

# Add Actual Arrival Reference Data

<b>CR Number (ID): 129</b>		<b>Submission Date: 9/22/2021</b>	
<b>GENERAL INFORMATION (AUTHOR TO COMPLETE)</b>			
Author	FAA FIXM Development Team		
Brief Description (Subject)	Add additional information identifying what type of arrival time is being referenced (in blocks, wheels-on, etc.) as well as the exact position where it occurred.		
Priority*	<input type="checkbox"/> Immediate	<input checked="" type="checkbox"/> High	<input type="checkbox"/> Medium <input type="checkbox"/> Low
Scale*	<input type="checkbox"/> Major	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Minor
Expected Impact to Implementers*	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> Low <input type="checkbox"/> None
Target FIXM Component(s)	<input checked="" type="checkbox"/> FIXM Logical Model <input type="checkbox"/> FIXM Application <input checked="" type="checkbox"/> FIXM XML Schemas <input type="checkbox"/> Other Specify...		
Target FIXM Release	<input checked="" type="checkbox"/> FIXM Core Version 4.3.0 <input type="checkbox"/> Application Version		
Related FIXM CRs			
Motivation / Change Reason	<input checked="" type="checkbox"/> Requirement <input type="checkbox"/> Functionality/Operability <input type="checkbox"/> Maintenance <input type="checkbox"/> Defect <input type="checkbox"/> Other Specify ...		

\* Optional fields; FIXM Secretariat may update during review

## MOTIVATION / CHANGE REASON DESCRIPTION (AUTHOR TO COMPLETE)

Support new requirement from the FF-ICE IG section 2.42.1: "The point on the arrival aerodrome to which the arrival time refers. The point is identified using and [sic] the appropriate trajectory point property, such as Wheels-On or In-Block, and may include its geographical position."

## PROPOSED CHANGE (AUTHOR TO COMPLETE)

Create a new class called `ActualTimeOfArrival` in the `Arrival` package with the following definition: “The time, type of time (wheels-on, in blocks, etc.), and geographical position of the arrival. [FIXM]”.

Change the `actualTimeOfArrival` attribute of the `Arrival` class in the `Arrival` package to an association to the new class with the same definition as the class.

Add two attributes to the new `ActualTimeOfArrival` class in the `Arrival` package:

Name: “position”

Type: `GeographicalPosition`

Definition: “The geographical position associated with the actual time of arrival. [FIXM]”

Name: “time”

Type: `Time`

Definition: “The actual time of arrival. [ICAO Doc 4444, Appendix 3, Field Type 17]”

Add a new class to the `Arrival` package:

Name: “`ArrivalTimeType`”

Definition: “The type of arrival time represented. [FIXM]”

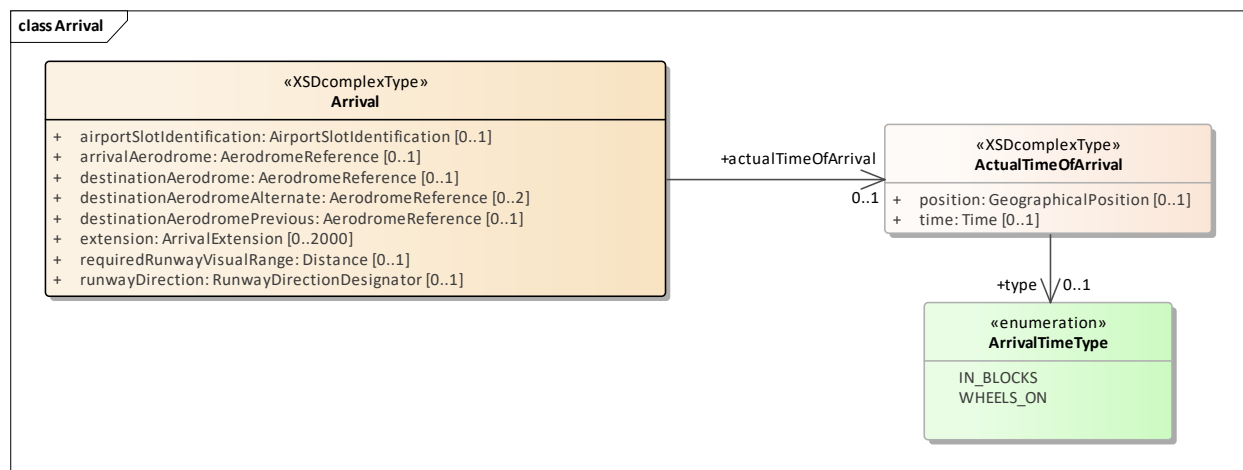
Base Type: `TrajectoryPointPropertyType`

Pattern: Retain only `IN_BLOCKS` and `WHEELS_ON` enumerated values

Add a new association between the new `ActualTimeOfArrival` class and the new `ArrivalTimeType` class in the `Arrival` package:

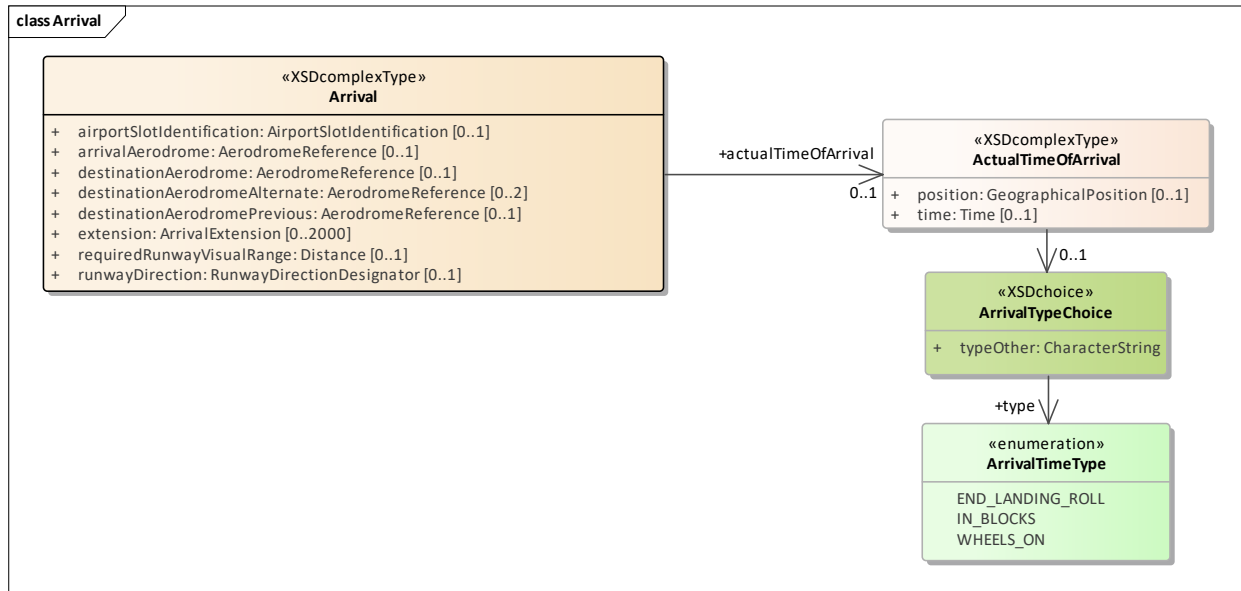
Name: “type”

Definition: “The type of arrival time represented. [FIXM]”

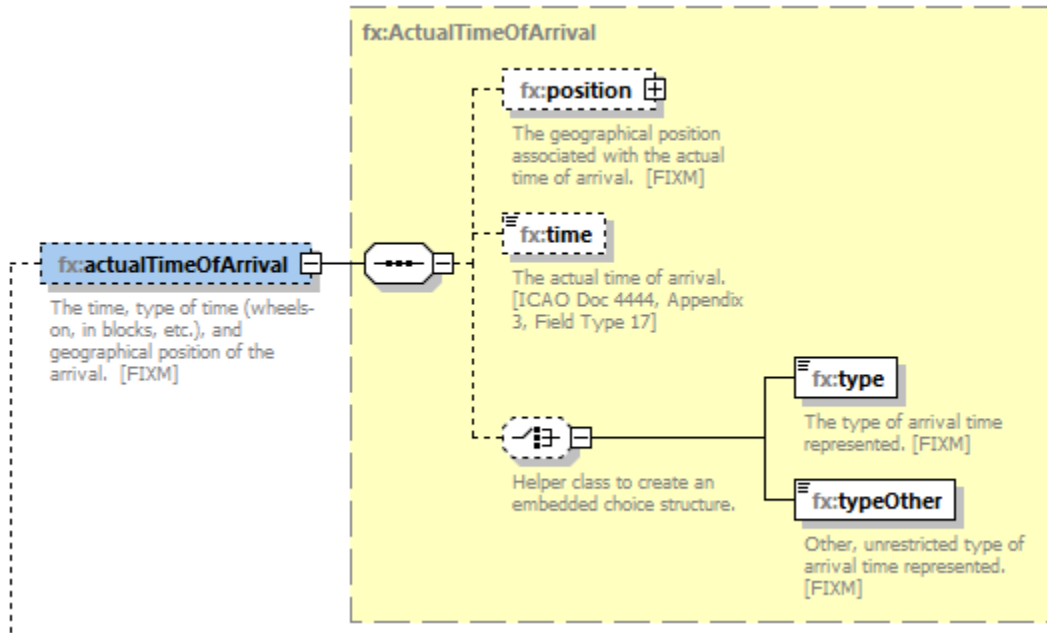


Potential CR changes based on review during the FIXM 4.3.0 Kick-Off meeting.

Two potential changes were raised for this CR. The first was to add “END\_LANDING\_ROLL” as a possible enumerated value to the proposed ArrivalTimeType enumeration. The second was to open up the options for arrival time types to include values other than those directly suggested in Table 6 of the FF-ICE IG. So, instead of only allowing enumerated values, also add an option for a free-text “other” category that could be used as needed. Below is a snippet of what the model might look like if both of these options were approved.



This example includes one of the new modeling techniques being considered for FIXM 4.3.0 in which an embedded choice is used directly rather than being represented by a complex type (an approach that reduces unneeded XML nesting). In the physical model, this would appear as follows.



Below are also two XML snippets showing how this would appear when resolved into an actual XML message.

Using a standard ArrivalTimeType enumeration:

```

<fx:arrival>
  <fx:actualTimeOfArrival>
    <fx:position srsName="urn:ogc:def:crs:EPSG::4326">
      <fb:pos>42.3656 -71.0096</fb:pos>
    </fx:position>
    <fx:time>2022-04-26T10:11:01Z</fx:time>
    <fx:type>END_LANDING_ROLL</fx:type>
  </fx:actualTimeOfArrival>
</fx:arrival>

```

Using a free-text type:

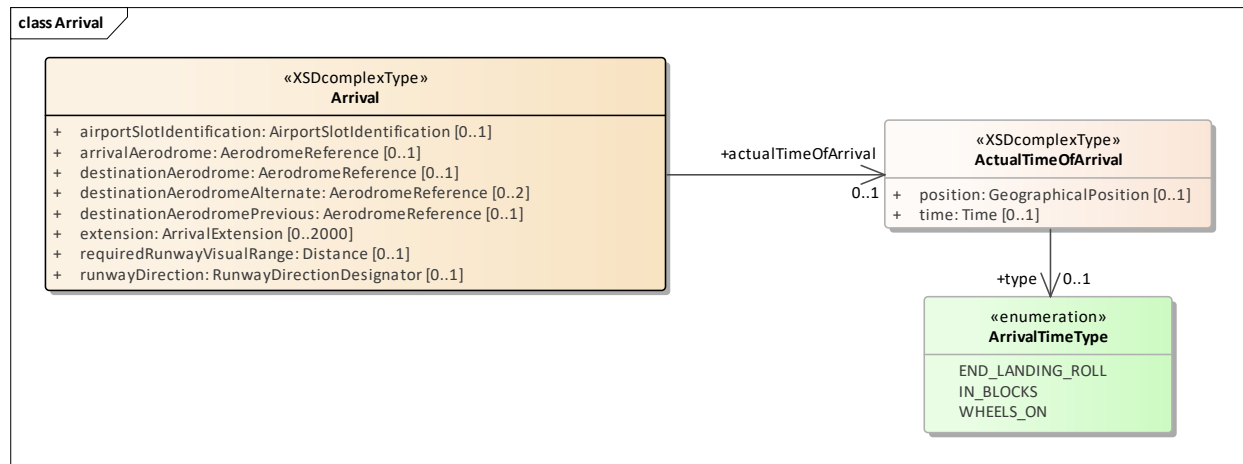
```

<fx:arrival>
  <fx:actualTimeOfArrival>
    <fx:position srsName="urn:ogc:def:crs:EPSG::4326">
      <fb:pos>42.3656 -71.0096</fb:pos>
    </fx:position>
    <fx:time>2022-04-26T10:11:01Z</fx:time>
    <fx:typeOther>CUSTOM TYPE HERE</fx:typeOther>
  </fx:actualTimeOfArrival>
</fx:arrival>

```

Update based on CR TIM 4

Current consensus is to add in the “END\_LANDING\_ROLL” enumerated value but not allow for custom, free-text entries unless a strong use case is provided showing a need for this. Modeling based on this decision will be as described in the original proposal with the addition of the “END\_LANDING\_ROLL” enumerated value.



CCB SECRETARIAT	
External Standard Consistency Checked	<input type="checkbox"/> AIDX <input type="checkbox"/> AIRM
CR Status	<input checked="" type="checkbox"/> Proposed <input type="checkbox"/> Implemented <input type="checkbox"/> Withdrawn <input type="checkbox"/> Rejected
Decision Date	Click or tap to enter a date
Implemented In	X.X.X
Comments	Click or tap here to add any additional information or comments.

## IMPLEMENTATION NOTES (CCB SECRETARIAT TO COMPLETE)

Added extension hook to ActualTimeOfArrival class and the ActualTimeOfArrivalExtension to the Extension package.