

ATD-2 TTP Traffic Management Messages

Traffic Management Restriction messages are published as two flows: steady state and resync.

Steady State messages are sent in real-time as traffic management information changes. (See [Traffic Management Schema Data](#) for details).

Resyncs consist of **Traffic Management Restriction** messages being sent for current traffic management information. They are preceded and succeeded by **Periodic Start** and **Periodic End** messages to distinguish themselves from the steady state messages. The resync is intended to be used by systems during startup or error recovery. **Heartbeat** messages are sent every 4.5 minutes and contain only header information.

A **System Start** message is sent out during the TTP system startup that will immediately be followed by a resync message. Resyncs will continue to be sent out every 15 minutes.

Message	System Start	Steady State	Resync
Traffic Management Restrictions	✓	✓	✓
System Start	✓		
Periodic Start	✓		✓
Periodic End	✓		✓
Heartbeat		✓	

TTP Message Headers

Traffic Management Restriction Messages published by TTP are JMS Text Messages, containing a standard JMS header augmented with TTP specific information.

System start and resync start/end messages will consist of only a header. They can be distinguished by the SYNC and DATA_GROUP values in the header.

Traffic Management Restriction messages also include a message body consisting formatted Traffic Management information (See [Traffic Management Schema Data](#) for details). They can be distinguished by the DATA_GROUP and MESSAGE_TYPE values in the header.

Message	Data Group	Body	Message Type
Traffic Management Restrictions	TrafficManagement Restrictions	TrafficManagementRestrictions	TrafficManagementRestrictions
System Start	TrafficManagement Restrictions		SystemStart
Periodic Start	TrafficManagement Restrictions		PeriodicStart
Periodic End	TrafficManagement Restrictions		PeriodicEnd
Heartbeat	TrafficManagement Restrictions		Heartbeat

Message Specific Header Properties

Property Name	Description
AERODROME	ID of the aerodrome the system applies to (e.g., KCLT)
SYNC	Indicates whether the message is a synchronization or flight data message. System start/sync message: sys Resync message: per Steady state message: rtm
DATA_GROUP	Identifies the TTP Service. Will always be set to TrafficManagementRestrictions for this service.
MESSAGE_TYPE	Used along with the SYNC header to determine the message type and content. Various combinations of MESSAGE_TYPE and SYNC: - SYNC= "sys"; MESSAGE_TYPE= "SystemStart" -Restart of the TTP service.

	<ul style="list-style-type: none"> - SYNC= "per"; MESSAGE_TYPE= "PeriodicStart" - Beginning of a sync event. - SYNC= "per"; MESSAGE_TYPE= "TrafficManagementRestrictions" - Contains all information about Traffic Management Restrictions during a sync event. - SYNC= "per"; MESSAGE_TYPE= "PeriodicEnd" - End of a sync event. - SYNC= "rtm"; MESSAGE_TYPE= "TrafficManagementRestrictions" -Real time updates about Traffic Mgt Restrictions. - SYNC= "rtm"; MESSAGE_TYPE= "Heartbeat" - This message is sent periodically to convey to the consumer that their connection to the TTP service is still active.
TFDM_RELEASE	<p>TFDM Release version providing this message (e.g. 12_1_B8_2P2).</p> <p>This property is currently not implemented for ATD-2. Value will be null.</p>
SCHEMA_VERSION	FIXM US Extension Schema Version (e.g. 4.1.1).
TIME_STAMP	Date and time of the message in Zulu time (e.g. "yyyy-mm-ddThh:mm:ssZ")
UUID	Universally unique identifier for the message. This should not be used by the consumer and is only intended for TFDM debug purposes.

Traffic Management Schema Data

This table includes which traffic management fields may be included in Traffic Management Restriction messages.

Data Element	Xpath In Traffic Management Message	Included as List	Details
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Aerodrome	TrafficManagementRestrictions/aerodrome		
ApprovalRequestDataList	TrafficManagementRestrictions/approvalRequestList	✓	Contains list of ApprovalRequestData elements.
[ApprovalRequestData] Timestamp	TrafficManagementRestrictions/approvalRequestList/approvalRequestData/timestamp		Contained in each element in ApprovalRequestList
[ApprovalRequestData] OriginalProducer	TrafficManagementRestrictions/approvalRequestList/approvalRequestData/originalProducer		Contained in each element in ApprovalRequestList
[ApprovalRequestData] ApprovalRequestId	TrafficManagementRestrictions/approvalRequestList/approvalRequestData/approvalRequestId		Contained in each element in ApprovalRequestList
[ApprovalRequestData] TmrAction	TrafficManagementRestrictions/approvalRequestList/approvalRequestData/tmrAction		Contained in each element in ApprovalRequestList
[ApprovalRequestData] RestrictedResource	TrafficManagementRestrictions/approvalRequestList/approvalRequestData/restrictedResource		Contained in each element in ApprovalRequestList.
MilesInTrailDataList	TrafficManagementRestrictions/milesInTrailList	✓	Contains list of MilesInTrailData elements.
[MilesInTrailData] Timestamp	TrafficManagementRestriction/milesInTrailList/milesInTrailData/timestamp		Contained in each element in MilesInTrailList

[MilesInTrailData] OriginalProducer	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/originalProducer		Contained in each element in MilesInTrailList
[MilesInTrailData] MilesInTrailId	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/approvalRequestId		Contained in each element in MilesInTrailList
[MilesInTrailData] TmrAction	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/tmrAction		Contained in each element in MilesInTrailList
[MilesInTrailData] RestrictedResource	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/restrictedResource		Contained in each element in MilesInTrailList.
[MilesInTrailData] StartTime	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/startTime		Contained in each element in MilesInTrailList.
[MilesInTrailData] EndTime	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/endTime		Contained in each element in MilesInTrailList.
[MilesInTrailData] MilesInTrailSpacing	TrafficManagementRestrictions/milesInTrailList/milesInTrailData/milesInTrailSpacing		Contained in each element in MilesInTrailList.
MinutesInTrailDataList	TrafficManagementRestrictions/minutesInTrailList	✓	Contains list of MinutesInTrailData elements.
[MinutesInTrailData] Timestamp	TrafficManagementRestriction/minutesInTrailList/minutesInTrailData/timestamp		Contained in each element in MinutesInTrailList

[MinutesInTrailData] OriginalProducer	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/originalProducer		Contained in each element in MinutesInTrailList
[MinutesInTrailData] MinutesInTrailId	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/approvalRequestId		Contained in each element in MinutesInTrailList
[MinutesInTrailData] TmrAction	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/tmrAction		Contained in each element in MinutesInTrailList
[MinutesInTrailData] RestrictedResource	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/restrictedResource		Contained in each element in MinutesInTrailList.
[MinutesInTrailData] StartTime	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/startTime		Contained in each element in MinutesInTrailList.
[MinutesInTrailData] EndTime	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/endTime		Contained in each element in MinutesInTrailList.
[MinutesInTrailData] MinutesInTrailSpacing	TrafficManagementRestrictions/minutesInTrailList/minutesInTrailData/minutesInTrailSpacing		Contained in each element in MinutesInTrailList.
AirportDepartureStopDataList	TrafficManagementRestrictions/airportDepartureStopList	✓	Contains list of AirportDepartureStop elements.
[AirportDepartureStopData] Timestamp	TrafficManagementRestrictions/airportDepartureStopList/airportDepartureStopData/timestamp		Contained in each element in

			AirportDepartur eStopList
[AirportDepartu reStopData] OriginalProduc er	TrafficManagementRestrictions/airportDepartureSt opList/airportDepartureStopData/originalProducer		Contained in each element in AirportDepartur eStopList
[AirportDepartu reStopData] AirportDepartur eStopId	TrafficManagementRestrictions/airportDepartureSt opList/airportDepartureStopData/airportDepartureS topId		Contained in each element in AirportDepartur eStopList
[AirportDepartu reStopData] TmrAction	TrafficManagementRestrictions/airportDepartureSt opList/airportDepartureStopData/tmrAction		Contained in each element in AirportDepartur eStopList
[AirportDepartu reStopData] StartTime	TrafficManagementRestrictions/airportDepartureSt opList/airportDepartureStopData/startTime		Contained in each element in AirportDepartur eStopList
[AirportDepartu reStop] EndTime	TrafficManagementRestrictions/airportDepartureSt opList/airportDepartureStopData/endTime		Contained in each element in AirportDepartur eStopList

WSRD to ATD2

The table below includes the Traffic Management elements as described in the TTP Web Service Requirements Document (WSRD). It also gives an indication of which TFDM build the element will be included in and if it is intended to be implemented by ATD-2.

WSRD	Definition	TFDM Build 1	TFDM Build 2	ATD-2

Aerodrome	The ICAO designator or the FAA Location Identifier for the aerodrome	✓	✓	✓
ApprovalRequestData	Complex data item providing CFR information	✓	✓	✓
[ApprovalRequestData] RestrictedResource	The ICAO designator or the FAA Location Identifier for the aerodrome or element subject to CFR.	✓	✓	✓
MilesInTrailData	Complex data item providing Miles In Trail information	✓	✓	✓
[MilesInTrailData] RestrictedResource	The ICAO designator or the FAA Location Identifier for the aerodrome or element subject to MIT restriction.	✓	✓	✓
[MilesInTrailData] StartTime	The start time for the MIT restriction	✓	✓	✓
[MilesInTrailData] EndTime	The end time for the MIT restriction	✓	✓	✓
[MilesInTrailData] MITSpacing	The MIT spacing (nm)	✓	✓	✓
MinutesInTrailData	Complex data item providing Minutes In Trail information	✓	✓	✓
[MinutesInTrailData] RestrictedResource	The ICAO designator or the FAA Location Identifier for the aerodrome or element	✓	✓	✓

	subject to MINIT restriction.			
[MinutesInTrailData] StartTime	The start time for the MINIT restriction	✓	✓	✓
[MinutesInTrailData] EndTime	The end time for the MINIT restriction	✓	✓	✓
[MinutesInTrailData] MINITSpacing	The MINIT spacing (minutes)	✓	✓	✓
AirportDepartureStop	Complex data item providing Departure Stop information for an airport	✓	✓	✓
[AirportDepartureStop] StartTime	The start time for the departure stop	✓	✓	✓
[AirportDepartureStop] EndTime	The end time for the departure stop	✓	✓	✓
[AirportDepartureStop] DepartureStopReason	The reason for the departure stop	✓	✓	✓

Example Traffic Management Information Message

HEADERS:

```
"AERODROME": "KCLT"
"DATA_GROUP": "TrafficManagementRestrictions"
"MESSAGE_TYPE": "TrafficManagementRestrictions"
"SCHEMA_VERSION": "4.1.1"
"SYNC": "per"
"TFDM_RELEASE": "null"
"TIME_STAMP": "2018-05-29T16:08:00Z"
```

"UUID":"9337518e-3ea9-430b-8bf6-ae046cc61cde"

```
<ns2:trafficManagementRestrictions
xmlns:ns2="http://www.mosaicatm.com/ttp/trafficmanagementrestrictions">
  <aerodrome>CLT</aerodrome>
  <approvalRequestList>
    <approvalRequestData>
      <timestamp>2018-05-29T10:44:53.515Z</timestamp>
      <originalProducer>TFMS</originalProducer>
      <approvalRequestId>
        <identification>-838145010</identification>
        <aerodrome>CLT</aerodrome>
      </approvalRequestId>
      <tmrAction>ADD</tmrAction>
      <restrictedResource>EWR</restrictedResource>
      <startTime>2018-05-29T10:30:00.000Z</startTime>
      <endTime>2018-05-30T02:00:00.000Z</endTime>
    </approvalRequestData>
    <approvalRequestData>
      <timestamp>2018-05-29T10:44:53.516Z</timestamp>
      <originalProducer>TFMS</originalProducer>
      <approvalRequestId>
        <identification>-1757155757</identification>
        <aerodrome>CLT</aerodrome>
      </approvalRequestId>
      <tmrAction>ADD</tmrAction>
      <restrictedResource>DCA</restrictedResource>
      <startTime>2018-05-29T10:30:00.000Z</startTime>
      <endTime>2018-05-30T02:00:00.000Z</endTime>
    </approvalRequestData>
    <approvalRequestData>
      <timestamp>2018-05-29T10:44:53.516Z</timestamp>
      <originalProducer>TFMS</originalProducer>
      <approvalRequestId>
        <identification>-505054903</identification>
        <aerodrome>CLT</aerodrome>
      </approvalRequestId>
      <tmrAction>ADD</tmrAction>
      <restrictedResource>LGA</restrictedResource>
      <startTime>2018-05-29T10:30:00.000Z</startTime>
      <endTime>2018-05-30T02:00:00.000Z</endTime>
    </approvalRequestData>
  </approvalRequestList>
</ns2:trafficManagementRestrictions>
```