



Agenda Item 4: Other Business

ICAO AIS/AIM TRAINING MANUAL

(Presented by the Secretariat)

Summary This working paper presents to the States the key competencies required for Aeronautical Information Services (AIS) and Aeronautical Information Management (AIM) staff developed by ad-hoc group of the ICAO AIS to AIM Study Group to be included in the ICAO AIS/AIM Training Manual.	
References: <ul style="list-style-type: none">• ICAO Annex 15• Aeronautical Information Services Manual (Doc 8126)	
ICAO Strategic Objectives:	A. Safety C. Environmental Protection and Sustainable Development of Air Transport

1 Background

1.1 The Annex 15 to the Convention of the International Civil Aviation Organization (ICAO) specifies that each contracting State shall provide an “aeronautical information service.” Annex 15 also specifies that “Each Contracting State shall take all necessary measures to ensure that the aeronautical information/data it provides relating to its own territory, as well as areas in which the State is responsible for air traffic services outside its territory, is adequate, of required quality and timely. This shall include arrangements for the timely provision of required aeronautical information and aeronautical data to the aeronautical information service by each of the State services associated with aircraft operations.”

1.2 The Annex 15 and the Aeronautical Information Services Manual (Doc 8126) further cite the need for each State to establish a quality system and put in place a quality management system. Quality management should be applicable to the entire aeronautical data chain from origination to distribution to the next intended user. “Within the context of the established quality management system, the skills and knowledge required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. States shall ensure that personnel possess the skills and competencies required to perform specific assigned functions, and appropriate records shall be maintained so that the qualifications of personnel can be confirmed.”

2 Discussion

2.1 In response to a number of requests of member States to address the need for training from the perspectives of Aeronautical Information Services (AIS) and Aeronautical Information Management (AIM), the ICAO AIS to AIM Study Group formed an ad-hoc group to study how best to provide an ICAO response to these training requests.

2.2 The ad-hoc group was tasked and challenged to provide a universal approach to training; therefore, this manual has been designed to provide guidance for training development in lieu of a formal training program that may not be universally applicable.

2.3 Using a competency-based approach to training allows an organization to identify the gaps in the knowledge, skills, and abilities of their staff performing the AIS/AIM functions and addressing performance expectations.

2.4 This allows for maximum flexibility recognizing the complex and diverse nature of AIS and AIM services worldwide, and training programs that are targeted and effective for maximum efficiency. It further allows a State organization to refine job descriptions, performance expectations, training plans, and career progression on an individual level.

2.5 In creating this training guidance manual, the following assumptions were made: The AIS/AIM organization:

- a) has specific job descriptions/profiles for staff performing AIS/AIM functions (regardless of whether the individuals are employees, contractors, or other named providers);
- b) can clearly define who (person or organization) provides each of the required services, and whether they take place within their AIS/AIM organization or elsewhere;
- c) has access to the appropriate physical training facilities (to include the appropriate technology support) needed to deliver the training;
- d) has implemented a quality management system that includes standard operating procedures (and/or documented work instructions);
- e) will develop (or has available) a training program that includes for example, the specified training courses, assessments, and the associated records;
- f) has access to the services for competency-based course developers and competent instructors; and
- g) will provide on-the-job training, following a training course, in order for a trainee to apply and/or reinforce the training objectives.

2.6 The competency framework is aligned with the general principles of AIS and the ICAO Roadmap for the Transition from AIS to AIM, and expected to be updated accordingly.

2.7 While this manual provides guidance on how to develop a competency-based training curriculum specifically for staff members, it should not be used or considered as a textbook on course content identification but rather as guidance on how to develop targeted training.

2.8 Competency-based training assumes that trainees will have a basic understanding of aviation fundamentals that are not addressed by this manual.

2.9 The key competencies required for Aeronautical Information Services (AIS) and Aeronautical Information Management (AIM) staff is contained in the **Appendix A** to this working paper.

3. Suggested action

3.1 Based on the foregoing, the Meeting is invited to:

- a) analyse the information contained in **Appendix A** to this working paper, and
- b) made comments or suggest the ammendements needed to inform the Ad-Hoc group by the secretariat.

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APPENDIX A
AIS/AIM COMPETENCY FRAMEWORK

X	COMPETENCY UNIT		
X.X	COMPETENCY ELEMENT		
	X.X.X	Terminal Objective (Performance Criteria)	Standard⁶
1	DATA AND INFORMATION MANAGEMENT		
1.1	PRE-PROCESS DATA		
	1.1.1	Receive and record raw data (internal and/or external)	Local procedures
	1.1.2	Evaluate whether the raw data is from an authorized source	ICAO Annex 15, Chap. 7 and Appendix 1; Doc 8126; Local procedures
	1.1.3	Evaluate whether the data meets protection requirements	Local procedures
	1.1.5	Identify if there is a need for translation and/or coding of the raw data	ICAO Doc 9713, Doc 8400
	1.1.6	Analyse the appropriateness of the data	ICAO Annex 15; Local procedures
	1.1.7	Verify the quality of the raw data	ICAO Annex 15, Chap. 3; Local procedures
	1.1.8	Analyse the data for completeness, coherence, abbreviation and ambiguity	ICAO Doc 8400; Local procedures
	1.1.9	Identify any discrepancies, duplication and misinterpretations of the data	ICAO Annex 15, Chap. 4 through 7
	1.1.10	Coordinate with data source	Local procedures
	1.1.11	Execute corrective action	Local procedures
1.2	PROCESS DATA		
	1.2.1	Perform storage of raw data	Local procedures
	1.2.2	Assess the impact of the data on existing publications, the significance and complexity of the data, and its temporality.	Local procedures
	1.2.3	Coordinate with other relevant parties	Local procedures
	1.2.4	Select the means of publication	Local procedures
	1.2.5	Schedule the publication process, taking into consideration the main milestones, proposed publication/effective date and the AIRAC cycle	ICAO Annex 15 and Local procedures, Doc 8126

⁶ The standards listed in this guidance are to be considered as representative and not exhaustive

X	COMPETENCY UNIT		
X.X	COMPETENCY ELEMENT		
	X.X.X	Terminal Objective (Performance Criteria)	Standard⁶
	1.2.6	Perform calculations e.g., data conversions	Local procedures
	1.2.7	Apply appropriate data formatting rules	Local procedures
	1.2.8	Enter data into application	Local procedures
	1.2.9	Assemble statistical data	Local procedures
	1.2.10	Make data available	Local procedures
1.3	OPERATE DATABASE(S)		
	1.3.1	Apply database maintenance operations	Local procedures
	1.3.2	Identify faults in the operation of the database and apply fault reporting procedures	Local procedures
	1.3.3	Operate application(s)	Local procedures
1.4	PRODUCE DATA SETS/FILES		
	1.4.1	Select the required data	Local procedures
	1.4.2	Compile data sets/files (e.g., terrain and obstacle, PIB, List of Valid NOTAM, etc.)	ICAO Documents and/or Local procedures
	1.4.3	Coordinate with other authorities as necessary	Local procedures
	1.4.4	Verify data sets/files	Local procedures
	1.4.5	Obtain approval	Local procedures
	1.4.6	Make data sets/files available	Local procedures
1.5	MAINTAIN DATA/INFORMATION AND LIBRARY (INTERNAL AND EXTERNAL)		
	1.5.1	Maintain publications (e.g. AIP)	Annex 15 and Local procedures
	1.5.2	Maintain data (static and/or dynamic)	Local procedures
	1.5.3	Maintain records	Local procedures
2	STATIC DATA		
2.1	GENERATE AIP/AIP AMENDMENT		
	2.1.1	Prepare content (text, tables, charts, and other elements)	ICAO Annex 15, Annex 4, Doc 8126, Doc 8400, Doc 8697, Local procedures
	2.1.2	Coordinate with other relevant parties	Local procedures
	2.1.3	Translate text into appropriate language	Local procedures

X COMPETENCY UNIT			
X.X		COMPETENCY ELEMENT	
	X.X.X	Terminal Objective (Performance Criteria)	Standard⁶
	2.1.4	Verify content	Local procedures
	2.1.5	Obtain approval of content	Local procedures
	2.1.6	Compile product	Local procedures
	2.1.7	Obtain approval of compiled product	Local procedures
	2.1.8	Make AIP/AIP Amendment available (paper and/or electronic form)	Annex 15 Section 3.3, ICAO 9855 (use of internet) and Local procedures
2.2	GENERATE AIP SUPPLEMENT		
	2.2.1	Prepare content (text, tables, charts, and other elements)	Local procedures
	2.2.2	Coordinate with other relevant parties	Local procedures
	2.2.3	Translate text into appropriate language	Local procedures
	2.2.4	Verify content	Local procedures
	2.2.5	Obtain approval of content	Local procedures
	2.2.6	Compile and verify content	Local procedures
	2.2.7	Obtain approval of compiled product	Local procedures
	2.2.8	Make AIP Supplement available (paper and/or electronic form)	Annex 15 Section 3.3, ICAO Doc. 9855 and Local procedures
2.3	GENERATE AERONAUTICAL INFORMATION CIRCULAR (AIC)		
	2.3.1	Prepare content (text, tables, charts, and other elements)	Local procedures
	2.3.2	Coordinate with other relevant parties	Local procedures
	2.3.3	Translate text into appropriate language	Local procedures
	2.3.4	Verify content	Local procedures
	2.3.5	Obtain approval of text	Local procedures
	2.3.6	Compile and verify content	Local procedures
	2.3.7	Obtain approval of compiled product	Local procedures
	2.3.8	Make AIC available (paper and/or electronic form)	Annex 15 Section 3.3, ICAO Doc 9855 and Local procedures
2.4	PRODUCE CHARTS		
	2.4.1	Prepare charts	ICAO Annex 4, Doc

X	COMPETENCY UNIT		
X.X	COMPETENCY ELEMENT		
	X.X.X	Terminal Objective (Performance Criteria)	Standard⁶
			8697; Doc 9674; Local procedures
	2.4.2	Coordinate with other relevant parties	Local procedures
	2.4.3	Translate elements into appropriate language	Local procedures
	2.4.4	Verify content	Local procedures
	2.4.5	Obtain approval of chart	Local procedures
	2.4.6	Make charts available (paper and/or electronic form)	Annex 15 Section 3.3; ICAO Doc 9855 and Local procedures
3	DYNAMIC DATA		
3.1	GENERATE NOTAM		
	3.1.1	Prepare content (series, number, Q line, E field, etc.)	ICAO Annex 15 Chap. 5, ICAO Doc 8126
	3.1.2	Coordinate with other relevant parties	Local procedures
	3.1.3	Translate text into appropriate language	Local procedures
	3.1.4	Verify content	Local procedures
	3.1.5	Make NOTAM available	ICAO Annex 15 Chap. 5.3, Annex 10 Vol 2 Chap 4 ; Doc 8126; Doc 7910; Doc 8400; Local procedures
3.2	GENERATE CHECKLIST OF VALID NOTAM		
	3.2.1	Prepare Checklist of Valid NOTAM	Local procedures
	3.2.2	Coordinate with other relevant parties	Local procedures
	3.2.3	Verify content	Local procedures
	3.2.4	Make Checklist of Valid NOTAM available	ICAO Annex 15 Chap. 5.3, Annex 10 Vol 2 Chap 4 ; Doc 8126; Doc 7910; Doc 8400; Local procedures
3.3	GENERATE SNOWTAM		
	3.3.1	Prepare SNOWTAM	ICAO Annex 15 Chap. 5, ICAO Doc 8126
	3.3.2	Coordinate with other relevant parties	Local procedures
	3.3.3	Verify content	Local procedures
	3.3.4	Make SNOWTAM available	ICAO Annex 15 Chap.

X	COMPETENCY UNIT		
X.X	COMPETENCY ELEMENT		
	X.X.X	Terminal Objective (Performance Criteria)	Standard⁶
			5.3, Annex 10 Vol 2 Chap 4 ; Doc 8126; Doc 7910; Doc 8400; Local procedures
3.4	GENERATE ASHTAM		
	3.4.1	Prepare ASHTAM	Annex 15 Chap. 5, ICAO Doc 8126
	3.4.2	Coordinate with other relevant parties	Local procedures
	3.4.3	Verify content	Local procedures
	3.4.4	Make ASHTAM available	ICAO Annex 15 Chap. 5.3, Annex 10 Vol 2 Chap 4 ; Doc 8126; Doc 7910; Doc 8400; Local procedures
4	ADDITIONAL PRODUCTS & SERVICES		
4.1	GENERATE ADDITIONAL PRODUCTS & SERVICES		
	4.1.1	Prepare additional products – data sets/files – (e.g. business products and services, VFR guide) and other customized products for stakeholders	Local procedures
	4.1.2	Coordinate with other relevant parties	Local procedures
	4.1.3	Verify content	Local procedures
	4.1.4	Obtain approval	Local procedures
	4.1.5	Make additional products available	Local procedures
5	PRE- AND POST-FLIGHT INFORMATION		
5.1	PRE-FLIGHT INFORMATION		
	5.1.1	Provide or make available pre-flight information e.g., AIP, PIB, etc.	ICAO Annex 15, Doc 8126, Doc 9855; Annex 10 Vol 2 Chap 4 and local procedures
	5.1.2	Assist stakeholders in the pre-flight phase	Local procedures
5.2	POST-FLIGHT INFORMATION		
	5.2.1	Receive post-flight data/information	ICAO Annex 15, Doc 8126 and local procedures
	5.2.2	Assist stakeholders in the post-flight phase	Local procedures
	5.2.3	Process post-flight data/information	Local procedures
	5.2.4	Distribute post-flight data/information to the relevant party(ies)	local procedures
6	ARO		
6.1	PROCESS FPL		

X	COMPETENCY UNIT		
X.X	COMPETENCY ELEMENT		
	X.X.	Terminal Objective (Performance Criteria)	Standard⁶
	6.1.1	Receive the FPL proposal	ICAO Doc 4444; Local procedures
	6.1.2	Process the FPL (Verify FPL for compliance with format and data conventions, and for completeness and accuracy)	Local procedure
	6.1.3	Receive, create and process associated /supplementary messages	Local procedures
	6.1.4	Execute corrective action	Local procedures
	6.1.5	Transmit FPL	ICAO Annex 10 Vol 2 Chap 4., Doc 4444; Local procedures
6.2	COORDINATION ACTIVITIES		
	6.2.1	Assist stakeholders in the pre-flight and post-flight phase	Local procedures
	6.2.2	Coordinate with ATS	Local procedures
	6.2.3	Coordination with Search and Rescue Coordination Center	Local procedures
	6.2.4	Coordinate with other relevant parties	Local procedures
7	BUSINESS CONTINUITY		
7.1	KNOWLEDGE REGARDING LOCAL CONTINGENCY PROCEDURES		
	7.1.1	Data and Information Management	Local procedures
	7.1.2	Static Data Information	Local procedures
	7.1.3	Dynamic Data Information	Local procedures
	7.1.4	Pre- Post-Flight Information	Local procedures
	7.1.5	Additional Products & Services	Local procedures
	7.1.6	ARO	Local procedures
7.2	EXECUTE LOCAL CONTINGENCY PROCEDURES		
	7.2.1	Data and Information Management	Local procedures
	7.2.2	Static Data Information	Local procedures
	7.2.3	Dynamic Data Information	Local procedures
	7.2.4	Pre- Post-Flight Information	Local procedures
	7.2.5	Additional Products & Services	Local procedures
	7.2.6	ARO	Local procedures