



Implementation Guide for Rail Carrier Freight Details and Invoice Functional Group Totals

**EDI 410 and EDI 980
Version 3020 to 4010**

Description: A Guide for the implementation of electronic receipt of Freight Invoices from CN pertaining to the movement of freight. Optional receipt of Batch Totals (EDI 980) for each invoice transaction sent.

Purpose of Rail Carrier Freight Details and Invoice EDI 410

When a movement of freight is initiated by the receipt of Shipping Instructions (a bill of lading), a charge for the transportation is generated and sent as an invoice. This document will explain how to receive an invoice using EDI. Other electronic options, such as the eBill Service tool is available on the CN One website at www.cn.ca.

Note: This process does not present invoices for ancillary or accessorial charges (Optional Services). These invoices are available on the web using the eBill Service tool.

Types of Invoices

The following types of invoices are available using this transaction:

- Normal Freight Invoice
- Balance Due Invoice (optional)
- Adjusted Invoice (optional)

EDI Version & Guidelines

This document describes the implementation of EDI 410 Rail Carrier Freight Details and Invoice using ANSI version 3020 to 4010.

CN is also capable of sending EDI 210 Motor Carrier Freight Details and Invoices upon request ANSI X12 version 4010.

It is mandatory to send an EDI 997 functional acknowledgement for each EDI 410 or EDI 210 received.

Special Format Options

It is the responsibility of the Receiver who requires coding or mapping structure, other than that expressly written in the Mapping or Implementation Guide documents, to have the necessary changes performed at their system or through a Value Added Network (VAN).

CN Contact

CN provides an email address for Freight Invoice inquiries RMGEC@cn.ca

The **EDI Onboarding team** email address is EDIMGR@cn.ca. You can also visit us at www.cn.ca.

Connection Options

CN has direct connection with 3 VAN's (Value Added Networks). They are Open Text GXS, Transentric, and Kleinschmidt (KNSX). Interconnection to other VANs is also available. Exchange through secured FTP is now available at CN and is free of charge to customers. Invoices sent via secured FTP will conform to EDI 410 Standards.

Message Options

The Rail Carrier Freight Details and Invoice (EDI 410) process includes a Functional Group Total transmission (EDI 980) within each message. The EDI 980 messages can be suppressed upon request.

Message Timing

Freight invoices are created at all times of the day; however, the EDI process will accumulate all invoices for the day and transmit them between 00:00 and 04:00, seven days per week.

Your Data Requirements

If your company has specific data requirements, such as specific reference numbers that must be on the invoice to reconcile within your systems, it is important that this information be provided on the Shipping Instructions. Request for any information other than Bill of Lading number will not be reliably provided unless the Shipping Instructions provided by the shipper of the goods is submitted using electronic means.

Getting Started

To begin the process of implementation you should do the following:

1. Notify us at EDIMGR@cn.ca that you want to receive Freight Invoices using EDI. This message should include your full company name and location, as well as both an Accounts Payable and EDI Technical contact.
2. CN will then assign someone to work with you on the implementation.
3. A review and walkthrough of the Mapping Guide and this Implementation Guide will facilitate understanding of the data and requirements.
4. Define any special data requirements, such as Purchase Order numbers or other reference numbers.
5. Technical details must be resolved such as the Value Added Network to be used, and the sender and receiver IDs.
6. CN supports a fully functional test system for technical and business validation of the exchange.

Mapping Guide

The following Mapping Guides are available to clearly identify each of the data elements CN will produce in each of the versions supported:

1. EDI 210 version 4010 (available at <https://www.cn.ca/en/customer-centre/tools/edi>)
2. EDI 410 version 4010 (available at <https://www.cn.ca/en/customer-centre/tools/edi>)
3. EDI 980 version 4010 (available at <https://www.cn.ca/en/customer-centre/tools/edi>)
4. EDI 410 version 3030 and 3040 (available upon request)
5. EDI 980 version 3030 and 3040 (available upon request)

Unless you are already exchanging this transaction set in earlier versions with others, we recommend that you use the 4010 version.

Using the Mapping Guide

Each Segment and Data Element in the transaction is identified in Segment and Data element order. The following information is available for each:

- Element Code, this is the Data Segment + position within the segment.
- Element Number, this is the ANSI reference to the data contained in this position.
- Element Name, the name of the data
- Element Type, the ANSI designation for the Data Elements
- Element Length, showing the Minimum/Maximum length of the data.
- Required, shows the Mandatory, Conditional, or Optional indication for this information.
- Description, notes on CN's usage of this data element, including accepted values.

Sample EDI 410 transmission: \$US Invoice

ISA*00* *00* *02*CN *ZZ*CUSTOMERID *250122*0318*U*00401*000000190*0*P*>
GS*IR*CN*CUSTOMERID*20250122*0318*190*X*004010
ST*410*190001
B3B*8553469*PP*20250107*563315*20250121*CN*R****USD
C4*USD*563315
N9*CT*CN 611327
N7*CNTX*123456*182100*N*75600*****RR*GEX***0000*A****181**T106
M7*49031,282,290
N8*100172*20180521
F9*57702*MILLSDALE*IL *****384182000
D9*37180*BROCKVILLE*ON*****040680000
N1*PR*CUSTOMER NAME*25*123456A
N3*P O BOX 308050
N4*CINNINNATI*OH
N1*CN*CUSTOMER NAME*25*123456A
N3* P O BOX 308050
N4*CINNINNATI*OH
N1*SH*SHIPPER NAME*25*123457
N4*MILLSDALE*IL
R2*CN*S
LX*1
L5*1*ALL FREIGHT RATE SHIPMENTS, NEC, OR TRAILER-ON-F*4611110*T
L0*1***25001*N***1*BAG
L1*1*5470.0000*PC*547000
L0*1
L1*1*.1980*PM*16315****ENS*****824*MR
PI*TS*123456***CN***1050000
L3*25001*N*5470.0000*PC*563315
SE*31*190001
GE*1*116
IEA*1*000000116

Sample EDI 410 transmission: \$CAD Invoice

ISA*00* *00* *02*CN *ZZ*CUSTOMERID *250122*0104*U*00401*000000169*0*P*>
GS*IR*CN*CUSTOMERID*20250122*0104*169*X*004010
ST*410*169001
B3B*30228623*PP*20250108*487391*20250106*CN*R*CRP0006331-01***CAD
C4*CAD*487391
N9*GT*10076 8779 RT0001*GOODS AND SERVICES TAX REGISTRATION NUMBER
N9*SI*CRP0006331-01
N9*ZZ*1000043156 TQ 0514*QUEBEC SALES TAX REGISTRATION NUMBER
N9*CO*68401
N7*TBX*661186*205000*N*81000***7550*E**RR*TTX***6009*A****204**A606
M7*BCOL 2607249/50
N8*484685*20180531
F9*95406*QUESNEL*BC*****094306000
D9*16031*TACOMA*WA*****846200000
N1*PR*Customer Name*25*789456B
N3*300 CARADICE ROAD
N4*QUESNEL*BC*V2J5Z7
N1*CN*Customer Name*25*789456
N3*300 CARRADICE RD
N4*QUESNEL*BC*V2J 2Z7
N1*CO*PUGET SOUND FRT LINES INC*25*678630
N3*2102 MILWAUKEE WAY
N4*TACOMA*WA
N1*SF*Customer Name*25*789456
N3*300 CARADICE ROAD
N4*QUESNEL*BC*V2J 5Z7
N1*SH*Customer Name*25*666666
N4*QUESNEL*BC
R2*CN*R
LX*1
L5*1*METHANOL*4909230*T
L0*1***191608*N***1*TKR
L1*1*4350.0000*PC*435000
L0*1
L1*1*.2010*PM*24803****ENS*****1234*MR
L0*1***1234*N
L1*1*.0600*CT*27588****GSTPI*TS*628599***CN***1050000
L3*191608*N*4350.0000*PC*487391
SE*41*169001
GE*5*169
IEA*1*000000169

ISA Segment: Interchange Control Header

ISA*00* *00* *02*CN *ZZ*CUSTOMERID *250122*0104*U*00401*000000169*0*P*>

Ref. Des.	Name	Data Element	Attributes
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ISA01	Authorization Information Qualifier	I01	ID 2/2
ISA02	Authorization Information (Ten spaces)	I02	AN 10/10
ISA03	Security Information Qualifier	I03	ID 2/2
ISA04	Security Information (ten spaces)	I04	AN 10/10
ISA05	Interchange ID Qualifier (02=SCAC)	I05	ID 2/2
ISA06	Interchange Sender ID (CN – fill out field with spaces)	I06	AN 15/15
ISA07	Interchange ID Qualifier (If RR SCAC use 02)	I05	ID 2/2
ISA08	Interchange Receiver ID (CUSTOMERID - fill out field with spaces)	I07	AN 15/15
ISA09	Interchange Date (YYMMDD)	I08	DT 6/6
ISA10	Interchange Time (HHMM)	I09	TM 4/4
ISA11	Repetition Separator (Suggest “^”)	I65	1/1
ISA12	Interchange Control Version Number (Value 00401)	I11	ID 5/5
ISA13	Interchange Control Number (a control number assigned by sender)	I12	N0 9/9
ISA14	Acknowledgment Requested (0 = none requested) (1= requested)	I13	ID 1/1
ISA15	Usage Indicator (P = Production) (T = Test)	I14	ID 1/1
ISA16	Component Element Separator (Suggest “.”)	I15	1/1

GS Segment: Functional Group Header**GS*IR*CN*CUSTOMERID*20250122*0104*169*X*004010**

Ref. Des.	Name	Data Element	Attributes	
GS01	Functional Identifier Code (IR=Rail Carrier Freight Details and Invoice (410, 980))	479	ID	2/2
GS02	Application Sender's Code	142	AN	2/15
GS03	Application Receiver's Code	124	AN	2/15
GS04	Date (CCYYMMDD)	373	DT	8/8
GS05	Time (HHMM)	337	TM	4/6
GS06	Group Control Number (Assigned number originated and maintained by CN)	28	N0	1/9
GS07	Responsible Agency Code (X = Accredited Standards Committee X12)	455	ID	1/2
GS08	Version / Release / Industry Identity	480	AN	1/12

ST Segment: Transaction Set Header

To indicate the start of a transaction set and to assign a control number.

ST*410*169001

Ref. Des.	Name	Data Element	Attributes	
ST01	Transaction Set Identifier Code (410=Rail Carrier Freight Details and Invoice)	143	ID	3/3
ST02	Transaction Set Control Number (Sequential control number generated by CN)	329	AN	4/9

B3B Segment: Beginning Segment for Carrier's Invoice**B3B*8553469*PP*20250107*563315*20250121*CN*R****USD**

Ref. Des.	Name	Data Element	Attributes	
B3B01	Invoice Number	76	AN	1/22
B3B02	Shipment Method of Payment (PP=prepaid)	146	ID	2/2
B3B03	Date (Billing date YYYYMMDD)	373	DT	8/8
B3B04	Net Amount Due (Bill amount)	193	N2	1/9
B3B05	Date (Bill due date YYYYMMDD)	373	DT	8/8
B3B06	Standard Carrier Alpha Code	140	ID	2/4
B3B07	Transport Method Type Code	91	ID	1/2
B3B11	Currency Code	100	ID	3/3

C4 Segment: Alternate Amount Due**C4*USD*563315**

Ref. Des.	Name	Data Element	Attributes	
C401	Currency Code (USD=US Dollars)	100	ID	3/3
C402	Net Amount Due	193	N2	1/9

N9 Segment: Reference Identification**N9*CT*CN 611327****N9*GT*10076 8779 RT0001*GOODS AND SERVICES TAX REGISTRATION NUMBER****N9*SI*CRP0006331-01****N9*ZZ*1000043156 TQ 0514*QUEBEC SALES TAX REGISTRATION NUMBER****N9*CO*68401**

Ref. Des.	Name	Data Element	Attributes	
N901	Reference Number Qualifier (WY = waybill number) (BM = Bill of Lading number) (GT = GST Registration Number) (ZZ = QST Registration Number) (PA = Price application date) (CT=Contract Number) (CO=Customer Order number)	128	ID	2/2
N902	Reference Identification	127	AN	1/30
N903	Free-Form Description	369	AN	1/45

N7 Segment: Equipment Details**N7*CNTX*123456*182100*N*75600*****RR*GEX***0000*A****181**T106**

Ref. Des.	Name	Data Element	Attributes	
N701	Equipment Initial	206	AN	1/4
N702	Equipment Number	207	AN	1/10
N703	Weight	81	R	1/10
N704	Weight Qualifier (N = net weight)	187	ID	1/2
N705	Tare Weight	167	N0	3/8
N708	Volume	183	R	1/8
N709	Volume Unit Qualifier (E=cubic feet)	184	ID	1/1
N711	Equipment Description Code (CN = container) (RR= railcar)	40	ID	2/2
N712	Standard Alpha Carrier Code	140	ID	2/4
N715	Equipment Length	567	N0	4/5
N716	Tare Qualifier Code (A = actual)	571	ID	1/1
N720	Equipment Height (114 = 114 inches or 9 ft. 5 in.)	65	R	1/8
N722	Equipment Type (AAR Equipment Kind)	24	ID	4/4

M7 Segment: Seal Numbers

M7*49031,282,290

Ref. Des.	Name	Data Element	Attributes	
M701	Seal Number	225	AN	2/15

N8 Segment: Waybill Reference

N8*100172*20231121

Ref. Des.	Name	Data Element	Attributes	
N801	Waybill Number	186	N0	1/6
N802	Date (YYYYMMDD)	373	DT	8/8

F9 Segment: Origin Station

F9*57702*MILLSDALE*IL***384182000**

Ref. Des.	Name	Data Element	Attributes	
F901	Freight Station Accounting Code	573	ID	1/5
F902	City Name	19	AN	2/30
F903	State/Province Code	156	ID	2/2
F908	Standard Point Location Code	154	ID	6/9

D9 Segment: Destination Station

D9*37180*BROCKVILLE*ON***040680000**

Ref. Des.	Name	Data Element	Attributes	
D901	Freight Station Accounting Code	573	ID	1/5
D902	City Name	19	AN	2/30
D903	State/Province Code	156	ID	2/2
D908	Standard Point Location Code	154	ID	6/9

N1 Segment: Name

N1*PR*CUSTOMER NAME*25*123456A
N1*CN*CUSTOMER NAME*25*123456A
N1*SH*SHIPPER NAME*25*123457

Ref. Des.	Name	Data Element	Attributes	
N101	Entity Identifier Code (CN = Consignee) (SH = Shipper) (PR = Payer) (SF= Shipped From) (CO=care of party)	98	ID	2/3
N102	Name	93	AN	1/35
N103	Identification Code Qualifier (25=Carrier's customer code)	66	ID	1/2
N104	Identification Code (CN's assigned patron number)	67	AN	2/17

N3 Segment: Address Information

N3*P O BOX 308050

Ref. Des.	Name	Data Element	Attributes	
N301	Address Information	166	AN	1/55

N4 Segment: Geographic Location

N4*CINCINNATI*OH
N4*MILLSDALE*IL

Ref. Des.	Name	Data Element	Attributes	
N401	City Name	19	AN	2/19
N402	State/Province Code	156	ID	2/2
N403	Zip/Postal Code	116	ID	3/9

R2 Segment: Route Information

R2*CN*S

Ref. Des.	Name	Data Element	Attributes	
R201	Standard Alpha Carrier Code	140	ID	2/4
R202	Routing Sequence Code (S=Origin carrier, Shipper's routing (rail))	133	ID	1/2

LX Segment: Assigned Number

LX*1

Ref. Des.	Name	Data Element	Attributes	
LX01	Assigned Number (Number assigned for differentiation within a transaction set)	554	N0	1/6

L5 Segment: Description, Marks, and Numbers

L5*1*ALL FREIGHT RATE SHIPMENTS, NEC, OR TRAILER-ON-F*4611110*T

Ref. Des.	Name	Data Element	Attributes	
L501	Line Number	213	N0	1/3
L502	Commodity Description	79	AN	1/50
L503	Commodity Code (7 digit Standard Transportation Commodity Code (STCC))	22	AN	1/16
L504	Commodity Code Qualifier (T = Standard Transportation Commodity Code (STCC))	23	ID	1/1

L0 Segment: Line Item - Quantity and Weight

L0*1*25001*N***1*BAG**

Ref. Des.	Name	Data Element	Attributes	
L001	Lading Line Item Number	213	N0	1/3
L004	Weight	81	R	1/10
L005	Weight Qualifier (E = Estimated Weight) (N = Net Weight)	187	ID	1/2
L008	Lading Quantity	80	N0	1/7
L009	Packaging Form Code (TKR=tank car) (CLD = Carload)	211	ID	3/3

L1 Segment: Rate and Charges

L1*1*5470.0000*PC*547000

L1*1*.1980*PM*16315**ENS*****824*MR**

Ref. Des.	Name	Data Element	Attributes	
L101	Lading Line Item Number	213	N0	1/3
L102	Freight Rate	60	R	1/9
L103	Rate/Value Qualifier	122	ID	2/2
	(PU=per unit PC=per car PW=percentage CT=charges based on percentage PM=per miles MN=minimum charge)			
L104	Charge	58	N2	1/9
L105	Advances	191	N2	1/9
L106	Prepaid Amount	117	N2	1/9
L108	Spec Charge/Allow Code	150	ID	3/3
	(150=Canadian Currency Exchange) (295=Discount-Special) (730=Terminal Service Fee) (BLC=Bill of Lading Charge) (BRD=Bridge Charge (PEI Confederation)) (CSE=Customs Entry) (CUS=Customs Charge) (DEL=Delivery Charge) (DIV=Diversion and Re-consignment) (DRC=Drayage) (DSC=Discount Special) (ENS=Fuel Surcharge) (FLT=Ferry Service) (GST=Goods and Services Tax Charge) (HAZ=Hazardous Cargo Charge) (HDF=Heavy Duty Flat Car Charge) (HDF=Heavy Duty Flat Car Charge) (HET=Heat in Transit Charges) (HST=Harmonized Sales Tax) (LDG=Loading) (NHB=N.H.D Wharfage) (PAD=Premium Charge) (PUD=Pick-Up and Delivery) (REF=Refrigeration) (SAJ=Surcharge - Dollar Value) (SOC=Stop-Off Charge) (STC=State Surcharge) (STR=Storage in Transit) (SWC=Switching Charge) (TER=Terminal Charge) (TTS=State Tax) (USF=Use - Special Type Flat Car) (TAD=Carbon Tax – BC (Also available as default for all Carbon Tax)) (ENC=Carbon Tax – Alberta (Specific to CN))			

	(CSK=Carbon Tax – Saskatchewan (Specific to CN))			
	(CMB=Carbon Tax – Manitoba (Specific to CN))			
	(CON=Carbon Tax – Ontario (Specific to CN))			
	(CQQ=Carbon Tax – Quebec (Specific to CN))			
	(CNB=Carbon Tact – New Brunswick (Specific to CN))			
	(CNS=Carbon Tax – Nova Scotia (Specific to CN))			
L117	Billed/Rated-as Quantity	220	NO	1/11
L118	Billed/Rated-As Qualifier	221	ID	1/2

PI Segment: Price Authority Identification

PI*TS*123456*CN***1050000**

Ref. Des.	Name	Data Element	Attributes	
PI01	Reference Identifier Qualifier (TS=tariff number)	128	ID	2/3
PI02	Reference Identification	127	AN	1/30
PI05	Tariff Agency Code	168	ID	1/4
PI08	Tariff Item Number	169	AN	1/16

L3 Segment: Total Weight and Charges

L3*25001*N*5470.0000*PC*563315

Ref. Des.	Name	Data Element	Attributes	
L301	Weight	81	R	1/10
L302	Weight Qualifier (N=net weight)	187	ID	1/2
L303	Freight Rate	60	R	1/9
L304	Rate/Value Qualifier	122	ID	2/2
L305	Charge	58	N2	1/9
L306	Advances	191	N2	1/9
L308	Spec Charge/Allow Code (150=Canadian Currency Exchange) (295=Discount-Special) (730=Terminal Service Fee) (BLC=Bill of Lading Charge) (BRD=Bridge Charge (PEI Confederation)) (CSE=Customs Entry) (CUS=Customs Charge) (DEL=Delivery Charge) (DIV=Diversion and Re-consignment) (DRC=Drayage) (DSC=Discount Special) (ENS=Fuel Surcharge) (FLT=Ferry Service) (GST=Goods and Services Tax Charge) (HAZ=Hazardous Cargo Charge) (HDF=Heavy Duty Flat Car Charge) (HDF=Heavy Duty Flat Car Charge) (HET=Heat in Transit Charges) (HST=Harmonized Sales Tax) (LDG=Loading) (NHB=N.H.D Wharfage) (PAD=Premium Charge) (PUD=Pick-Up and Delivery) (REF=Refrigeration) (SAJ=Surcharge - Dollar Value) (SOC=Stop-Off Charge) (STC=State Surcharge) (STR=Storage in Transit) (SWC=Switching Charge) (TER=Terminal Charge) (TTS=State Tax) (USF=Use - Special Type Flat Car) (TAD=Carbon Tax – BC (Also available as default for all Carbon Tax)) (ENC=Carbon Tax – Alberta (Specific to CN)) (CSK=Carbon Tax – Saskatchewan (Specific to CN)) (CMB=Carbon Tax – Manitoba (Specific to CN)) (CON=Carbon Tax – Ontario (Specific to CN)) (CQQ=Carbon Tax – Quebec (Specific to CN)) (CNB=Carbon Tact – New Brunswick (Specific to CN)) (CNS=Carbon Tax – Nova Scotia (Specific to CN))	150	ID	3/3

SE Segment: Transaction Set Trailer**SE*31*190001**

Ref. Des.	Name	Data Element	Attributes	
SE01	Number of Included Segments (Includes ST and SE segments)	96	N0	1/10
SE02	Transaction Set Control Number (Repeated from ST segment ST02)	329	AN	4/9

GE Segment: Functional Group Trailer**GE*1*116**

Ref. Des.	Name	Data Element	Attributes	
GE01	Number of Transaction Sets Included	97	N0	1/6
GE02	Group Control Number (Repeated from GS segment GS06)	28	N0	1/9

IEA Segment: Interchange Control Trailer**IEA*1*000000116**

Ref. Des.	Name	Data Element	Attributes	
IEA01	Number of included Functional Groups	I16	N0	1/5
IEA02	Interchange Control Number (Same number as ISA13)	I12	N0	9/9

EDI 980 – Functional Group Totals (Batch Totals)

This optional transaction is included in the transmission immediately after all the EDI 410 Invoices and will never be sent as its own transmission. It represents the total of all EDI 410 Invoices in the message. This message will be included unless specifically requested to be suppressed.

Sample EDI 980 message

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ISA*00*      *00*      *02*CN      *ZZ*CUSTOMERID *250122*0318*U*00401*000000190*0*P*>
GS*IR*CN*CUSTOMERID*20250122*0318*190*X*004010
ST*980*190003
BT1*980*2*1*B307*6000.00
SE*7*190003
GE*3*190
IEA*1*000000190
```

ST Segment: Transaction Set Header

To indicate the start of a transaction set and to assign a control number.

ST*980*190003

Ref. Des.	Name	Data Element	Attributes	
ST01	Transaction Set Identifier Code (980 = Functional Group Totals)	143	ID	3/3
ST02	Transaction Set Control Number (Sequential control number generated by Customer)	329	AN	4/9

BT1 Segment: Batch Totals**BT1*980*2*1*B307*6000.00**

Ref. Des.	Name	Data Element	Attributes	
BT01	Transaction Set ID Code (980=Function Group Totals)	143	ID	3/3
BT02	Number of Transaction Sets totaled	515	N0	1/7
BT03	Total Qualifier (1=functional group total)	516	ID	1/1
BT04	Data Element totaled (B707=net amount due from 410)	517	AN	4/5
BT105	Total	518	R	1/11

SE Segment: Transaction Set Trailer**SE*7*190003**

Ref. Des.	Name	Data Element	Attributes	
SE01	Number of Included Segments (Includes ST and SE segments)	96	N0	1/10
SE02	Transaction Set Control Number (Repeated from ST segment ST02)	329	AN	4/9

GE Segment: Functional Group Trailer**GE*3*190**

Ref. Des.	Name	Data Element	Attributes	
GE01	Number of Transaction Sets Included	97	N0	1/6
GE02	Group Control Number	28	N0	1/9

IEA Segment: Interchange Control Trailer**IEA*1*000000190**

Ref. Des.	Name	Data Element	Attributes	
IEA01	Number of included Functional Groups	I16	N0	1/5
IEA02	Interchange Control Number	I12	N0	9/9