ATD-2 TTP Airport Information Messages

Airport Information messages are published as two flows: steady state and resync.

Steady State messages are sent as a real-time airport information changes occur. (See Airport Information Data Schema for details).

Resyncs consist of the current airport information being sent out in an **Airport Information** message. 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
Airport Information	✔	✔	✔
System Start	✔		
Periodic Start	✔		✔
Periodic End	✔		✔
Heartbeat		✔	

TTP Message Headers

Airport Information 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.

Airport Information messages also include a message body consisting of a formatted airport information data (See Airport Information Data Schema for details). They can be distinguished by the DATA_GROUP and MESSAGE_TYPE values in the header.

Message	Data Group	Body	Message Type
Airport Information	AirportInformation	AirportInformationData	AirportInformation
System Start	AirportInformation		SystemStart
Periodic Start	AirportInformation		PeriodicStart
Periodic End	AirportInformation		PeriodicEnd
Heartbeat	AirportInformation		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 AirportInformation 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. - SYNC= "per"; MESSAGE_TYPE= "PeriodicStart" - Beginning of a sync event.

	- SYNC= "per"; MESSAGE_TYPE= "AirportInformation" - Contains all information about an airport during a sync event. - SYNC= "per"; MESSAGE_TYPE= "PeriodicEnd" - End of a sync event. - SYNC= "rtm"; MESSAGE_TYPE= "AirportInformation" - Real time updates about an airport. - SYNC= "rtm"; MESSAGE_TYPE= "Heartbeat" - Heartbeat message to confirm to consumers that the service is still active.
TFDM_RELEASE	TFDM Release version providing this message (e.g. 12_1_B8_2P2). This property is currently not implemented for ATD-2. Value will be null.
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.

Airport Information Data Schema

This table includes which airport information fields may be included in Airport Information messages.

Data Element	Xpath In Airport Information Message	Included as List	Details
Aerodrome	AirportInformationData/aerodrome		
[CurrentAirportConfiguration] StartTime	AirportInformationData/currentAirportConfiguration/startTime		
[CurrentAirportConfiguration]	AirportInformationData/currentAirportConfiguration/endTime		

EndTime			
[CurrentAirportConfiguration] AirportArrivalRate	AirportInformationData/currentAirportConfiguration/airportArrivalRate/aircraftPerHour		
[CurrentAirportConfiguration] AirportDepartureRate	AirportInformationData/currentAirportConfiguration/airportDepartureRate/aircraftPerHour		
[CurrentAirportConfiguration] RunwayArrivalRateList	AirportInformationData/currentAirportConfiguration/runwayArrivalRates	✔	
[CurrentAirportConfiguration] [RunwayArrivalRate] Runway	AirportInformationData/currentAirportConfiguration/runwayArrivalRates/runwayRate/runway		Contained in each element in RunwayArrivalRate
[CurrentAirportConfiguration] [RunwayArrivalRate] RunwayRate	AirportInformationData/currentAirportConfiguration/runwayArrivalRates/runwayRate/rate		Contained in each element in RunwayArrivalRate
[CurrentAirportConfiguration] RunwayDepartureRateList	AirportInformationData/ currentAirportConfiguration /runwayDepartureRates	✔	
[CurrentAirportConfiguration] [RunwayDepartureRate] Runway	AirportInformationData/ currentAirportConfiguration /runwayDepartureRates/runwayRate/runway		Contained in each element in RunwayDepartureRate
[CurrentAirportConfiguration] [RunwayDepartureRate] RunwayRate	AirportInformationData/ currentAirportConfiguration /runwayDepartureRates/runwayRate/rate		Contained in each element in RunwayDepartureRate
ScheduledAirportConfigurations	AirportInformationData/ scheduledAirportConfigurations	✔	

[ScheduledAirportConfiguration] StartTime	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/startTime		Contained in each element in ScheduledAirportConfiguration list.
[ScheduledAirportConfiguration] EndTime	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/endTime		Contained in each element in ScheduledAirportConfiguration list.
[ScheduledAirportConfiguration] AirportArrivalRate	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/airportArrivalRate/aircraftRatePerHour		Contained in each element in ScheduledAirportConfiguration list.
[ScheduledAirportConfiguration] AirportDepartureRate	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/airportDepartureRate/aircraftRatePerHour		Contained in each element in ScheduledAirportConfiguration list.
[ScheduledAirportConfiguration] RunwayArrivalRateList	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/runwayArrivalRates	✔	Contained in each element in ScheduledAirportConfiguration list. Contains list of RunwayArrivalRate elements.
[ScheduledAirportConfiguration] [RunwayArrivalRate] Runway	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/ runwayArrivalRates/runwayRate/runway		Contained in each element in RunwayArrivalRate list.

[ScheduledAirportConfiguration] [RunwayArrivalRate] RunwayRate	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/ runwayArrivalRates/runwayRate/rate		Contained in each element in RunwayArrivalRate list.
[ScheduledAirportConfiguration] RunwayDepartureRateList	AirportInformationData/scheduledAirportConfigurationList/ scheduledAirportConfiguration/runwayDepartureRates	✔	Contained in each element in ScheduledAirportConfiguration list. Contains list of RunwayDepartureRate elements.
[ScheduledAirportConfiguration] [RunwayDepartureRate] Runway	AirportInformationData/scheduledAirportConfigurationList/scheduledAirportConfiguration/ runwayDepartureRates/runwayRate/runway		Contained in each element in RunwayDepartureRate list.
[ScheduledAirportConfiguration] [RunwayDepartureRate] RunwayRate	AirportInformationData/scheduledAirportConfigurationList/scheduledAirportConfiguration/ runwayDepartureRates/runwayRate/rate		Contained in each element in RunwayDepartureRate list.
Closures	AirportInformationData/closures	✔	Contains list of ClosureDataType elements.
[Closures] [ClosureDataType] ID	AirportInformationData/closures/closureDataType/closureId		Contained in each element in Closures list.
[Closures] [ClosureDataType] StartTime	AirportInformationData/closures/closureDataType/closureStartTime		Contained in each element in Closures list.

[Closures] [ClosureDataType] EndTime	AirportInformationData/closures/closureDataType/closureEndTime		Contained in each element in Closures list.
[Closures] [ClosureDataType] ClosedRegions	AirportInformationData/closures/closureDataType/closedRegions	✔	Contained in each element in Closures list.
[Closures] [ClosureDataType] [ClosedRegions] ClosedRunways	AirportInformationData/closures/closureDataType/closedRegions/closedRunways	✔	Contained in each element in Closures list.
[Closures] [ClosureDataType] [ClosedRegions] TaxiwayRegions	AirportInformationData/closures/closureDataType/closedRegions/taxiwayRegions	✔	Contained in each element in Closures list.
[Closures] [ClosureDataType] [ClosedRegions] RampRegions	AirportInformationData/closures/closureDataType/closedRegions/rampRegions	✔	Contained in each element in Closures list.

WSRD to ATD2

The table below includes the airport information 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	✔	✔	✔

CurrentAirportConfiguration	Complex data item for the current airport configuration data items	✔	✔	✔
[CurrentAirportConfiguration] StartTime	Start time for the current airport Configuration	✔	✔	✔
[CurrentAirportConfiguration] EndTime	End time for the current airport Configuration	✔	✔	✔
[CurrentAirportConfiguration] AirportArrivalRate	The airport arrival rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔
[CurrentAirportConfiguration] AirportDepartureRate	The airport departure rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔
[CurrentAirportConfiguration] ArrivalRunway	Complex data item for the arrival runways data items	✔	✔	✔
[ArrivalRunway] RunwayDesignator	The runway designator	✔	✔	✔
[ArrivalRunway] RunwayArrivalRate	The runway arrival rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔
[CurrentAirportConfiguration] DeparturelRunway	Complex data item for the departure runways data items	✔	✔	✔
[DepartureRunway] RunwayDesignator	The runway designator	✔	✔	✔
[DepartureRunway] RunwayDepartureRate	The runway departure rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔

ScheduledAirportConfiguration	Complex data item for the scheduled airport configuration data items	✔	✔	✔
[ScheduledAirportConfiguration] StartTime	Start time for the scheduled airport Configuration	✔	✔	✔
[ScheduledAirportConfiguration] EndTime	End time for the scheduled airport Configuration	✔	✔	✔
[ScheduledAirportConfiguration] AirportArrivalRate	The airport arrival rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔
[ScheduledAirportConfiguration] AirportDepartureRate	The airport departure rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔
[ScheduledAirportConfiguration] ArrivalRunway	Complex data item for the arrival runways data items	✔	✔	✔
[ArrivalRunway] RunwayDesignator	The runway designator	✔	✔	✔
[ArrivalRunway] RunwayArrivalRate	The runway arrival rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔
[ScheduledAirportConfiguration] DeparturelRunway	Complex data item for the departure runways data items	✔	✔	✔
[DepartureRunway] RunwayDesignator	The runway designator	✔	✔	✔
[DepartureRunway] RunwayDepartureRate	The runway departure rate declared by the facility expressed in number of aircraft per hour	✔	✔	✔

ActualDepartureQueueLength	The actual departure queue length for the airport			
MaximumUnmeteredPredictedDepartureQueueLengthData	Complex data item providing maximum unmetered predicted departure queue length for the airport for each adapted future time interval			
ActualDepartureRunwayQueueLengthData	Complex data item for the actual departure queue length for one or a group of runways			
MaximumUnmeteredPredictedRunwayDepartureQueueLengthData	Complex data item providing maximum unmetered predicted departure queue length for one or a group of runways for each adapted future time interval			
ActualDepartureAirspaceElementsQueueLengthData	Complex data item for the actual departure queue length for a group of airspace elements			
MaximumUnmeteredPredictedAirspaceElementsDepartureQueueLengthData	Complex data item providing maximum unmetered predicted departure queue length for a group of airspace elements for each adapted future time interval			
AirportMovementAreaPredictedGridlockData	Complex data item providing airport movement area predicted gridlock information			
AirportMovementAreaActualGridlockData	Complex data item providing airport movement area actual gridlock information			

AirportNonMovementAreaPredictedGridlockData	Complex data item providing airport non movement area predicted gridlock information			
AirportNonMovementAreaActualGridlockData	Complex data item providing airport non movement area actual gridlock information			
RunwayClosureData	Complex data item providing runway closure data for the airport	✔	✔	✔
[RunwayClosureData] RunwayDesignator	The runway designator	✔	✔	✔
[RunwayClosureData] ClosureStartTime	The start time for the runway closure	✔	✔	✔
[RunwayClosureData] ClosureEndTime	The end time for the runway closure	✔	✔	✔
[RunwayClosureData] ClosureAdvisory	Provides the additional information for the closure	✔	✔	✔
TaxiwayClosureData	Complex data item providing taxiway closure data for the airport	✔	✔	✔
[TaxiwayClosureData] TaxiwayIdentifier	The taxiway identifier	✔	✔	✔
[TaxiwayClosureData] ClosureStartTime	The start time for the taxiway closure	✔	✔	✔
[TaxiwayClosureData] ClosureEndTime	The end time for the taxiway closure	✔	✔	✔
[TaxiwayClosureData] ClosureAdvisory	Provides the additional information for the closure	✔	✔	✔

SurfaceElementClosureData	Complex data item providing closure data for any airport surface element	✔	✔	✔
[SurfaceElementClosureData] SurfaceElementIdentifier	The surface element identifier	✔	✔	✔
[SurfaceElementClosureData] ClosureStartTime	The start time for the surface element closure	✔	✔	✔
[SurfaceElementClosureData] ClosureEndTime	The end time for the surface element closure	✔	✔	✔
[SurfaceElementClosureData] ClosureAdvisory	Provides the additional information for the closure	✔	✔	✔
NonMovementAreaClosureData	Complex data item providing closure data for airport non-movement areas.	✔	✔	✔
[NonMovementAreaClosureData] NonMovementAreaIdentifier	The non-movement area identifier	✔	✔	✔
[NonMovementAreaClosureData] ClosureStartTime	The start time for the closure	✔	✔	✔
[NonMovementAreaClosureData] ClosureEndTime	The end time for closure	✔	✔	✔
[NonMovementAreaClosureData] ClosureAdvisory	Provides the additional information for the closure	✔	✔	✔
Notifications	Complex data item providing notification data.			

AirportDemandInformation	The arrival, departure, and weighted departure counts for an airport for a specific time period			
RunwayDemand	Complex data element containing runway specific demand information.			
AirportDepartureDelay	The current departure delay at an airport			
AirportDepartureDelayStartTime	The start time for delays at an airport			
RunwayDepartureDelayData	Complex data element containing runway departure delay information			

Example Airport Information Message

```
HEADERS:
"AERODROME":"KCLT"
"DATA_GROUP":"AirportInformation"
"MESSAGE_TYPE":"AirportInformation"
"SCHEMA_VERSION":"4.1.1"
"SYNC":"per"
"TFDM_RELEASE":"null"
"TIME_STAMP":"2018-05-29T16:08:00Z"
"UUID":"67f0bff7-9206-4283-8979-8b3b39519286"

<ns2:airportInformationData
xmlns:ns2="http://www.mosaicatm.com/ttp/airportinformation">
    <aerodrome>CLT</aerodrome>
    <currentAirportConfiguration>
        <startTime>2018-05-29T08:36:25.312Z</startTime>
        <endTime>292278994-08-17T07:12:55.807Z</endTime>
        <airportArrivalRate>
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```

```xml
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```