

ECTA Best Practice Guideline: Transport visibility within Bulk Chemicals



GUIDELINE REVISIONS	VERSION	DATE
Initiation	1.0	01-03-2020
Extra description of fields and XSD specification added (7.1.1 & 7.1.2) + storage IN – storage OUT added as optional flows in customer view	1.1	18-01-2021

Table of Contents

1. Lexicon and list of abbreviations.....	4
2. Introduction.....	5
3. Scope and objectives.....	6
4. Challenges of transport visibility	7
5. Transport visibility and ETA definitions flows	8
5.1 From a customer point of view	8
5.2 From a supplier point of view	9
6. Milestone message and ETx update rules	13
7. Message examples formats customer & supplier view.....	14
7.1 Transport milestone messages - customer view.....	14
7.1.1 Description of the Fields	17
7.1.2 XSD specification of the transport milestone messages.....	17
7.1.3 XML (EDI) example message for transport milestone message " Departed from first Departure Terminal"	19
7.2 Transport milestone messages - Supplier view	21
7.2.1 Intermodal milestone messages	21
7.2.2 Depot milestone messages	21
7.2.3 Trucking milestone messages	21
7.2.4 XML (EDI) example message for trucking milestone message "Arrived at Gate Loading"	23
8. Contact Lists and WG participants	24

Disclaimer

This document is intended for information only and sets out best practice guidelines for transport visibility by exchanging transport milestone messages and ETx updates in a bulk chemicals supply chain and this in a harmonized and interoperable way amongst different supply chain actors. The information provided in these guidelines is provided in good faith and, while it is accurate as far as the authors are aware, no representations or warranties are made with regards to its completeness. It is not intended to be a comprehensive guide. Each company, based on their individual decision-making process, may apply these guidelines, in full or partly or apply any other adapted measures.

No responsibility will be assumed by ECTA to the information contained in these Guidelines.

Overview of Figures

Figure 1:	Transport Milestone Messages - Shipper View.....	8
Figure 2:	Intermodal Milestone Message - Holistic Supplier View	9
Figure 3:	Intermodal Milestone Message - Depot Supplier View	10
Figure 4:	Intermodal Milestone Message - Trucking Supplier View (Part 1)	11
Figure 5:	Intermodal Milestone Message - Trucking Supplier View (Part 2)	11

Overview of Tables

Table 1:	Definition of Milestone Messages - Shipper View	8
Table 2:	Definition of Milestone Messages - Holistic Supplier View.....	10
Table 3:	Definition of Milestone Messages - Depot Supplier View	11
Table 4:	Definition of Milestone Messages - Trucking Supplier View.....	12
Table 5:	Definition of ETx Update Triggers	13
Table 6:	Mandatory Attributes of Transport Milestone Messages.....	16
Table 7:	Mandatory Attributes of Trucking Milestone Messages.....	22

1. Lexicon and list of abbreviations

Actor	A company exchanging ETA and other information along the logistics chain of milestone events
API	Application Programming Interface
ECTA	European Chemical Transport Association
EDI	Electronic Data Interchange
ETA	Estimated time of arrival
ETA Cleaning	Estimated time of arrival at cleaning station
ETA Customs	Estimated time of arrival at customs office
ETA Drop	Estimated time of arrival at drop place
ETA Heating	Estimated time of arrival at heating station
ETA Loading	Estimated time of arrival at loading site
ETA Multistop	Estimated time of arrival at multi-stop place
ETA Pickup	Estimated time of arrival at the pickup place
ETA Unloading	Estimated time of arrival at unloading site
ETC	Estimated time of closing
ETx	Referring to all different types of estimated time updates, such as ETA, ETP, etc.
Milestone Event	A node where logistics activities take place within the logistics chain that might impact the ETA
XML-XSD	XSD (XML Schema Definition) is a World Wide Web Consortium (W3C) recommendation that specifies how to formally describe the elements in an Extensible Markup Language (XML) document.

2. Introduction

Tracking, measuring and improving “On Time Delivery” is a historical corner stone in transport services and therefore the topic to track door-to-door transport visibility is not new. Earlier in 2002, a first ECTA best practice guideline was written, better known as the “ECTA codes” (1), to set and agree on codification standards to measure transport performance and drive continuous improvement. At the start of 2000 and with the introduction of ERP systems and the broader use of EDI, the technology allowed us to analyze, measure and investigate why certain shipment were late after the delivery took place.

Nowadays and driven by the new cloud technologies and the “Amazon” alike e-commerce tracking & tracing customer experience, a transport performance measurement after the customer delivery took place does no longer meet the new customer expectations. Both customer and logistics service providers want to think pro-actively and want to anticipate late deliveries along a door-to-door movement of goods. As a result, all supply chain actors are demanding for more transport visibility through frequent and accurate transport milestone messages and ETA updates especially when unexpected delays during transit are occurring.

The goal of this guideline is to define a standard definition framework with transport milestone events and ETx updates within a Chemical multimodal door-to-door product movement. Once such milestone events are pre-defined and agreed amongst each of the supply chain actors, specific transport tracking and performance measurement reports can be established to answer questions like: “Will the truck be late at the final leg to the customer because the delivery appointment of the former rail leg was late? Should the LSP’s pre-notify each other and as of when is a pre-notification to the final customer expected? Can the end customer obtain a regular tracking trail explaining where the shipment is and when it is expected to arrive?”

Such a framework is an important precursor before companies start deploying individual telematics and truck/equipment tracking solutions and it forms the basis towards transport visibility, interoperability and real-time information exchange across all logistics actors in the chemical supply chain.

Besides a streamlined flow of communication, this standard framework will lead to optimization of inbound and outbound logistics and will therefore be beneficial to all actors in the chemical supply chain. As the Logistic Service Providers (LSP) are at the center of this chain, ECTA has taken the lead to initiate an ECTA workgroup for this purpose.

In a first chapter we will explain the benefits of such a milestone messages and ETx update framework and zoom in on some of the challenges being faced. Next, we will map the door-to-door milestone events typically applied to multimodal bulk chemical product movements. At the same time definitions will be set while looking from an end customer view and supplier view. The last chapter sets communication standards between all actors to ensure that a seamless, automated pre-notifications can be generated amongst all actors. Last but not least, some example messages are shared describing the technology connectivity standards most commonly used.

This best practice guideline wants to create a collaborative framework so our chemical customers can be served better. To save costs, avoid rework, improve customer service and avoid confusion along a chain of events within a door-to-door movement, ECTA recommends to exchange pre-defined, validated milestone messages and ETx updates between all supply chain actors involved instead of continuous sharing of GPS truck or load locations itself. Those signals are only a support to calculate especially the ETA dates and by themselves lack necessary additional information of driver resting hours, depot stops, ad-hoc planning changes etc.

3. Scope and objectives

This guideline is focused on the dry and liquid bulk chemical product flows. From a transport mode point of view, movements between road, rail and water are included.

We consider the following supply chain actors involved:

1. Logistics Service Providers

- Freight forwarders
- Transport/trucking companies
- Rail Operator companies
- Cleaning, heating, repair and maintenance depots
- Terminal operators
- Barge, Ferry and Short & Deep Sea Operator companies

2. Customers / Shippers

- Petrochemicals, Chemicals and Gas producers
- Chemical processors
- Chemical distributors and traders

The overall objectives of the guideline are to:

- Describe and predefine the milestone events of typical door-to-door flows and align the relevant ETx type definitions accordingly
- Provide a standard to strive for a more consistent, transparent communication when providing transport milestone messages and ETx updates
- Provide rules for ETx update notifications to the specific actors involved in case of a delay along the logistics chain
- Set the framework for ETx interoperability together with a synchronized communication between all logistics actors involved and focusing on the end customer delivery
- Clarify the difference between an ETx update and a “continuous” GPS location exchange. In many deployments of telematics and ETA algorithms, telematics providers are transmitting GPS signals on the location status of the load however these stand-alone GPS data signals lack necessary additional information of driver resting hours, depot stops, ad-hoc planning changes etc.
- Provide the foundation for clear order status reports according to the milestone event framework and logistics activities
- Start measuring “door-to-door” delivery performance levels and work on the weakest performance links to improve the overall customer service level

4. Challenges of transport visibility

While high level ETx calculations look quite straightforward and simple for a single lane, when digging into the details a couple of constraints and challenges are encountered. Obviously, each challenge is an opportunity, but it might take some time and it is important to manage expectations. Some of the challenges in a multi-actor and multimodal lane are:

- Within a chain of milestone events, not every actor has the same level of supply chain visibility maturity and the accuracy of the ETx updates might depend on the weakest link in the chain. As an example, rail providers today not yet have the capability to predict with the right level of reliability when a container would arrive at the rail terminal
- A scattered landscape of involved supply chain actors and lacking connectivity between them hampers the near real-time flow of data along the chain and thus causes a delayed reception at the receiver side
- Exchanging milestone messages and ETx updates continuously in a real time way needs adapted system infrastructure and resources
- Exchanging information requires harmonised industry-wide standards and definitions to ensure interoperability and scalability
- Companies consider data sharing and digital collaboration as a risk to lose control
- Keep IT systems complexity under control

5. Transport visibility and ETA definitions flows

5.1 From a customer point of view

As described before, customers of logistics service providers (LSP) expect a higher degree of transport visibility for future transports. Based on the known demands of those shippers and best practice examples a standard milestone and ETA framework is depicted below and definitions of each milestone event and ETx types are described thereafter:

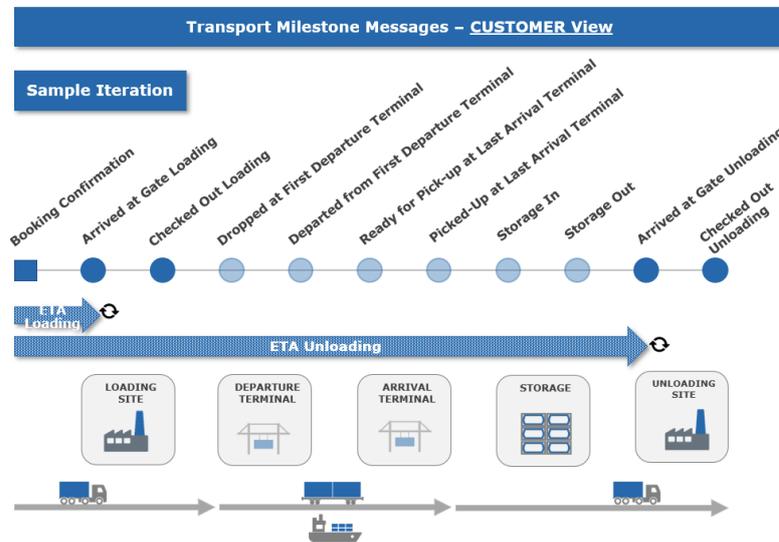


Figure 1: Transport Milestone Messages - Shipper View

Hereby the milestone messages are defined as follows:

Term	Definition
Booking Confirmation	Timestamp of booking confirmation
Arrived at Gate Loading	Arrival timestamp on loading CMR
Checked Out Loading	Departure timestamp on loading CMR
Dropped at First Departure Terminal	Timestamp of the handover of the container
Departed from First Departure Terminal	Timestamp of the departure of the container via train/vessel
Ready for Pick-up at Last Arrival Terminal	Timestamp of the container being ready for pick-up
Picked-Up at Last Arrival Terminal	Timestamp of the pick-up of the container
Storage In	Timestamp when the container goes into storage
Storage Out	Timestamp when the container goes out of storage
Arrived at Gate Unloading	Arrival timestamp on delivery CMR
Checked Out Unloading	Departure timestamp on delivery CMR
ETA Loading	Estimated time of arrival at loading site
ETA Unloading	Estimated time of arrival at unloading site

Table 1: Definition of Milestone Messages - Shipper View

5.2 From a supplier point of view

As a pre-condition to fulfill customer requirements in terms of transport visibility, freight forwarders and logistics service providers rely on accurate information (again transport milestone messages and ETX updates) from their suppliers and subcontractors.

Therefore, various scenarios for the different types of suppliers, e.g. rail companies, shipping lines, trucking companies and depot service providers are shown in the following figures including detailed definitions of each milestone event:

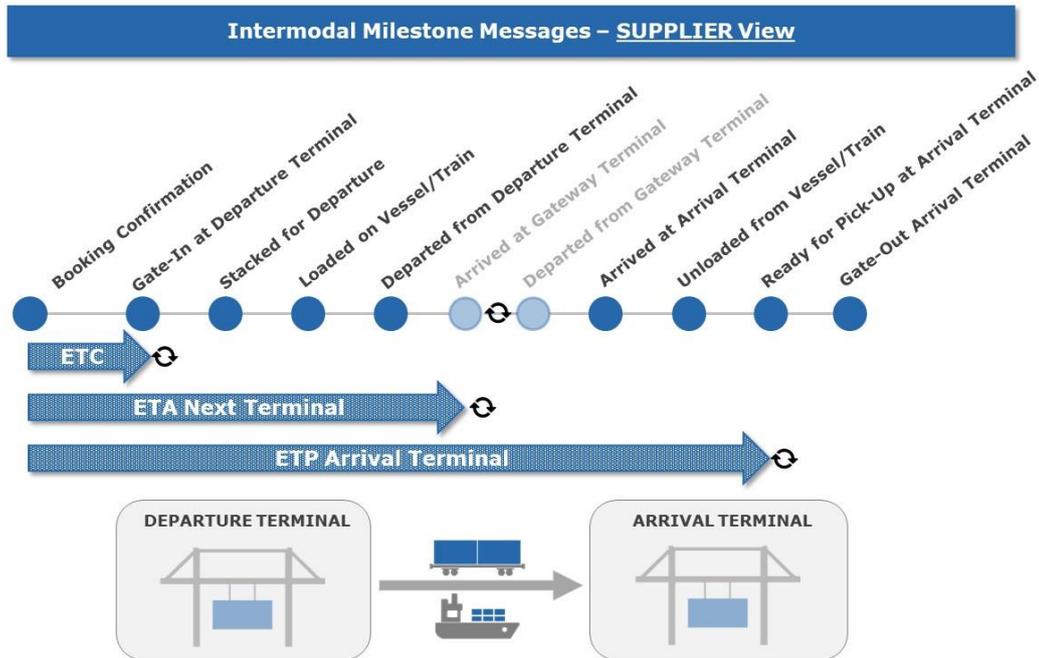


Figure 2: Intermodal Milestone Message - Holistic Supplier View

Term	Definition
Booking Confirmation	Timestamp of booking confirmation
Gate-In Departure Terminal	Timestamp of the interchange document
Stacked for Departure	Timestamp of the container being stacked for departure
Loaded on Vessel/Train	Timestamp of the container being loaded on the vessel/train
Departed from Departure Terminal	Timestamp of the container having departed from the terminal
Arrived at Gateway Terminal	Timestamp of arrival at gateway/transshipment terminal
Departed from Gateway Terminal	Timestamp of departure from gateway/transshipment terminal
Arrived at Arrival Terminal	Timestamp of the container having arrived at terminal
Unloaded from Vessel/Train	Timestamp of the container being unloaded at terminal
Ready for Pick-Up at Arrival Terminal	Timestamp of the container being ready for pick-up

Gate-Out Arrival Terminal	Timestamp of the container having left the terminal
ETC	Estimated time of closing at departure terminal
ETA Next Terminal	Estimated time of arrival at next (gateway/transshipment) terminal and corresponding terminal name
ETP Arrival Terminal	Estimated time of the container being ready for pick-up

Table 2: Definition of Milestone Messages - Holistic Supplier View

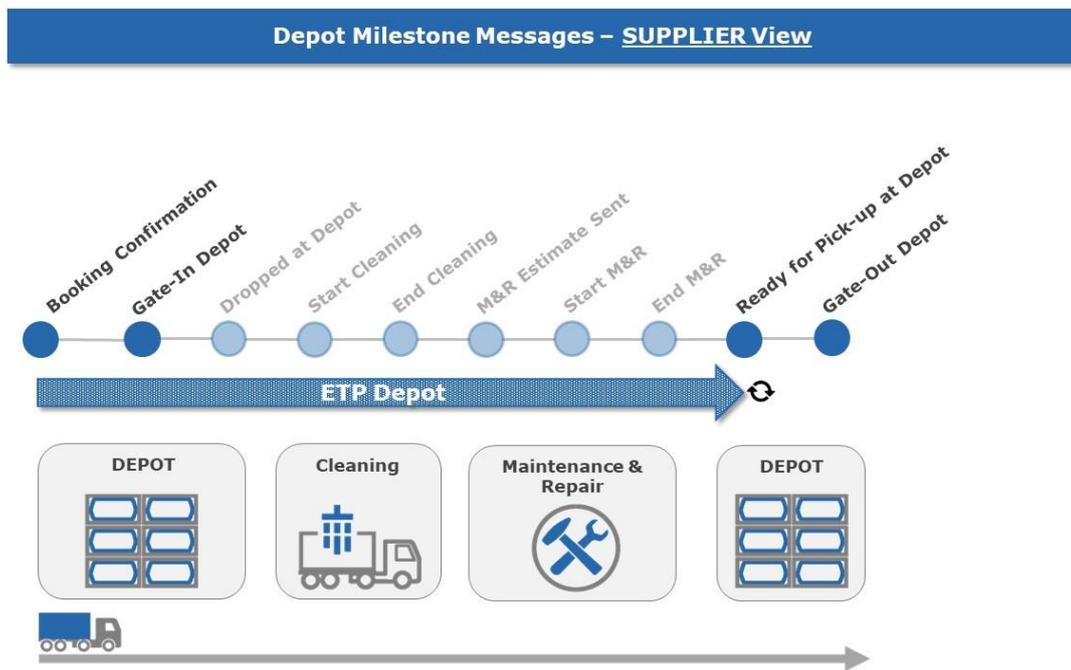


Figure 3: Intermodal Milestone Message - Depot Supplier View

Term	Definition
Booking Confirmation	Timestamp of booking confirmation
Gate-In Depot	Timestamp of the interchange document
Dropped at Depot	Timestamp of the container being dropped
Start Cleaning	Timestamp of the container started cleaning
End Cleaning	Timestamp of the container finished cleaning
M&R Estimate Sent	Timestamp of the estimate details being sent
Start M&R	Timestamp of the container started repair
End M&R	Timestamp of the container finished repair
Ready for Pick-Up at Depot	Timestamp of the container being ready for pick-up
Gate-Out Depot	Timestamp of the container having left the depot
ETP Depot	Estimated time of the container being ready for pick-up

Table 3: Definition of Milestone Messages - Depot Supplier View

Trucking Milestone Messages – SUPPLIER View

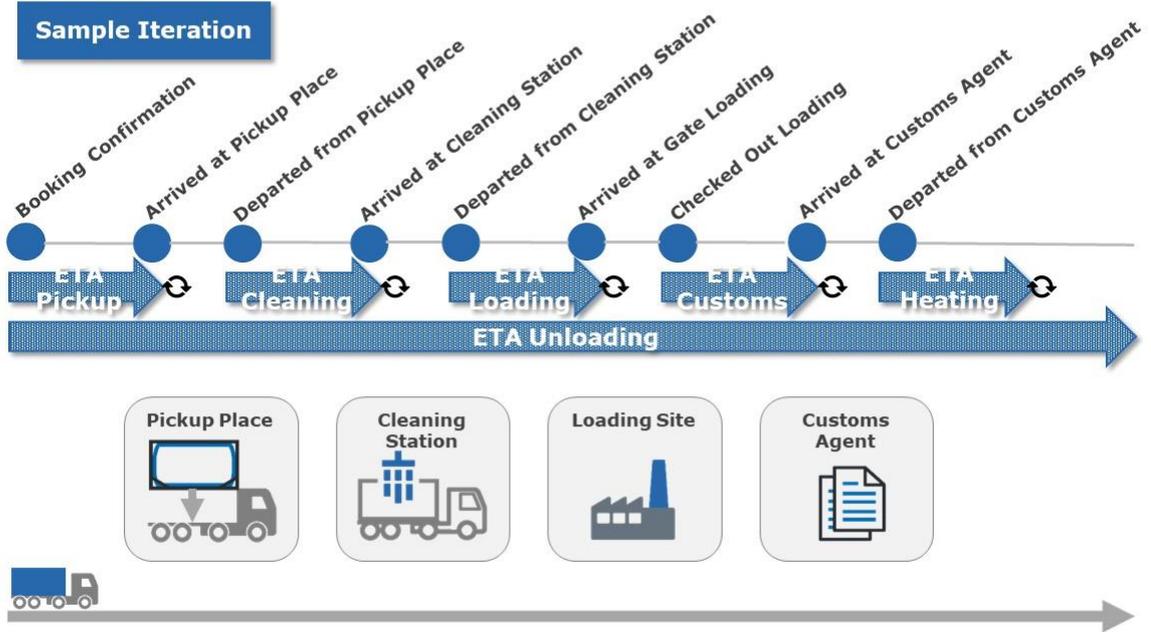


Figure 4: Intermodal Milestone Message - Trucking Supplier View (Part 1)

Trucking Milestone Messages – SUPPLIER View

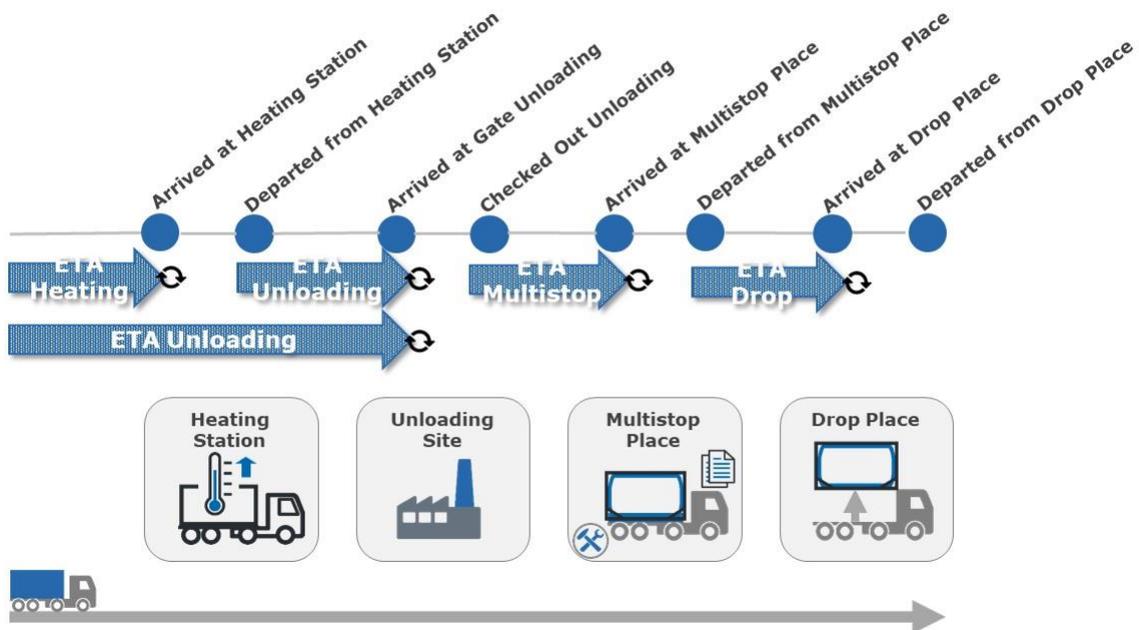


Figure 5: Intermodal Milestone Message - Trucking Supplier View (Part 2)

Term	Definition
Booking Confirmation	Timestamp of booking confirmation
Arrived at Pickup Place	Timestamp of the arrival at the pickup place
Departed from Pickup Place	Timestamp of the departure from the pickup place
Arrived at Cleaning Station	Timestamp of the arrival at the cleaning station
Departed from Cleaning Station	Timestamp of the departure from the cleaning station
Arrived at Gate Loading	Arrival timestamp on loading CMR
Checked Out Loading	Departure timestamp on loading CMR
Arrived at Customs Agent	Timestamp of the arrival at the customs agent
Departed from Customs Agent	Timestamp of the departure from the customs agent
Arrived at Heating Station	Timestamp of the arrival at the heating station
Departed from Heating Station	Timestamp of the departure from the heating station
Arrived at Gate Unloading	Arrival timestamp on delivery CMR
Checked Out Unloading	Departure timestamp on delivery CMR
Arrived at Multistop Place	Timestamp of the arrival at the multistop place (e.g. extra stop for paperwork, maintenance, modification, etc.)
Departed from Multistop Place	Timestamp of the departure from the multistop place (e.g. extra stop for paperwork, maintenance, modification, etc.)
Arrived at Drop Place	Timestamp of the arrival at the drop place
Departed from Drop Place	Timestamp of the departure from the drop place
ETA Pickup	Estimated time of arrival at the pickup place
ETA Cleaning	Estimated time of arrival at cleaning station
ETA Loading	Estimated time of arrival at loading site
ETA Customs	Estimated time of arrival at customs office
ETA Heating	Estimated time of arrival at heating station
ETA Unloading	Estimated time of arrival at unloading site
ETA Multistop	Estimated time of arrival at multistop place
ETA Drop	Estimated time of arrival at drop place

Table 4: Definition of Milestone Messages - Trucking Supplier View

6. Milestone message and ETx update rules

One important element within transport visibility is the near real-time flow of information to ensure timely notification of all involved supply chain actors. Regarding the provision of transport milestone messages, this guideline proposes to aim for a target time lack of one hour between the realisation of a milestone event and the reporting to the next actor. However, this will only be feasible in a more connected and integrated service provider landscape.

Additionally, for the provision of ETx updates a crucial element is the alignment of update triggers that define rules of sending actualised information in order to avoid over communication between supply chain actors. Hence the following is proposed:

Term	Update Trigger
ETA Loading	<ul style="list-style-type: none"> • >24 hours prior to planned loading: deviation > 24 hours vs. last reported • <24 hours prior to planned loading: deviation > 1 hour vs. last reported
ETA Unloading	<ul style="list-style-type: none"> • >24 hours prior to planned unloading: deviation > 24 hours vs. last reported • <24 hours prior to planned unloading: deviation > 1 hour vs. last reported
ETC	<ul style="list-style-type: none"> • Difference of planned vs. new closing time: deviation > 30 minutes vs. last reported
ETA Next Terminal	<ul style="list-style-type: none"> • After departure from previous terminal: deviation > 4 hours vs. last reported
ETP Arrival Terminal	<ul style="list-style-type: none"> • > 24 hours till planned ready for pick-up: deviation > 4 hours vs. last reported • < 24 hours till planned ready for pick-up: deviation > 30 minutes vs. last reported
ETP Depot	<ul style="list-style-type: none"> • > 24 hours till planned ready for pick-up: deviation > 4 hours vs. last reported • < 24 hours till planned ready for pick-up: deviation > 30 minutes vs. last reported
ETA Pickup, ETA Cleaning, ETA Customs, ETA Heating, ETA Multistop, ETA Drop	<ul style="list-style-type: none"> • > 24 hours till planned arrival: deviation > 4 hours vs. last reported • < 24 hours till planned arrival: deviation > 30 minutes vs. last reported
<u>For all Milestone</u>	<ul style="list-style-type: none"> • Milestone updates transmitted in near real-time < 1 hrs

Table 5: Definition of ETx Update Triggers

7. Message examples formats customer & supplier view

Below are generic example messages for the customer and supplier view described in chapter 5 above. For the supplier view, reference is also made to existing standards and initiatives supported by ECTA.

7.1 Transport milestone messages - customer view

The following overview shows the mandatory attributes of the transport milestone messages used in the customer view as well as example messages for the recommended data exchange formats.

Transport Milestone Messages - CUSTOMER View			
Message Name	Content/Attribute	Value	Mandatory (M) Required (for optional attributes please see example message)
Booking Confirmation	StatusCode	ACCEPTED, REJECTED	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Codes 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Arrived at Gate Loading	StatusCode	LOADING_ARRIVAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	CarriersReferenceNumber	individual	M
Checked out Loading	StatusCode	LOADING_CHECKOUT_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	CarriersReferenceNumber	individual	M

Dropped at first Departure Terminal	StatusCode	IM_DROP_DEPARTURE_TERMINAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Departed from first Departure Terminal	StatusCode	IM_DEPART_DEPARTURE_TERMINAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Ready for pick-up at last Arrival Terminal	StatusCode	IM_READY_ARRIVAL_TERMINAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Picked-up at last Arrival Terminal	StatusCode	IM_PICKUP_ARRIVAL_TERMINAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Storage In	StatusCode	STORE_IN_TIME	M
	DocumentIdentifier	Individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M

Storage Out	StatusCode	STORE_OUT_TIME	M
	DocumentIdentifier	Individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Arrived at Gate Unloading	StatusCode	UNLOADING_ARRIVAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
Checked out Unloading	StatusCode	UNLOADING_CHECKOUT_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
ETA Loading	StatusCode	LOADING_ETA_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M
ETA Unloading	StatusCode	UNLOADING_ETA_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ShipmentIdentifier	individual	M
	CarriersReferenceNumber	individual	M

Table 6: Mandatory Attributes of Transport Milestone Messages

7.1.1 Description of the Fields

DocumentIdentifier	Unique Identifier of this status message
ThisDocumentDateTime	Time, when message got created
Sender	DUNS Number / CompanyID
Receiver	DUNS Number / CompanyID
Carrier	Allows to specify the carrier in case it differs from sender
Shipper	Allows to specify the shipper, in case it differs from the receiver
ShipmentIdentifier	The identifier of the shipment from the sender of the shipment
AdditionalShipmentIdentifier	Additional identifier of the shipment
EquipmentIdentifier	Container
CarriersReferenceNumber	The identifier of the shipment from the carrier of the shipment
StatusCode	Status code
StatusNote	Comment to the status code
ETA	ETA of the shipment
ETA.EtaType	Type of the ETA (Loading or Unloading)
ETA.EstimatedTimeOfArrivalDate	ETA-Date
ETA.EstimatedTimeOfArrivalTime	ETA-Time
LoadedQuantity	Weight of the chemicals in the container
Temperature	Temperature of the chemicals in the container
StatusLocation	Address, where this status update occurred
Latitude	Position, where this status update occurred
Longitude	Position, where this status update occurred
StatusReason	ECTA- ReasonCode for this status message
StatusReason.ECTACode	Official ECTA-ReasonCode
StatusReason.ECTAComment	Comment to the ECTA- ReasonCode
EventDateTime	Date and Time, when this status occurred
CarrierTrackingLink	URL where the carrier offers a detailed status
Documents	Documents (like CMR) of this shipment

7.1.2 XSD specification of the transport milestone messages

```
<?xml version="1.0" encoding="utf-8" ?>
<xs:schema xmlns:xmime="http://www.w3.org/2005/05/xmlmime" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://ecta.com/ECTAStatusEventV1.1" targetNamespace="http://ecta.com/ECTAStatusEventV1.1">
  <xs:import namespace="http://www.w3.org/2005/05/xmlmime" schemaLocation="http://www.w3.org/2005/05/xmlmime" />
  <xs:element name="StatusEvent">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="DocumentIdentifier" type="xs:string" />
        <xs:element name="ThisDocumentDateTime" type="xs:dateTime" />
        <xs:element name="Sender" type="tns:Party" />
        <xs:element name="Receiver" type="tns:Party" />
        <xs:element name="Carrier" type="tns:Party" minOccurs="0" />
        <xs:element name="Shipper" type="tns:Party" minOccurs="0" />
        <xs:element name="ShipmentIdentifier" type="xs:string" />
        <xs:element name="AdditionalShipmentIdentifier" type="xs:string" minOccurs="0" />
        <xs:element name="EquipmentIdentifier" type="xs:string" minOccurs="0" />
        <xs:element name="CarriersReferenceNumber" type="xs:string" minOccurs="0" />
        <xs:element name="StatusCode">
          <xs:simpleType>
            <xs:restriction base="xs:string">
              <xs:enumeration value="LOADING_ETA_TIME" />
              <xs:enumeration value="LOADING_ARRIVAL_TIME" />
              <xs:enumeration value="LOADING_CHECKOUT_TIME" />
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

```

        <xs:enumeration value="IM_DROP_DEPARTURE_TERMINAL_TIME" />
        <xs:enumeration value="IM_DEPART_DEPARTURE_TERMINAL_TIME" />
        <xs:enumeration value="IM_READY_ARRIVAL_TERMINAL_TIME" />
        <xs:enumeration value="IM_PICKUP_ARRIVAL_TERMINAL_TIME" />
        <xs:enumeration value="STORE_IN_TIME" />
        <xs:enumeration value="STORE_OUT_TIME" />
        <xs:enumeration value="UNLOADING_ETA_TIME" />
        <xs:enumeration value="UNLOADING_ARRIVAL_TIME" />
        <xs:enumeration value="UNLOADING_CHECKOUT_TIME" />
    </xs:restriction>
</xs:simpleType>
</xs:element>
<xs:element name="StatusNote" type="xs:string" minOccurs="0" />
<xs:element name="ETA" type="tns:ETA" minOccurs="0" />
<xs:element name="LoadedQuantity" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="UnitOfMeasure">
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <xs:enumeration value="KGM" />
                        <xs:enumeration value="TNE" />
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
            <xs:element name="SpecificMeasurement" type="xs:decimal" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="Temperature" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="UnitOfMeasure">
                <xs:simpleType>
                    <xs:restriction base="xs:string">
                        <!-- CEL=Celsius / FAH=Fahrenheit / KAL=Kelvin -->
                        <xs:enumeration value="CEL" />
                        <xs:enumeration value="KAL" />
                        <xs:enumeration value="FAH" />
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
            <xs:element name="SpecificMeasurement" type="xs:decimal" />
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="StatusLocation" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="PartnerName" type="xs:string" />
            <xs:element name="PartnerIdentifier" type="xs:string" />
            <xs:element name="AddressInformation" minOccurs="0">
                <xs:complexType>
                    <xs:sequence>
                        <xs:element name="AddressLine" type="xs:string" />
                        <xs:element name="CityName" type="xs:string" />
                        <xs:element name="PostalCode" type="xs:string" />
                        <xs:element name="PostalCountry" type="xs:string" />
                    </xs:sequence>
                </xs:complexType>
            </xs:element>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="Latitude" type="xs:decimal" minOccurs="0" />
<xs:element name="Longitude" type="xs:decimal" minOccurs="0" />
<xs:element name="StatusReason" minOccurs="0">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="ECTACode">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="Domain" type="xs:string" use="required" />
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
        </xs:sequence>
    </xs:complexType>

```

```

        </xs:simpleContent>
      </xs:complexType>
    </xs:element>
    <xs:element name="ECTAComment" type="xs:string" />
  </xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="EventDateTime" type="xs:dateTime" />
<xs:element name="CarrierTrackingLink" type="xs:anyURI" />
<xs:element name="Documents" type="tns:Documents" minOccurs="0" />
</xs:sequence>
<xs:attribute name="ECTAStandardVersion" type="xs:decimal" use="required"/>
</xs:complexType>
</xs:element>
<xs:complexType name="Party">
  <xs:sequence>
    <xs:element name="Name" type="xs:string" />
    <xs:element name="Identifier" type="xs:string" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="Documents">
  <xs:sequence>
    <xs:element name="Document" maxOccurs="unbounded">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Type" type="xs:string" />
          <xs:element name="FileName" type="xs:string" />
          <xs:element name="DocumentBody" type="tns:BinaryDocument" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="BinaryDocument">
  <xs:simpleContent>
    <xs:restriction base="xmime:base64Binary">
      <xs:attribute ref="xmime:contentType" use="required" />
    </xs:restriction>
  </xs:simpleContent>
</xs:complexType>
<xs:complexType name="ETA">
  <xs:sequence>
    <xs:element name="EtaType">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="LOADING" />
          <xs:enumeration value="UNLOADING" />
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="EstimatedTimeOfArrivalDate" type="xs:date" />
    <xs:element name="EstimatedTimeOfArrivalTime" type="xs:time" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
</xs:schema>

```

7.1.3 XML (EDI) example message for transport milestone message " Departed from first Departure Terminal"

```

<?xml version="1.0" encoding="UTF-8"?>
<tns:StatusEvent xmlns:xmime="http://www.w3.org/2005/05/xmlmime"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:tns="http://ecta.com/ECTAStatusEventV1.1"
ECTAStandardVersion="1.1">
  <DocumentIdentifier>ABCDEF</DocumentIdentifier>
  <ThisDocumentDateTime>2020-01-27T08:46:22.0Z</ThisDocumentDateTime>
  <Sender>
    <Name/>
    <Identifier>__DUNS__</Identifier>
  </Sender>
  <Receiver>

```

```

<Name/>
<Identifier>__DUNS__(67890)</Identifier>
</Receiver>
<Carrier>
  <!-- optional mandatory if Carrier not equal Sender -->
  <Name/>
  <Identifier>__DUNS__</Identifier>
</Carrier>
<Shipper>
  <Name/>
  <Identifier>__DUNS__(22220)/CompanyID</Identifier>
</Shipper>
<ShipmentIdentifier>0086611304_531B</ShipmentIdentifier>
<AdditionalShipmentIdentifier>M098723</AdditionalShipmentIdentifier>
<!-- optional -->
<EquipmentIdentifier>BIDU 494714-1</EquipmentIdentifier>
<!--optional -->
<CarriersReferenceNumber>2838046_984806</CarriersReferenceNumber>
<!--optional -->
<StatusCode>IM_DEPART_DEPARTURE_TERMINAL_TIME</StatusCode>
<StatusNote>Departed from First Departure Terminal</StatusNote>
<!--optional -->
<ETA>
  <EtaType>LOADING</EtaType>
  <EstimatedTimeOfArrivalDate>2020-01-28</EstimatedTimeOfArrivalDate>
  <!--optional -->
  <EstimatedTimeOfArrivalTime>06:15:00.0Z</EstimatedTimeOfArrivalTime>
</ETA>
<!--optional -->
<LoadedQuantity>
  <!--optional -->
  <UnitOfMeasure>KGM</UnitOfMeasure>
  <SpecificMeasurement>24000</SpecificMeasurement>
</LoadedQuantity>
<Temperature>
  <!--optional -->
  <UnitOfMeasure>CEL</UnitOfMeasure>
  <!-- possible Values: CEL=Celsius / FAH=Fahrenheit / KAL=Kelvin as documented in the XSD -->
  <SpecificMeasurement>54</SpecificMeasurement>
</Temperature>
<StatusLocation>
  <!--optional -->
  <PartnerName>__Terminal__</PartnerName>
  <PartnerIdentifier>__DUNS__</PartnerIdentifier>
  <AddressInformation>
    <AddressLine>street name and house id</AddressLine>
    <CityName>city</CityName>
    <PostalCode>ZIP</PostalCode>
    <PostalCountry>BE</PostalCountry>
  </AddressInformation>
</StatusLocation>
<Latitude>51.4557937</Latitude>
<Longitude>13.8546606</Longitude>
<StatusReason>
  <!--optional -->
  <ECTACode Domain="ECTA2017">DT-C-IM-N-D-CN-5</ECTACode>
  <ECTAComment>Free text comment</ECTAComment>
</StatusReason>
<EventDateTime>2020-01-27T08:46:22.0Z</EventDateTime>
<CarrierTrackingLink>https://extranet.bertschi.com/CustomerPortal/74QGRVW3YR8M</CarrierTrackingLink>
<!--optional -->
<Documents>
  <!--optional -->
  <Document>
    <Type>CMR</Type>
    <FileName>CMR.PDF</FileName>
    <DocumentBody xmime:contentType="application/pdf">UjBs</DocumentBody>
  </Document>
  <Document>
    <Type>CMR</Type>
    <FileName>CMR.PNG</FileName>
    <DocumentBody xmime:contentType="application/png">UjBs</DocumentBody>
  </Document>
</Documents>
</tns:StatusEvent>

```

7.2 Transport milestone messages - Supplier view

The following chapters provides an overview of suggested standards for intermodal suppliers. Additionally, it shows the mandatory attributes of the trucking milestone messages used in the supplier view as well as example messages for the recommended data exchange formats.

7.2.1 Intermodal milestone messages

- Rail:** ECTA recommends using the latest version of EDIGES, which is developed and maintained by the EDIGES consortium. For more information please see <https://edigesconsortium.atlassian.net/wiki/spaces/ED/overview>
- Deep sea:** ECTA recommends using the latest version of DCSA *Interface Standard for Track and Trace*, which is developed and maintained by the Digital Container Shipping Association. For more information please see <https://dcsa.org/>
- Short sea / Barge:** ECTA recommends using either the latest version of EDIGES or the DCSA *Interface Standard for Track and Trace*, as there is currently no separate common standard published.

7.2.2 Depot milestone messages

ECTA recommends supporting the ECLIC platform to establish a standardized interface for the communication across all types of depot services (e.g. cleaning, maintenance & repair) for the chemical logistics. For more information please see <https://www.ecllc.eu/>

7.2.3 Trucking milestone messages

The following overview generically shows the mandatory attributes of the trucking milestone messages used in the supplier view.

Trucking Milestone Messages - SUPPLIER View			
Message Name	Content/Attribute	Value	Mandatory (M) Required (for optional attributes please see example message)
Booking Confirmation	StatusCode	ACCEPTED, REJECTED	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	ReceiverReferenceNumber	individual	M
	SenderReferenceNumber	individual	M
For all Milestone (e.g. Arrived at Gate Loading)	StatusCode	LOADING_ARRIVAL_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M

	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ReceiverReferenceNumber	individual	M
	SenderReferenceNumber	individual	M
For all ETA (e.g. ETA Loading)	StatusCode	LOADING_ETA_TIME	M
	DocumentIdentifier	individual	M
	ThisDocumentDateTime	ISO Code 8601	M
	Sender	DUNS Number / CompanyID	M
	Receiver	DUNS Number / CompanyID	M
	EventDateTime	ISO Code 8601	M
	ReceiverReferenceNumber	individual	M
	SenderReferenceNumber	individual	M

Table 7: Mandatory Attributes of Trucking Milestone Messages

7.2.4 XML (EDI) example message for trucking milestone message "Arrived at Gate Loading"

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE StatusEvent SYSTEM "StatusEvent.dtd">
<StatusEvent>
  <DocumentIdentifier>ABCDEFG</DocumentIdentifier>
  <ThisDocumentDateTime>20200127T084622+0000</ThisDocumentDateTime>
  <Sender>
    <Name></Name>
    <Identifier>__DUNS__(12345))/CompanyID</Identifier>
  </Sender>
  <Receiver>
    <Name></Name>
    <Identifier>__DUNS__(67890)/CompanyID</Identifier>
  </Receiver>
  <Carrier>!-- optional
    <Name></Name>
    <Identifier>__DUNS__(11110)/CompanyID</Identifier>
  </Carrier>
  <ReceiverReferenceNumber>2838046_9864806</ReceiverReferenceNumber>
  <EquipmentIdentifier></EquipmentIdentifier>!-- optional {ContainerNumber BIDU-1111-0}
  <SenderReferenceNumber>0086611304_/531B</SenderReferenceNumber>
  <StatusCode>LOADING_ARRIVAL_TIME</StatusCode>
  <StatusNote>Arrived at Gate Loading</StatusNote>!-- optional
  <StatusLocation>!-- optional
    <partnerName>Customer Name</partnerName>
    <partnerIdentifier>0000055261</partnerIdentifier>
    <addressInformation>
      <addressLine>Street Name + No. </addressLine>
      <cityName>City Name</cityName>
      <postalCode>ZIP Code</postalCode>
      <postalCountry>UN Country Code</postalCountry>
    </addressInformation>
  </StatusLocation>
  <Latitude>51.4557937</Latitude>!-- optional
  <Longitude>13.8546606</Longitude>!-- optional
  <Status>late</Status>!-- optional
  <StatusReason>!-- optional
    <ECTACode Domain="ECTA20??">DT - C - IM - N - D - CN - 5</ECTACode>
    <ECTAComment>Free text comment</ECTAComment>
  </StatusReason>
  <EventDateTime>20191211T094900+0100</EventDateTime>
</StatusEvent>

```

8. Contact Lists and WG participants



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