



# NMFTA Invoice & Document API

## Product Requirements

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### Overview

NMFTA is on a journey with logistical and banking institutions to transform the electronic transfer of invoice data and supporting documents through an open-source API. Systems across the economic landscape will leverage this information to bring speed through data availability. Today, EDI and digital document uploads across numerous company specific applications are required for doing business within the logistical sector. Ultimately, this work will include managing a corpus of electronic data values and document file type returns with the focus on the transfer of the Invoice and supporting documents supporting all logistical types.

Part of the journey is to build an open API to ensure all logistical and banking partners to reach a level of automation that scales with the business demand. With adoption of the FTL council, medium- and long-term value will be achieved for all parties across the economic markets and transportation providers. Teams from DSDC (Digital Standards Development Council) and support from the LTL council have come together for a collective goal to achieve business value for all.

**The GAP:** Multiple sources and various technology implementations have created an endless landscape for shippers, carriers, and banking institutions that continue to empower antiquated physical documentation or outgrown EDI processes. APIs do not currently have all consistent components to fully operationalize document data transfers and document type dissemination, especially in the areas of “*invoice data values*”, “*bill of lading*” and “*freight bills*”

**Value Proposition:** The Invoice and Documents API will allow for the ability to seamlessly pass specific invoice and related shipment information regardless of transport type to obtain or pass an invoice or related documentation. This will transform the logistics industry by simplification of complex billing processes through accuracy and timeliness in one place will be paramount for all shipments. With a design to handle all complexities for any shipment, a simplified **standard source** will meet all business needs **quickly** while providing companies with the needed **forecasting** for growth.

- **Carriers:** Providing the ability to pass and create an invoice through details to a Shipper or 3<sup>rd</sup> Party through standard shipment details. Additional

documentation will also be able to be passed for additional proof of payment through supporting document types through shipment criteria. The ease will allow for Carriers to ensure that they avoid being cornered within the market.

- **Shippers:** Receiving Carrier invoices and supplemental documentation for payment will allow for central standard empowering timely and accurate validation of services while providing the ability to eliminate slower physical or open-source transfers.
- **3rd Party:** Ensuring no delay in data validation or accuracy in supplying the appropriate information to support Invoice and supporting documentation for all parties.

## Definitions

**Application Programming Interface (API):** An API is a set of rules using HTTP that enables software applications to communicate with each other, exchanging data, features, and functionality. In transportation, APIs can be used to integrate systems for tracking shipments, managing logistics, and automating processes.

**Appointment:** A scheduled range of time for the pickup or delivery of goods. It ensures that the carrier and receiver are coordinated for efficient handling of shipments.

**Bill of Lading (BOL):** Contractual document issued to the shipper which confirms the carrier's receipt of the cargo, acknowledges goods being shipped or received for shipment, and specifies the terms of delivery (as evidence of the contract of carriage). The Bill of Lading is a document of title to the goods and can be a negotiable document. Negotiability implies that the document can be transferred from one party to another, and the transfer of the document is necessary for the transfer of ownership of the goods. The Bill of Lading is usually prepared based on Shipping Instructions, including cargo description, given by the shipper on forms issued by the carrier. When issued in digital format it is referred to as an electronic Bill of Lading (eBOL).

**Carrier:** Carrier means any person, organization or government undertaking the transport of goods by any means of transport.

**Equipment:** Physical assets used for storing and transporting freight.

**Full Truckload (FTL):** Full Truckload refers to a transportation mode where a truck carries a Load for a single customer, meaning the journey is reserved for that customer only. This is typically used for large Shipments that can fill an entire truck.

**Invoice:** A Document type issued by Carrier, sometimes called a Freight Bill, reflecting charges incurred for movement of freight.



**Less Than Truckload (LTL):** Less Than Truckload is a shipping service for smaller freight loads that combines shipments from multiple customers to optimize costs and efficiency. It is used when shipments do not require the full capacity of a truck.

**Load:** A freight service provided by a Carrier to move goods from one or more Stops to one or more Stops. It represents the transportation of one or more Shipments. Loads are typically planned, tracked, and managed as discrete units.

**Receiver:** The receiver is the person or entity that accepts final receipt of goods, also known as delivery. They are responsible for ensuring the goods are delivered as expected. Could also be referred to as Consignee.

**Shipment:** An item or collection of items that is planned and moved between a single origin and destination location. A Shipment can consist of one or more legs (e.g., a shipment from an origin of vendor or supplier location split through a hub to a destination DC). One or more Shipment(s) are created from a single transport order (e.g., purchase order, sales order, transfer order).

**Shipper:** Shipper means any person or legal entity by whom or in whose name, or on whose behalf, a contract of carriage of goods has been concluded with a carrier, or any person by whom or in whose name, or on whose behalf, the goods are actually delivered to the carrier in relation to the contract of carriage.

**Stop:** A scheduled point in a transport plan where equipment or shipments are picked up, delivered, or transferred.

**Tender:** A formal offer or request from a shipper to a carrier or transportation provider to move a specific Load under defined terms, including origin, intermediate stops, destination, timing, and pricing. A tender may be accepted, rejected, or negotiated and can be issued as part of a spot process or under a contractual agreement.

**Core Systems Involved:** Initial phases will facilitate the primary need for invoice related data elements to facilitate payment related requirements between Carriers and Shippers. Supplemental document types can be created, uploaded and exported to further enrich the needs of all parties involved in the logistical transaction.

- **Invoice Value Endpoint:** Intermediate invoicing data transfer will assist in the speed to cash environment to best ensure that payments are met within the appropriate window for subsequent business retention.
- **Document Types:** Specific logistical documents will be provided for standardization of formatting and compliance between all entities within the logistical agreement. Blank document creation and transfer is available for standardization purposes and future upload. Document types within an output of PDF, TIF, JPEG, PNG that are included range from the twenty four (24) identified below:
  - Bill of Lading (BOL)

- Catalog Page (CAT)
  - Communications & Correspondence (COMM)
  - Contract (CON)
  - Customer Specific Rules Tariff (RULE)
  - Dimension Certificate (DIM)
  - Detention Receipt (DTR)
  - Discount Matrix (DIS)
  - Freight Bill (FRB)
  - Fuel Tables (FUEL)
  - Invoice (INV)
  - Inspection Certificate (INSP)
  - Letter of Authority (LOA)
  - Lumper Receipt (LPR)
  - Material Safety Data Sheet (MSDS)
  - Packing Slip (PAC)
  - Photos (IMG)
  - Proof of Delivery (POD)
  - Quote (QUO)
  - Residential Dispute Support (RESI)
  - Spec Sheet (SPEC)
  - Scale (SCL)
  - Statement Bill (STB)
  - Weight & Inspection Certificate (W&I)
- **Document Upload:** Enablement of Carriers, Brokers, and Shippers to upload documents must include at least one of the optional parameters to associate with a shipment. Facilitation of the transfer of documents to be uploaded, in binary format with a max size of 25 MB. File types supported are PDF, TIF, JPEG, PNG.

## Best Practices

### **Required Identifiers**

Enables users to transfer invoice data with imaged documents and must include following parameters to associate with a shipment. Upon call the specific logistical documents will be provided for standardization of formatting and compliance between all entities within the logistical agreement.

The seven (7) document parameters from above will be within the Header:

- **uniqueID <String> Required**
  - (Unique ID for this transaction)

- ShipmentID / Load Number **<String>**
  - The Shipper/3rd party provider tracking ID and can be Pro Number
- documentType **<String> Required**
  - Identifier of origin type
- DOT **<String> Required**
  - Department of Transportation identifier
- MC **<String> Required**
  - Motor Carrier Identifier
- Invoice Number **<String> Required**
  - Unique identifier created by Carrier
- Invoice Date **<Date> Required**
  - Invoice date created by Carrier
- Invoice Amount **<String> Required**
  - Amount of payment for Carrier agreed upon via Tender
- PO Number **<String>**
  - Buyer's goods or services purchase order number
- Contract Number
  - Contract number for pricing at the line level
- Contract Order Number
  - Contract number of the contract Freight Payment should use for pricing at the line level

However, it is not required to include any one particular identifier. This is intentional as NMFTA

does not want to prescribe for a system what information they may or may not need. Ultimately, it will be up to the discretion of the system to clearly define via their own documentation if specific identifiers laid out by the NMFTA are required or optional for their

specific implementation. As a rule of thumb, you should provide additional information about

the shipment if you are uncertain if the information you originally planned to provide will

adequately identify the shipment.

## Requirements

### Create Invoice: Request

As a Carrier, I want to Create an Invoice and send shipment information for a particular Shipper or 3<sup>rd</sup> Party.

- In a request, the Carrier MUST provide a shipmentID provided by the Shipper or 3<sup>rd</sup> Party participant.

- LTL Consideration: Pro Number may be viable for proper tracking to the BOL generation process.
- In a request, the Carrier MUST designate the document type so that the acceptance of the response can be tracked on the Shipper/3<sup>rd</sup> Party side. This can range from the Invoice to the supported twenty-four (24) document types.
  - 1. Bill of Lading (BOL)
  - 2. Catalog Page (CAT)
  - 3. Communications & Correspondence (COMM)
  - 4. Contract (CON)
  - 5. Customer Specific Rules Tariff (RULE)
  - 6. Dimension Certificate (DIM)
  - 7. Detention Receipt (DTR)
  - 8. Discount Matrix (DIS)
  - 9. Freight Bill (FRB)
  - 10. Fuel Tables (FUEL)
  - 11. Invoice (INV)
  - 12. Inspection Certificate (INSP)
  - 13. Letter of Authority (LOA)
  - 14. Lumper Receipt (LPR)
  - 15. Material Safety Data Sheet (MSDS)
  - 16. Packing Slip (PAC)
  - 17. Photos (IMG)
  - 18. Proof of Delivery (POD)
  - 19. Quote (QUO)
  - 20. Residential Dispute Support (RESI)
  - 21. Spec Sheet (SPEC)
  - 22. Scale (SCL)
  - 23. Statement Bill (STB)
  - 24. Weight & Inspection Certificate (W&I)
- In a request, the Carrier MUST identify themselves, so the Shipper/3<sup>rd</sup> Party is aware of who is sending the Invoice information
  - Types of universal identifiers: DOT Number or MC number.
- In a request, the Carrier MUST designate the Invoice Number to properly record the instance of payment for the Shipper/3<sup>rd</sup> party.
- In a request, the Carrier MUST designate a Date associated with their shipment so that proper payment intervals are adhered to by the Shipper/3<sup>rd</sup> party.
- In a request, the Carrier MUST specify an amount for proper payment tracking and agreed upon terms specified in the tender.
- In a request, the Carrier MAY specify the following document information, including the list below to best support the identification and tracking by the Shipper/3<sup>rd</sup> party:

- **Payment Section**

- **billing.terms:**
  - **Type:** String
  - **Definition:** Freight Billing Terms for the shipment.
  - **Valid Formats/Values:** Prepaid, Collect, Third Party.
  - **Example:** Prepaid.
- **Due Date:**
  - **Type:** Date
  - **Definition:** Date upon which payment is due.
  - **Valid Formats/Values:** ISO 8601 format (YYYY-MM-DDTHH:mm:ss.sss).
  - **Example:** 2024-11-20T00:00:00.000.
- **payment.Terms:**
  - **Type:** String
  - **Definition:** Payment terms for shipment.
  - **Valid Formats/Values:** Net 30, upon receipt, etc.
  - **Example:** Net 30.

- **Destination Section**

- **destination.locationId:**
  - **Type:** String
  - **Definition:** Company's location ID for the destination (Customer generated #).
  - **Valid Formats/Values:** Numeric or alphanumeric.
  - **Example:** 808.
- **destination.name:**
  - **Type:** String
  - **Definition:** Company name associated with the destination location.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** Closets Closets Closets.
- **destination.address1:**
  - **Type:** String
  - **Definition:** Primary address line for the destination location.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** 12 S. Closets Place.
- **destination.address2:**

- **Type:** String
  - **Definition:** Secondary address line for destination location.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** ste 3.
- **destination.city:**
  - **Type:** String
  - **Definition:** City Name for the destination location.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** Los Angeles.
- **destination.stateProvince:**
  - **Type:** String
  - **Definition:** Two-letter state/province code for the state/province destination location.
  - **Valid Formats/Values:** Two-letter code.
  - **Example:** CA.
- **destination.postalCode:**
  - **Type:** String
  - **Definition:** The 5-digit (or 6-characters for Canada) zip code for the destination location.
  - **Valid Formats/Values:** Numeric or alphanumeric.
  - **Example:** 90001.
- **destination.country:**
  - **Type:** String
  - **Definition:** Three-letter country code for the destination location.
  - **Valid Formats/Values:** ISO 3166-1 alpha-3 code.
  - **Example:** USA.
- **Charges Section**
  - **accountCode:**
    - **Type:** String
    - **Definition:** General ledger accounting code information specified in code value pair.
    - **Valid Formats/Values:** Alphanumeric.
    - **Example:** 01.
  - **stopNumber:**
    - **Type:** String



- **Definition:** Sequence number of the routing stop.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 1.
- **specialInstructions:**
  - **Type:** String
  - **Definition:** Descriptive text detailing any instructions related to the servicing of the shipment.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** Handle with care.
- **hazmat:**
  - **Type:** String
  - **Definition:** Hazardous classification and placard notation.
  - **Valid Formats/Values:** Alphanumeric.
  - **Example:** HAZ.
- **grossCharges:**
  - **Type:** Array
  - **Definition:** Gross charges for the shipment.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 858.55.
- **Volume:**
  - **Type:** Decimal Number
  - **Definition:** Value of volumetric measure.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 54.98.
- **Lading Quantity:**
  - **Type:** Decimal Number
  - **Definition:** Number of units (pieces) of the lading commodity.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 5556.
- **handlingUnits.count:**
  - **Type:** Integer
  - **Definition:** Number of Handling units being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 2.
- **handlingUnits.type:**

- **Type:** String
  - **Definition:** Type of the handling units being described.
  - **Valid Formats/Values:** Alphanumeric.
  - **Example:** SKD.
- **handlingUnits.tareWeight:**
  - **Type:** Decimal Number
  - **Definition:** Weight of the skids/pallets/slips used in the shipment.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 5.
- **handlingUnits.weight:**
  - **Type:** Decimal Number
  - **Definition:** Total weight for the specified handling units.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 1500.
- **handlingUnits.weightUnit:**
  - **Type:** String
  - **Definition:** The unit of measurement for weight.
  - **Valid Formats/Values:** LB or KG.
  - **Example:** LB.
- **handlingUnit.length:**
  - **Type:** Decimal Number
  - **Definition:** The length of the handling unit being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 48.
- **handlingUnit.width:**
  - **Type:** Decimal Number
  - **Definition:** The width of the handling unit being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 48.
- **handlingUnit.height:**
  - **Type:** Decimal Number

- **Definition:** The height of the handling unit being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 48.
- **handlingUnit.dimensionUnit:**
  - **Type:** String
  - **Definition:** The unit of measurement for dimensions.
  - **Valid Formats/Values:** IN or CM.
  - **Example:** IN.
- **lineItems.weight:**
  - **Type:** Decimal Number
  - **Definition:** Total weight for the specified lineitem.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 1500.
- **lineItems.weightUnit:**
  - **Type:** String
  - **Definition:** The unit of measurement for weight.
  - **Valid Formats/Values:** LB or KG.
  - **Example:** LB.
- **lineItem.pieces:**
  - **Type:** Integer
  - **Definition:** Number of individual pieces for the line item being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 3.
- **lineItem.packagingType:**
  - **Type:** String
  - **Definition:** Packaging type for the individual pieces of the line item being described.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** box.
- **lineItem.classification:**
  - **Type:** String
  - **Definition:** Classification of the line item being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 55.

- **lineItem.nmfc:**
  - **Type:** String
  - **Definition:** NMFC of the code being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 86900.
- **lineItem.nmfcSub:**
  - **Type:** String
  - **Definition:** The Sub value for the NMFC of the freight being described.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 3.
    - **LineHaul Amount:**
  - **Type:** String
  - **Definition:** Overall amount agreed upon.
  - **Valid Formats/Values:** Free-form text.
  - **Example:** Allowance for the overall agreement and would need to be linked to the Tender & BOL.
- **Fuel Surcharge %:**
  - **Type:** Float
  - **Definition:** Fuel Charge Percent.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 0.31.
- **Fuel Surcharge \$:**
  - **Type:** Decimal Number
  - **Definition:** Fuel Charge.
  - **Valid Formats/Values:** Numeric.
  - **Example:** 62.88.
- **currency:**
  - **Type:** String
  - **Definition:** Attribute to indicate currency of monetary charges.
  - **Valid Formats/Values:** CAS, MXN, USD
  - **Example:** USD
- **weightUnit:**
  - **Type:** String
  - **Definition:** The unit of measurement for weight charges.

- **Valid Formats/Values:** LB, KG, LB3, M3
  - **Example:** LB
- Total Freight Charges
  - **Type:** Decimal Number
  - **Definition:** Totally Charges at the time of this notification.
  - **Valid Formats/Values:** Lines need to match total
  - **Example:** 239.78
- In a request, the Carrier MUST adhere to the transfer of PDF, TIF, JPEG, or PNG file Types.
  - Max size MUST not exceed 25 MB

#### Create Invoice: Response

- In a response, NMFTA MUST provide a response for successful or failure to transfer identification and values.
- In a response, the Shipper/3<sup>rd</sup> Party MUST provide an acceptance or failure of transfer.

#### Create Supporting Documents: Request

- In a request, the Carrier MUST provide the following identifiers.
  - The seven (7) document parameters from above will be required:
    - **uniqueID <String> Required**
      - (Unique ID for this transaction)
    - **ShipmentID / Load Number <String>**
      - The Shipper/3<sup>rd</sup> party provider tracking ID and can be Pro Number
    - **documentType <String> Required**
      - Identifier of origin type
    - **DOT <String> Required**
      - Department of Transportation identifier
    - **MC <String> Required**
      - Motor Carrier Identifier
    - **Invoice Number <String> Required**
      - Unique identifier created by Carrier
    - **Invoice Date <Date> Required**
      - Invoice date created by Carrier
    - **Invoice Amount <String> Required**
      - Amount of payment for Carrier agreed upon via Tender
    - **PO Number <String>**

- Buyer's goods or services purchase order number
- Contract Number
  - Contract number for pricing at the line level
- Contract Order Number
  - Contract number of the contract Freight Payment should use for pricing at the line level
- In a request, the Carrier MUST adhere to the transfer of PDF, TIF, JPEG, or PNG file Types.
  - Max size MUST not exceed 25 MB

### Update Invoice: Request

- In a response, NMFTA MUST provide a response for successful or failure to transfer identification and values.
  - The seven (7) document parameters from above will be required:
    - **uniqueID <String> Required**
      - (Unique ID for this transaction)
    - **ShipmentID / Load Number <String>**
      - The Shipper/3rd party provider tracking ID and can be Pro Number
    - **documentType <String> Required**
      - Identifier of origin type
    - **DOT <String> Required**
      - Department of Transportation identifier
    - **MC <String> Required**
      - Motor Carrier Identifier
    - **Invoice Number <String> Required**
      - Unique identifier created by Carrier
    - **Invoice Date <Date> Required**
      - Invoice date created by Carrier
    - **Invoice Amount <String> Required**
      - Amount of payment for Carrier agreed upon via Tender
    - **PO Number <String>**
      - Buyer's goods or services purchase order number
    - **Contract Number**
      - Contract number for pricing at the line level
    - **Contract Order Number**
      - Contract number of the contract Freight Payment should use for pricing at the line level in a response,

the Shipper/3<sup>rd</sup> Party MUST provide an acceptance or failure of transfer.

### Cancel Invoice: Request

- In a response, NMFTA MUST provide a response for successful or failure to transfer identification and values.
  - The seven (7) document parameters from above will be required:
    - uniqueID <String> Required
      - (Unique ID for this transaction)
    - ShipmentID / Load Number <String>
      - The Shipper/3<sup>rd</sup> party provider tracking ID and can be Pro Number
    - documentType <String> Required
      - Identifier of origin type
    - DOT <String> Required
      - Department of Transportation identifier
    - MC <String> Required
      - Motor Carrier Identifier
    - Invoice Number <String> Required
      - Unique identifier created by Carrier
    - Invoice Date <Date> Required
      - Invoice date created by Carrier
    - Invoice Amount <String> Required
      - Amount of payment for Carrier agreed upon via Tender
    - PO Number <String>
      - Buyer's goods or services purchase order number
    - Contract Number
      - Contract number for pricing at the line level
    - Contract Order Number
      - Contract number of the contract Freight Payment should use for pricing at the line level in a response, the Shipper/3<sup>rd</sup> Party MUST provide an acceptance or failure of transfer.

### Cancel Invoice: Response

- In a response, NMFTA MUST provide a response for successful or failure to transfer identification and values.
- In a response, the Shipper/3<sup>rd</sup> Party MUST provide an acceptance or failure of transfer.





Figure 1: Invoice\_Creation Typical Flow

