

FlightLevel representation in FIXM

CR Number (ID): 154		Submission Date: 3/25/2022	
GENERAL INFORMATION (AUTHOR TO COMPLETE)			
Author	Author Name		
Brief Description (Subject)	This CR proposes an improvement to the Flight Level representation in FIXM		
Priority*	<input type="checkbox"/> Immediate	<input type="checkbox"/> High	<input type="checkbox"/> Medium <input checked="" 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 type="checkbox"/> Requirement <input type="checkbox"/> Functionality/Operability <input checked="" 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)

CR123 had been submitted during the FIXM 4.2.0 development in order to propose, among others, a refactoring of the FIXM Measures and a change to the FlightLevel types to restrict xs:integer instead of xs:double. CR123 was deferred to a post 4.2.0 release because the proposed changes to the FIXM Measures would have been too significant for the 4.2.0 Release Candidate timeframe.

CR123 was re-evaluated during the FIXM 4.3.0 development (FIXM TIM on 22-March-2022). This TIM recommended to withdraw CR123 and to recreate a new CR (this CR) to narrow the discussion to the Flight Level representation.

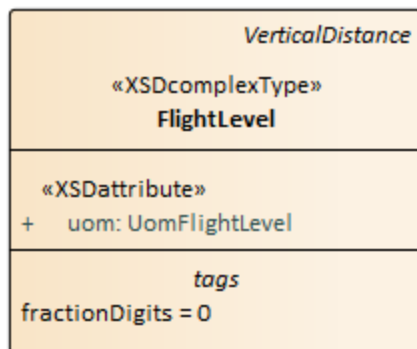
PROPOSED CHANGE (AUTHOR TO COMPLETE)

It is proposed to leverage the standard constraining facet [fractionDigits](#) in order to enforce the exchange of flight level values without digits in FIXM 4.3.0. However, [fractionDigits](#) is a facet that can be specified for decimal but not for double. Therefore, it is proposed:

- To update the FIXM Measure type so that it restricts xs:decimal instead of xs:double



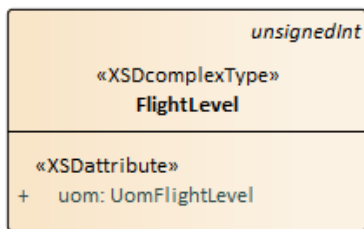
- To set the fact fractionDigits to 0 on FIXM FlightLevel type.



Based on the discussions on the subject during the FIXM TIM on 22-March-2022, FIXM implementers are invited to crosscheck that this new facet fractionDigits would be correctly processed at the time of the marshalling of the FIXM schemas.

Alternatively, if the proposed changes above prove unsatisfactory, the following may be considered:

- Model FlightLevel separately from Measures, and have FlightLevel restrict xs:unsignedInt directly. This modelling would be consistent with the [AIXM 5.1.1 representation of FlightLevel](#).



Note: the AIXM 5.1.1 representative of FlightLevel sets facet maxInclusive to 999

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	Enter version in which this CR is first implemented.
Comments	Click or tap here to add any additional information or comments.

IMPLEMENTATION NOTES (CCB SECRETARIAT TO COMPLETE)

EA did not recognize the fractionDigits tag when applied directly to the FlightLevel class. As a workaround, a helper class was created name RestrictedVerticalDistance with the <<XSDsimpleType>> stereotype, the fractionDigits tag set to zero, and the following definition: “Helper type for restrictions on fractionDigits”. This class was placed between the FlightLevel class and the VerticalDistance class in the inheritance hierarchy and this allowed FlightLevel to receive the modified fractionDigits setting.

