

<b>WORLD METEOROLOGICAL ORGANIZATION</b>		<b>COMMISSION FOR BASIC SYSTEMS DECISION REQUEST</b>	
Submitted by:	President CBS		
Manual to be changed:	<b>Man Codes Vol I.3</b>	Date:	<b>4 December 2017</b>
Procedure:	<b>Simple (fast track)</b>	Stage:	<b>5 - National</b>
Committee:	<b>IPET-DD</b>	Decision required:	<b>Move to stage: 6 = CBS President or EC review</b>
Deciding Body:	<b>National Focal Points for Codes</b>	Options:	<b>1. Approve</b> = Approve without change <b>2. Approve with comments</b> = Approve but would be improved if the comments are addressed <b>3. Amendments needed</b> = Do not approve unless amendments are made <b>4. Disapprove</b> = Do not support the proposal <b>5. Abstain</b> = Neither approve nor disapprove
Title:	<b>Introduction of release 2.1.1 of IWXXM</b>		

Ref.: 44940/2017-1.0 OBS-WIS/DRMM

## Brief description of proposal.

Introduce patch release 2.1.1 of IWXXM and its supporting environment. IWXXM supports the exchange of aviation information in XML and release 2.1 was intended to support fully the requirements of Amendment 77 to the Convention on International Air Navigation. This patch release corrects issues identified by software developers during implementation of IWXXM 2.1. See Annex 1 for more details.

This patch release does not change the schemas, and all reports in IWXXM 2.1 remain valid in IWXXM 2.1.1. Reports produced under IWXXM 2.1.1 may be processed by systems designed to handle reports in IWXXM 2.1. The changes include:

- corrections to the validation rules in iwxxm.sch and iwxxm-collect.sch to avoid incorrect rejection of reports;
- addition of administrative entries to <http://codes.wmo.int> and the corresponding tables in Volume I.3 of the Manual on Codes to correct editorial omissions;
- updated examples, including more examples of the use of COLLECT documents.

The XML namespace for IWXXM 2.1.1 remains <http://schemas.wmo.int/iwxxm/2.1>.

## Justification for proposal

- Software developers preparing for operational exchange of information in IWXXM 2.1 have reported that some valid TAF and SIGMET reports fail to validate. IWXXM 2.1.1 corrects this problem

## Decision(s) Required

Decision name	Decision required
MM51.1	Recommendation on "Corrections to the validation rules in iwxxm.sch sch and iwxxm-collect.sch and introduction of offline validation."
MM51.2	Recommendation on "updated guidance and examples."

Doc Id: <b>C3-M-MM51-5-2-ChangeDescriptionV2_en</b>	Proposal Number: <b>MM51</b>
---	------------------------------

Decision name	Decision required
MM51.3	Recommendation on "addition of administrative entries to codes.wmo.int and the corresponding tables in WMO No. 306 Volume I.3."

## Supporting documents

Schemas, examples and the UML data model supporting IWXXM 2.1.1RC1 are available from <http://schemas.wmo.int/iwxxm/2.1.1RC1>.

Request prepared by: Secretariat  
Date: 14 December 2017

Ref.: 44940/2017-1.0 OBS-WIS/DRMM

## ***Annex 1 to C2-D-MM51-5-2-ChangeDescription***

Introduce sub-release 2.1.1 of IWXXM and its supporting environment.

IWXXM supports the exchange of aviation information in XML. Release 2.1 was intended to support fully the requirements of Amendment 77 to the Convention on International Air Navigation.

This patch release, IWXXM 2.1.1, corrects issues identified by software developers during implementation of IWXXM 2.1. In the remainder of this document, the original version of IWXXM 2.1 is referred to as sub-release IWXXM 2.1.0 to avoid ambiguity.

This sub-release does not change the schemas, and all reports in IWXXM 2.1.0 remain valid in IWXXM 2.1.1. Reports produced under IWXXM 2.1.1 may be processed by systems designed to handle reports in IWXXM 2.1.0.

The changes include:

- corrections to the validation rules in iwxxm.sch sch and iwxxm-collect.sch to avoid incorrect rejection and addition of an additional schematron (iwxxm-collect-codelists.sch) that allows validation of reports without access to an internet connection;
- corrections to schema airmet.xsd to state explicitly the types of quantity that may be reported using that schema;
- updated guidance and examples to show the use of COLLECT groups to encapsulate individual reports in XML to form an aggregate equivalent to a bulletin in TAC;
- addition of administrative entries to codes.wmo.int and the corresponding tables in Volume I.3 of the Manual on Codes to correct editorial omissions;
- addition of “height of top of cloud” to the physical quantities that may be represented in METCE to allow that information to be reported in AIRMET and SIGMET reports.

The changes to validation rules are documented more fully at <http://schemas.wmo.int/iwxxm/2.1.1RC1> and the changes to the code table entries are listed in decision MM51.2.

The only changes between the contents of <http://schemas.wmo.int/iwxxm/2.1.0> and <http://schemas.wmo.int/2.1.1> are in the contents of the schematron files for validating iwxxm documents (<http://schemas.wmo.int/iwxxm/2.1.1/rule/iwxxm.sch> and <http://schemas.wmo.int/iwxxm/2.1.1/rule/iwxxm-collect.sch>), the examples in (<http://schemas.wmo.int/iwxxm/2.1.1/examples>), the html presentation of the data model (that has been updated to show the correct rules for validation), and the readme file that provides the release notes for this release. These changes are included in the compressed files containing the complete online definition of IWXXM (<http://schemas.wmo.int/iwxxm/2.1.1RC1>).

The schemas and other files supporting release IWXXM 2.1.1 are in the location: <http://schemas.wmo.int/iwxxm/2.1.1RC1>.

The folder containing release IWXXM 2.1 has been copied to <http://schemas.wmo.int/iwxxm/2.1.0>. On approval of IWXXM 2.1.1, <http://schemas.wmo.int/iwxxm/2.1.1RC1> will be renamed as <http://schemas.wmo.int/iwxxm/2.1.1> and also copied to replace <http://schemas.wmo.int/iwxxm/2.1> as the reference release of IWXXM 2.1.

Detailed release notes are available from <https://schemas.wmo.int/iwxxm/2.1.1RC1/ReleaseNotes-IWXXM.txt>.

### ***Decision MM51.1      Corrections to the validation rules in iwxxm.sch and iwxxm-collect.sch and introduction of offline validation***

The updated validation rules in <http://schemas.wmo.int/iwxxm/2.1.1RC1/rule/iwxxm.sch> and <http://schemas.wmo.int/iwxxm/2.1.1RC1/rule/iwxxm-collect.sch> are the same as those for release IWXXM 2.1.0 except for the following two changes. These changes are proposed in order to correct errors in the validation rules that were reported by organizations implementing IWXXM 2.1.0.

**MM5.1.1      TAF validation.** Rule TAF.TAF18 has been modified so that if CAVOK is reported the cloud amount is not reported.

**MM5.1.2      SIGMET/AIRMET validation.** The validation rules have been changes to allow use of the equivalent of the Traditional Alphanumeric Code height specifications of ABV a flight level and BLW a flight level.

**MM5.1.3      Offline validation.** Introduce schematron iwxxm-collect-codelists.sch to allow validation of IWXXM documents without an active connection to the internet.

### ***Decision MM51.2      Updated guidance and examples***

**MM51.2.1      Examples and guidance on the use of identifiers.** Amend the guidance and examples on IWXXM documents to assist in the aggregation of IWXXM documents into a single COLLECT document. (<http://schemas.wmo.int/iwxxm/2.1.1RC1/examples>)

**MM51.2.1.1      Update the guidance** on the use of IWXXM to advise that gml:idattributes should be globally unique (that is, no two identifiers used within IWXXM documents may have the same gml:id). The form of a gmd:identifier should be <gml:id id=uuid:universally\_unique\_identifier) where *universally\_unique\_identifier* is defined in ITU-T Rec. X.667 [(ISO/IEC 9834-8:2005). *Note that at IWXXM 2.1.1RC1 this does not form part of the formal definition of IWXXM.*

**MM51.2.1.2** Amend the examples in folder <http://schemas.wmo.int/iwxxm/2.1.0/examples> with the versions in <http://schemas.wmo.int/iwxxm/2.1.1RC1/examples>.

Amend the examples listed in the tables below to show how the COLLECT container may be used.

Doc Id: <b>C3-M-MM51-5-2-ChangeDescriptionV2_en</b>	Proposal Number: <b>MM51</b>
---	------------------------------

<b>File in 2.1.0</b>	<b>has been replaced by file in 2.1.1</b>
metar-NIL.xml	metar-NIL-collect.xml
metar-translation-failed.xml	metar-translation-failed.xml
sigmet-translation-failed.xml	sigmet-translation-failed-collect.xml
taf-NIL.xml	taf-NIL-collect.xml

Add an explanation of how to handle documents that cannot be translated from traditional alphanumeric codes to IWXXM: TAC-to-XML-Guidance.txt.

Update all examples show the location of the schemas for this sub-release (<http://schemas.wmo.int/iwxxm/2.1.1RC1> for the pre-approval versions and <http://schemas.wmo.int/iwxxm/2.1.1> for the versions following approval).

In addition, amend the examples in the following table.

<b>Example</b>	<b>Amendment</b>
airmet-A6-1a-TS.xml	Correct the observation type to AIRMETEvolvingConditionCollectionAnalysis.
metar-A3-1.txt	Correct the handling of result time.
sigmet-A6-1a-TS.xml	Correct the observation type to SIGMETEvolvingConditionCollectionAnalysis.
sigmet-A6-1b-CNL.xml	Correct the observation type to SIGMETEvolvingConditionCollectionAnalysis.
sigmet-A6-2-TC.xml	Correct the observation types to SIGMETEvolvingConditionCollectionAnalysis and SIGMETPositionCollectionAnalysis.
sigmet-multi-location.xml	Correct the observation types to SIGMETEvolvingConditionCollectionAnalysis and SIGMETPositionCollectionAnalysis, the references to <om:procedure>, and the observed properties to SIEMETEvolvingConditionCollectionAnalysis and SIGMETPositionCollectionAnalysis.. Remove all references to <om:observedProperty xlink:href="http://codes.wmo.int/49-2/SigWxPhenomena/VA"/>.
sigmet-VA-EGGX.xml	Correct the observation types to SIGMETEvolvingConditionCollectionAnalysis and SIGMETPositionCollectionAnalysis. Change observed property <a href="http://codes.wmo.int/49-2/SigWxPhenomena/VA">http://codes.wmo.int/49-2/SigWxPhenomena/VA</a> to <a href="http://codes.wmo.int/49-2/observable-property/SIGMETEvolvingConditionCollectionAnalysis">http://codes.wmo.int/49-2/observable-property/SIGMETEvolvingConditionCollectionAnalysis</a> .
tc-advisory-A2-2.xml	Simplify the reference to the AIXM time slice. Correct <a href="http://codes.wmo.int/49-2/observable-property/TCAdvisory">http://codes.wmo.int/49-2/observable-property/TCAdvisory</a> to <a href="http://codes.wmo.int/49-2/observable-property/TropicalCycloneObservedConditions">http://codes.wmo.int/49-2/observable-property/TropicalCycloneObservedConditions</a> or <a href="http://codes.wmo.int/49-2/observable-property/TropicalCycloneForecastConditions">http://codes.wmo.int/49-2/observable-property/TropicalCycloneForecastConditions</a> as appropriate to the context.
va-advisory-A2-1.xml	Simplify the specification of aixm:timeslice. Correct references to <a href="http://codes.wmo.int/49-2/observable-property/VAA Advisory">http://codes.wmo.int/49-2/observable-property/VAA Advisory</a> to <a href="http://codes.wmo.int/49-2/observable-property/VolcanicAshConditions">http://codes.wmo.int/49-2/observable-property/VolcanicAshConditions</a> .

Doc Id: <b>C3-M-MM51-5-2-ChangeDescriptionV2_en</b>	Proposal Number: <b>MM51</b>
---	------------------------------

**Decision MM51.3**  
**Volume I.3.**

**Addition of entries to codes.wmo.int and the corresponding tables in WMO-No. 306**

**MM51.3.1** Amend CODE TABLE D-4: FM 205-16 – IWXXM OBSERVATION TYPES as shown

<i>Label</i>	<i>Notation</i>	<i>Code-space</i>	<i>Description</i>
AIRMET Evolving Condition Collection Analysis	AIRMETEvolvingConditionCollectionAnalysis	<a href="http://codes.wmo.int/49-2/observation-type/IWXXM/2.1">http://codes.wmo.int/49-2/observation-type/IWXXM/2.1</a>	AIRMETEvolvingConditionAnalysis (a subclass of SamplingObservation from METCE) is intended for use when reporting an observed aggregate set of meteorological conditions concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-level flights in the flight information region concerned or sub-area thereof. The result of this observation type shall refer to a single EvolvingMeteorologicalCondition which represents an AIRMET observation of meteorological conditions. AIRMETEvolvingConditionAnalysis enforces the following additional constraints: "featureOfInterest" shall refer to an entity of type SF_SamplingSurface and the associated "sampledFeature" must be an airspace.
SIGMET evolving condition collection analysis	SIGMETEvolvingConditionCollectionAnalysis	<a href="http://codes.wmo.int/49-2/observation-type/IWXXM/2.1">http://codes.wmo.int/49-2/observation-type/IWXXM/2.1</a>	SIGMETEvolvingConditionCollectionAnalysis (a subclass of SamplingObservation from METCE) is intended for use when reporting an observed or forecast aggregate set of meteorological conditions hazardous to flight over a large airspace, including anticipated intensity change plus speed and direction of motion. The result

Doc Id: <b>C3-M-MM51-5-2-ChangeDescriptionV2_en</b>	Proposal Number: <b>MM51</b>
---	------------------------------

<i>Label</i>	<i>Notation</i>	<i>Code-space</i>	<i>Description</i>
			of this observation type shall refer to a single <del>EvolvingMeteorologicalCondition</del> <u>SIGMETEvolvingConditionCollection</u> which represents a SIGMET observation or forecast of meteorological conditions. SIGMETEvolvingConditionCollectionAnalysis enforces the following additional constraints: "featureOfInterest" shall refer to an entity of type SF_SamplingSurface and the associated "sampledFeature" must be an airspace.
SIGMET position <u>collection</u> analysis	SIGMETPositionCollectionAnalysis	<a href="http://codes.wmo.int/49-2/observation-type/IWXXM/2.1">http://codes.wmo.int/49-2/observation-type/IWXXM/2.1</a>	SIGMETPositionCollectionAnalysis (a subclass of SamplingObservation from METCE) is intended for use when reporting the forecast position of meteorological conditions hazardous to flight. The result of this observation type shall refer to one <del>or more</del> <u>MeteorologicalPositions</u> . SIGMETPositionCollection which represents the forecast positions of SIGMET phenomena. SIGMETPositionCollectionAnalysis enforces the following additional constraints: "featureOfInterest" shall refer to an entity of type SF_SamplingSurface and the associated "sampledFeature" must be an airspace.
Tropical Cyclone Forecast Conditions	TropicalCycloneForecastConditions	<a href="http://codes.wmo.int/49-2/observation-type/IWXXM/2.1">http://codes.wmo.int/49-2/observation-type/IWXXM/2.1</a>	TropicalCycloneForecastConditions (a subclass of SamplingObservation from METCE) is intended for use when reporting the expected occurrence of tropical cyclone phenomena which may affect the safety of aircraft operations, and of the development of those phenomena in time and space. The result of this observation type shall refer to one or more MeteorologicalPositions which represents the forecast positions of Tropical Cyclone phenomena. TropicalCycloneForecastConditions enforces the following additional constraints: "featureOfInterest" shall refer to an entity of type SF_SamplingPoint.

Doc Id: <b>C3-M-MM51-5-2-ChangeDescriptionV2_en</b>	Proposal Number: <b>MM51</b>
---	------------------------------

<i>Label</i>	<i>Notation</i>	<i>Code-space</i>	<i>Description</i>
Tropical Cyclone Observed Conditions	TropicalCycloneObservedConditions	<a href="http://codes.wmo.int/49-2/observation-type/IWXXM/2.1">http://codes.wmo.int/49-2/observation-type/IWXXM/2.1</a>	TropicalCycloneObservedConditions (a subclass of SamplingObservation from METCE) is intended for use when reporting the occurrence of tropical cyclone phenomena which may affect the safety of aircraft operations, and of the development of those phenomena in time and space. The result of this observation type shall refer to one or more MeteorologicalPositions which represents the forecast positions of SIGMET phenomena. TropicalCycloneObservedConditions enforces the following additional constraints: "featureOfInterest" shall refer to an entity of type SF_SamplingPoint.
Volcanic Ash Conditions	VolcanicAshConditions	<a href="http://codes.wmo.int/49-2/observation-type/IWXXM/2.1">http://codes.wmo.int/49-2/observation-type/IWXXM/2.1</a>	VolcanicAshConditions (a subclass of SamplingObservation from METCE) is intended for use when reporting the occurrence and/or expected occurrence of specified en-route volcanic ash phenomena which may affect the safety of aircraft operations, and of the development of those phenomena in time and space. The result of this observation type shall refer to one or more MeteorologicalPositions which represents the forecast positions of Volcanic Ash phenomena. VolcanicAshConditions enforces the following additional constraints: "featureOfInterest" shall refer to an entity of type SF_SamplingSurface and the associated "sampledFeature" must be an airspace.

The previous entries SIGMETEvolvingConditionAnalysis and SIGMETPositionAnalysis will be retained on <http://codes.wmo.int> and marked as "retired".

Doc Id: <b>C3-M-MM51-5-2-ChangeDescriptionV2_en</b>	Proposal Number: <b>MM51</b>
---	------------------------------

**MM51.3.2** Add the following entries to CODE TABLE D-5: IWXXM OBSERVABLE PROPERTIES

<i>Label</i>	<i>Notation</i>	<i>Code-space</i>	<i>Description</i>
<a href="#">AIRMET Evolving Condition Collection Analysis</a>	<a href="#">AIRMETEvolvingConditionCollectionAnalysis</a>	<a href="http://codes.wmo.int/49-2/observable-property">http://codes.wmo.int/49-2/observable-property</a>	<a href="#">The set of physical properties evaluated as a result of an AIRMET, as specified in Technical Regulations, Volume II (WMO-No. 49): Meteorological Services for International Air Navigation.</a>
<a href="#">SIGMET Evolving Condition Collection Analysis</a>	<a href="#">SIGMETEvolvingConditionCollectionAnalysis</a>	<a href="http://codes.wmo.int/49-2/observable-property">http://codes.wmo.int/49-2/observable-property</a>	<a href="#">The set of meteorological conditions to be reported in a SIGMET, as specified in Technical Regulations, Volume II (WMO-No. 49): Meteorological Services for International Air Navigation.</a>
<a href="#">SIGMET Position Collection Analysis</a>	<a href="#">SIGMETPositionCollectionAnalysis</a>	<a href="http://codes.wmo.int/49-2/observable-property">http://codes.wmo.int/49-2/observable-property</a>	<a href="#">The set of locations where meteorological conditions exist to be reported in a SIGMET, as specified in Technical Regulations, Volume II (WMO-No. 49): Meteorological Services for International Air Navigation.</a>

**MM51.3.3** Add the following row to CODE TABLE D-2 PHYSICAL QUANTITY KINDS in the section of the table with title “Meteorological quantities”

<i>Label</i>	<i>Notation</i>	<i>Description</i>	<i>Dimensions</i>
<a href="#">Height of top of cloud</a>	<a href="#">heightOfTopOfCloud</a>	<a href="#">For a given cloud or cloud layer, vertical distance (measured from sea level) of the highest level in the atmosphere at which the air contains a perceptible quantity of cloud particles.</a>	<a href="#">L</a>