ATM Information Reference Model

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Abstract

This is the release note for the ATM Information Reference Model (AIRM).

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Rational for rejection
None.

Document History

Edition	Date	Status	Author	Justification
02.03.01	30/05/2013	Final		New Template
03.00.00	30/09/2013	Final		Updated for AIRM v3.0.0
03.01.00	30/03/2014	Final		Updated for AIRM v3.1.0
03.01.01	30/05/2014	Final		Updated for AIRM v3.1.1
03.02.00	30/09/2104	Final		Updated for AIRM v3.2.0
03.02.01	17/11/2014	Final		Updated for AIRM v3.2.1. Corrected footer.
03.03.00	30/03/2015	Final		Updated for AIRM v3.3.0
03.03.01	30/05/2015	Final		Updated for AIRM v3.3.1 Updated date of copyright notice.
04.00.00	30/09/2015	Final		Updated for AIRM v4.0.0
04.00.01	14/12/2015	Final		Updated for AIRM v4.0.1

04.01.00	30/03/2016	Final	███████████	Updated for AIRM v4.1.0

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Table of Contents

1 AIRM Contents

The ATM Information Reference Model (AIRM) deliverable contains the following parts:

1.1 AIRM Primer

8.1.3.D47_AIRM_Pri
    mer v4.1.0.doc

1.2 AIRM Foundation Rulebook

This is now available as a separate deliverable. See 8.1.3.D48_AIRM_Foundation_Rulebook V4.1.0.doc.

1.3 AIRM UML Models

8.1.3.D47_AIRM_Mo
    del v4.1.0.eap

1.4 AIRM Glossary

8.1.3.D47_AIRM_Glo
    ssary v4.1.0.doc

1.5 Note

You will need Sparx Enterprise Architect installed in order to open the AIRM UML Models. You can download a free EA Viewer at the EA Lite page.

2 AIRM Version History

Version	Changes	
4.1.0	**CR**	**Description**
	CR00569	Add meteorological features missing for the ICAO Annex 3 "Upper-air gridded forecast"
	CR00591	Traffic Counts for AIRM CLDM
	CR00592	(STAM) Measure Collaborative Decision Making
	CR00593	STAM Measure (CLDM)
	CR00594	ATFM Rerouting (CLDM)
	CR00595	Clarify proposal for future namespace management
	CR00596	UDPP enhanced slot-swapping (IM)
	CR00597	Alignment of AIRM Foundation with the SESAR ConOps Abbreviations
	CR00598	Add properties to allow the tracing of message level validity information
	CR00599	Correction of Rule 105 to cover codelists (again)
	CR00600	Correct modelling of runway operational constraints
	CR00601	Finalize Meteorology as eneded by EXE VP-669 and SVA003-010
	CR00602	Minor updates to some CLDM airspace types to reflect the recent evolution of the NM B2B Model
	The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Information Model • AIRM Foundation Rulebook • AIRM Foundation Library	

Version	Changes	
4.0.1	**CR**	**Description**
	CR00170	Surface Planning and Routing
	CR00258	Met - Consistency issues between codelist and ICAO terminology in Foundation Library
	CR00514	Additions from latest version of EUROCAE ED-99, AMDBs
	CR00523	Promoting UnpublishedRoutePoint from Airspace Infrastructure to Flight/Trajectory
	CR00524	Add new terms and definitions from European Regulations
	CR00525	Refresh the AIRM Primer to bring up to date
	CR00526	Replace the use of composition with aggregation of CLDM Objects
	CR00527	Rule for formatting AIRM::Constraints
	CR00528	Ensuring AIRM Completeness against ICAO Doc 4444 Item 7
	CR00529	Ensuring AIRM Completeness against ICAO Doc 4444 Item 8
	CR00531	Revisit Entity FlightAirspace
	CR00532	Deprecate OceanicTrack
	CR00533	Deprecate AOFlightProfile and ATFMFlightProfile in the CLDM
	CR00534	Deprecate UncertaintyQualifications in the CLDM
	CR00535	Deprecate values CodeTrajectoryPointType.JOINING / LEAVING
	CR00537	AircraftMovement and GroundMovement are synonyms
	CR00538	Deprecate <<IMEntity>> Movement
	CR00539	CLDM: Consolidate "Runway Mix Operations" modelling with representation of arrival and departure sequences

	CR00540	Complete Modeling of OLDI - Basic Procedure - Coordination in IM and CLDM
	CR00541	Simplify the IdentifierType in the CLDM based on UN/CEFACT
	CR00542	Add IOP Flight Object management roles
	CR00543	Add IMEntity Special Event
	CR00544	New IM Entities to support UDPP
	CR00545	CLDM Alignment for UDPP
	CR00546	Flight Restrictions for RVSM and 8.33 (IM+CLDM)
	CR00547	Time To Remove from / Insert in Sequence (IM + CLDM)
	CR00548	Add stay indicators
	CR00549	Airport DCB capacity figures
	CR00550	MET parameters and alerts: fixings and gaps
	CR00551	New IM Entities for Airport Slot Management
	CR00552	CLDM Improvements on Airport Slots
	CR00553	Deprecate orphan <<CLDMObject>> ManoeuvreData
	CR00554	Move Arrival.timeAtEntryInTheLastFIR to event AirspaceEntry
	CR00555	Improve CLDM modelling of flight type change information
	CR00556	Move property TrajectoryPoint.overflown to OverPoint
	CR00557	Improve AIRM modelling of DirectFlight(Segment)
	CR00558	Improving the AIRM IM modelling of Departure Runway occupancy phase
	CR00559	Add Sector Configuration to CLDM
	CR00560	Ensuring full coverage of the SESAR Extended Flight Plan content
	CR00561	Improvement Network Management IM ENtities
	CR00562	Add model content required for new version of AMAN Service
	CR00564	Add status model for TTOT
	CR00565	Filling the gaps in CLDM for tracing from the ASI service payload
	CR00566	Rename StakeholdersAndBusinessServices subject field
	CR00567	Remove some items from the reference list in the Foundation Rulebook
	CR00568	Simplification of the AIRM Internal Semantic Trace from the AIRM Consolidated Logical Data Model (CLDM) to the AIRM Information Model(IM)
	CR00570	Supporting What-If Flight Information in the CLDM
	CR00571	Refactoring of StateVector and TrajectoryPoint
	CR00572	Promote ICAO recognised aerodrome services from the CLDM to IM
	CR00573	Add seaplane landing sites to the IM
	CR00574	Overlapping properties in CLDM Entity AngleIndication
	CR00575	CLDM simplifications for Operator Preferences and Constraints
	CR00576	AIRM CLDM Completeness against ICAO Doc 9965 FF-ICE
	CR00577	Correcting AIRM IM bugs related to ICAO Doc 9965 coverage
	CR00578	Ensuring AIRM Completeness against ICAO Doc 4444 Item 16
	CR00579	Ensuring AIRM Completeness against ICAO Doc 4444 Item 18
	CR00580	Ensuring AIRM Completeness against ICAO Doc 4444 Item 19
	CR00581	Improving the AIRM modelling of ICAO Location Indicators
	CR00582	Improved AIRM IM modelling of RBT and Flight Object dataset
	CR00583	CLDM modelling of GroundHandling
	CR00584	"Number of passengers" and "Persons on board" information in the CLDM
	CR00585	Enhanced links between Trajectory-related terms in the AIRM IM
	CR00586	AOP-NOP Integration (tracing to CLDM)
	CR00587	Relax Requirement Req.-12 of the AIRM Compliance Framework
	CR00588	Modelling of Alert in CLDM
	CR00589	Improve A-CDM Alert (IM + CLDM)
	CR00590	Update to DCB in AIRM IM

The following components were updated:
- AIRM Consolidated Logical Data Model
- AIRM Information Model
- AIRM Foundation Rulebook
- AIRM Primer
- AIRM Foundation Library

Version	Changes	
	CR	**Description**
4.0.0	CR00446	CodeAircraftAvionicsEquipmentType should be split
	CR00454	Findings coming from the ED-133 AIRM Compliance
	CR00470	Additions and fixings from Doc 4444 and OAT FPL fields emerging from SVA004
	CR00495	Airspace Management in CLDM
	CR00496	Additions to ConvectionCell entity in CLDM
	CR00497	Promote remaining Meteorology messages from CLDM to IM and deprecate the rest
	CR00498	New stereotypes for Units of Measurement and Measures
	CR00499	IM Air Traffic Operations subject field: close gaps in coverage of PANS-ATM and Annexes
	CR00500	AIRM Compliance Framework
	CR00501	Promote remaining information products from CLDM to IM and deprecate the rest
	CR00502	Achieving greater harmonisation of ranges of values in the CLDM
	CR00503	Improving the AIRM IM modelling of SectorConfiguration
	CR00504	Upgrade of the AIRM IM Geometry and Point modelling
	CR00505	Ensure that OLDI "Basic" coordination is covered by the CLDM
	CR00506	Improving the AIRM IM with regards to Military Operations
	CR00507	Improving the AIRM CLDM with regards to Military Operations
	CR00508	Demand and Capacity Balancing (IM)
	CR00509	CLDM Demand and Capacity Balancing (DCB)
	CR00510	Final upgrade of the AIRM CLDM Point modelling
	CR00512	Build taxonomy of weather phenomena in the IM
	CR00513	Differences between TakeOff/Landing phases and events
	CR00515	AIRM IM Completeness against ICAO Doc 9965 FF-ICE
	CR00516	AIRM IM Completeness for Environmental Impact Assessments
	CR00517	ATC Instructions and Trajectory constraints in the CLDM
	CR00518	ATC Instructions and Trajectory constraints in the IM
	CR00519	AIRM IM alignment with current SESAR-FAA work on the ICAO provisions for FF-ICE increment 1
	CR00520	Bringing together the SESAR SBT and the FF-ICE Information concept

The following components were updated:
- AIRM Consolidated Logical Data Model
- AIRM Information Model
- AIRM Foundation Rulebook

Version	Changes

	CR	Description
	CR	**Description**
	CR00147	Harmonise Codelists
	CR00423	UML correctness of AIRM
	CR00487	Structure Codelist portfolio and document implicit status models.
	CR00488	CLDM Point Model Harmonisation
	CR00489	Improving the AIRM IM Airspace Infrastructure SubjectField
	CR00490	Improving the AIRM taxonomy of flights
3.3.1	CR00491	IM Airspace Management with (advanced) Flexible Use of Airspace
	CR00492	Promote ATC instructions to <<IMMessage>>
	CR00493	Promote remaining Surveillance messages from CLDM to IM and deprecate the rest

The following components were updated:
- AIRM Consolidated Logical Data Model
- AIRM Information Model

Version	Changes	
	CR	**Description**
	CR00348	Define the entities/objects which have no definitions
	CR00436	CLDM - BaseInfrastructure - NavigationInfrastructure
	CR00447	A-CDM improvements for IM
	CR00450	DateTimeWithStatus subtype
	CR00451	Add the new abbreviations which have been collected
	CR00455	Add new attributes to cover obstacle geometry
	CR00456	Add new vertical structure type to cover the obstacle requirements
	CR00457	Change values of CodeAircraftWingspanType
	CR00458	Add TAR in the enumeration of the CodeRadarServiceType
	CR00459	Redundant codelists to remove from model
	CR00461	Remodel the Use of ValFLType
	CR00462	Convert the "Numeric Value Types" to Measures
	CR00463	Add newly identified ICAO definition to AIRM Foundation Library
	CR00464	Deprecate <<CLDMObject>> LandingTakeOffAreaCollection in the CLDM
3.3.0	CR00465	Deprecate SurveySet from the AIRM CLDM
	CR00466	Move Notes and Timesheet to the Abstract
	CR00467	Incorporate Information Element agreed by B4.2
	CR00468	Remodel SpecialDate in the AIRM CLDM
	CR00469	Make Identifier Inherit from ISO CharacterString
	CR00471	Model NOTAM in the AIRM Information Model based on current CLDM
	CR00472	Integrate WMO METCE Model in AIRM Foundation
	CR00473	Simplify the structure of the Aircraft Subject Field
	CR00475	Simplify the structure of the BaseInfrastructure subject field
	CR00476	Simplify the structure of the AirspaceInfrastructure subject field
	CR00477	Deprecate MeteoConditions from Aircraft Subject field - refer to Meteorology/AviationCondition instead.
	CR00478	Improved package structure for SubjectFields AirTrafficOperations and Flight
	CR00479	Introducing representations of Flight and Trajectory in the IM
	CR00480	General clean-up of Trajectory Management & Flight Subject Fields
	CR00481	Ensuring AIRM Completeness against ICAO Doc 4444 Item 15
	CR00482	Ensuring AIRM Completeness against OFA 3.1.1 TMF technical Note

	CR00483	Ensuring AIRM Completeness based on AIRM Compliance Report of FIXM v3.0
	CR00484	Tidy up StateVector, AircraftState, AircraftDerivedData
	CR00485	Updates to the MET model to meet SVA010 requirements
	CR00486	DPI and FUM IMMessages

The following components were updated:
- AIRM Consolidated Logical Data Model
- AIRM Information Model

Version	Changes	
	CR	**Description**
	00408	Wind gust and wind projections over runway
	00415	Gaps in to data held in Flight Plan / Extended Flight Plan
	n/a	Minor tidy up changes applied such as corrected footers in documents.
3.2.1	The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook • AIRM Primer	

Version	Changes	
	CR	**Description**
	00307	Miscellaneous minor "tidy up" modifications to Governance Handbook.
	00367	Update membership of AIRM CCB to reflect the new project structures within SESAR and to add more SYS/OP members
	00368	Allow external experts to be invited to AIRM CCB meetings
	00376	New attributes for the ExpandedRoutePoint
	00379	IM - AerodromeInfrastructure - ICAO Annex 14 accommodation
	00393	Quality Criteria for AIRM Change Requests
	00394	Add a representative of Airservices Australia to the AIRM CCB
	00395	Allow CRs to go directly from status CCBS to Delegate.
	00396	Include semantic trace between IM and CLDM in the Rulebook
3.2.0	00397	AMAN Strategy
	00398	AMAN Horizons in CLDM
	00399	AMAN Advisories model refinement
	00401	Landing Rate
	00402	New codelist values to cover Airport Mapping Databases (AMDB) and services
	00403	on attribute to the AeronauticalInformationEvent class
	00404	Missing series attribute in the NOTAM class
	00405	Missing attribute regarding the SNOWTAM message
	00407	Some codelists are no longer used and can be deprecated
	00409	Add the three compliance constructs to the AIRM Abstract Model
	00410	AMAN -- Cumulative Fixes in Information Model
	00412	The code ELECTRIC from ICAO DOC 8643 is missing in the CodeAircraftEngineType
	00413	ADD the notion of Estimated Time Over
	00414	Add a MIL representative to the AIRM CCB

	00416	Represent the provisions of ICAO Annex 11 "Air Traffic Services" in the Information Model
	00417	Update list of items affected by Governance with the Governance Handbook
	00418	Add a duty to SYS projects to take account of standardised Exchange Models
	00419	Clarify that it is the CCB Chairman who calls for a vote
	00420	Add the procedure used during asynchronous meetings to the AIRM Governance Handbook
	00421	AIRM Governance Handbook - Text Edits to ensure consistency
	00422	Formalise the data types for Date, Time and Duration
	00424	Final rules and recommendations for Rulebook
	00425	IM - Base Infrastructure - Navigation Infrastructure
	00426	IM - Base Infrastructure - Surveillance Infrastructure
	00427	CLDM improvements to fulfill FT10 needs
	00428	IM - Base Infrastructure - Communication Infrastructure
	00429	Clean up CLDM Package Common::Time
	00430	Improve usage of Time constructs
	00431	IM - Stakeholder and Activities
	00432	Improving the AIRM "Point" Model
	00433	Enriching the content of Subject Field Airspace Infrastructure
	00434	Improving IM Aircraft subject field - AircraftConfiguration
	00435	Achieving consistent modelling of identifiers in the AIRM
	00437	Clarify AIRM stereotype of association class in Ruelbook

The following components were updated:
- AIRM Consolidated Logical Data Model
- AIRM Foundation Rulebook
- AIRM Information Model
- AIRM Constraints Model

Version	Changes	
	CR	**Description**
3.1.1	00341	Assure that SESAR is enough granular source reference by a CCB meeting
	00372	Constraints
	00373	Use colons instead of slashes within AIRM Uniform resources Names (URNs)
	00375	Runway mix sequence data
	00377	Upgrade Arrival Management related terminology
	00380	Add Metadata to the AIRM Abstract Model
	00381	Add definitions from ICAO ADREP to terminology area of AIRM Foundation Library
	00385	Simplify URN building rules
	00388	Refactoring Emergency information in the CLDM
	00389	Addition of an attribute and modification of an existing definition
	00390	Improving the AIRM IM Trajectory package
	00391	Improving the AIRM CLDM Trajectory package
	00392	Revised Event Pattern

The following components were updated:
- AIRM Consolidated Logical Data Model
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Version	Changes	
	CR	**Description**
	00131	Quality of Definitions
	00229	Wording [Adapted from] [source], enforced by AIRM Rulebook Rule 60, may be misleading
	00239	The values available for the "Definition:Status" tagged value should be agreed
	00250	The ICAO Terms should be given a stereotype
	00253	Make an association between TemporalEnabledEntity and the Note object
	00255	Ensure that reference from one entity to another are modelled as roles on UML associations
	00271	Clarify Rule 23 to make it more explicit that at least one role name is required
	00274	Adress Airport CDM related IM gaps
	00275	Adress Airport CDM related CLDM gaps identified by FT-10
	00276	Standardise description of semantic change to external definitions
	00277	Reorganise "Stakeholders and Activities" into a new primary subject field
	00279	Use of colours for AIRM Subject Fields
	00280	Add AIRM List of Abbreviations to the AIRM Foundation Library
3.1.0	00281	Abbreviations used in the definitions of classes should be added to the List of Abbreviations
	00282	Deprecated numeric data types that add no new attributes
	00334	Include AIRM meta-model documentation in the Foundation Rulebook
	00335	Rename "Glidepath", "Elevation" and "Azimuth" to make them specific to navigation aids
	00336	Add "AIM Products" to the AIRM Information Model
	00337	Correct combinations of "Entity/Object" status and "Defintion:Status"
	00338	Add geometries to aerodrome surface route network nodes and edges
	00339	Add a GeoTemporalEnabledEntity
	00344	Correct the term/definition of StartUp
	00350	AIRM Foundation Rulebook should be tidied up to ensure consistency
	00352	Add an abstract "CLDMObject" into the AIRM Abstract model
	00353	Add ICAO Doc 9965 definitions to AIRM Foundation Library
	00354	B4.2 release 8 new information elements
	00355	Decide if in AIRM Abbreviations list the Abbreviations of standards shall be included
	00356	Take into account the definitions from the Free Route Task Force
	00357	Update of the Flight Identifier packages (IMT#6 Flight Theme)
	00358	Refactor the CLDM modelling of the Flight Plan
	00359	Put "Active Runway Configuration" concept into IM and CLDM
	00360	Syntax on how to name standards
	00361	Additional recommendations on AIRM Compliance based upon PMCG work

00362	Flatten the structure contained in the Terminal Procedures package
00363	Baseline representation of ATC Operations (ICAO standards)
00364	Refactor "Flight Phase" Information Model (IMT #6 Flight Theme)
00365	Definition of the "Flight" Subject Field (IMT #6 Flight Theme)
00366	SESAR ATM phase concept (IMT #6 Flight Theme)
00370	New Rule: model elements must appear on at least one diagram.
00371	Met subject field changes

The following components were updated:
- AIRM Consolidated Logical Data Model
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Version	Changes	
	CR	**Description**
3.0.0	00142	to get a standarised SESAR definition related to routing coming from WP8, the one that will be used by SWIM
	00216	Revision of the structure of the MET model in AIRM to accommodate METCE & IWXXM
	00251	Add the AIRM Technical Standards Profile to the AIRM Foundation Library UML
	00252	Integrate necessary pieces of FIXM core information into the AIRM
	00254	Deprecate all entities in the Environment Subject Field in the AIRM IM
	00256	Correct obvious spelling mistakes in the definitions used in the AIRM IM and CLDM.
	00257	The aircraft entity does not say which category of aircraft it is
	00259	As part of global harmonisation, add units of measurement used in NAS-EA OV7
	00260	Revised IM model for the Meteorology Subject field
	00262	Refactoring of AMAN and DMAN related information in CLDM
	00264	ENV IM Model - Assessments
	00265	New structure for the AIRM Flight Packages
	00268	IMT#5 Flight theme conclusions - IM and CLDM improvements
	00269	IMT Flight theme - Flight Identifier taxonomy

The following components were updated:
- AIRM Consolidated Logical Data Model
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Version	Changes	
	CR	**Description**
2.3.1	00215	FT6 - Aerodrome Map Information REQ
	00217	Add an FAA member to the AIRM CCB
	00232	Deprecate the "intentional Change Request" option
	00238	Candidate for a rule in the rulebook
	00241	Implement Information Model for Step 1 Arrival and Departure Management concepts
	00242	Introduce CTA and TTA definitions into the AIRM Information Model
	00243	Add a stereotype to the AIRM Metamodel to identify Message-Type constructs
	00244	Deprecate AIRM CLDM Airport Domain content from ANXM import not

Version	Changes
	backed by SESAR requirements
	00245 Turnaround and TITAN Related Changes
	00246 ENV input model
	00247 Update AIRM Foundation Rulebook with rules necessary for AIRM Compliance Framework
	00248 Initial Aircraft Subject Field re-factor
	00249 Rule 46 should be restricted to the CLDM
	The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook • AIRM Information Model
2.3.0	Implemented Change Requests: 00153, 00174, 00175, 00176, 00177, 00178, 00179, 00192, 00196, 00197, 00205, 00209, 00210, 00211, 00212, 00218, 00227, 00228, 00230, 00231, 00233, 00234 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook • AIRM Information Model
2.2.1	Implemented Change Requests: 00194, 00195, 00203, 00206 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook and Library • AIRM Information Model
2.2.0	Implemented Change Requests: 00120, 00136, 00137, 00139, 00158, 00159, 00160, 00161, 00162, 00167, 00172, 00173, 00180, 00181, 00183, 00184, 00185, 00186, 00187, 00188, 00200, 00201 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook and Library • AIRM Information Model • AIRM Glossary • AIRM Primer
2.1.1	Implemented Change Requests: 00138, 00143, 00154, 00155, 00156, 00169 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook and Library • AIRM Information Model
2.1.0	Implemented Change Requests: 00040, 00100, 00101, 00102, 00106, 00109, 00112, 00117, 00119, 00124, 00125, 00126, 00127, 00128, 00129, 00130, 00132, 00133, 00135, 00140, 00148, 00150, 00151, 00152 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook and Library • AIRM Information Model

Version	Changes
	• AIRM Glossary • AIRM Primer
2.0.0	Implemented Change Requests: 00006, 00008, 00029, 00032, 00035, 00036, 00037, 00039, 00049, 00051, 00053, 00055, 00057, 00058, 00060, 00061, 00065, 00066, 00068, 00071, 00072, 00073, 00074, 00075, 00076, 00077, 00078, 00079, 00080, 00081, 00082, 00083, 00084, 00086, 00087, 00089, 00091, 00093 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook and Library • AIRM Information Model • AIRM Glossary • AIRM Primer
1.1.1	Implemented Change Requests: 00011, 00041, 00043, 00044, 00045, 00046, 00047, 00048 The following components were updated: • AIRM Consolidated Logical Data Model • AIRM Foundation Rulebook
1.1.0	Corrective Release. AIRM Consolidated Logical Data Model was corrected with the removal of overlaps and the completion of gaps. The AIRM Information Model was "refreshed". The AIRM Foundation Library contains a new ISO standard for Language Codes.
1.0.0	This is the "Initial Load" of AIRM

3 Deprecations

Version	Changes
4.1.0	The following elements are marked as deprecated and **have been** deleted: • From the AIRM Information Model: o ACDMAlertInconsistencyDetection o AerodromeConstraint o AircraftCriteria o AircraftOperator o AirspaceDemandAndCapacity o AirspaceFlowRouteElement o AMANTrajectory o Balance o CoordinationAndTransferConstraint o Crossing o DirectFlight o DirectTo o FlowCondition o FlowCriteria o FlowRestriction o FlowRouting o GroundMovement o HeadingConstraint o HoldingConstraint o IntendedConstraintUpdate o Load o Movement o OptimumAirspace o PerformanceStatistics o PlanningScenario o PlanningValue o RouteCriteria o RunwayDirectionClassOccupancy o ScenarioAircraftClass o StandSystemCapacityScenario o StayConstraint o StrategicATFMMeasure o StrategicConstraint o TacticalATFMMeasure o TacticalConstraint o TaxiwaySystemCapacityScenario o TheoreticalCapacityCase o UsageStatistics o VerticalRateConstraint o VolumeCriteria • From the AIRM Consolidated Logical Data Model: o AbstractReport o AerodromeInadequacy o AerodromeWarning o AeronauticalMeteorologicalStation o AfterPassingClimbTo o AfterPassingDescendTo o AimingPoint o AircraftCharacteristic

Version	Changes
	o AircraftCriteria
	o AircraftReport
	o AircraftWeight
	o AirportArrivalSlot
	o AirportDepartureSlot
	o AirspaceBasic
	o AirspaceBorderCrossing
	o AirspaceDemandAndCapacity
	o AirspaceFlowRouteElement
	o AirspaceInUse
	o AltitudeRange
	o AOFlightProfile
	o ApronInadequacy
	o AreaReport
	o ArrivalSlotAssignmentHistory
	o ATCFrequencyInadequacy
	o ATCInstruction
	o AtCleared
	o AtClimbTo
	o AtDescendTo
	o ATFMFlightProfile
	o AtProceedDirectTo
	o BaseApplicability
	o BirdConcentrationObservation
	o BrakingActionObservation
	o CapacityBaseline
	o CapacityBaselineValue
	o CapacityBody
	o CapacityPoint
	o CheckpointInertialNavigationSystem
	o CheckpointVOR
	o CivilMilitaryCrossingData
	o ClearedTo
	o ClimbAt
	o ClimbTo
	o ClimbToReachBy
	o CodeAirborneStatusType
	o CodeAirspacePointRoleType
	o CodeAISPublicationType
	o CodeApplicationRuleType
	o CodeApproachCategoryType
	o CodeApproachGuidanceType
	o CodeBaselineType
	o CodeBirdConcentrationLocationType
	o CodeCapacityBodyCategoryType
	o CodeConstraintFulfilmentStatusType
	o CodeConstraintPolicyType
	o CodeCourseDeviationType
	o CodeCPDLCStatusType
	o CodeCrewQualificationType
	o CodeDemandCapacityBalanceType
	o CodeDepartureOrArrivalType
	o CodeEventEncodingType
	o CodeFlightManoeuvringStatusType
	o CodeFlightModeSetType
	o CodeFlightPlanProcessingType

Version	Changes
	o CodeFlightTrendType
	o CodeFlowConditionOperationType
	o CodeFlowElementType
	o CodeFlowRestrictionType
	o CodeHoldingType
	o CodeImprovementRouteStateType
	o CodeIssueType
	o CodeLongitudinalModeType
	o CodeMeteoConditionsType
	o CodeModeSFlightStatusType
	o CodeMOPSVersionType
	o CodeNOTAMTranslationType
	o CodeNOTAMType
	o CodeObsReportForecastType
	o CodeOperandCodeType
	o CodeOperationalApplicationStatusType
	o CodeOperationalPointUsage
	o CodeOperationalType
	o CodeOperatorCodeType
	o CodePassengerMovementType
	o CodePerceivedDecelerationRateType
	o CodePointType
	o CodePrimaryRadarType
	o CodePriorityLevelType
	o CodeProbabilityDistributionType
	o CodeRegulationLocationType
	o CodeRegulationStatusType
	o CodeReroutableStatusType
	o CodeRNPCodeType
	o CodeRouteTrafficType
	o CodeRunwayDirectionInterdependencyType
	o CodeRVROutOfRangeType
	o CodeRVSMType
	o CodeSequenceEmergencyType
	o CodeServiceGroundControlType
	o CodeSideType
	o CodeSlotStateType
	o CodeSpecialDateType
	o CodeSpeedConstraintType
	o CodeSurfaceType
	o CodeSuspensionStateType
	o CodeTaxiNodeType
	o CodeTaxiTimeStatusType
	o CodeTerrainElevationReferenceType
	o CodeTheoreticalRunwayCapacityType
	o CodeToleranceClassType
	o CodeTrafficFlowVolumeType
	o CodeTrafficVolumeCategoryType
	o CodeTransferHeadingType
	o CodeTransversalModeType
	o CodeTurnIndicatorType
	o CodeValidationResultType
	o CodeVerticalModeType
	o ConditionCombination
	o ContinuePresentHeading
	o CORAPreference

Version	Changes
	- CrossAt - CrossAtOrAbove - CrossAtOrAfter - CrossAtOrBefore - CrossAtOrBelow - CrossBetween - CrossingTrajectory - CrossingTrajectory - CustomWakeVortexClassification - DataLinkAuthority - DataSourceIdentifier - DeicingCommencement - DeicingEnd - Demand - DepartureSlotAssignmentHistory - DependentApplicability - DependentApplicabilityClassification - DescendAt - DescendTo - DescendToReachBy - DirectFlight - DirectFlightClass - DirectFlightSegment - DirectMatter - DirectSegmentFlowRoutingElement - DirectTo - EntryExitUsage - Equipment833Restriction - ExclusionFromRegulations - FieldConditionInadequacyAtDestination - FinalApproach - FlightAirspace - FlightFormationArrival - FlightFormationDeparture - FlightMode - FlowCondition - FlowConditionElement - FlowConditionExpression - FlowCriteria - FlowRouting - FlowRoutingElement - FlyHeading - FlyTrack - FormationCharacteristics - GaseousEmission - GateStatistics - GlobalNavigationSatelliteSystem - GridCell - GroupOfStands - Habitat - HeadingConstraint - Hold - HoldingBay - HoldingConstraint - HoldingExitTimeInputData - HoldingPatternDistance

Version	Changes
	o HoldingPatternDuration
	o IATACoordination
	o IncreaseSpeedTo
	o IndirectMatter
	o IntendedConstraintUpdate
	o InterDepartureTime
	o LandUse
	o LandUsePlanning
	o LocalReport
	o LowVisibilityOperation
	o Maintain
	o ManoeuvreData
	o ManoeuvringAreaInadequacy
	o MotionVector
	o MountainObscuration
	o MountainWave
	o MovementPreference
	o NationalMilitaryActivity
	o NavaidInadequacy
	o NavigationSystemCheckpoint
	o Negotiating4DTrajectory
	o NoSpeedRestriction
	o ObstacleInadequacy
	o OceanicTrack
	o OffsetOfRoute
	o OperatingConstraint
	o OperationalIntent
	o OperationalPoint
	o OptimumAirspace
	o ParkingPosition
	o ParticulateMatter
	o PermanentCapacity
	o PilotObservation
	o PilotRequest
	o PlanningScenario
	o PlanningValue
	o Population
	o Preference
	o PreferencesInformation
	o PrimarySurveillanceRadar
	o ProcedureTransitionLeg
	o ProceedDirectTo
	o RadioactiveCloud
	o ReachBy
	o ReadyForDeicing
	o ReadyStatus
	o ReduceSpeedTo
	o ReduceToMinimumApproachSpeed
	o RegulationCause
	o RejoinRouteBy
	o ReportProcess
	o RequestedFlightLevel
	o RequestedSpeed
	o ReroutingIndicator
	o ResidentialChange
	o ResponseScheme

Version	Changes
	o Responsibility
	o RestrictionApplicability
	o ResumeNormalSpeed
	o Role
	o RouteCriteria
	o RoutePortionFlowRoutingElement
	o RunwayBrakingActionObservation
	o RunwayDeclaredDistanceValue
	o RunwayDirectionInterdependency
	o RunwayInUse
	o RunwayOccupancyTime
	o RunwaySectionBrakingActionObservation
	o RunwaySequence
	o RunwaySystemCapacityScenario
	o RVSMRestriction
	o ScenarioAircraftClass
	o ShortTermATFCMMeasure
	o SpecialRadioNavaid
	o SpeedRange
	o StandardLevel
	o StandGroupUsage
	o StandInterdependency
	o StandStatistics
	o StandSystemCapacityScenario
	o StartUpApprovalRequest
	o StartUpGiven
	o Stay
	o StayConstraint
	o StochasticY
	o StrategicConstraint
	o SurfaceForecastReport
	o SurfaceReport
	o System
	o TACTComment
	o TacticalConstraint
	o TACTReason
	o TaxilineNode
	o TaxiNodeResult
	o TaxiRouteAutomatic
	o TaxiRouteConstraint
	o TaxiRouteManual
	o TaxiRouteProcedure
	o TaxiRouteResult
	o TaxiRouteSemiAutomatic
	o TaxiSegmentResult
	o TaxiwayBrakingActionObservation
	o TaxiwaySystemCapacityScenario
	o TemporaryCapacity
	o TerminalProcedureFlowRoutingElement
	o TerrainPoint
	o TerrainSet
	o TheoreticalCapacity
	o TheoreticalCapacityCase
	o TimeRangeConstraint
	o TropicalCycloneAdvisory
	o Turn

Version	Changes
	o TurnHeading o TurnToPoint o UncertaintyQualifications o UnpublishedRoutePoint o ValDistanceSignedType o ValEmissionIndexType o ValSurfaceType o ValTerminalTheoreticalCapacityType o VerticalRateConstraint o VerticalStructureLightingStatus o VerticalStructurePartGeometry o VisualNavigationAid o VolcanicActivityReport o VolcanicAshAdvisory o VolumeCriteria o WakeVortexSeparation o WhatIfFlightRejectReason o WhatIfFlightResponse o WhatIfSlotList o WindShearWarning o XFLEFLInput
4.0.0	The following elements are marked as deprecated and **have been** deleted: • From the AIRM Information Model: o OverInitialApproachFix o OverInitialMeteringPoint o OverMeteringPoint o AircraftState o FlowMeasure o AirspaceActivation o AirspaceReservation o EnRouteSegmentPoint o TerminalSegmentPoint o HoldingPatternDistance o HoldingPatternDuration o HoldingPatternLength o UnplannedHolding o FlowMeasure o FlightType • From the AIRM Consolidated Logical Data Model: o AircraftState o CodeAerialRefuellingPointType o CodeFreeFlightType o CodeMilitaryRoutePointType o CodeProcedureFixRoleType o AerialRefuellingPoint o EnRouteSegmentPoint o SegmentPoint o TerminalSegmentPoint o Waypoint o LandingTakeOffAreaCollection o ChangeOverPoint o EmergencyPoint o Package Name: SurveillanceInformationProduct o ADSBAirTargetReport

Version	Changes
	- ADSBSurfaceTargetReport - ADSBTargetReport - ADSBTargetStatus - AirborneProjectedGroundVector - AircraftDerivedData - AircraftOperationalStatus - AirStateVector - CalculatedTrackBarometricAltitudeType - ModeOfMovement - MOPSVersion - PositionTimestamp - QualityIndicator - SelectedHeading - StatusReportedByADSB - SurfaceGroundVector - SurfaceStateVector - SystemTrack - TargetReport - TargetReportDescriptor - TargetStatus - TrackDataAges - TrackMode1Code - TrackMode2Code - TrackMode3ACode - TrackMode4Code - TrackMode5Code - TrackStatus - TrackUpdateAges - TrajectoryIntentPoint - VelocityTimestamp - AeronauticalInformationEvent - AISPublication - NOTAM - NOTAMTranslation - SurveySet - CodeRunwayPointRoleType - AerodromeReferencePoint - RunwayCentrelinePoint - SurveyControlPoint - NextReportingPosition - TakeOff - TaxiIn - TaxiOut - AirborneSegment - AirborneTrajectoryElement - Desired4DTrajectory - Executed4DTrajectory - IntermediatePoint - SurfaceSegment - SurfaceSegmentElement - TaxiData - TaxiPath - TaxiPathElement - SpecialDateReference
3.3.0	The following elements are marked as deprecated and **have been** deleted:

Version	Changes
	- From the AIRM Information Model: - AuthorityForAirspace - CirclingArea - ApronLightSystem - DirectionFinder - GuidanceService - ILSGlidepath - Localizer - MLSAzimuth - MLSElevation - Navaid - SpecialNavigationSystem - From the AIRM Consolidated Logical Data Model: - CodeFiledFPLProcessingCodesType - CodeFlightPlanMessageStatusType - CodeFlightPlanMessageType - CodeFlightPlanStatusType - CodeFrequencyAvailabilityType - CodeLocationType - CodeSelectedAltitudeSourceType - CodeWeatherProximityType - Package Name: DateAndTimeTypes - DateMonthDayType - DateYearType - AircraftIdentifier - AircraftRegistration - SignificantPointInAirspace - ExtendedWeeklyDayPeriodList - SpecialDayPeriodList - SpecialDayTimeTable - TimeFunction - TimePositionList - TimeTable - TimeTableList - TimeValueList - WeeklyPeriod - WeeklyPeriodList - WeeklyTimePattern - FlightIdentifier - IFPLIdentifier - MeteorologicalData - MeteorologicalCondition
3.2.0	The following elements were marked as deprecated and **have been** deleted: - From the AIRM Information Model: - SurfaceRouting - Instruction - CodeSharing - From the AIRM Consolidated Logical Data Model: - AbstractCoverage

Version	Changes
	o AbstractCoverageDomain
	o ACASResolutionAdvisoryReport
	o AdditionalRemark
	o AerialPilotReport
	o AerialReport
	o AIREP
	o AIRMET
	o AirSpeedInformation
	o AlternativeFlightData
	o AMDAR
	o Annex3Product
	o AreaCoverage
	o AreaDomain
	o AreaOfInterest
	o BoundaryPoint
	o CapacityBodyIdentifierType
	o CCFP
	o ComposedAircraftIdentifier
	o CoreMeasure
	o Coverage
	o DataType
	o DiscreteCoverage
	o DistributionList
	o DomainSet
	o Event
	o EventPeriod
	o EventPlanningStatus
	o EventTime
	o ExpandedRoute
	o ExpandedRoutePoint
	o ExtentOfType
	o Feature
	o FiledFlightPlan
	o FlightIdentifierType
	o FlightInteroperabilityInformation
	o FlightInteroperabiltyIdentifier
	o FlightObject
	o FlightPlan
	o FlightPlanMessage
	o FlightScript
	o FlightSegment
	o Forecast
	o FutureProduct
	o GAFOR
	o G-AIRMET
	o G-SIGMET
	o Hydrometeor
	o IATAFlightIdentifier
	o IFR
	o InitialConditions
	o Lithometeor
	o MDCR
	o Measure
	o METAR
	o METARSpeci
	o MeteorologicalWatchOffice

Version	Changes
	o Meteorology
	o METForecast
	o METObservation
	o ModeSMBData
	o MotionVectors
	o MultiPoint
	o NonICAOProduct
	o ObjectWithAge
	o Observation
	o ObservationOrForecast
	o OtherInformation
	o Package Name: FlightPlan
	o PercentageRange
	o Phenomenon
	o PIREP
	o PointCollectionCoverage
	o PointCollectionDomain
	o PointCoverage
	o PointDomain
	o PointTimeSeriesCoverage
	o PointTimeSeriesDomain
	o PointWithAgeType
	o Product
	o ProfileCoverage
	o ProfileDomain
	o ProfileTimeSeriesCoverage
	o ProfileTimeSeriesDomain
	o RepetitiveFlightPlan
	o RoutePoint
	o SelectedAltitude
	o Shower
	o SIGMET
	o SignificantPointFlowRouteElement
	o StationBearing
	o SupplementaryInformation
	o SurfaceDeposit
	o TAF
	o Thunderstorm
	o Trajectory4DData
	o TrajectoryCoverage
	o TrajectoryDescription
	o TrajectoryDomain
	o TrajectoryIntentDataType
	o TrajectorySignificantPoint
	o TREND
	o TropicalCycloneAdvisoryCentre
	o UnitOfMeasure
	o UrgentPIREP
	o ValAlarmLimitType
	o ValAltitudeWithAgeType
	o ValAngleWithAgeType
	o ValChannelNumberType
	o ValFrictionType
	o ValIntegerWithAgeType
	o ValLCNType
	o ValMachNumberWithAgeType

Version	Changes
	o ValMagneticVariationChangeType o ValPCNType o ValPercentType o ValPressureWithAgeType o ValSpeedWithAgeType o VolcanicAshAdvisoryCentre o VolcanicAshConcentration o WeatherModifier o WeatherPhenomenon o WxCondition o WxConditions
3.1.0	The following elements were marked as deprecated and **have been** deleted: • From the AIRM Information Model: o Environment o FlightPhase o GaseousEmissions o NoiseEmissions o NoiseMap o Particles o Substances o Zone o IATAFlightIdentifier o Coverage • From the AIRM Consolidated Logical Data Model: o AllocatedStand o StandAllocation o CommercialAirline o EstimatedOffBlockDate o EstimatedOffBlockTime o ClassificationCriteria o DepositDepthCriteria o DepositDepthStatistics o DepositSnocloCriteria o DepositSnocloStatistics o GroundVisibility o MeteoCase o MeteoStatistics o PressureCriteria o PressureStatistics o SkyConditionCriteria o SkyConditionStatistics o SlantVisibility o SurfaceState o TemperatureCriteria o TemperatureStatistics o VisibilityCriteria o VisibilityStatistics o WeatherConditionCriteria o WeatherConditionStatistics o WindCriteria o WindStatistics o AMDAR o MDCR

Version	Changes
	The following elements were marked as deprecated and **have been** deleted:
3.0.0	• From the AIRM Information Model: o AircraftControlParameter o AutomaticFlightControlSystem o EmergencyData o LateralEPPWaypoint o AirborneTrajectory o BusinessOrMissionDevelopmentTrajectory o BusinessOrMissionTrajectory o BusinessOrMissionTrajectory o Desired4DTrajectory o ExpandedRoute o FlightScript o InitialConditions o PredictedTrajectory4D o Profile4D o ReferenceBusinessOrMissionTrajectory o SharedBusinessOrMissionTrajectory o Trajectory4D o ArrivalHandOver o OverInitialMeteringPoint.TTOIMP o OverInitialMeteringPoint.ATOIMP o AltitudeIntent o ConfigurationIntent o LateralIntent o LongitudinalIntent o PowerIntent o ExtendedProjectedProfilePoint o VerticalEPPWaypoint o CurrentStateVector o • From the AIRM Consolidated Logical Data Model: o AircraftRegistration o AirBrake o AirFrame o DinghieEquipment o EmergencyEquipment o EquipmentCapabilityAndStatus o EquipmentOperationalStatus o LandingGear o LifeJacketEquipment o LiftDevice o SurveillanceEquipment o SurvivalEquipment o AircraftReady o AirportCDMBaseData o Movement o Profile o ProfileData o SequenceReason o TurnaroundTime o TurnRoundActivity o UDPPCDMData o ATMProcedureImplementation

Version	Changes
	- ExperiencedDelayCase - PassengerCount - UsageCount - AircraftClassificationCriteria - AircraftClassStatistics - FlightOperationalStatus - MaximumRealisableCapability - MaximumRealisableCapabilityContour - MovementAnalysis - MovementBreakdown - MovementSample - ThroughputDistribution - GateTransportationMean - PreDepartureProgressDetails - TaxiRouteGuidanceLine
2.3.0	The following elements were marked as deprecated and **have been** deleted: • From the AIRM Information Model: - ICAOFlightPlan - AircraftDerivedData - AircraftDownloadedData - EventTypeChange - ExtendedProjectedProfileChangeSubscription - ExtendedProjectedProfileChangeTolerance - ExtendedProjectedProfileContinuousChangeSubscription - ExtendedProjectedProfileDelineatedChangeSubscription - ExtendedProjectedProfileDemand - ExtendedProjectedProfilePeriodicDemand - ExtendedProjectedProfileWindow - TrajectorySubscription - TrajectoryICAO - AirSurveillance - AircraftSurveillance - SurfaceSurveillance • From the AIRM Consolidated Logical Data Model: - HoldingPatternLength - MarkingExtent - ArrestingGearExtent - GuidanceService - ObstacleAreaOrigin - PublishedRoutePoint - RadialPointType - RadialRoutePoint - RouteAirspacePoint - SignificantPointType - EquipmentChoice - FlightConditionElementChoice - FlightRoutingElementChoice

Appendix A   Licence

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