Informed Visibility®

Mail Tracking & Reporting
Mail.XML™ Guide

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1   Introduction

1.1   Purpose

This guide provides information about using Mail.XML™ to receive United States Postal Service® (USPS®) mail tracking data through the Informed Visibility® Mail Tracking & Reporting (IV®-MTR) application. Through Mail.XML, mailers can receive visibility information for letter and flat containers and handling units (trays, tubs, and sacks).

Although IV-MTR provides visibility information for bundles and pieces, this information is not available via Mail.XML. Please see the _IV-MTR User Guide_ for information about bundle and piece visibility. IV-MTR does not provide mail tracking data on packages, to include associated containers, handling units, and bundles.

The intended audience for this guide is mailers and their technical support resources. This guide describes the Mail.XML mail tracking messages and how to get started with Mail.XML.

Additional documentation is available:

- _User Guide_: Describes the prerequisites for receiving mail tracking data through IV-MTR, the data provisioning options available, how to use the application, and how to interpret scan data; intended for mailers

- _External Facing Data Dictionary_: Describes the data attributes available in the external-facing system

- _Sample Data Set_: Provides example records of data attributes available in the application

These documents and other IV-MTR resources are available on the IV-MTR PostalPro™ page.

1.2   Background

Prior to IV-MTR, mail tracking functionality for letters and flats, and their associated containers, handling units, and bundles, was distributed across several applications. IMb Tracing® (formerly CONFIRM®) was the source for automated piece and bundle tracking data, while _PostalOne!®_ was the source for container and handling unit tracking data. Furthermore, the availability of tracking data was delayed, limiting usefulness to mailers.

With the legacy systems, mailers did not have full visibility of mail as it moved through the mailstream because they were limited to actual scans of their containers, handling units, bundles, or pieces. As mailpieces are processed, they are nested, de-nested, and re-nested in and out of handling units and containers. There was not a system to capture all nesting relationships between mailpieces, handling units, and containers, which left gaps in end-to-end visibility.

Mail tracking functionality for containers, handling units, bundles, and pieces is consolidated into IV-MTR, which is the new and comprehensive mail data repository for the Postal Service™. The application provides near real-time tracking information for all letters, flats, and mail aggregates, which includes containers, handling units, and bundles.

The application gives mailers visibility into their mailings and service, increasing the value of mail and enabling mailers to plan their mailings, measure success of each mailing campaign, and efficiently staff. The system provides several key benefits for mailers:

- Enhances visibility to provide end-to-end tracking across the entire mailstream – providing logical handling events and assumed handling events based on nesting associations

- Provides tracking information in near real-time, improving the timeliness for container and handling unit data

- Improved ease of use for mailers through flexible data provisioning (how you get data) and flexible data delegation (how you share data visibility)

1.3　IV-MTR Release Schedule

Mail tracking functionality in the application will be implemented through a phased approach. See the IV-MTR PostalPro page for the release schedule.

2   Mail.XML Mail Tracking Messages

Users can receive data using Mail.XML messages through the following two options:

- Push messages (scheduled subscription)
- Pull messages (on-demand request)

Notes:

- IV-MTR currently supports Mail.XML versions 12.0A, 12.0B, 14.0A, and 16.0 for all messages. For Start-the-Clock messages, IV-MTR supports these versions as well as version 21.0.
- All of the XML Schema Definitions (XSDs) in this document are from Mail.XML version 16.0.
- If you are new to using Mail.XML push or pull messages, see Section 3: *Getting Started with Mail.XML*.

2.1   Push Messages

Push messages are a set of Mail.XML delivery and notification messages. Customers can subscribe to either delivery or notification on a scheduled interval. If customer is subscribed to the delivery option, all the available data is pushed to customer at the specified interval. If the customer is subscribed to the notification option, a notification message is sent to customer indicating the available data at the specified interval, after which the customer can then pull the data based on the criteria provided in the notification message.

The Mail.XML push subscription messages to be supported by IV-MTR are as follows:

- *ContainerVisibilityDelivery:* Postal Service sends detailed handling event data for containers and/or handling units matching subscription
- *ContainerVisibilityNotification:* Postal Service sends notification of available handling event data for containers and/or handling units
- *StartTheClockDelivery:* Postal Service sends detailed Start-the-Clock data for containers matching subscription
- *StartTheClockNotification:* Postal Service sends notification of available Start-the-Clock data for containers

Key data elements and related business rules for delivery messages (*ContainerVisibilityDelivery* and *StarTheClockDelivery*) are defined below:

- **LargeTransactionDividerGroupOptionalType:** This datatype allows large datasets to be broken up into multiple transactions. The Feet Ahead concept is used, where the sender of the large data set provides information about how many total transactions to expect and what the current transaction number is among the total expected transactions.
    - **MessageGroupID:** This Sequence Number remains the same until all the transactions are completed. For example, the MessageGroupID is 10 and remains 10 for all transactions, so the receiver knows that all the transactions with MessageGroupID 10 are part of one business transaction.
    - **TotalMessageCount:** This element tells the receiver the total number of transactions to expect for a particular MessageGroupID. This element is always a positive integer.
    - **MessageSerialNumber:** This indicates the number (e.g., first, second) of the current message out of the TotalMessageCount for the given MessageGroupID. The value ranges from 1 to the TotalMessageCount.
    - **TransmittedRecordCount:** A count of records in the current message transaction.

- **TotalRecordsAcrossMessages:** This is the total expected record count once the receiver for the given MessageGroupID has received all transactions.
- **LastMessage:** This is a Yes or No indicator confirming that this transaction is the last transaction of the MessageGroupID. For example, when MessageGroupID 10 has a TotalMessageCount value of 20 and the MessageSerialNumber becomes 20, the LastMessage would have a Yes indicator.

- **SubmittingParty:** IV-MTR will always put a value of "USPS" in the MaildatUserLicense field for all notification and delivery messages.

- **SubmittingSoftware:** IV-MTR will always put the following for all notification and delivery messages:
    - Value of "IV" in the SoftwareName element
    - Value of "USPS" in the Vendor element
    - Version number of Mail.XML used to send the message
    - No values in the ApprovalDate and ApprovalKey elements

The Customer Registration ID (CRID) element is for industry usage and is optional. For delivery messages, IV-MTR does not populate this element.

IV-MTR provides the job information, either the Mail.dat Job ID and User License Code OR the Customer Group ID and MailingGroupID for Mail.XML, to the customer.

IV-MTR sends one or more ContainerVisibility blocks containing one of the following ContainerScanState values:

- **Entered at USPS:** Container or Orphan Handling Unit inducted in Postal Service network (also the scan used for Start-the-Clock)

- **Enroute Arrive:** Container or handling unit arrived at a Postal Service facility or airport

- **Enroute:** Handling unit or bundle was processed at a Postal Service facility on sorting equipment

- **Enroute Depart:** Container or handling unit departed a Postal Service facility or airport

2.1.1   Use Push Messages in IV-MTR

Use the IV-MTR web application to create or modify a data feed (subscription) to receive data from IV-MTR using Mail.XML push messages. Instructions for creating and modifying a data feed are available in the *IV-MTR User Guide*. Mail.XML push messages are not available for one-time queries.

In the IV-MTR application, you are able to customize a Mail.XML push data feed in many ways. For example, you can select which mail object type (e.g., container, handling unit) and handling event type(s) (e.g., actual, logical) for which to receive data.

2.1.2 ContainerVisibilityDelivery

IV-MTR uses this data structure to report container or handling unit visibility data to the customer with all available *ContainerVisibilityEntry* data elements populated.

The XSD of *ContainerVisibilityDelivery* is shown below:

Figure 2.1: ContainerVisibilityDelivery XML Schema Definition

```
<xs:element name="ContainerVisibilityDelivery">
    <xs:annotation>
        <xs:documentation>Delivery of full service container visibility information by uSPS.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType" minOccurs="0"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType" minOccurs="0"/>
            <xs:element ref="mailxml_defs:DataRecipient" minOccurs="0"/>
            <xs:element name="PushMessageID" type="mailxml_base:s25" minOccurs="0"/>
            <xs:element ref="mailxml_dd:ContainerVisibilityEntry" minOccurs="1" maxOccurs="unbounded"/>
        </xs:sequence>
        <xs:attributeGroup ref="mailxml_defs:LargeTransactionDividerGroupOptionalType"/>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *ContainerVisibilityDelivery* and its sub-components is shown below:

Figure 2.2: ContainerVisibilityDelivery XSD Components

mailxml_defs:submittingSoftwareType

attributes

mailxml_defs:SoftwareName

mailxml_defs:Vendor

mailxml_dd:SubmittingSoftware

mailxml_defs:Version

mailxml_defs:ApprovalDate

mailxml_defs:ApprovalKey

DataRecipient

mailxml_defs:CRID

mailxml_defs:Role

mailxml_dd:UserLicenseCode

mailxml_dd:MaildatJobID

mailxml_dd:CustomerGroupID

mailxml_dd:MailingGroupID

mailxml_dd:ConsigneeApptID

mailxml_dd:LogicalIndicator

mailxml_dd:CSAID

mailxml_dd:ContainerID

mailxml_dd:ParentContainerID

mailxml_dd:SiblingContainerID

ContainerVisibilityEntry

mailxml_dd:ContainerType

mailxml_dd:ScanEvent

mailxml_dd:IMcb

mailxml_dd:IMtb

mailxml_dd:IMpb

mailxml_dd:FullServiceComplianceIndicator

mailxml_dd:FullServiceNonComplianceReasonCode

mailxml_dd:FSNonFSAvailabilityDate

mailxml_dd:FullServiceIndicator

mailxml_dd:scanEventType

mailxml_dd:USPSFacilityLocaleKey

mailxml_dd:City

mailxml_dd:State

mailxml_dd:USPSFacilityName

mailxml_dd:ScanEvent

mailxml_dd:ScanDateTime

1..∞

mailxml_dd:ContainerScanState

mailxml_dd:ScanStatus

mailxml_dd:ScanIssueDescription

mailxml_dd:ScanIssueResolution

2.1.3   ContainerVisibilityNotification

IV-MTR sends this notification to the customer and provides the job information for the container visibility data that is available for pickup.

The XSD of *ContainerVisibilityNotification* is shown below:

Figure 2.3: ContainerVisibilityNotification XML Schema Definition

```
<xs:element name="ContainerVisibilityNotification">
    <xs:annotation>
        <xs:documentation>Notification sent by USPS that full service container visibility information is ready for pickup.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType" minOccurs="0"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType" minOccurs="0"/>
            <xs:element name="PushMessageID" type="mailxml_base:s25" minOccurs="0"/>
            <xs:choice minOccurs="0">
                <xs:sequence>
                    <xs:element name="UserLicenseCode" type="mailxml_base:userLicenseCodeType"/>
                    <xs:element name="MaildatJobID" type="mailxml_base:jobIDType"/>
                </xs:sequence>
                <xs:sequence>
                    <xs:element name="CustomerGroupID" type="mailxml_base:s25" minOccurs="0"/>
                    <xs:element name="MailingGroupID" type="xs:nonNegativeInteger"/>
                </xs:sequence>
            </xs:choice>
            <xs:element name="FSNonFSAvailabilityDate" type="xs:date"/>
            <xs:sequence minOccurs="0" maxOccurs="unbounded">
                <xs:element name="AvailableRecordCount" type="xs:nonNegativeInteger"/>
                <xs:element name="CountType" type="mailxml_dd:countTypeType"/>
            </xs:sequence>
            <xs:element name="NotificationDate" type="xs:date"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *ContainerVisibilityNotification* and its sub-components is shown below:

Figure 2.4: ContainerVisibilityNotification XSD Components
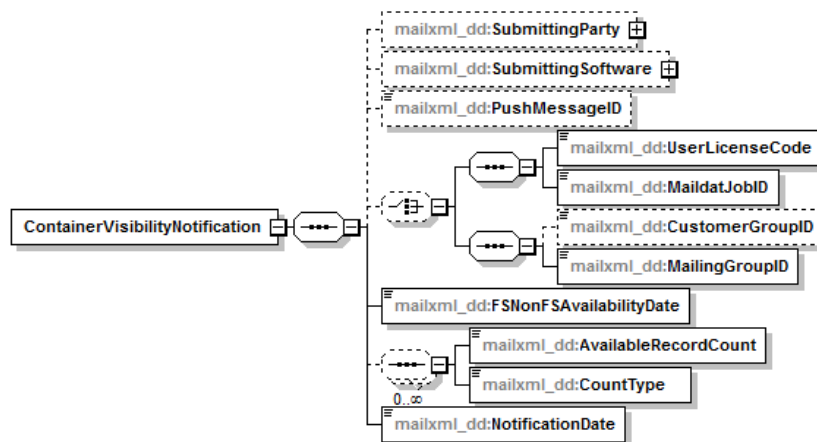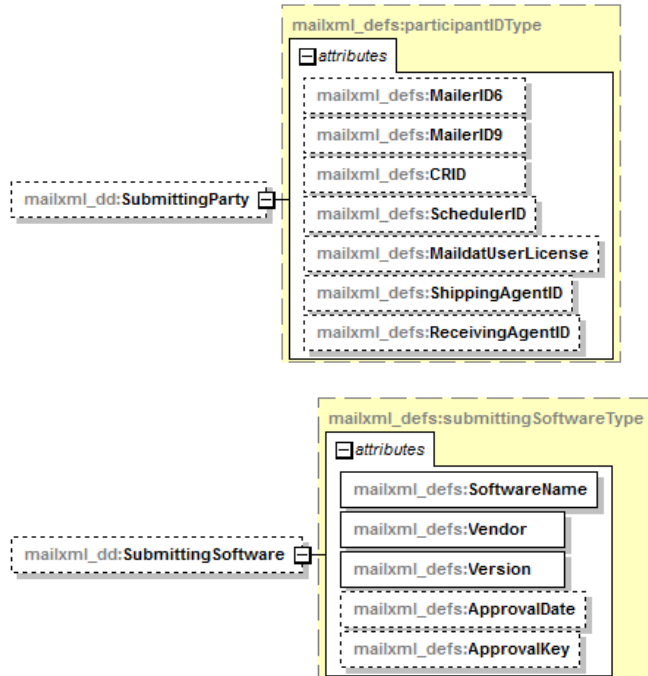
2.1.4 StartTheClockDelivery

IV-MTR uses this data structure to report container Start-the-Clock data to the customer with all available *StartTheClockDelivery* data elements populated.

The XSD of *StartTheClockDelivery* is shown below:

Figure 2.5: StartTheClockDelivery XML Schema Definition

```
<xs:element name="StartTheClockDelivery">
    <xs:annotation>
        <xs:documentation>Delivery of start the clock information to customer by USPS.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType" minOccurs="0"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType" minOccurs="0"/>
            <xs:element ref="mailxml_defs:DataRecipient" minOccurs="0"/>
            <xs:element name="PushMessageID" type="mailxml_base:s25" minOccurs="0"/>
            <xs:sequence maxOccurs="unbounded">
                <xs:element name="ClockStarted" type="mailxml_dd:clockStartedType"/>
            </xs:sequence>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```
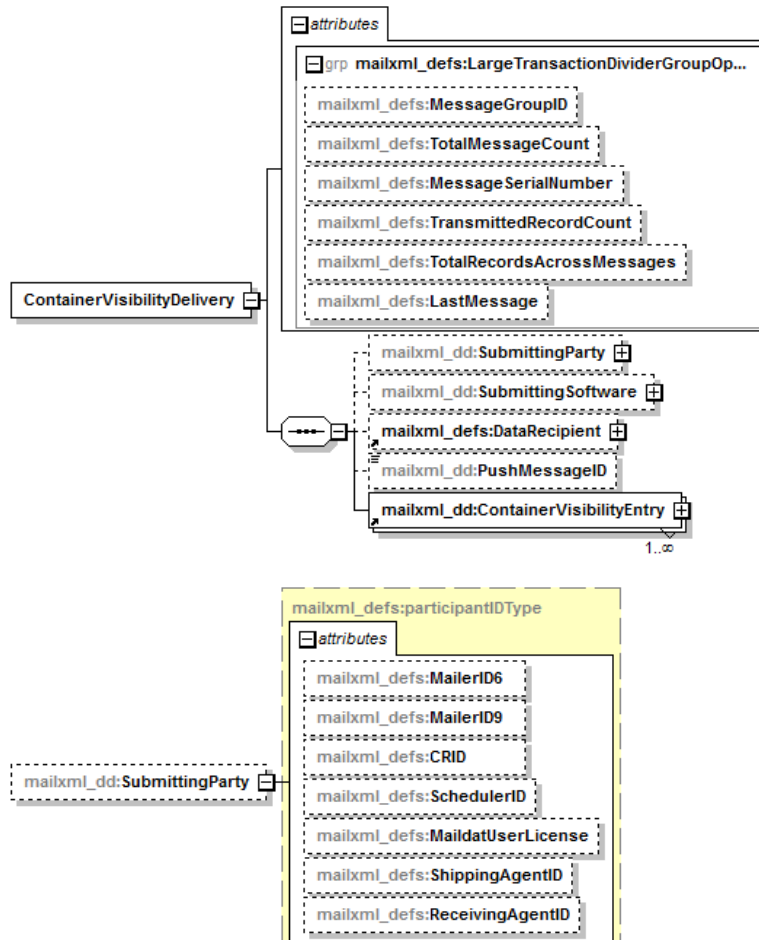
A visual representation of the XSD of *StartTheClockDelivery* and its sub-components is shown below:

Figure 2.6: StartTheClockDelivery XSD Components

mailxml_defs:participantIDType

attributes

mailxml_defs:**MailerID6**

mailxml_defs:**MailerID9**

mailxml_defs:**CRID**

mailxml_dd:**SubmittingParty**

mailxml_defs:**SchedulerID**

mailxml_defs:**MaildatUserLicense**

mailxml_defs:**ShippingAgentID**

mailxml_defs:**ReceivingAgentID**

mailxml_defs:submittingSoftwareType

attributes

mailxml_defs:**SoftwareName**

mailxml_defs:**Vendor**

mailxml_dd:**SubmittingSoftware**

mailxml_defs:**Version**

mailxml_defs:**ApprovalDate**

mailxml_defs:**ApprovalKey**

DataRecipient

mailxml_defs:**CRID**

mailxml_defs:**Role**

mailxml_dd:clockStartedType

mailxml_dd:**StartTheClockBEMUBlock**

0..∞

mailxml_dd:**ClockStarted**

mailxml_dd:**StartTheClockDropShipOrOriginBlock**

0..∞

mailxml_dd:**StartTheClockPlantLoadBlock**

0..∞

StartTheClockBEMUBlock

mailxml_dd:**StartTheClockBEMU**

1..∞

```
                                              ┌─────────────────────────────────────┐
                                         ┌────│   mailxml_dd:UserLicenseCode         │
                              ┌──────────┤    └─────────────────────────────────────┘
                    ┌─────────┤          │    ┌─────────────────────────────────────┐
                    │         │          └────│   mailxml_dd:MaildatJobID            │
                    │         │               └─────────────────────────────────────┘
                    │         │               ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │         │          ┌─────   mailxml_dd:CustomerGroupID
                    │         └──────────┤    └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │                    │    ┌─────────────────────────────────────┐
                    │                    └────│   mailxml_dd:MailingGroupID          │
                    │                         └─────────────────────────────────────┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:PublicationNumber
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:MailClass
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:ProcessingCategory
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:OriginFacilityName
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:OriginFacilityLocaleKey
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
┌──────────────────────────┐      │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
│ mailxml_dd:StartTheClockBEMU│──│─ ─ ─ ─ ─   mailxml_dd:ArrivalDateTime
└──────────────────────────┘      │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
         1..∞                     │         ┌─────────────────────────────────────┐
                    │─────────────│   mailxml_dd:StartTheClockDate      │
                    │             └─────────────────────────────────────┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:FullServiceComplianceIndicator
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:FullServiceNonComplianceReasonCode
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:FSNonFSAvailabilityDate
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │─ ─ ─ ─ ─   mailxml_dd:FullServiceIndicator
                    │         └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │                    ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │               ┌─────   mailxml_dd:ContainerID
                    │               │    └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    │               │              0..∞
                    │               │    ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                    │               │────   mailxml_dd:ContainerType
                    │               │    └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                    └ ─ ─ ─ ─ ─ ─ ─┤              0..∞
                                    │         ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                                    │    ┌─────   mailxml_dd:IMcb
                                    │    │    └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                                    │    │           0..∞
                                    │    │    ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                                    └ ─ ─┤─────   mailxml_dd:IMtb
                                         │    └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                                         │           0..∞
                                         │    ┌ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┐
                                         └─────   mailxml_dd:IMpb
                                              └ ─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
                                                     0..∞
```

StartTheClockDropShipOrOrigin

- mailxml_dd:**UserLicenseCode**
- mailxml_dd:**MaildatJobID**
- mailxml_dd:**CustomerGroupID**
- mailxml_dd:**MailingGroupID**
- mailxml_dd:**ConsigneeApptID**
- mailxml_dd:**CSADispatchNumber**
- mailxml_dd:**PublicationNumber**
- mailxml_dd:**MailClass**
- mailxml_dd:**ProcessingCategory**
- mailxml_dd:**DropShipYesNo**
- mailxml_dd:**UspsFacilityName**
- mailxml_dd:**UspsFacilityLocaleKey**
- mailxml_dd:**City**
- mailxml_dd:**State**
- mailxml_dd:**ApptDateTime**
- mailxml_dd:**ArrivalDateTime**
- mailxml_dd:**UnloadStartDateTime**
- mailxml_dd:**UnloadEndDateTime**
- mailxml_dd:**ApptStatus**
- mailxml_dd:**StartTheClockDate**
- mailxml_dd:**FullServiceComplianceIndicator**
- mailxml_dd:**FullServiceNonComplianceReasonCode**
- mailxml_dd:**FSNonFSAvailabilityDate**
- mailxml_dd:**FullServiceIndicator**
- mailxml_dd:**ContainerID** 0..∞
- mailxml_dd:**ContainerType** 0..∞
- mailxml_dd:**IMcb** 0..∞
- mailxml_dd:**IMtb** 0..∞
- mailxml_dd:**IMpb** 0..∞

StartTheClockPlantLoadBlock — mailxml_dd:**StartTheClockPlantLoad** 1..∞

```
                                    ┌──────────────────────────────┐
                              ┌───┤   mailxml_dd:UserLicenseCode   │
                    ┌─••••─┤├──┤                                  │
                    │        └───┤   mailxml_dd:MaildatJobID      │
          ┌─/├─┤├──┤                                              │
          │         │        ┌───┤   mailxml_dd:CustomerGroupID   │
          │         └─••••─┤├──┤                                  │
          │                  └───┤   mailxml_dd:MailingGroupID    │
          │         ┌──────────────────────────────┐
          │         │   mailxml_dd:PublicationNumber │
          │         │   mailxml_dd:CSADispatchNumber │
          │         │   mailxml_dd:MailClass         │
          │         │   mailxml_dd:ProcessingCategory│
          │         │   mailxml_dd:OriginFacilityName│
┌────────────────────────┐          │   mailxml_dd:OriginFacilityLocaleKey│
│ mailxml_dd:StartTheClockPlantLoad │──••••──┤   mailxml_dd:MailReleasedDateTime│
└────────────────────────┘          │   mailxml_dd:StartTheClockDate │
          1..∞                       │   mailxml_dd:FullServiceComplianceIndicator│
                                      │   mailxml_dd:FullServiceNonComplianceReasonCode│
                                      │   mailxml_dd:FSNonFSAvailabilityDate│
                                      │   mailxml_dd:FullServiceIndicator│
                                      │        ┌──────────────────────────────┐
                                      │        │   mailxml_dd:ContainerID      │
                                      │        │              0..∞             │
                                      │        │   mailxml_dd:ContainerType    │
                              ┌──••••──┤        │              0..∞             │
                                               │        ┌──────────────────────────────┐
                                               │        │   mailxml_dd:IMcb             │
                                               │        │              0..∞             │
                                      ┌─/├─┤├──┤   mailxml_dd:IMtb             │
                                               │        │              0..∞             │
                                               │        │   mailxml_dd:IMpb             │
                                               │        │              0..∞             │
```
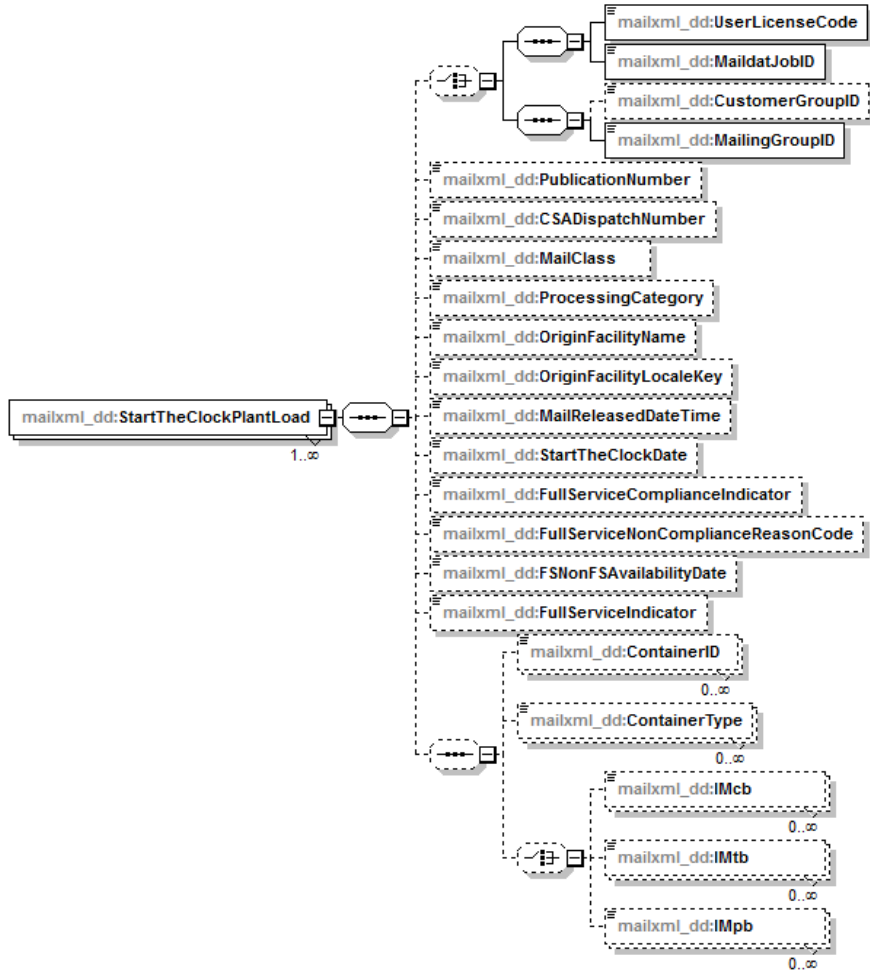
2.1.5   StartTheClockNotification

IV-MTR sends this notification to the customer and provides the job information for the container Start-the-Clock data that is available for the customer to retrieve via query requests.

The XSD of *StartTheClockNotificatio*n is shown below:

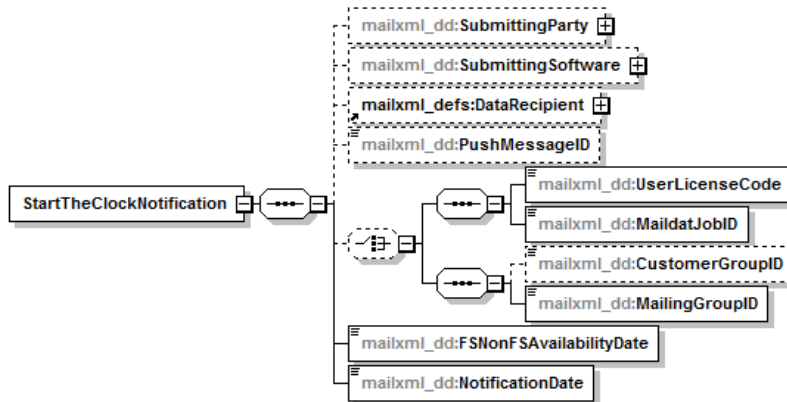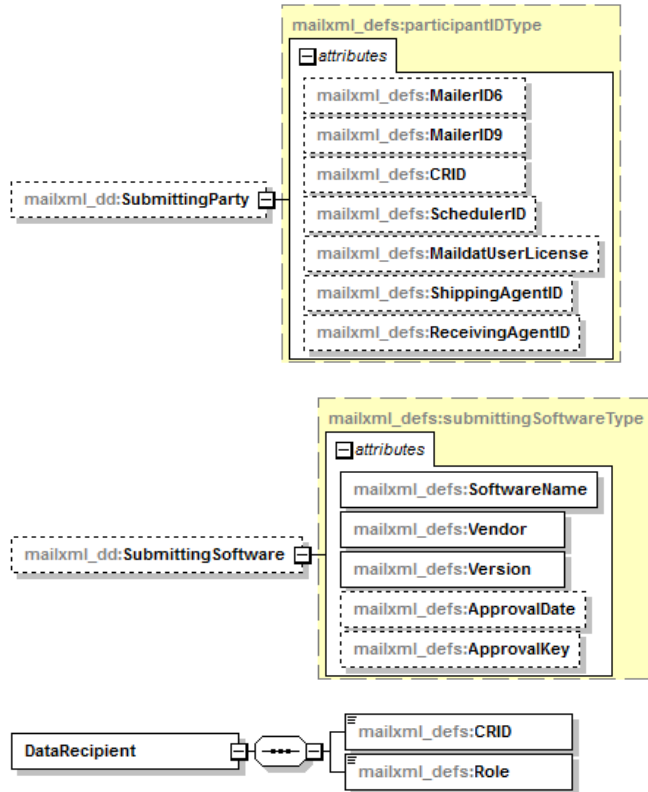**Figure 2.7: StartTheClockNotification XML Schema Definition**

```
<xs:element name="StartTheClockNotification">
    <xs:annotation>
        <xs:documentation>Notification from USPS that start the clock information is ready to be picked up.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType" minOccurs="0"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType" minOccurs="0"/>
            <xs:element ref="mailxml_defs:DataRecipient" minOccurs="0"/>
            <xs:element name="PushMessageID" type="mailxml_base:s25" minOccurs="0"/>
            <xs:choice minOccurs="0">
                <xs:sequence>
                    <xs:element name="UserLicenseCode" type="mailxml_base:userLicenseCodeType"/>
                    <xs:element name="MaildatJobID" type="mailxml_base:jobIDType"/>
                </xs:sequence>
                <xs:sequence>
                    <xs:element name="CustomerGroupID" type="mailxml_base:s25" minOccurs="0"/>
                    <xs:element name="MailingGroupID" type="xs:nonNegativeInteger"/>
                </xs:sequence>
            </xs:choice>
            <xs:element name="FSNonFSAvailabilityDate" type="xs:date"/>
            <xs:element name="NotificationDate" type="xs:date"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *StartTheClockNotification* and its sub-components is shown below:

Figure 2.8: StartTheClockNotification XSD Components

2.2 Pull Messages

Customers can send a web service-based Mail.XML request message invoking the Postal Service web service to pull data in an XML format from IV-MTR. This allows the customer to retrieve information on an as-needed basis by using a set of specific criteria.

The Mail.XML pull request and response messages supported by IV-MTR are as follows:

- *ContainerVisibilityQueryRequest:* Mailer requests container or handling unit visibility information

- *ContainerVisibilityQueryResponse:* IV-MTR acknowledges the container or handling unit visibility request by providing the available handling event data

- *StartTheClockQueryRequest:* Mailer requests container Start-the-Clock information

- *StartTheClockQueryResponse:* IV-MTR acknowledges the container Start-the-Clock request by providing the available data

- *MessageResponseRetrievalRequest:* Mailer requests container or handling unit visibility for the TrackingID provided in the request (used to retrieve batched groups of messages)

- *MessageResponseRetrievalResponse:* IV-MTR acknowledges the container or handling unit visibility request by providing the available handling event data for the TrackingID provided in the request

If a large data set is being returned, IV-MTR returns a response with the first 200 messages. The response also provides one or more TrackingIDs as part of LargeTransactionDividerResult for the remaining messages. Whenever a mailer application sees the TrackingID element, the mailer application needs to send *MessageResponseRetrievalRequest* (using the correct Mail.XML version XSD) and use the TrackingID provided to get the response. For example, if a mailer sends *ContainerVisibilityQueryRequest* and IV-MTR has to send a large result set as a response, IV-MTR returns a response with the first 200 messages and includes five TrackingIDs as part of

LargeTransactionDividerResult. The mailer sends a *MessageResponseRetrievalRequest* request for each TrackingID to get the remaining data. Additionally, the element LargeTransactionDividerGroupType can give more information on what is included on each transmission.

Key data elements and related business rules for response messages (*ContainerVisibilityQueryResponse* and *StartTheClockQueryResponse*) are defined below:

- **LargeTransactionDividerGroupOptionalType:** This datatype allows large datasets to be broken up into multiple transactions. The Feet Ahead concept is used, where the sender of the large data set provides information about how many total transactions to expect and what the current transaction number is among the total expected transactions.

  - **MessageGroupID:** This Sequence Number remains the same until all the transactions are completed. For example, the MessageGroupID is 10 and remains 10 for all transactions, so the receiver knows that all the transactions with MessageGroupID 10 are part of one business transaction.

  - **TotalMessageCount:** This element tells the receiver the total number of transactions to expect for a particular MessageGroupID. This element is always a positive integer.

  - **MessageSerialNumber:** This indicates the number (e.g., first, second) of the current message out of the TotalMessageCount for the given MessageGroupID. The value ranges from 1 to the TotalMessageCount.

  - **TransmittedRecordCount:** A count of records in the current message transaction.

  - **TotalRecordsAcrossMessages:** This is the total expected record count once the receiver for the given MessageGroupID has received all transactions.

  - **LastMessage:** This is a Yes or No indicator confirming that this transaction is the last transaction of the MessageGroupID. For example, when MessageGroupID 10 has a TotalMessageCount value of 20 and the MessageSerialNumber becomes 20, the LastMessage would have a Yes indicator.

2.2.1   Use Pull Messages in IV-MTR

To use Mail.XML pull messages to receive data from IV-MTR, you would not use the IV-MTR web application.

You can only customize the data to receive based on the XSD for the message type. At this time, this means you are not able to specify select which mail object type (e.g., container, handling unit) and handling event type(s) (e.g., actual, logical) for which to receive data.

2.2.2   ContainerVisibilityQueryRequest

Customers use this data structure to request container or handling unit visibility information from IV-MTR by providing the job information, appointment/trip information, facility ID, container or handling unit scan state, or Intelligent Mail container/tray barcodes.
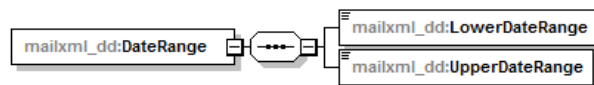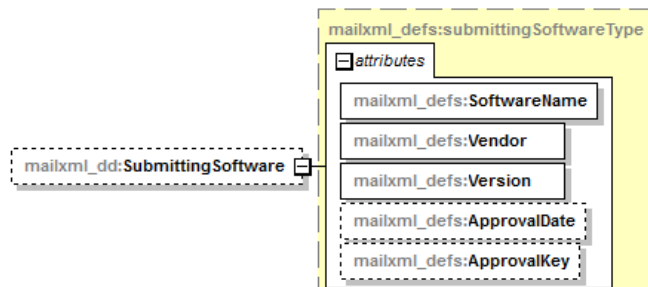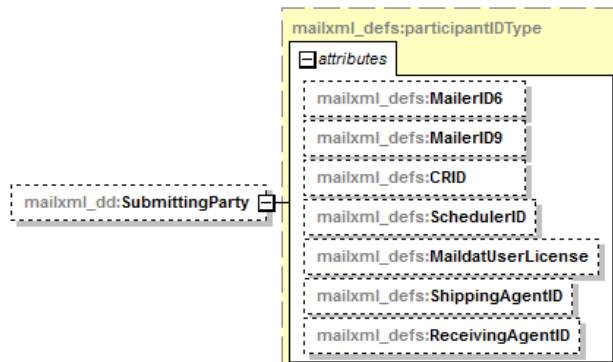
The XSD of *ContainerVisibilityQueryRequest* is shown below:

Figure 2.9: ContainerVisibilityQueryRequest XML Schema Definition

```
<xs:element name="ContainerVisibilityQueryRequest">
    <xs:annotation>
        <xs:documentation>Query request for for full service container visisbility information.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType" minOccurs="0"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType" minOccurs="0"/>
            <xs:element name="SubmitterTrackingID" type="mailxml_base:s20" minOccurs="0"/>
            <xs:choice minOccurs="0">
                <xs:sequence>
                    <xs:element name="UserLicenseCode" type="mailxml_base:userLicenseCodeType"/>
                    <xs:element name="MaildatJobID" type="mailxml_base:jobIDType"/>
                </xs:sequence>
                <xs:sequence>
                    <xs:element name="CustomerGroupID" type="mailxml_base:s25" minOccurs="0"/>
                    <xs:element name="MailingGroupID" type="xs:nonNegativeInteger"/>
                </xs:sequence>
            </xs:choice>
            <xs:element name="DateRange">
                <xs:complexType>
                    <xs:sequence>
                        <xs:element name="LowerDateRange" type="xs:date"/>
                        <xs:element name="UpperDateRange" type="xs:date"/>
                    </xs:sequence>
                </xs:complexType>
            </xs:element>
            <xs:element name="ConsigneeApptID" type="mailxml_base:s12" minOccurs="0"/>
            <xs:element name="CSAID" type="mailxml_base:s10" minOccurs="0"/>
            <xs:choice>
                <xs:element name="IMcb" type="mailxml_base:IMcbType" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="IMtb" type="mailxml_base:IMtbType" minOccurs="0" maxOccurs="unbounded"/>
                <xs:element name="IMpb" type="mailxml_base:IMpbType" minOccurs="0" maxOccurs="unbounded"/>
            </xs:choice>
            <xs:element name="USPSFacilityLocaleKey" type="mailxml_base:localeKeyType" minOccurs="0"/>
            <xs:element name="ContainerScanState" type="mailxml_dd:containerScanStateType" minOccurs="0"/>
            <xs:element name="retrieveDataBy" type="mailxml_dd:retrieveDataByType" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *ContainerVisibilityQueryRequest* and its sub-components is shown below:

Figure 2.10: ContainerVisibilityQueryRequest XSD Components

2.2.3 ContainerVisibilityQueryResponse

IV-MTR uses this data structure to respond to the customer's request with any available container or handling unit visibility data matching the request.

The XSD of *ContainerVisibilityQueryResponse* is shown below:

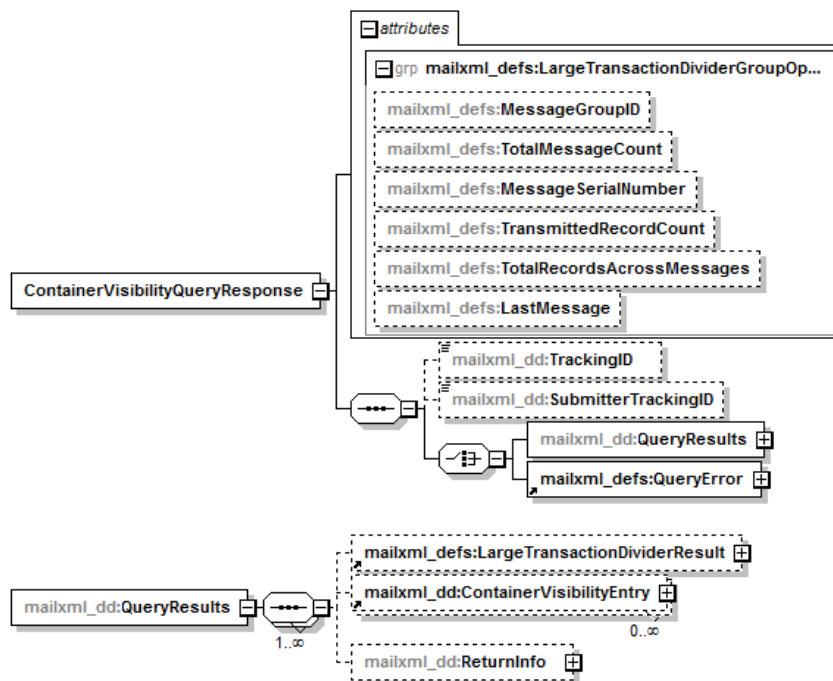**Figure 2.11: ContainerVisibilityQueryResponse XML Schema Definition**

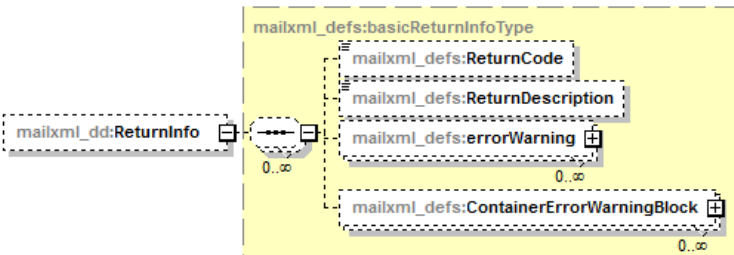```
<xs:element name="ContainerVisibilityQueryResponse">
    <xs:annotation>
        <xs:documentation>Response to the Query request for for full service container visisbility information.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="TrackingID" type="mailxml_base:s20" minOccurs="0"/>
            <xs:element name="SubmitterTrackingID" type="mailxml_base:s20" minOccurs="0"/>
            <xs:choice>
                <xs:element name="QueryResults">
                    <xs:annotation>
                        <xs:documentation/>
                    </xs:annotation>
                    <xs:complexType>
                        <xs:sequence maxOccurs="unbounded">
                            <xs:element ref="mailxml_defs:LargeTransactionDividerResult" minOccurs="0"/>
                            <xs:element ref="mailxml_dd:ContainerVisibilityEntry" minOccurs="0" maxOccurs="unbounded"/>
                            <xs:element name="ReturnInfo" type="mailxml_defs:basicReturnInfoType" minOccurs="0"/>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
                <xs:element ref="mailxml_defs:QueryError"/>
            </xs:choice>
        </xs:sequence>
        <xs:attributeGroup ref="mailxml_defs:LargeTransactionDividerGroupOptionalType"/>
    </xs:complexType>
</xs:element>
```
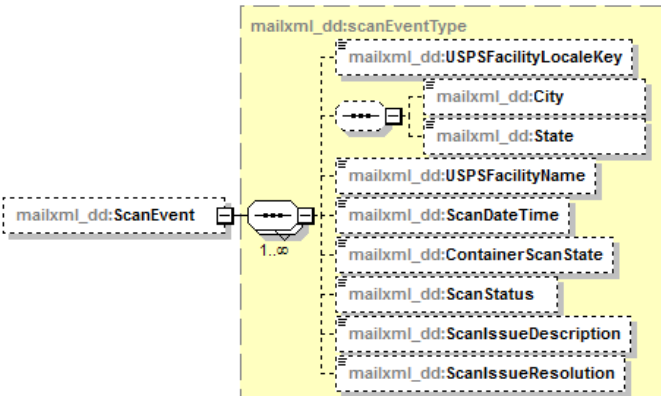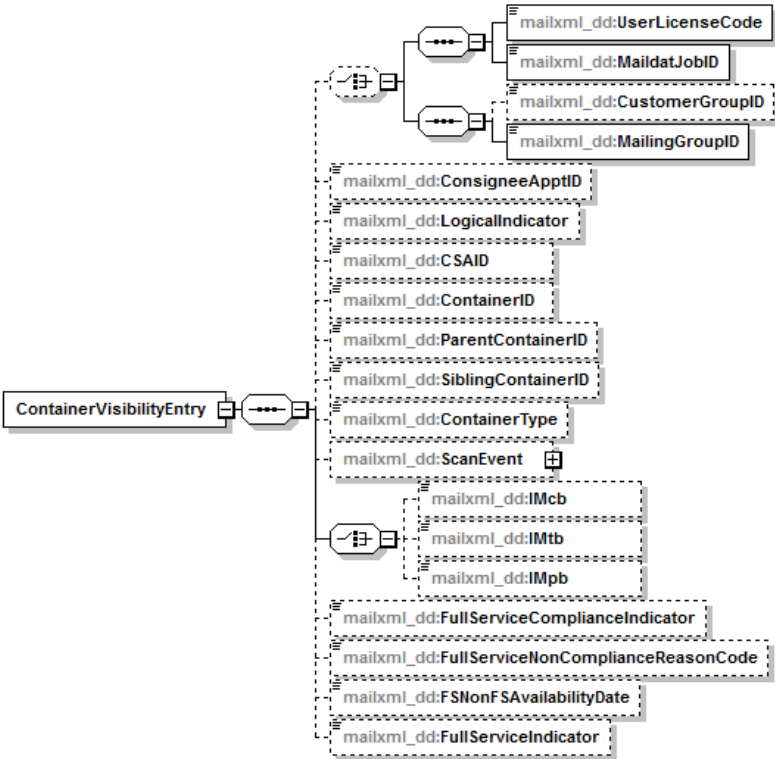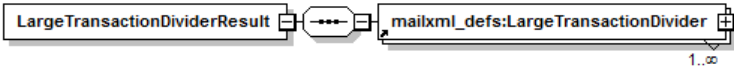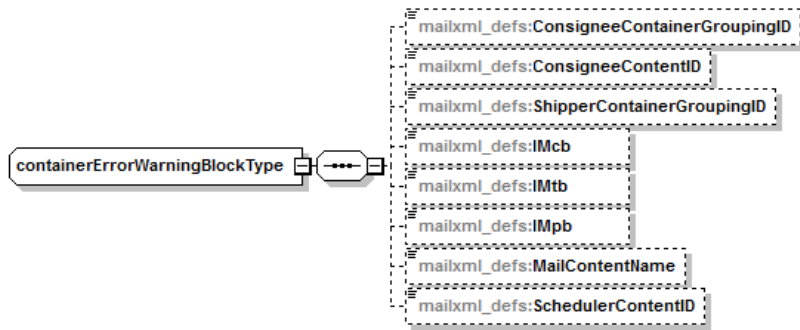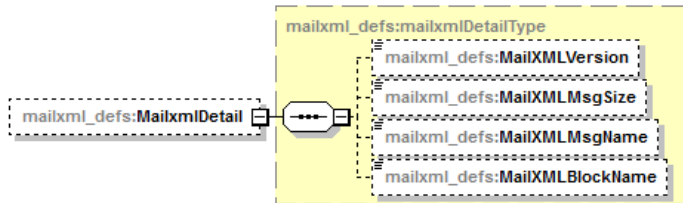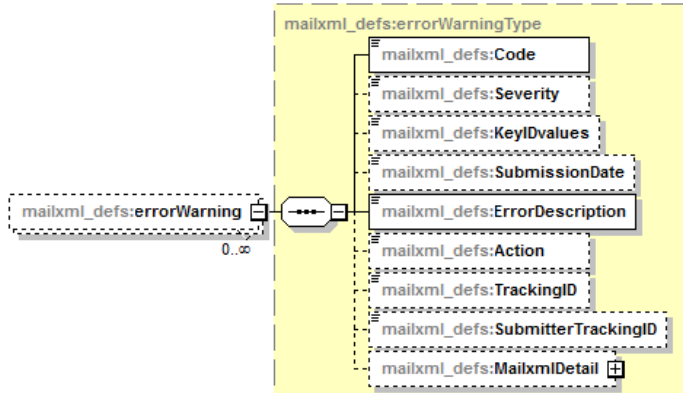
A visual representation of the XSD of *ContainerVisibilityQueryResponse* and its sub-components is shown below:

**Figure 2.12: ContainerVisibilityQueryResponse XSD Components**

```
LargeTransactionDividerResult ─[]─( •••• )─[]─▶ mailxml_defs:LargeTransactionDivider [+]
                                                                                    1..∞

LargeTransactionDivider ─[]─( ••• )─[]─ mailxml_defs:TrackingID

                                                    ┌─ mailxml_dd:UserLicenseCode
                                        ( •••• )─[]─┤
                                   ┌─[]─┤            └─ mailxml_dd:MaildatJobID
                                   │    │
                                   │    │            ┌─ mailxml_dd:CustomerGroupID
                                   │    ( •••• )─[]─┤
                                   │                 └─ mailxml_dd:MailingGroupID
                                   │
                                   ├─ mailxml_dd:ConsigneeApptID
                                   │
                                   ├─ mailxml_dd:LogicalIndicator
                                   │
                                   ├─ mailxml_dd:CSAID
                                   │
                                   ├─ mailxml_dd:ContainerID
                                   │
                                   ├─ mailxml_dd:ParentContainerID
                                   │
ContainerVisibilityEntry ─[]─( ••• )─[]─┤─ mailxml_dd:SiblingContainerID
                                   │
                                   ├─ mailxml_dd:ContainerType
                                   │
                                   ├─ mailxml_dd:ScanEvent [+]
                                   │
                                   │            ┌─ mailxml_dd:IMcb
                                   ├─( /‼ )─[]─┤─ mailxml_dd:IMtb
                                   │            └─ mailxml_dd:IMpb
                                   │
                                   ├─ mailxml_dd:FullServiceComplianceIndicator
                                   │
                                   ├─ mailxml_dd:FullServiceNonComplianceReasonCode
                                   │
                                   ├─ mailxml_dd:FSNonFSAvailabilityDate
                                   │
                                   └─ mailxml_dd:FullServiceIndicator
```

```
┌─ mailxml_dd:scanEventType ──────────────────────────────┐
│                                                          │
│            ┌─ mailxml_dd:USPSFacilityLocaleKey           │
│            │                                             │
│            │            ┌─ mailxml_dd:City               │
│            │  ( ••• )─[]─┤                               │
│            │            └─ mailxml_dd:State              │
│            │                                             │
│            ├─ mailxml_dd:USPSFacilityName                │
│            │                                             │
mailxml_dd:ScanEvent ─[]─( •••• )─[]─┤─ mailxml_dd:ScanDateTime │
│            │                                             │
│    1..∞    ├─ mailxml_dd:ContainerScanState             │
│            │                                             │
│            ├─ mailxml_dd:ScanStatus                      │
│            │                                             │
│            ├─ mailxml_dd:ScanIssueDescription            │
│            │                                             │
│            └─ mailxml_dd:ScanIssueResolution             │
└──────────────────────────────────────────────────────────┘
```

```
┌─ mailxml_defs:basicReturnInfoType ──────────────────────┐
│                                                          │
│            ┌─ mailxml_defs:ReturnCode                    │
│            │                                             │
│            ├─ mailxml_defs:ReturnDescription             │
│            │                                             │
mailxml_dd:ReturnInfo ─[]─( •••• )─[]─┤─ mailxml_defs:errorWarning [+]│
│            │                                    0..∞     │
│    0..∞    │                                             │
│            └─ mailxml_defs:ContainerErrorWarningBlock [+]│
│                                                     0..∞ │
└──────────────────────────────────────────────────────────┘
```

2.2.4 StartTheClockQueryRequest

Customers use this data structure to request container Start-the-Clock information from IV-MTR by providing the job information.

The XSD of *StartTheClockQueryRequest* is shown below:

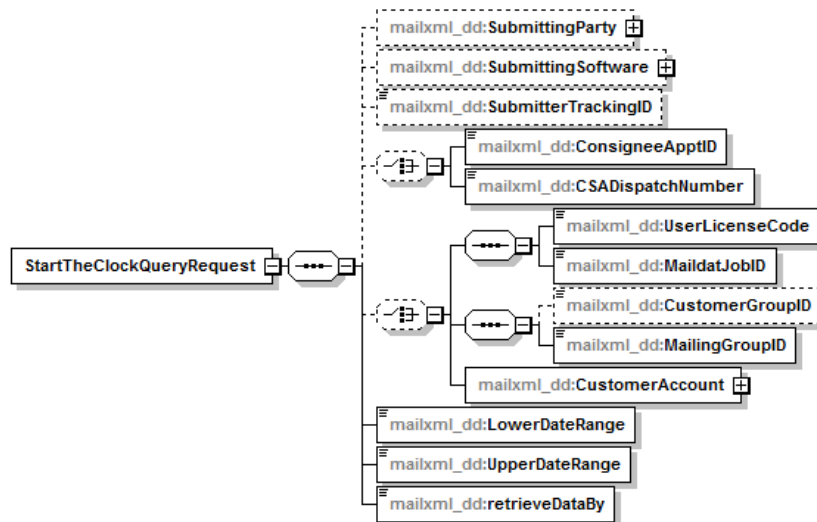**Figure 2.13: StartTheClockQueryRequest XML Schema Definition**

```
<xs:element name="StartTheClockQueryRequest">
    <xs:annotation>
        <xs:documentation>Query request for start the clock information.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType" minOccurs="0"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType" minOccurs="0"/>
            <xs:element name="SubmitterTrackingID" type="mailxml_base:s20" minOccurs="0"/>
            <xs:choice minOccurs="0">
                <xs:element name="ConsigneeApptID" type="mailxml_base:s12"/>
                <xs:element name="CSADispatchNumber" type="mailxml_base:s10"/>
            </xs:choice>
            <xs:choice minOccurs="0">
                <xs:sequence>
                    <xs:element name="UserLicenseCode" type="mailxml_base:userLicenseCodeType"/>
                    <xs:element name="MaildatJobID" type="mailxml_base:jobIDType"/>
                </xs:sequence>
                <xs:sequence>
                    <xs:element name="CustomerGroupID" type="mailxml_base:s25" minOccurs="0"/>
                    <xs:element name="MailingGroupID" type="xs:nonNegativeInteger"/>
                </xs:sequence>
                <xs:element name="CustomerAccount" type="mailxml_defs:permitPublicationDataType"/>
            </xs:choice>
            <xs:element name="LowerDateRange" type="xs:date"/>
            <xs:element name="UpperDateRange" type="xs:date"/>
            <xs:element name="retrieveDataBy" type="mailxml_dd:retrieveDataByType"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```
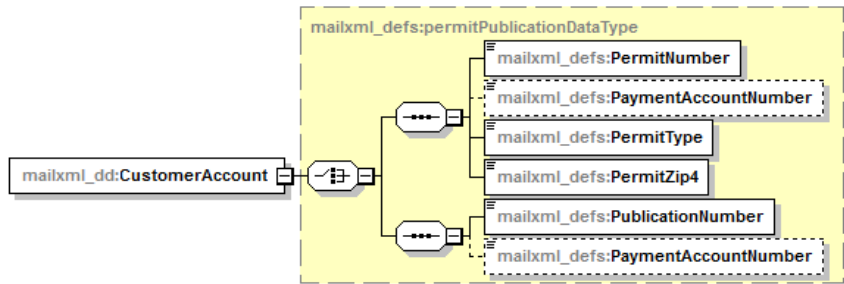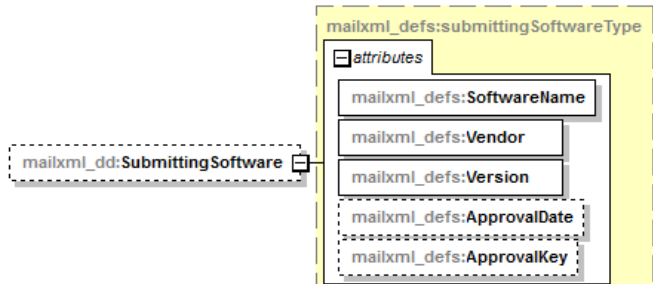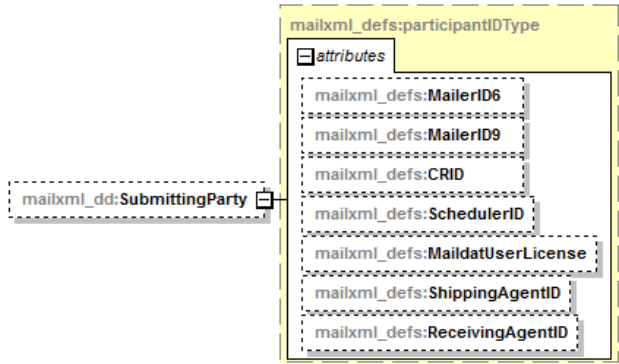
A visual representation of the XSD of *StartTheClockQueryRequest* and its sub-components is shown below:

Figure 2.14: StartTheClockQueryRequest XSD Components

mailxml_defs:participantIDType

attributes

- mailxml_defs:**MailerID6**
- mailxml_defs:**MailerID9**
- mailxml_defs:**CRID**
- mailxml_defs:**SchedulerID**
- mailxml_defs:**MaildatUserLicense**
- mailxml_defs:**ShippingAgentID**
- mailxml_defs:**ReceivingAgentID**

mailxml_dd:**SubmittingParty**

mailxml_defs:submittingSoftwareType

attributes

- mailxml_defs:**SoftwareName**
- mailxml_defs:**Vendor**
- mailxml_defs:**Version**
- mailxml_defs:**ApprovalDate**
- mailxml_defs:**ApprovalKey**

mailxml_dd:**SubmittingSoftware**

mailxml_defs:permitPublicationDataType

- mailxml_defs:**PermitNumber**
- mailxml_defs:**PaymentAccountNumber**
- mailxml_defs:**PermitType**
- mailxml_defs:**PermitZip4**
- mailxml_defs:**PublicationNumber**
- mailxml_defs:**PaymentAccountNumber**

mailxml_dd:**CustomerAccount**

2.2.5 StartTheClockQueryResponse

IV-MTR uses this data structure to respond to a customer's *StartTheClockQueryRequest* message with a *StartTheClockQueryResponse* message containing the container Start-the-Clock data that is available.

The XSD of *StartTheClockQueryResponse* is shown below:

Figure 2.15: StartTheClockQueryResponse XML Schema Definition

```
<xs:element name="StartTheClockQueryResponse">
    <xs:annotation>
        <xs:documentation>Response to the query for start the clock information.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="TrackingID" type="mailxml_base:s20" minOccurs="0"/>
            <xs:element name="SubmitterTrackingID" type="mailxml_base:s20" minOccurs="0"/>
            <xs:choice>
                <xs:element name="QueryResults">
                    <xs:annotation>
                        <xs:documentation/>
                    </xs:annotation>
                    <xs:complexType>
                        <xs:sequence maxOccurs="unbounded">
                            <xs:element ref="mailxml_defs:LargeTransactionDividerResult" minOccurs="0"/>
                            <xs:sequence maxOccurs="unbounded">
                                <xs:element name="ClockStarted" type="mailxml_dd:clockStartedType"/>
                                <xs:element name="ReturnInfo" type="mailxml_defs:basicReturnInfoType" minOccurs="0"/>
                            </xs:sequence>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
                <xs:element ref="mailxml_defs:QueryError"/>
            </xs:choice>
        </xs:sequence>
        <xs:attributeGroup ref="mailxml_defs:LargeTransactionDividerGroupType"/>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *StartTheClockQueryResponse* and its sub-components is shown below:

Figure 2.16: StartTheClockQueryResponse XSD Components
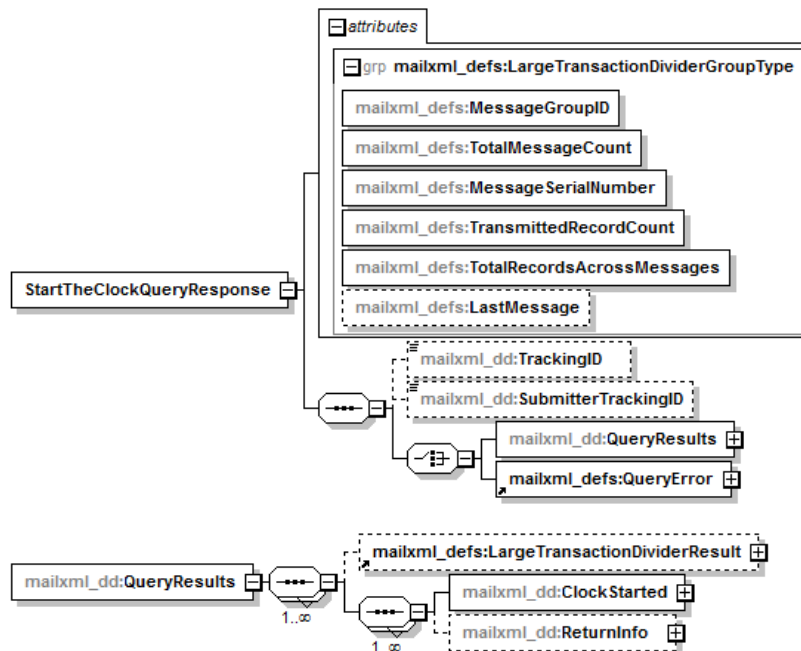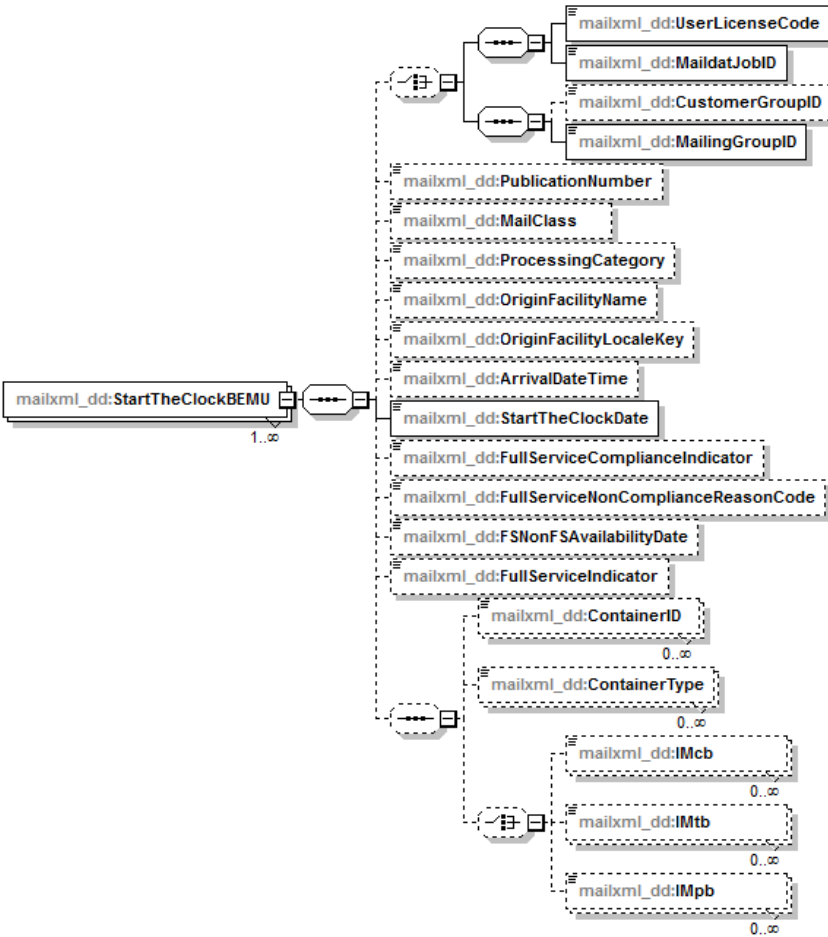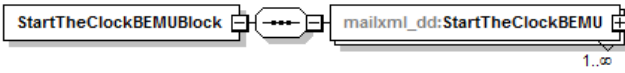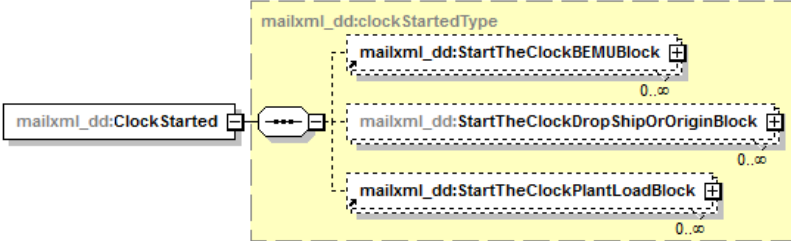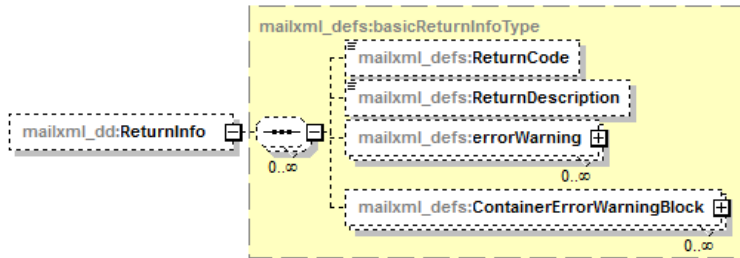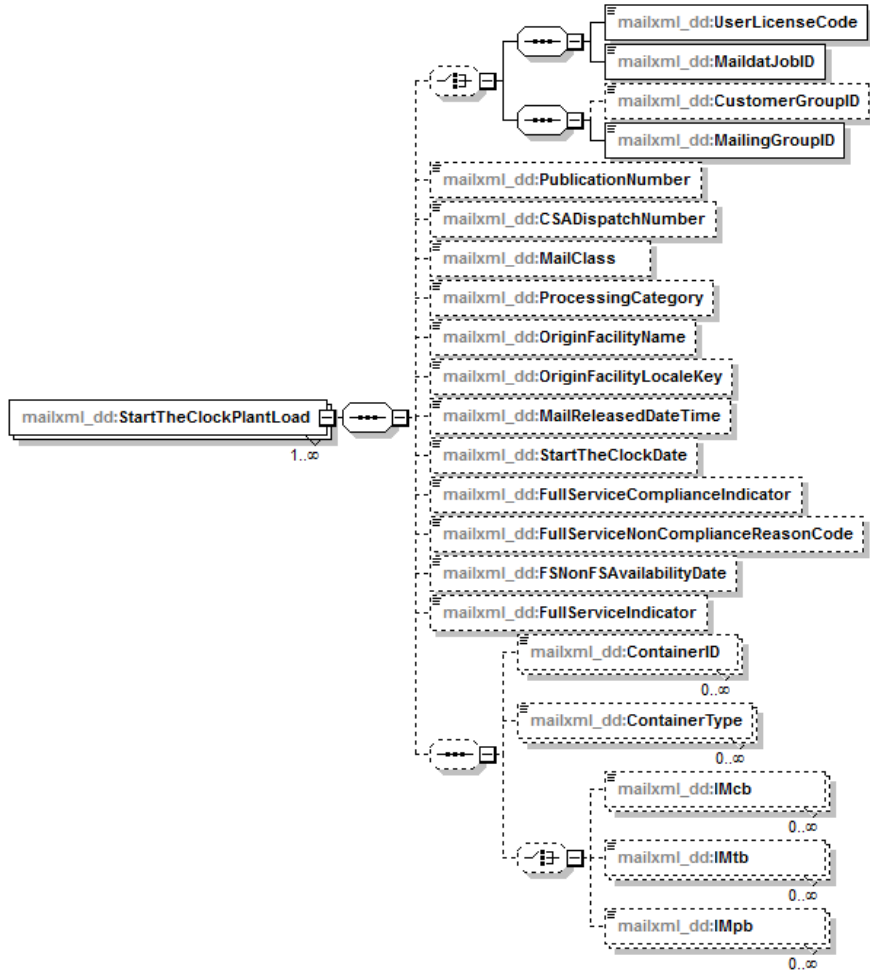
2.2.6 MessageResponseRetrievalRequest

Customers use this data structure to request additional container or handling unit visibility data available based on the TrackingID provided in the request.
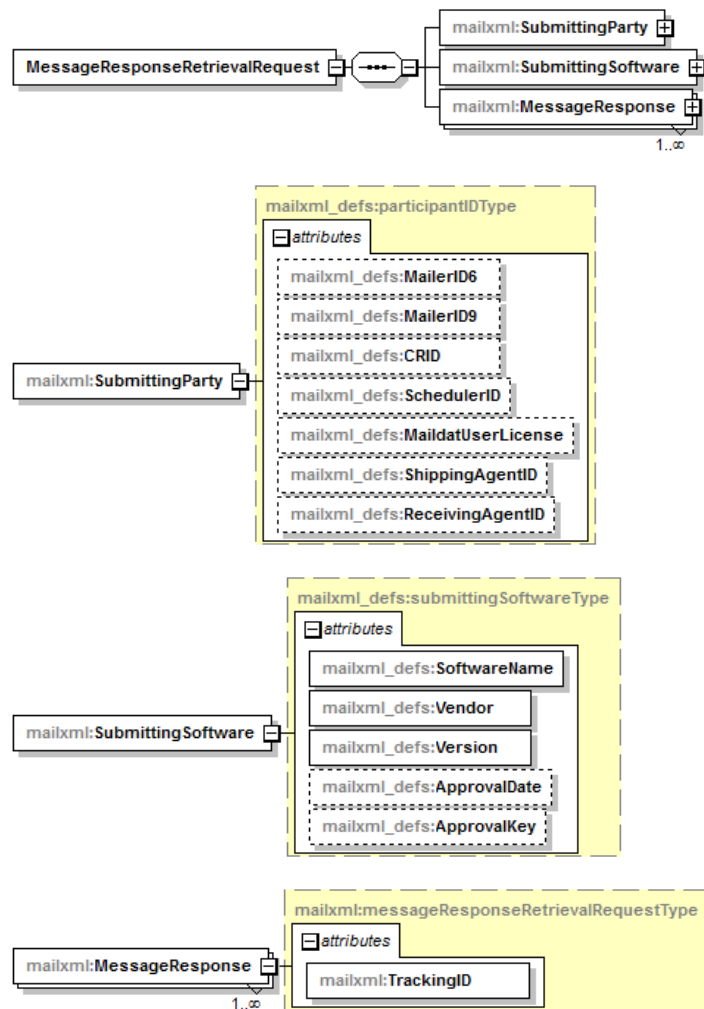
The XSD of *MessageResponseRetrievalRequest* is shown below:

Figure 2.17: MessageResponseRetrievalRequest XML Schema Definition

```
<xs:element name="MessageResponseRetrievalRequest">
    <xs:annotation>
        <xs:documentation>Request to send responses once more when the response was interrupted by a system fault.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:sequence>
            <xs:element name="SubmittingParty" type="mailxml_defs:participantIDType"/>
            <xs:element name="SubmittingSoftware" type="mailxml_defs:submittingSoftwareType"/>
            <xs:element name="MessageResponse" type="mailxml:messageResponseRetrievalRequestType" maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *MessageResponseRetrievalRequest* and its sub-components is shown below:

Figure 2.18: MessageResponseRetrievalRequest XSD Components

2.2.7 MessageResponseRetrievalResponse

IV-MTR uses this data structure to respond to the message retrieval request by providing the available container or handling unit data for the TrackingID provided in the request.

The XSD of *MessageResponseRetrievalResponse* is shown below:

Figure 2.19: MessageResponseRetrievalResponse XML Schema Definition

```
<xs:element name="MessageResponseRetrievalResponse">
    <xs:annotation>
        <xs:documentation>Response to the Message Response Retrieval Request that resends interrupted responses.</xs:documentation>
    </xs:annotation>
    <xs:complexType>
        <xs:choice maxOccurs="unbounded">
            <xs:element name="MessageResponseRetrievalAccept" type="mailxml:messageResponseRetrievalResponseType"/>
            <xs:element name="MessageResponseRetrievalReject" type="mailxml:messageResponseNotAvailableResponseType"/>
        </xs:choice>
    </xs:complexType>
</xs:element>
```

A visual representation of the XSD of *MessageResponseRetrievalResponse* and its sub-components is shown below:

Figure 2.20: MessageResponseRetrievalResponse XSD Components
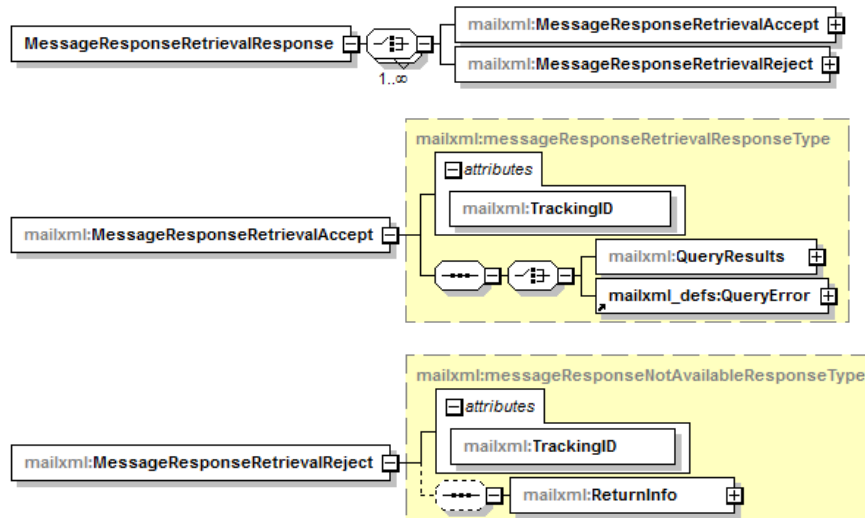
3 Getting Started with Mail.XML

Notes:

- The information in this section pertains to users who are new to using Mail.XML to receive mail tracking information. For existing *PostalOne!* customers using Mail.XML to receive mail tracking information, separate migration instructions will be provided.

- It is assumed that users have technical resources available to assist in getting started with Mail.XML. This document can only provide general instructions because the specific details will vary based on your system and server configuration.

- IV-MTR currently supports Mail.XML versions 12.0A, 12.0B, 14.0A, and 16.0 for all messages. For Start-the-Clock messages, IV-MTR supports these versions as well as version 21.0.

To use either Mail.XML push or pull messages, you must first complete the following steps. See the sections below for additional information about the steps for getting started:

Table 3.1: Steps to Get Started with Mail.XML

	Steps
Mail.XML Push	1. Download and install the IV-MTR Web Services Description Language (WSDL) file 2. Purchase and install a signed Secure Sockets Layer (SSL) certificate (Verisign or Comodo) on your servers 3. Register for the IV-MTR service through the Business Customer Gateway (BCG) 4. Test push messages (required)
Mail.XML Pull	1. Download and install the IV-MTR WSDL file 2. Download and install the IV-MTR SSL certificate 3. Register for the IV-MTR service through the BCG 4. Test pull messages (optional)

3.1 Install WSDL File

A WSDL definition file is an XML-based document that automates the details involved in communication between applications. The first step in using Mail.XML push and pull messages is to download and install the appropriate IV-MTR WSDL file. For Mail.XML pull, there is one WSDL file. For Mail.XML push, use the IV-MTR WSDL file corresponding to the version of Mail.XML your system uses.

The IV-MTR WSDL files are available to download from the IV-MTR PostalPro page.

3.2 Install SSL Certificate

An SSL certificate provides communication security between a web browser and a web server. Whether you need to install an SSL certificate on your own servers or download and install the IV-MTR SSL certificate depends on whether you want to use push or pull messages. Please see the appropriate section below.

3.2.1 Push

To use Mail.XML push messages, you must purchase and install a signed SSL certificate on the servers that will receive data from Postal Service servers. The Postal Service currently supports certificates obtained from Verisign or Comodo only.

3.2.2 Pull

To use Mail.XML pull messages, you must download and install the IV-MTR SSL certificate. The IV-MTR SSL certificate is available on the IV-MTR PostalPro page.

3.3 Register for IV-MTR Service through BCG

See the *IV-MTR User Guide* for instructions to register for the IV-MTR service through the BCG.

3.4 Test Messages

The final step is for the mailer to test the push or pull messages. Testing is required before using push messages. Testing is optional for using pull messages but is strongly recommended.

3.4.1 Push Messages

To test push messages, follow these steps:

1. Add your web service as an entry in your IV-MTR address book.

   Note: Instructions for doing this are included in the User Guide.

2. In the server address book entry, click **Test Server Connection**. IV-MTR sends a test push message to your web service and determines if the communication was successful or not. If the test was successful, that endpoint is marked as "validated" in IV-MTR and can then be used for a push subscription.

Note: Any time you add or change a web service endpoint, you should repeat the test process above for push messages.

3.4.2 Pull Messages

To test pull messages, follow these steps:

1. Download the IV-MTR Mail.XML Test Pull Messages ZIP file from the IV-MTR PostalPro page.

2. Post the appropriate test request file in your pull client.

3. Using your client, send the test pull request to IV-MTR. If the connection to IV-MTR is successful, a reference response is sent back to your client.

4   Customer Support

The IV Solutions Center through the Postal Service National Customer Support Center (NCSC):

- Provides full support for initial onboarding
- Provides full support for all IV-MTR needs
    - Questions
    - Account administration
    - Research for visibility issues
    - Barcode testing and certification
- Is able to address most issues on initial call
- Will escalate to necessary functional organizations to address any systemic issues
- Escalates issues to management

Telephone	1-800-238-3150, Option #2
Email	InformedVisibility@usps.gov
Mail	USPS National Customer Support Center ATTN: Informed Visibility 225 N. Humphreys Blvd, Suite 501 Memphis, TN 38188-1001

Within the application, access the contact information for the IV Solutions Center by clicking the **Contact Us** 📞 (telephone) widget at the top left of the screen.
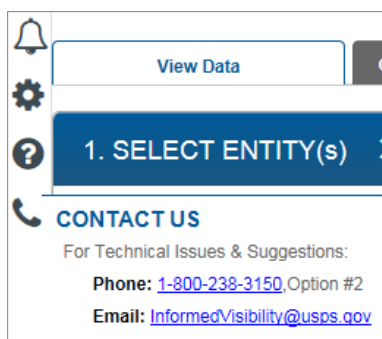
General information about IV-MTR is available on the IV-MTR PostalPro page.

Appendix A   Change History

Date	Version	Description
3/22/2019	3.0	• Added version number and date to cover page. • Added note to Section 2: *Mail.XML Mail Tracking Messages* and 3: *Getting Started with Mail.XML* that IV-MTR supports version 21.0 for Start-the-Clock messages. • Removed notes throughout Section 2: *Mail.XML Mail Tracking Messages* and its subsections that Start-the-Clock messages will be available in a future release. • Removed IV Solutions Center hours from Section 4: *Customer Support.*
8/29/2018	2.6	• Updated "IV-MTR Help Desk" to "IV Solutions Center" throughout the document.
5/11/2018	2.5	• Added notes to indicate that *StartTheClockDelivery* and *StartTheClockNotification* messages will be available in a future release.
2/9/2018	2.4	• Because *StartTheClockDelivery* and *StartTheClockNotification* messages are available, removed notes stating they would be available in a future release. • Updated Appendix D: *Mail.XML Schemas and Specifications* to reflect changes to the IDEAlliance website.
1/8/2018	2.3	• Throughout the entire document, updated "IV" to "IV-MTR". • Updated Section 4: *Customer Support* to include information about the **Contact Us** widget.
9/28/2017	2.2	• Updated Section 3.4.2: *Pull Messages* to include link to the Test Pull Messages file and instructions for using the test messages. • Updated Appendix C: *References* with references to PostalPro and included additional references. • Removed references to the IV RIBBS page.
8/23/2017	2.1	• Updated Informed Visibility trademark symbol to registered trademark symbol. • Added links to the *IV-MTR User Guide* and IV PostalPro page. • Added Sections 2.1.1: *Use Push Messages in* and 2.2.1: *Use Pull Messages in .* • Added link for the IV WSDL files to Section 3.1: *Install WSDL File.* • Updated Appendix C: *References* to include link to the IV application and the IV PostalPro page.

Date	Version	Description
9/8/2016	2.0	• Changed title from "Technical Guide" to "Mail.XML Guide". • Moved following sections to *IV-MTR User Guide*: – Data Provisioning Options – Data Dictionary – Definitions – Business Rules – Legacy *PostalOne!* Informed Visibility Download File Format • Revised Section 3: *Getting Started with Mail.XML*, which included addition of link to IV SSL certificate. • Removed FAQs.
6/29/2016	1.1	• Updated Section 2.1.3.1: *Legacy IMb Tracing* to specify that Suppressed Routing Code is included. (Section later moved to User Guide.)
6/27/2016	1.0	• First published version. • Removed *MPSVis* Mail.XML messages pending determination of method to deliver additional bundle visibility.
6/9/2016	0.17	• Draft for MTAC UG4 review

Appendix B   Acronyms and Abbreviations

Acronym or Abbreviation	Description
BCG	Business Customer Gateway
CRID	Customer Registration ID
CSA	customer supplier agreement
FS	Full-Service
IMb	Intelligent Mail barcode
IMpb	Intelligent Mail package barcode
IMcb	Intelligent Mail container barcode
IMtb	Intelligent Mail tray barcode
IV-MTR	Informed Visibility Mail Tracking & Reporting
MID	Mailer ID
MTAC UG4	Mailers' Technical Advisory Committee User Group 4
NCSC	National Customer Support Center
NFS	non Full-Service
SSL	Secure Sockets Layer
USPS	United States Postal Service
XML	eXtensible Markup Language
XSD	XML Schema Definition
WSDL	Web Services Description Language

Appendix C   References

Business Customer Gateway (BCG)

https://gateway.usps.com

Electronic Documentation (eDoc) page on PostalPro

https://postalpro.usps.com/mailing/edoc

Full-Service Fact Sheets page on PostalPro

https://postalpro.usps.com/node/2788

IDEAlliance Mail.XML specifications

https://www.idealliance.org/mail-xml

IV Mail Tracking & Reporting application

https://iv.usps.com

IV-MTR page on PostalPro

https://postalpro.usps.com/visibility-and-tracking/informed-visibility-iv

Mailing Services page on PostalPro

https://postalpro.usps.com/mailing
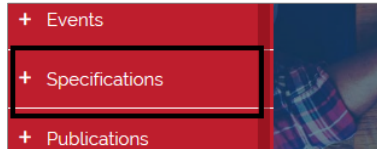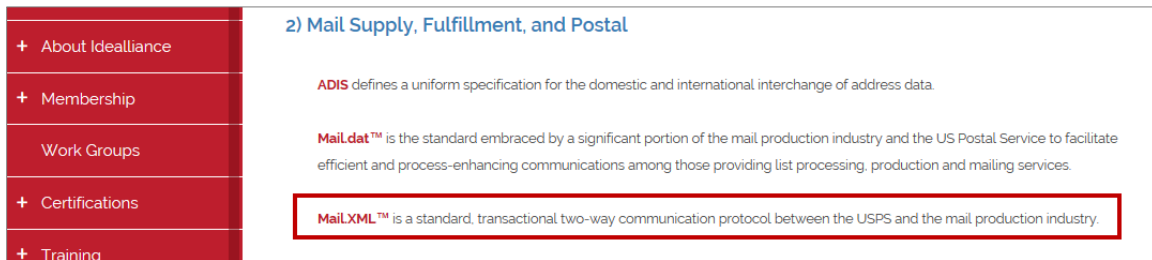
Appendix D   Mail.XML Schemas and Specifications

IDEAlliance publishes the Mail.XML schema definitions and specifications. To download the schema definitions and specifications, follow these instructions:

1. Go to the IDEAlliance site: http://www.idealliance.org.

2. In the left-hand navigation, click **Specifications**.
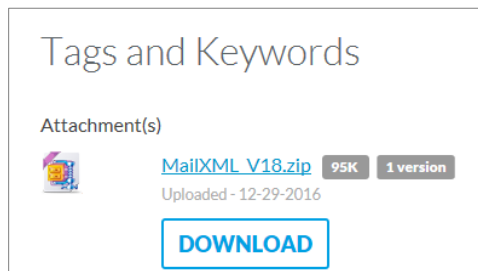
3. Under **2) Mail Supply, Fulfillment, and Postal**, click **Mail.XML™**.

4. Click the download link for the desired Mail.XML version.

5. On the download page, click **Download**.

Appendix E Extract of Mail.XML Element, Complex Type, and Attribute Definitions

The element, complex type, and attribute definitions contained in this appendix were extracted from the IDEAlliance® Mail.XML Version 16.0 Specifications and XSDs. See Appendix D: *Mail.XML Schemas and Specifications* for instructions to obtain these documents.

E.1 Complex Type: basicReturnInfoType

Field	Format	Acceptable Values	Business Rules	Comments
basicReturnInfoType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	Optional 0 to many allowed	-
ReturnCode	ns04	-	Optional	Refer to Mail.XML Base schema
ReturnDescription	s260	-	Required	Refer to Mail.XML Base schema
errorWarning	errorWarningType	-	Optional	Refer to Mail.XML Defs schema
ContainerErrorWarningBlock	containerErrorWarningBlockType	-	Optional	Refer to Mail.XML Defs schema
Sequence Block ENDS	-	-	-	-
basicReturnInfoType ENDS	-	-	-	-

E.2 Complex Type: clockStartedType

Field	Format	Acceptable Value	Business Rules	Comments
clockStarted Type BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
StartTheClockBEMUBlock	StartTheClockBEMU	-	-	See Mail.XML DD schema
StartTheClockDropShipOrigin Block	StartTheClockDropShip OrOrigin	-	-	See Mail.XML DD schema
StartTheClockPlantLoadBlock	StartTheClockPlantLoad	-	-	See Mail.XML DD schema
Sequence Block ENDS	-	-	-	-
clockStarted Type ENDS	-	-	-	-

E.3   Element: ContainerVisibilityEntry

Field	Format	Acceptable Values	Business Rules	Comments
ContainerVisibilityEntry BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
Choice Block BEGINS	-	-	Optional	-
Sequence Block BEGINS	-	-	-	-
UserLicenseCode	userLicenseCodeType	-	-	Refer to this simple type in Appendix F
MaildatJobID	jobIDType	-	Required when Mail.dat is used	Refer to this simple type in Appendix F
Sequence Block ENDS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
CustomerGroupID	s25	-	Optional	Refer to this simple type in Appendix F
MailingGroupID	nonNegativeInteger	-	Required	-
Sequence Block ENDS	-	-	-	-
Choice Block ENDS	-	-	-	-
ConsigneeApptID	s12	-	Optional	Refer to this simple type in Appendix F
LogicalIndicator	yesNo	-	Optional	Refer to this simple type in Appendix F
CSAID	s10	-	Optional	Refer to this simple type in Appendix F
ContainerID	s06	-	Optional	Refer to Mail.XML Base schema
ParentContainerID	s06	-	Optional	Refer to Mail.XML Base schema
SiblingContainerID	s06	-	Optional	Refer to Mail.XML Base schema
ContainerType	mailXMLContainerType	-	Optional	Refer to Mail.XML Base schema
ScanEvent	scanEventType	-	Optional	Refer to Mail.XML DD schema
Choice Block BEGINS	-	-	-	-

Field	Format	Acceptable Values	Business Rules	Comments
IMcb	IMcbType	-	Optional	Refer to this simple type in Appendix F
IMtb	IMtbType	-	Optional	Refer to this simple type in Appendix F
IMpb	IMpbType	-	Optional	Refer to this simple type in Appendix F
Choice Block ENDS	-	-	-	-
FullServiceComplianceIndicator	fullServiceComplianceIndicatorType	-	Optional	Refer to Mail.XML DD schema
FullServiceNonComplianceReasonCode	reasonCodeType	-	Optional	Refer to Mail.XML DD schema
FSNonFSAvailabilityDate	date	-	Optional	-
FullServiceIndicator	yesNo	-	Optional	Refer to this simple type in Appendix F
Sequence Block ENDS	-	-	-	-
ContainerVisibilityEntry ENDS	-	-	-	-

E.4   Element: DataRecipient

Field	Format	Acceptable Values	Business Rules	Comments
DataRecipient BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
CRID	CRIDType	-	Required	Refer to Mail.XML Base schema
Role	roleType	-	Required	Refer to Mail.XML Base schema
Sequence Block ENDS	-	-	-	-
DataRecipient ENDS	-	-	-	-

E.5   Element: IMbMailpieceScanData

Field	Format	Acceptable Values	Business Rules	Comments
IMbMailpieceScanData BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	Optional	-

Field	Format	Acceptable Values	Business Rules	Comments
UserLicenseCode	userLicenseCodeType	-	-	Refer to this simple type in Appendix F
MaildatJobID	jobIDType	-	-	Refer to this simple type in Appendix F
CustomerGroupID	s25	-	-	Refer to this simple type in Appendix F
MailingGroupID	nonNegativeInteger	-	Optional	-
Choice Block BEGINS	-	-	-	-
MailBundleCount	nonNegativeInteger	-	-	-
MPSCount	nonNegativeInteger	-	-	-
Choice Block ENDS	-	-	-	-
Choice Block BEGINS	-	-	-	-
IMcbAndIMtbPieceScanInfo	-	-	-	-
IMcbPieceScanInfo	-	-	-	-
IMtbPieceScanInfo	-	-	-	-
IMbScanRec	s500	-	Unbounded	Refer to Mail.XML DD schema
Choice Block ENDS	-	-	-	-
Sequence Block ENDS	-	-	-	-
IMbMailpieceScanData ENDS	-	-	-	-

E.6   Attribute Group: LargeTransactionDividerGroupType

Field	Format	Acceptable Values	Business Rules	Comments
LargeTransactionDividerGroupType BEGINS	-	-	-	-
MessageGroupID	s20	-	Required	Refer to this simple type in Appendix F
TotalMessageCount	positiveInteger	-	Required	-
MessageSerialNumber	positiveInteger	-	Required	-
TransmittedRecordCount	positiveInteger	-	Required	-
TotalRecordsAcrossMessages	positiveInteger	-	Required	-
LastMessage	yesNo	-	Optional Default set to "No"	Refer to this simple type in Appendix F
LargeTransactionDividerGroupType ENDS	-	-	-	-

E.7   Attribute Group: LargeTransactionDividerGroupOptionalType

Field	Format	Acceptable Values	Business Rules	Comments
LargeTransactionDividerGroupOptionalType BEGINS	-	-	-	-
MessageGroupID	s20	-	Optional	Refer to this simple type in Appendix F
TotalMessageCount	positiveInteger	-	Optional	-
MessageSerialNumber	positiveInteger	-	Optional	-
TransmittedRecordCount	positiveInteger	-	Optional	-
TotalRecordsAcrossMessage	positiveInteger	-	Optional	-
LastMessage	yesNo	-	Optional Default set to "No"	Refer to this simple type in Appendix F
LargeTransactionDividerGroupOptionalType ENDS	-	-	-	-

E.8   Element: LargeTransactionDividerResult

Field	Format	Acceptable Values	Business Rules	Comments
LargeTransactionDividerResult BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
LargeTransactionDivider	LargeTransactionDivider	-	-	Refer to Mail.XML Defs schema
Sequence Block ENDS	-	-	-	-
LargeTransactionDividerResult ENDS	-	-	-	-

E.9   Complex Type: manifestScanEventDetailType

Field	Format	Acceptable Values	Business Rules	Comments
manifestScanEventDetailType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
USPSEventExtractFileVersionNumber	s03	-	-	Refer to Mail.XML Base schema
IMpb	IMpbType	-	-	Refer to this simple type in Appendix F

Field	Format	Acceptable Values	Business Rules	Comments
ElectronicFileNumber	s34	-	-	Refer to Mail.XML Base schema
MailerID	MIDType	-	-	Refer to Mail.XML Defs schema
MailerName	s20	-	-	Refer to this simple type in Appendix F
DestinationZipCode	zipCode	-	-	-
DestinationZipPlusFour	s09	-	-	Refer to Mail.XML Base schema
ScanningFacilityZip	zipCode	-	-	-
ScanningFacilityName	s31	-	-	Refer to Mail.XML Base schema
EventCode	s02	-	-	Refer to Mail.XML Base schema
EventName	s40	-	-	Refer to Mail.XML Base schema
EventDate	date	-	-	-
EventTime	time	-	-	-
MailerOwnerID	MIDType	-	-	Refer to Mail.XML Defs schema
CustomerReferenceID	s40	-	-	Refer to Mail.XML Base schema
DestinationCountryCode	s02	-	-	Refer to Mail.XML Base schema
RecipientName	s20	-	-	Refer to this simple type in Appendix F
OriginalLabel	s34	-	-	Refer to Mail.XML Base schema
UnitofMeasureCode	ns01	-	-	Refer to Mail.XML Base schema
Weight	ns09	-	-	Refer to Mail.XML Base schema
GuaranteedDeliveryDate	time	-	-	-

Field	Format	Acceptable Values	Business Rules	Comments
GuaranteedDeliveryTime	time	-	-	-
LogisticsManagerMailerID	MIDType	-	-	Refer to Mail.XML Defs schema
Sequence Block ENDS	-	-	-	-
manifestScanEventDetailType ENDS	-	-	-	-

E.10 Complex Type: manifestScanQueryType

Field	Format	Acceptable Values	Business Rules	Comments
manifestScanQueryType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
ConsigneeManifestID	ns22	-	-	Refer to this simple type in Appendix F
Sequence Block ENDS	-	-	-	-
manifestScanQueryType ENDS	-	-	-	-

E.11 Complex Type: manifestScanNotificationDataType

Field	Format	Acceptable Values	Business Rules	Comments
manifestScanNotificationDataType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
ConsigneeManifestID	ns22	-	-	Refer to this simple type in Appendix F
Sequence Block ENDS	-	-	-	-
manifestScanNotificationDataType ENDS	-	-	-	-

E.12 Complex Type: messageResponseNotAvailableResponseType

Field	Format	Acceptable Values	Business Rules	Comments
messageResponseNotAvailableResponseType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
ReturnInfo	returnInfoType	-	-	See Mail.XML Defs schema
Sequence Block ENDS	-	-	-	-

Field	Format	Acceptable Values	Business Rules	Comments
TrackingID	s20	-	Required	Refer to this simple type in Appendix F
messageResponseNotAvailable ResponseType ENDS	-	-	-	-

E.13   Complex Type: messageResponseRetrievalRequestType

Field	Format	Acceptable Values	Business Rules	Comments
messageResponseRetrievalRequestType BEGINS	-	-	-	-
TrackingID	s20	-	Required	Refer to this simple type in Appendix F
messageResponseRetrievalRequestType ENDS	-	-	-	-

E.14   ComplexType: messageResponseRetrievalResponseType

Field	Format	Acceptable Values	Business Rules	Comments
messageResponseRetrievalResponseType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
Choice Block BEGINS	-	-	-	-
QueryResults Block BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
Choice Block BEGINS	-	-	-	-
ContainerVisibilityQueryResponse	ContainerVisibilityQueryResponse	-	-	Refer to this message in Section 2.2.3
StartTheClockQueryResponse	StartTheClockQueryResponse	-	-	Refer to this message in Section 2.2.5
Choice Block ENDS	-	-	-	-
ReturnInfo	basicReturnInfoType	-	-	Refer to this complex type in Appendix D
Sequence Block ENDS	-	-	-	-
QueryError Block BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
ReturnInfo	basicReturnInfoType	-	-	Refer to this complex type in Appendix D

Field	Format	Acceptable Values	Business Rules	Comments
Sequence Block ENDS	-	-	-	-
QueryError Block ENDS	-	-	-	-
DeliveryResponse	DeliveryResponse	-	-	Refer to Mail.XML schema
NotificationResponse	NotificationResponse	-	-	Refer to Mail.XML schema
SystemVersionQueryResponse	SystemVersionQueryResponse	-	-	Refer to Mail.XML schema
Choice Block ENDS	-	-	-	-
Sequence Block ENDS	-	-	-	-
TrackingID	s20	-	Required	Refer to this simple type in Appendix F
messageResponseRetrievalResponsetType ENDS	-	-	-	-

E.15   ComplexType: MPSNotificationDataType

Field	Format	Acceptable Values	Business Rules	Comments
MPSNotificationDataType BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
MPSRBlock	MPSRBlockType	-	-	See Mail.XML DD schema
MPSAvailabilityDate	date	-	-	-
Sequence Block ENDS	-	-	-	-
MPSNotificationDataType ENDS	-	-	-	-

E.16   Complex Type: participantIDType

Field	Format	Acceptable Values	Business Rules	Comments
participantIDType BEGINS	-	-	-	-
MailerID6	mailerID6Type	-	Not required (attribute) Either MailerID6 or MailerID9 can be provided, not both	Refer to Mail.XML Base schema

Field	Format	Acceptable Values	Business Rules	Comments
MailerID9	mailerID9Type	-	Not required (attribute) Either MailerID6 or MailerID9 can be provided, not both	Refer to Mail.XML Base schema
CRID	CRIDType	-	Not required (attribute) Either CRID or MID can be provided for authorization	Refer to Mail.XML Base schema
SchedulerID	s12	-	Optional	Refer to this simple type in Appendix F
MaildatUserLicense	userLicenseCodeType	-	Optional	Refer to this simple type in Appendix F
ShippingAgentID	s12	-	Optional	Refer to this simple type in Appendix F
ReceivingAgentID	s12	-	Optional	Refer to this simple type in Appendix F
participantIDType ENDS	-	-	-	-

E.17 Complex Type: permitPublicationDataType

Field	Format	Acceptable Values	Business Rules	Comments
permitPublicationDataType BEGINS	-	-	-	-
Choice Block BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
PermitNumber	s08	-	-	Refer to Mail.XML Base schema
PaymentAccountNumber	s20	-	-	Refer to this simple type in Appendix F
PermitType	permitTypeType	-	-	Refer to Mail.XML Base schema
PermitZip4	ns09	-	-	Refer to Mail.XML Base schema
Sequence Block ENDS	-	-	-	-

Field	Format	Acceptable Values	Business Rules	Comments
Sequence Block BEGINS	-	-	-	-
PublicationNumber	s08	-	-	Refer to Mail.XML Base schema
PaymentAccountNumber	s20	-	-	Refer to this simple type in Appendix F
Sequence Block ENDS	-	-	-	-
Choice Block ENDS	-	-	-	-
permitPublicationDataType ENDS	-	-	-	-

E.18 Element: QueryError

Field	Format	Acceptable Values	Business Rules	Comments
QueryError BEGINS	-	-	-	-
Sequence Block BEGINS	-	-	-	-
ReturnInfo	basicReturnInfoType	-	-	Refer to this complex type in Appendix D
Sequence Block ENDS	-	-	-	-
QueryError ENDS	-	-	-	-

E.19 Complex Type: submittingSoftwareType

Field	Format	Acceptable Values	Business Rules	Comments
submittingSoftwareType BEGINS	-	-	-	-
SoftwareName	string	-	Required	-
Vendor	string	-	Required	-
Version	string	-	Required	-
ApprovalDate	date	YYYY-MM-DD	Optional	-
ApprovalKey	string	-	Optional	-
submittingSoftwareType ENDS	-	-	-	-

Appendix F   Extract of Mail.XML Simple Type Definitions

The simple type definitions contained in this appendix were extracted from the IDEAlliance Mail.XML Version 16.0 Specifications and XSDs. See Appendix D: *Mail.XML Schemas and Specifications* for instructions to obtain these documents.

F.1   Simple Type: containerScanStateType

Tag	Value
Base	string
enumeration	Electronic Information Received
enumeration	Entered at USPS
enumeration	Enroute Depart
enumeration	Enroute
enumeration	Enroute Arrive
enumeration	All Scan States

F.2   Simple Type: countTypeType

Tag	Value
Base	string
enumeration	IMcb
enumeration	IMtb
enumeration	IMpb

F.3   Simple Type: eDocTypeType

Tag	Value
Base	string
enumeration	101
enumeration	102
enumeration	103
enumeration	104
enumeration	105
enumeration	106
enumeration	107
enumeration	108
enumeration	109
enumeration	110

F.4   Simple Type: IMcbType

Tag	Value
Base	string
maxLength	24
minLength	21

F.5   Simple Type: IMpbType

Tag	Value
Base	string
maxLength	34
minLength	21

F.6   Simple Type: IMtbType

Tag	Value
Base	string
maxLength	24
minLength	24

F.7   Simple Type: jobIDType

Tag	Value
Base	string
maxLength	8
minLength	1
whiteSpace	preserve

F.8   Simple Type: localeKeyType

Tag	Value
Base	s09*

Refer to Mail.XML Base schema

F.9   Simple Type: ns22

Tag	Value
Base	string
value	[0-9]{22}

F.10 Simple Type: retrieveDataByType

Tag	Value
Base	string
enumeration	FS
enumeration	NFS
enumeration	Both

F.11 Simple Type: s10

Tag	Value
Base	string
maxLength	10
minLength	1
whiteSpace	preserve

F.12 Simple Type: s12

Tag	Value
Base	string
maxLength	12
minLength	1
whiteSpace	preserve

F.13 Simple Type: s20

Tag	Value
Base	string
maxLength	20
minLength	1
whiteSpace	preserve

F.14 Simple Type: s22

Tag	Value
Base	string
maxLength	22
minLength	1
whiteSpace	preserve

F.15   Simple Type: s25

Tag	Value
Base	string
maxLength	25
minLength	1
whiteSpace	preserve

F.16   Simple Type: userLicenseCodeType

Tag	Value
Base	string
maxLength	4
minLength	1
whiteSpace	preserve

F.17   Simple Type: yesNo

Tag	Value
Base	string
enumeration	Yes
enumeration	No