

Downstream eBusiness Work Group - Petroleum Data Exchange PDXR v4.01

The following changes are included in PDXR v4.01 :

- Add: Component Contract Number (BL record) (32AN)
- Change: „Contract Number“ name to „Supplier Contract Number“ (BL record)
- Delete: RIN number fields (Renewable Identification Number) (BL record)

Convention: For consistency in the record definitions:

- a numeric field type “N” is always right-justified and zero-filled
- an alphanumeric field type “A” is always left-justified and space-filled

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LA - Load Authorization (CA - Customer Authorization)

The LA transaction provides Third Party Data Providers with all the information required to identify a consignee at a specific location. It is used to initiate an allocation check against data established in the seller's database. The LA transaction is a total of 93 characters comprised of the following elements:

Ref #	Field Name	Cols	Length	Description
1	Transaction Type	1-2 M	2 AN	Code that identifies the information as a load authorization request – Formerly “CA” now “LA”
2	Version	3-6 M	4 AN	Identifies the terminal protocol version, this version for example is 4.01 (decimal is not implied and should be shown)
3	Terminal ID	7-15 M	9 AN	ID Number will be assigned to each location. It is made up of the standard Source Point Location Code (SPLC) and a unique 3 digit identifier for the terminal operator.
4	Seller ID	16-18 M	3 AN	Unique code assigned to each selling company. This number will correspond to a valid user code or company code within the 3 rd party data provider.
5	Consignee Number	19-32 M	1 to 14 AN	Identification for the “ship to” buyer of the product.
6	Final Shipper ID	33-35 M	3 AN	Identifier which is used only when a third party relationship is to be checked. The final shipper is the last seller requiring a LA. If a third party relationship does not exist the final shipper should be populated with the seller id or “000”.
7	Carrier ID	36-43 M	8 AN	Data which identifies the carrier and is used in the BOL record. Based on the SCAC alpha code, it should be transmitted in the form 0000AAAA where AAAA is the alpha code. SCAC code of CUST should not be used as a default. CUST is an assigned SCAC code for a

				particular carrier. For future reference: the 4 leading zeroes in the Carrier ID will be dropped and the field will be shortened to 4 characters. We recommend not implementing functionality using these leading 4 characters.
8	Rack Driver ID	44-63 O	20 AN	Unique identifier for drivers within the TAS system.
9	Terminal Control Number	64-72 M	9 AN	An alpha-numeric field identifying the Internal Revenue Service's Terminal Control Number. (Use "NON-IRS" if not applicable such as for an asphalt terminal or refinery)
10	Release/ Order Number	73-88 O	16 AN	A number provided to the authorizing system that identifies a specific truck load. Typically the driver will provide this information for authentication at the authorizing system.
11	Check Digit37	89 M	1 AN	This is based on modulus 37 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. If 12 is blank, then use this field as a check digit.
12	Check Digit16	90 - 93 O	4 AN	This is based on CRC 16 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. Does not include CheckDigit37 in its calculation. This field is optional; blanks means it is not used and CheckDigit 37 is used.
	TOTAL		93	

AUTH - Authorization Granted

When a LA transaction is received it is processed immediately and the results sent to the calling terminal. After all of the authorization checks are made and authorization is granted an AUTH response is returned. If product authorization was also granted depending on the Allocation Method used specific PIDX Codes or PIDX Product Families will be returned in the AUTH response. (For further explanation please refer to Allocation Method's identified below. The AUTH response is a minimum of 42 characters comprised of the the following elements:

Ref #	Field Name	Cols	Length	Description
1	Response Type	1-4 M	4 AN	Code that identifies the information as an authorization response - "AUTH"
2	Version	5-8	4 AN	Identifies the terminal protocol version, this version for example is 4.01 (decimal is not implied and should be shown)
3	Authorization Number	9-16 M	8 AN	Number assigned by 3 rd party data provider when authorization is granted.
4	Consignee Number	17-30 M	1 - 14 AN	Number which identifies the "ship-to" buyer which was authorized.
5	Carrier ID	31-34 M	4 AN	Identification for the carrier which was sent with the LA transaction.
6	Total PIDX Products/ PIDX Prod Families Authorized/Not Authorized	35-36 M	2 N	The number of PIDX Products or PIDX Product Families authorized/not authorized in response to an LA request. (Dependent on Allocation Method Used.) This number will correspond to the number of repeating blocks of data to be used for each product or product family authorized/not authorized. Repeating blocks are identified with an * next to the data element. If Product authorization is not required value should be set to 0 and field 8 through 11 will be omitted. It is recommended that support for maximum value of at least 25 for this field.

7	Product Allocation Method	37 M	1 N	Identifies the product allocation method used, so that the TAS system can correctly interpret the products being authorized/not authorized. Valid product allocation methods are 1, 2, and 3. See below for explanation of methods. If Products are not being allocated by the identified seller the value is set to 0 and fields 8 through 11 will be omitted..
8*	Product Type Indicator	VAR	1 AN	Identifies the nature of the data in the following Product/Family authorized/not authorized field. Valid values are P for products and F for Family. Omitted when field 6 and 7 are both zero.
9*	PIDX Product/ PIDX Family Authorized/Not Authorized	VAR	4 AN	The PIDX product code or PIDX product family being authorized/not authorized. Omitted when field 6 and 7 are both zero. Currently the product is only 3 characters; the extra trailing space is for future growth.
10*	Authorized Volume	VAR	10N	Volume authorized for this product or product family. This field is only used with Product Allocation Method 3. If not used then blank. Omitted when field 6 and 7 are both zero.
11*	Unit of Measure	VAR	3AN	The unit of measure for the authorized volume above. Valid recognized values are as per the table below. This field is only used with Product Allocation Method 3. If not used then blank. Omitted when field 6 and 7 are both zero.
12	Check Digit37	VAR	1 AN	This is based on modulus 37 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. If 13 is blank, then use this field as a check digit
13	Check Digit16	VAR	4 AN	This is based on CRC 16 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. Does not include CheckDigit37 in its calculation. This field is optional; blanks means it is not used and CheckDigit37 is used.
	TOTAL	VAR		Length will based on (value in field 6 *18) + 42 static data fields. Minimum: 42, Maximum:1824)

*** Repeating Fields for each occurrence of a PIDX Product Code or PIDX Product Family
Product Allocation Method – 3 Options**

0. **No product restrictions**
1. **Authorized Product Family or Specific Products by Consignee** If a product family or specific product is listed - those products are authorized to load.
2. **Not Authorized Product Family or Specific Products by Consignee** If a product family or specific product is listed - those products are not authorized to load. All other products cleared at the terminal by the seller for the customer are authorized to load.
3. **Order Specific:** Provides a list of authorized products and their associated volumes.

Unit of Measure Table

Code	Unit of Measure
BBL	Barrels
GAL	Gallons
LTR	Liters
TON	Tons (2000 lbs)
LBS	Pounds
MTN	Metric Ton (2200 lbs)
KGS	Kilograms

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DENY - Authorization Denied

When a LA transaction is sent to the third party provider it may be denied for any one of several reasons. The authorization denied response provides the terminal with information on why the transaction was not approved. The DENY response is a total of 29 characters comprised of the the following elements:

Ref #	Field Name	Cols	Length	Description
1	Response Type	1-4 M	4 AN	A code that identifies the information as an authorization denial - "DENY".
2	Version	5-8 M	4 AN	Identifies the terminal protocol version, this version for example is 4.01. (decimal is not implied and should be shown)
3	Seller ID	9-11	3 AN	A code which identifies the seller who denied the transaction. If this field equals 000, then 3 rd party data provider actually stopped the authorization.
4	Denial Reason Code	12-14 M	3 N	A code which identifies the reason for the denial. Refer to Denial Code tables managed by Downstream eBusiness and published on the PIDX website at : WWW.PIDX.ORG
5	Additional Denial Info	15-24 O	10	A code which identifies the reason for the denial. Refer to Denial Code tables managed by Downstream eBusiness and published on the PIDX website at : WWW.PIDX.ORG
6	Check Digit37	25 M	1 AN	This is based on modulus 37 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. If 7 is blank, then use this field as a check digit.
7	Check Digit16	26-29 O	4 AN	This is based on CRC 16 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. Does not include CheckDigit37 in its calculation. This field is optional; blanks means it is not used and CheckDigit37 is used.
	TOTAL		29	

BL - Bill of Lading Record (BB – Build BOL and CB – Completed BOL)

The BL –Bill of Lading Record will be used to transmit the Bill of Lading Record Detail for both authorized and non-authorized loads. The BL record is a minimum of 342 characters comprised of the the following elements:

Ref #	Field Name	Cols	Length	Description
1	Transaction Type	1-2 M	2 AN	Code that identifies the information as a BOL Header Record – Formerly “BB” now “BL”
2	Version	3-6 M	4 AN	Identifies the terminal protocol version, this version for example is 4.01 (decimal is not implied and should be shown)
3	Terminal ID	7-15 M	9 AN	ID Number will be assigned to each location. It is made up of the standard Source Point Location Code (SPLC) and a unique 3 digit identifier for the terminal operator.
4	Seller ID	16 - 18 M	3 AN	Unique code assigned to each selling company. This code will correspond to a valid user number or valid Company Code within the 3 rd party data provider.
5	Final Shipper ID	19 – 21 M	3 AN	Identifier which is used when a third party relationship exists. The final shipper is the last seller of the product.
6	Terminal Control Number	22-30 M	9 AN	An alpha-numeric field identifying the Internal Revenue Service’s Terminal Control Number. (Use “NON-IRS” if not applicable such as for an asphalt terminal or refinery)
7	BOL Number	31-46 M	16 N	A numeric field, which contains the bill of lading number.
8	Authorization Number	47-54 M	8 N	A numeric field which contains the authorization number assigned during the load authorization check. If this field is blank this transaction was BOL was issued without an authorization.
9	Final Shipper Transaction sequence	55-63 O	9 N	A optional field representing a sequential number assigned within the Company Code and SPLC code. The number begins at 1 and goes until it rolls over to 1 again. Receivers of data can now conduct continuity checks to ensure all data has been received from a given sending site.

10	Authorized Load	64 M	1 N	Identifies if the BOL is from an authorized load or an unauthorized load (0 – Authorized, 1 – Unauthorized)
11	BOL Version	65-66 M	2 N	If the BOL is a revision of a previously transmitted BOL, this specifies what revision (01-99). For the first occurrence of the BOL issued by the terminal, the value will be 0.
12	Start Load Date	67-74 M	8 N	The date that the load commenced formatted MMDDYYYY. (Year 2000 compatible)
13	Start Load Time	75-78 M	4 N	The time of day (terminal's local time) that the load commenced, formatted (HHMM) based on the 24-hour clock (00:00 - 23:59).
14	End Load Date	79-86 M	8 N	The date of load completion, formatted MMDDYYYY (year 2000 compatible).
15	End Load Time	87-90 M	4 N	The time of day (terminal's local time) that the load completed, formatted (HHMM) based on the 24-hour clock (00:00 - 23:59).
16	Consignee Number	91-104 M	14 AN	An alpha-numeric field which identifies the consignee as it appears on the BOL.
17	Destination State Code	105-106 M	2 AN	The two character state abbreviation
18	Destination County	107-136 O	30 AN	County name
19	Destination City	137-166 O	30 AN	City name
20	Destination Zip Code	167-175 O	9 N	Standard 5 and 4 postal zip code associated with destination of product.

21	Carrier Code	176-179 M	4 AN	Alpha-numeric field containing the Standard Carrier Alpha Code (SCAC) to identify the carrier. The SCAC codes are maintained and distributed by the National Motor Freight Traffic Association as Continental Directory NMF101.
22	Carrier FEIN	180-189 M	10 AN	Carrier's Federal Employer Identification Number. Use 9 digit FEIN followed by the letter F. If the carrier does not have a FEIN, use the carrier's Social Security Number followed by the letter S. If unknown, use 000000000U.
23	Rack Driver ID	190-209 O	20 AN	Unique identifier for drivers within the TAS system.
24	Vehicle Number	210-229 O	20 AN	For truck related configurations, this field represents the tractor or the tank truck. Any trailers will be identified in following fields. For non-truck related movement this is the transport's id number.
25	Container Number-1	230-249 O	20 AN	For a vehicle type of truck this would be the trailer number.
26	Container Number- 2	250-269 O	20 AN	For a vehicle type of truck this would be the trailer number.
27	Vehicle Type	270 M	1 AN	Type of vehicle used: B = Barge, C=Container, R = Rail, S = Vessel/Tanker, T = Tank Truck, X = Book Transfer
28	Purchase Order Number	271-300 O	30 AN	An alpha-numeric field containing the purchase order number.
29	Order/Release Number	301-316 O	16 AN	An alpha-numeric field containing the order/release number.
30	Supplier Contract Number	317-348 O	32 AN	Contract number is the contract for which an order is assigned.

31	Split Load Flag	349 O	1 AN	A split load indicates instances where compartments on the same truck are loaded from different lanes at a terminal requiring the driver to card in and card out as he moves from lane to lane to complete a load. Y indicates split load.
32	Shipper Info	350- 359 O	10 AN	Various shipper defined information.
33	Total PIDX Products Transmitted	360- 361 M	2 N	The number of PIDX Products Codes being transmitted in the BOL record.
34*	Product Code Type	362 M	1AN	A=Additive; F = Finished Product; C=Component Product
35*	PIDX Product Code	363- 365 M	3 AN	A code which identifies the product loaded. Codes used are the Oil Industry Common PIDX Product Codes. The Finished Product and Component Product codes are maintained and available from the Downstream E-Business Subcommittee. If the Product Type Code is is an additive use "ADD" here and identify custom value for additive in the Additive Code below.
36*	Additive Code	366- 385 O	20AN	The user-specified Additive product code.
37*	Gross Quantity	386- 395 M	10 N	A numeric un-signed field which represents the gross (metered) quantity of product loaded. Front fill with zeroes. Last 2 characters are implied decimal positions (ex. 1453 gallons would be represented as 0000145300).
38*	Gross Credit Sign	396 M	1 AN	If the Gross Quantity is negative, enter a minus '-' sign. Leave blank if positive.
39*	Net Quantity	397- 406 M	10 N	A numeric unsigned field which either represents the net (adj. To 60 degrees) quantity of product loaded (front filled with zeroes) .For net quantity, the last 2 characters are implied decimal positions (ex. 1453 gallons would be represented as 0000145300).
40*	Net Credit Sign	407 M	1 AN	If the Net Quantity negative, enter a minus '-' sign. Leave blank if positive.

41*	Temperature	408-411 O	4N	Temperature has one implied decimal position. (example: 600 = 60.0 °or 1002=100.2 °)	
42*	Temperature Measurement Type	412 O	1A	Refers to either F - Fahrenheit or C - Celsius – conditionally optional if temperature is populated then required.	
43*	Gravity	413-416 O	4N		Gravity has one implied decimal position. (example 101.4 = 1014 or 78.0 = 0780)
44*	Blend Or Alteration Indicator	417-418 M	2AN		A code which indicates that there has been some modification to the product. Reference the Blend indicator table on the PIDX website at WWW.PIDX.ORG – (example of blend code „1“ would show as „1“ and a space.)
45*	Measurement Type	419-421 M	3 AN	Indicator defining the measurement used: See table of units of measure above.	
46*	Finished Product Batch-Id	422-424 M	3 AN	A 3 character field which indicates a grouping of blend component which were combined to create a blended product. If product was not blended batch-id must not match any other, else it be treated as a component of that blend. (Example of finished product batch id „1“ would display as „1 space space“)	
47	Component Contract Number	425-456 O	32 AN	Contract number for the component	
48*	Sub-Company ID	457-465 O	9 AN	A 9 character identifier sub-ordinate to the Company code. It can be viewed as the stockholder in the terminal, i.e. many companies create multiple stockholders (shippers) within rack automation systems to track inventory. Or supplier of the component in this particular finished product.	
49	Check Digit37	466 M	1 AN	This is based on modulus 37 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. If 46 is blank, then use this field as a check digit.	

50	Check Digit16	467-470 M	4 AN	This is based on CRC 16 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. Does not include CheckDigit37 in its calculation. This field is optional; blanks means it is not used and CheckDigit37 is used.
	Total Record Length		Variable	Length will be dependant on how many product blocks are sent.

*** Repeating Fields for each occurrence of a PIDX Product Code**

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RT - Re-Transmit

If for any reason the response sent from the 3rd party data provider cannot be decoded by the terminal, an RT should be sent to request a retransmission. This would usually occur when the check digit sent by 3rd party data provider does not correspond to the data.

Transaction Type	2 AN	Code that identifies the information as a request for re-transmission - "RT".
Check Digit37	1 AN	This is based on modulus 37 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. If 46 is blank, then use this field as a check digit.
Check Digit16	4 AN	This is based on CRC 16 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. Does not include CheckDigit37 in its calculation. This field is optional; blanks means it is not used and CheckDigit37 is used.

FP - Finished Processing

When the "conversation" is complete and there are no more transactions to be processed, an FP should be sent.

Transaction Type	2 AN	Code that identifies the information as a finished processing request and terminates the phone call - "FP".
Check Digit37	1 AN	This is based on modulus 37 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. If 46 is blank, then use this field as a check digit.
Check Digit16	4 AN	This is based on CRC 16 and is computed from the string of data being sent. It will be used to ensure that the data was transmitted correctly. Does not include CheckDigit37 in its calculation. This field is optional; blanks means it is not used and CheckDigit37 is used.

R? - Request

An "R?" is a response from 3rd party data provider indicating that the system is ready to accept a transaction. It is always followed by a carriage return <CR> and does not include a check digit.

If data is sent to 3rd party data provider prior to the receipt of the R?<CR>, it will be ignored and never processed. For that reason, a terminal should not attempt to simulate the response. Once an R?<CR> is sent, 3rd party data provider remains in a dormant state, waiting for transactions. If 3rd party data provider does not receive any information for several minutes, it will terminate the session and drop the connection.

E! - Re-Transmit Last Transaction

If for any reason a transaction sent to 3rd party data provider from the terminal cannot be decoded, an E! would be returned to request a retransmission. This would usually occur when the check digit sent to 3rd party data provider does not correspond to the data. The E! response is followed by a <CR> and does not contain a check digit.

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