



AP-3.8

Transaction File – TR

Version: 2.0

Date: 4 March 2025

DOCUMENT STATUS

| | |
|---------------------|-------------------------------------|
| Document No. | AP-3.8 Transaction File – TR |
|---------------------|-------------------------------------|

| Status | Version | Description |
|---------------|----------------|--------------------|
| Approved | 2.0 | |

REVISION HISTORY

| Version | Date | Author | Main Changes |
|----------------|--------------|---------------|---|
| 1.0 | 4 July 2024 | NPRA | New document. Content from old doc. 4.3, cleaned up and clarified. Rectified inconsistencies. |
| 2.0 | 4 March 2025 | NPRA | Minor correction in table 1. Deleted the last line. |

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1 PREFACE

1.1 Description

The Transaction File (TR) is generated at the Charging Point and periodically transferred to AutoPASS HUB. Each qualified passage¹ in a Charging Point will create a record in the Transaction File.

EN15509 is the only OBE protocol supported by the TR-file. The format is the same whether the passage is for an OBE passage or a video passage.

The body lines end with a Line Feed only. The footer ends without a Line Feed character.

1.2 Format Versions

This file format is specific to AutoPASS. It remains unchanged from the original AutoPASS format definition.

¹ «Qualified Passage» means a passage with a vehicle that shall normally be charged, without considering possible exemptions.

1.3 File Name Generation

The file name format is:

```
tr000000_YYYYMMDDhhmmPPP_SS.str
```

- OOOOOO – Operator ID (unique identification of the toll system)
- YYYY – Year
- MM – Month (01-12)
- DD – Day (01-31)
- hh – Hour (00-23)
- mm – Minute (00-59)
- PPP – Charging Point ID (001-999)
- SS – Sequence Number of the Transaction File from each CP (00-99)

Hour & Minute (hhmm) means the hour and minute when the transaction file was created, given in local Norwegian time. Daylight savings time is to be observed.

“.str” means Sorted Transactions.

The Sequence Number is incremented for each transaction file produced from the CP. It is reset to 0 after 99. The Sequence Numbers shall increment also over midnight, i.e. it does not reset to 0 for the start of the next day.

1.4 Data Formats

1.4.1 Character Set

The ISO/IEC 8859-1 character set is to be used. See [Table 5 - Valid Characters for LPN](#). Non-Latin characters shall be mapped into this character set according to [Table 6 – Mapping of Non-Latin Characters for LPN](#).

1.4.2 Time Stamp Format

All time stamps in the file body shall be given in local Norwegian time. Daylight savings time is to be observed.

The format of the time stamp is YYYYMMDDhhmmssddd, where:

- YYYY – Year
- MM – Month (01-12)
- DD – Day (01-31)
- hh – Hour (00-23)
- mm – Minute (00-59)
- ss – Second (00-59)
- ddd – Decimal Second (000-999)

2 TRANSACTION FILE FORMAT

2.1 File Header

There is no file header.

2.2 Body

This format description is to be used for OBE passages as well as for video passages.

| Name | Number of Char. | Type of value | Begin | End | Definition | Origin | Adjusted | Mandatory or Optional | Value if Nothing | Padding |
|------------------|-----------------|---------------|-------|-----|--|-----------|----------|-----------------------|------------------|---------|
| Charging point | 3 | Numeric | 1 | 3 | Charging point ID. | CP-config | Right | Mandatory | n/a | Zeros |
| Direction | 1 | Numeric | 4 | 4 | Direction of passage is being used in road charging and gives information whether the passage was inbound or outbound of the area which is subject to fees. A single passage in open systems is marked as: 0 = Inbound 1 = Outbound | CP-config | Right | Mandatory | n/a | Zeros |
| Lane | 2 | Numeric | 5 | 6 | ID of the lane where the passage took place. | CP-config | Right | Mandatory | n/a | Zeros |
| Blank | 1 | AlphaN | 7 | 7 | Blank | CP | | | Blank | |
| Time | 17 | Numeric | 8 | 24 | The time of the passage in local time. The format is YYYYMMDDhhmmssddd. 20010115102430123 means January 15, 2001, at 10:24:30.123. In normal operating conditions, this is the time of the detection of the vehicle. | CP | Right | Mandatory | n/a | Zeros |
| DST | 3 | AlphaN | 25 | 27 | Standard indication of summertime (daylight saving time) described with 3 characters. If the time is adjusted for summertime, the value shall be "DST". Otherwise, blanks. | CP | Left | Mandatory | Blanks | n/a |
| Blank | 1 | AlphaN | 28 | 28 | Blank | CP | | | Blank | |
| Signal code | 2 | Numeric | 29 | 30 | See AP-1.4, "AutoPASS Processing of Signal Codes" for the definition of the signal codes. | CP | Right | Mandatory | n/a | Zeros |
| Vehicle Class | 2 | Numeric | 31 | 32 | Always "00" | CP | Right | Mandatory | n/a | Zeros |
| TagStatusFlag | 2 | Numeric | 33 | 34 | Always "00" | CP | Right | Mandatory | n/a | Zeros |
| Blank | 1 | AlphaN | 35 | 35 | Blank | CP | | | Blank | |
| CountryCode | 4 | Numeric | 36 | 39 | Country code. Character 1-4 of PAN. (Norway=9578) See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | n/a |
| IssuerIdentifier | 4 | Numeric | 40 | 43 | Character 5-8 of PAN, Attribute 32 Code which identifies the Issuer of the OBE. Every Issuer of OBE has its own code. Together with the CountryCode the Issuer is uniquely identified. OBE Issuer Identifier as registered by standardisation body See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | n/a |
| ServiceNumber | 11 | Numeric | 44 | 54 | Character 9-x of PAN, Attribute 32 (if PAN less than 19 characters spaces are filled in rightmost positions) The ServiceNumber, according to ISO 14816 indicate "ServiceCode" and "UniqueNumber". See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Left | Mandatory for OBE | Zeros | Blanks |

| Name | Number of Char. | Type of value | Begin | End | Definition | Origin | Adjusted | Mandatory or Optional | Value if Nothing | Padding |
|---------------------------------|-----------------|---------------|-------|-----|---|--------|----------|-----------------------|------------------|---------|
| Key Generation | 1 | Numeric | 55 | 55 | Legacy parameter. Not in use. | CP | Right | | Zero | Zeros |
| Contract Provider | 6 | AlphaN | 56 | 61 | E.g. 30C00B (30C = NO (Norway), 00B = National TSP ID) | OBE | Left | Mandatory for OBE | Zeros | n/a |
| Level of security | 2 | Numeric | 62 | 63 | Shall only be 01 for approved OBE in AutoPASS. | AIT | Right | Mandatory for OBE | Zeros | Zeros |
| Transaction Type | 1 | Numeric | 64 | 64 | 1 if EN15509 OBE. | CP | Right | Mandatory for OBE | Zero | n/a |
| Authentication result, TC (RSE) | 1 | Numeric | 65 | 65 | 0 if not checked or no OBE reading, 1 if checked and OK, 2 if checked and failed | CP | Right | Mandatory | n/a | n/a |
| OBE authenticator, TSP | 8 | AlphaN | 66 | 73 | MAC for TSP authentication as returned by the OBE. See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Left | Mandatory for OBE | Zeros | Zeros |
| Contract authenticator | 8 | AlphaN | 74 | 81 | Not used in AutoPASS. To be filled with zeros. | CP | Left | | Zeros | n/a |
| RNRSE, TSP | 8 | AlphaN | 82 | 89 | Random number used by the OBE during TSP authentication calculations, Hex representation | CP | Left | Mandatory for OBE | Zeros | Zeros |
| KEYREF for TSP key | 3 | Numeric | 90 | 92 | Reference to the key used during calculation of the TSP Authenticator | AIT | Right | Mandatory for OBE | Zeros | n/a |
| OBE Status | 5 | Numeric | 93 | 97 | Flag which gives the status of the battery voltage and attempts to move the OBE. See Table 2 – OBE Status (Flag Code) | OBE | Right | Mandatory for OBE | Zeros | Zeros |
| TransactionCounter | 5 | Numeric | 98 | 102 | A counter in the OBE that the RSE shall be incremented by 1 for every passage. If the counter reaches the maximum value (65535), it will start over again from 1. See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | Zeros |
| Filler | 30 | Numeric | 103 | 132 | Not in use | CP | | | Zeros | |
| SignalLevel | 3 | Numeric | 133 | 135 | Information on OBE performance (000-999). May be used to compare individual OBE performance over time. | OBE | Right | Mandatory for OBE | Zeros | Zeros |
| Filler | 5 | Numeric | 136 | 140 | Not in use | CP | Right | Mandatory | n/a | Zeros |
| Blank | 1 | AlphaN | 141 | 141 | Blank | CP | | | Blank | |
| SeqValidPayment | 10 | Numeric | 142 | 151 | Not in use | CP | Right | Optional | Zeros | Zeros |
| SeqEntryDetection | 10 | Numeric | 152 | 161 | Sequential counter giving the number of vehicles detected. This counter is generated in the CPE, and the value is sent to AutoPASS Core for reconciliation. The counter increases by 1 for each valid passage. | CP | Right | Mandatory | n/a | Zeros |
| SeqEnforced | 10 | Numeric | 162 | 171 | Not in use | CP | Right | Optional | Zeros | Zeros |
| SeqLCTransaction | 10 | Numeric | 172 | 181 | Sequential counter giving the number of transactions sent from the CPE. This counter is generated in the CPE, and is the value sent to the AutoPASS Core for reconciliation. The counter increases by 1 every time CPE sends a transaction. | CP | Right | Mandatory | n/a | Zeros |

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| Name | Number of Char. | Type of value | Begin | End | Definition | Origin | Adjusted | Mandatory or Optional | Value if Nothing | Padding |
|------------------------------|-----------------|---------------|-------|-----|--|---------------|----------|-----------------------|------------------|---------|
| SeqVideoPicture | 10 | Numeric | 182 | 191 | Sequential counter of the pictures sent from the CPE to AutoPASS Core. (The CPE generates a set of pictures for every passage, but the pictures are not to be sent to AP Core for all transactions. See AP-1.4.) This counter is generated by the CPE, and the value is sent to AP Core for reconciliation. The counter increments by 1 for every set of pictures that is sent to AP Core. This counter shall also be used as the sequence number in the picture filename. For transactions where images are not to be sent from the CPE, no data shall be given and the value shall not be incremented. | CP | Right | Mandatory | Zeros | Zeros |
| Blank | 1 | AlphaN | 192 | 192 | Blank | CP | | | Blank | |
| Filler | 49 | Numeric | 193 | 241 | Not in use | CP | | | Zeros | |
| Blank | 1 | AlphaN | 242 | 242 | Blank | CP | | | Blank | |
| SignalCodeBitmap | 8 | Numeric | 243 | 250 | Not In use | CP | Right | | Zeros | |
| Blank | 1 | AlphaN | 251 | 251 | Blank | CP | | | Blank | |
| LaneMode | 2 | Numeric | 252 | 253 | Always 01. 08 is used for some older CPs for lane in the opposite direction of the charging direction. | CP | Right | Mandatory | n/a | Zero |
| LightSignalCode | 2 | Numeric | 254 | 255 | Not in use | CP | Right | | Zeros | Zeros |
| Blank | 1 | AlphaN | 256 | 256 | Blank | CP | | | Blank | |
| MMI Signal Code | 2 | Numeric | 257 | 258 | The feedback the user received at the time of passage. See Table 3 - MMI Signal Codes | CP | Right | Mandatory for OBE | Zeros | n/a |
| Filler | 8 | Numeric | 259 | 266 | Not in use | CP | | | Zeros | |
| ValidationFile | 40 | AlphaN | 267 | 306 | The full file name of OBU Status file used for validation of EFC passages. The file name shall be stated for all passages, also for non-OBE passages. | OBUStatusFile | Left | Mandatory | n/a | Blanks |
| ClassificationType | 1 | Numeric | 307 | 307 | Not in use | CP | | | Zero | |
| MeasuredLength | 5 | Numeric | 308 | 312 | Not in use | CP | | | Zeros | |
| MeasuredWeight | 5 | Numeric | 313 | 317 | Not in use | CP | | | Zeros | |
| NumberOfAxels | 1 | Numeric | 318 | 318 | Not in use | CP | | | Zero | |
| VehicleSpecialClassification | 2 | Numeric | 319 | 320 | The first digit is the trailer bit. 0=No Trailer. 1=Trailer. The second digit may give the AutoPASS Ferry Class. | CP | Left | Mandatory | n/a | Zeros |
| Filler | 3 | Numeric | 321 | 323 | Not in use | CP | | | Zeros | |
| MeasuredWidth | 5 | Numeric | 324 | 328 | In cm | CP | Right | Mandatory | n/a | Zeros |
| MeasuredHeight | 5 | Numeric | 329 | 333 | In cm | CP | Right | Mandatory | n/a | Zeros |
| OtherClassificationData | 10 | AlphaN | 334 | 343 | Not in use | CP | | | Blanks | |
| LPNFront | 10 | AlphaN | 344 | 353 | This is the Licence Plate Number as read by the ANPR processes. No spaces or separators are allowed in between the characters. | CP | Left | Mandatory | Blanks | Blanks |
| NationLPNFront | 3 | AlphaN | 354 | 356 | This is the nationality of the Licence Plate Number as read by the ANPR processes. The nationality of the Licence Plate number is according ISO 3166-1-Alpha-2 code elements. DK = Denmark, NO = Norway, SE = Sweden etc. http://www.iso.org/iso/english_country_names_and_code_elements | CP | Left | Mandatory | Blanks | Blanks |

| Name | Number of Char. | Type of value | Begin | End | Definition | Origin | Adjusted | Mandatory or Optional | Value if Nothing | Padding |
|-------------------------------|-----------------|---------------|-------|-----|--|--------|----------|-----------------------|------------------|---------|
| OCRConfidenceFront | 3 | Numeric | 357 | 359 | The ANPR process produces a confidence levels of the LPN reading. The measure is given in % as an integer between 0 and 100. The exact values will depend on each supplier's implementation. | CP | Right | Mandatory | Zeros | Zeros |
| OCRGroupFront | 1 | Numeric | 360 | 360 | The ANPR process produces a category code: 0 = No ANPR result 1 = Successful/confident reading 2 = ANPR result of low confidence | CP | Right | Mandatory | n/a | Zeros |
| LPNRear | 10 | AlphaN | 361 | 370 | See LPNFront | CP | Left | Mandatory | Blanks | Blanks |
| NationLPNRear | 3 | AlphaN | 371 | 373 | See: NationLPNFront | CP | Left | Mandatory | n/a | Blanks |
| OCRConfidenceRear | 3 | Numeric | 374 | 376 | See: OCRConfidenceFront | CP | Right | Mandatory | n/a | Zeros |
| OCRGroupRear | 1 | Numeric | 377 | 377 | See: OCRGroupFront | CP | Right | Mandatory | n/a | Zeros |
| LPNResultFrontandRear | 10 | AlphaN | 378 | 387 | The resulting LPN from the processing of the front and rear images (ANPR results and Confidence). | CP | Left | Mandatory | n/a | Blanks |
| NationLPNResultFrontandRear | 3 | AlphaN | 388 | 390 | The resulting nationality according to LPNResultFrontandRear. | CP | Left | Mandatory | n/a | Blanks |
| OCRConfResultFrontandRear | 3 | Numeric | 391 | 393 | The front/rear comparison process will produce a resulting confidence based on the individual confidences from the front and rear ANPR process. | CP | Right | Mandatory | n/a | Zeros |
| OCRGroupResultFrontandRear | 1 | Numeric | 394 | 394 | See: OCRGroupFront. To be defined by each supplier. | CP | Right | Mandatory | n/a | Zeros |
| Blank | 1 | AlphaN | 395 | 395 | Blank | CP | | | Blank | |
| LicencePlateNumber | 34 | AlphaN | 396 | 429 | Value from OBE. Not in use. | CP | | | Zeros | |
| VehicleClass | 2 | AlphaN | 430 | 431 | Value from OBE. Not in use. | CP | | | Zeros | |
| VehicleDimintions | 6 | AlphaN | 432 | 437 | Value from OBE. Not in use. | CP | | | Zeros | |
| VehicleAxels | 4 | AlphaN | 438 | 441 | Value from OBE. Not in use. | CP | | | Zeros | |
| VehicleWeightLimits | 12 | AlphaN | 442 | 453 | Value from OBE. Not in use. | CP | | | Zeros | |
| VehicleSpecificcharateristics | 8 | AlphaN | 454 | 461 | Value from OBE. Not in use. | CP | | | Zeros | |
| EquipmentOBUId | 10 | Numeric | 462 | 471 | As received from reading the OBE, attribute 24, EN 15509. Written as a decimal number. Set by the OBE manufacturer. See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | Zeros |
| EquipmentStatus | 4 | AlphaN | 472 | 475 | As received from reading the OBE, attribute 26, EN 15509. Written as a hexa-decimal number. See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Left | Mandatory for OBE | Blanks | Blanks |
| TypeOfContract | 4 | Numeric | 476 | 479 | As received from reading the OBE, attribute 0, EN 15509. See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | Zeros |
| ContextVersion | 2 | Numeric | 480 | 481 | As received from reading the OBE, attribute 0, EN 15509. See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | Zeros |
| PaymentMeansExpireDate | 4 | Numeric | 482 | 485 | Value from OBE. Not in use. | CP | | | Zeros | |
| PaymentUsageControl | 4 | Numeric | 486 | 489 | Value from OBE. Not in use. | CP | | | Zeros | |
| OBUManufacturerId | 5 | Numeric | 490 | 494 | As received from reading the OBE (VST) See Table 1 – AutoPASS EN15509 DSRC Commands | OBE | Right | Mandatory for OBE | Zeros | Zeros |

| Name | Number of Char. | Type of value | Begin | End | Definition | Origin | Adjusted | Mandatory or Optional | Value if Nothing | Padding |
|-------------|-----------------|---------------|-------|-----|---|-----------|----------|-----------------------|------------------|---------|
| Filler | 11 | Numeric | 495 | 505 | | CP | | | Zeros | |
| Operator ID | 6 | AlphaN | 506 | 511 | Same as in the filename | CP-config | Left | Mandatory | n/a | Blanks |
| End of Line | 1 | AlphaN | 512 | 512 | Line Feed. Carriage Return is not to be used. | CP | n/a | Mandatory | n/a | n/a |

The following is an example showing a possible body line of a transaction file:

```
072101 20160908183414951DST 020000 9578006417222938
030C04001118EACDAAB0000000024143851118000000004500000000000000000000000000000000109500000
000000000000219483910000000000022264057000000000 0000000000000000000000000000000000000000000000000000000 0100
3300000000obustatusfile_100008_20160908_47.dat 0000000000000000000019700190000000000MQ12345 NO 0991MQ12345 NO
0951MQ12345 NO 0971
30C00E00000000000000000000000000000000000000000000000000000993106376038E00010200000000000420000000000100008<LF>
```


3 DSRC PROTOCOL COMMANDS

Table 1 – AutoPASS EN15509 DSRC Commands

| VST | | | | | | | |
|-----------------|-----------|-------|---|-------------------|---------|-------------|---|
| OBE field | Attribute | Octet | | Transaction File | Pos | Format | Remarks |
| EFC-ContextMark | 0 | 1-3 | → | ContractProvider | 56-61 | | Pos 56-58: CountryCode: 0011 0000 1100 = 0x30C (NO) |
| | | | | | | | Pos 59-61: TSP Identifier: 0000 0000 1011 =0x00B (TSP No. 11) |
| | | | | | | | ContractProvider: 30C00B |
| | | 4-5 | → | TypeOfContract | 476-479 | Hexadecimal | 0000 0000 0000 0001 = 0x0001 |
| | | | | | | | 0000 0000 0001 0001 = 0x0011 |
| | | 6 | → | ContextVersion | 480-481 | Hexadecimal | 0000 0010 = 02 |
| ManufacturerId | | | → | OBUManufacturerId | 490-494 | Hexadecimal | 0000 0000 0000 0010 1010 = 0x0002A |
| | | | | | | | 0000 0000 0000 0100 0010 = 0x00042 |

| GET_STAMPED.response | | | | | | | | |
|----------------------|-----------|-------|---|------------------------|---------|---------|--|---------------------|
| OBE Field | Attribute | Octet | | Transaction Field | Pos | | Remarks | |
| Payment Means | 32 | 1-3 | → | CountryCode | 36-39 | Decimal | Personal Account Number (PAN) PAN = 9.578.XXXX.AAAAAA.L where MII = 9, 578 is country code for Norway and XXXX is the Toll Service Provider (Issuer) identifier as assigned by Standards Norway. Please observe that XXXX is 4 digits in line with 7812-1, A.5 National schemes using Issuer Identification Number (IIN) greater than 6 digits. AAAAAAA10 is the Individual Account Identification and L10 is the Check Digit. PAN is padded to achieve 10 octets. | |
| | | 4-5 | → | IssuerIdentifier | 40-43 | Decimal | | |
| | | 6-10 | → | ServiceNumber | 44-54 | Decimal | | |
| | | 11-12 | → | PaymentMeansExpireDate | 482-485 | | | 0000 0000 0000 0000 |
| | | 13-14 | → | PaymentUsageControl | 486-489 | | | 0000 0000 0000 0000 |

| GET.response | | | | | | | |
|-----------------|-----------|-------|---|--------------------|---------|-------------|--|
| OBE Field | Attribute | Octet | | Transaction Field | Pos | | Remarks |
| EquipmentOBUId | 24 | 1-5 | → | EquipmentOBUId | 462-471 | Decimal | 0000 0100 Length indicator=4, 0000 0000 0000 0000 0000 0000 0000 |
| EquipmentStatus | 26 | 1-2 | → | EquipmentStatus | 472-475 | Hexadecimal | LocalCoding : 0000 = 0 |
| | | | | TransactionCounter | 98-102 | Decimal | Transaction Counter: 0001 0000 1100 = 268 |

4 TABLES

4.1 OBE Status – Flag Code

Table 2 – OBE Status (Flag Code)

| Code | Description | Flag |
|-------|---|--------|
| 00001 | Not defined in AutoPASS. Normally "0". | Bit 0 |
| 00002 | Not defined in AutoPASS. Normally "0". | Bit 1 |
| 00004 | Not defined in AutoPASS. Normally "0". | Bit 2 |
| 00008 | Not defined in AutoPASS. Normally "0". | Bit 3 |
| 00016 | Not defined in AutoPASS. Normally "0". | Bit 4 |
| 00032 | Not defined in AutoPASS. Normally "0". | Bit 5 |
| 00064 | Not defined in AutoPASS. Normally "0". | Bit 6 |
| 00128 | Not defined in AutoPASS. Normally "0". | Bit 7 |
| 00256 | Not defined in AutoPASS. Normally "0". | Bit 8 |
| 00512 | Not defined in AutoPASS. Normally "0". | Bit 9 |
| 01024 | Not defined in AutoPASS. Normally "0". | Bit 10 |
| 02048 | Not defined in AutoPASS. Normally "0". | Bit 11 |
| 04096 | Not defined in AutoPASS. Normally "0". | Bit 12 |
| 08192 | Low battery voltage. Is set to "1" if low battery voltage is detected in the OBE. | Bit 13 |
| 16384 | Not defined in AutoPASS. Normally "0". | Bit 14 |
| 32768 | OBE moved. | Bit 15 |

4.2 MMI Signal Codes

Table 3 - MMI Signal Codes

| Code | OBE MMI code | Description |
|------|--------------|--------------------------|
| 30 | 0 | OK |
| 31 | 1 | Not OK |
| 32 | 2 | Contact Service Provider |
| 33 | 255 or none | No Signalling |

4.3 AutoPASS Ferry Class

According to the AutoPASS regulations for ferry services.

Table 4 - AutoPASS Ferry Class

| Code | Description |
|------|--------------------------------------|
| 0 | Unknown, default if not in use |
| 1 | Small vehicle length 0 – 6m |
| 2 | Medium vehicle length 6.01 – 8.00m |
| 3 | Large vehicle length 8.01 – 10.00m |
| 4 | Large vehicle length 10.01 – 12.50m |
| 5 | Large vehicle length 12.51 – 14.50m |
| 6 | Large vehicle length 14.51 – 17.50 m |
| 7 | Large vehicle length 17.51 – 19.50 m |
| 8 | Large vehicle length 19.51 – 22.00 m |
| 9 | Large vehicle length >22.00m |

4.4 OBE Manufacturer Id

The international register of Manufacturer Ids can be found online:

<https://www.itsstandards.eu/registries/register-of-manufacturers-cs2/>

4.5 Valid Characters for LPN

Only the highlighted characters in Table 5 are valid characters for the LPN field of the transaction file.

Table 5 - Valid Characters for LPN

| ISO/IEC 8859-1 | | | | | | | | | | | | | | | | |
|----------------|------------|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|----|
| | x0 | x1 | x2 | x3 | x4 | x5 | x6 | x7 | x8 | x9 | xA | xB | xC | xD | xE | xF |
| 0x | Not in use | | | | | | | | | | | | | | | |
| 1x | Not in use | | | | | | | | | | | | | | | |
| 2x | SP | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / |
| 3x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 4x | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 5x | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 6x | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 7x | P | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | |
| 8x | Not in use | | | | | | | | | | | | | | | |
| 9x | Not in use | | | | | | | | | | | | | | | |
| Ax | NBSP | ı | ç | £ | ¤ | ¥ | ¦ | § | ¨ | © | ª | « | ¬ | SHY | ® | ¯ |
| Bx | ° | ± | ² | ³ | ´ | µ | ¶ | · | ¸ | ¹ | º | » | ¼ | ½ | ¾ | ¿ |
| Cx | À | Á | Â | Ã | Ä | Å | Æ | Ç | È | É | Ê | Ë | Ì | Í | Î | Ï |
| Dx | Ð | Ñ | Ò | Ó | Ô | Õ | Ö | × | Ø | Ù | Ú | Û | Ü | Ý | Þ | ß |
| Ex | à | á | â | ã | ä | å | æ | ç | è | é | ê | ë | ì | í | î | ï |
| Fx | ð | ñ | ò | ó | ô | õ | ö | ÷ | ø | ù | ú | û | ü | ý | þ | ÿ |

4.6 Allowed Non-Latin Characters for LPN

Table 6 – Mapping of Non-Latin Characters for LPN

| License Plate Character | Unicode Code Point | Mapped Latin1 Character |
|-------------------------|--------------------|-------------------------|
| A to Z | U+0041to U+005A | not mapped |
| 0 to 9 | U+0030to U+0039 | not mapped |
| Ä | U+00C4 | not mapped |
| Ö | U+00D6 | not mapped |
| Ü | U+00DC | not mapped |
| А | U+039B | a |
| Б | U+042A | b |
| С | U+010C | c |
| Д | U+0414 | d |
| Е | U+0401 | e |
| Э | U+042D | f |
| Г | U+0413 | g |
| Ь | U+042C | h |
| Ч | U+0427 | i |
| Й | U+0419 | j |
| З | U+0417 | k |
| Л | U+041B | l |
| Щ | U+0429 | m |
| И | U+0418 | n |
| Ф | U+0424 | o |
| П | U+041F | p |
| Ы | U+042B | q |
| Я | U+042F | r |
| Š | U+0160 | s |
| Ю | U+042E | t |
| Ц | U+0426 | u |
| Б | U+0411 | v |
| Ш | U+0428 | w |
| Ж | U+0416 | x |
| У | U+0423 | y |
| Ž | U+017D | z |
| Ð | U+00D0 | ä |
| Ć | U+0106 | ü |