Advisory Circular

UCAA-AC-AIM005
December 2022

UGANDA

GUIDANCE ON AERONAUTICAL INFORMATION MANAGEMENT AND CARTOGRAPHY STAFF TRAINING.

1.0   PURPOSE

This Advisory Circular (AC) provides information and guidance to the aeronautical information service provider (AISP) and aeronautical cartographic service provider (ACSP) in the development of training programmes plus associated training plans for the technical personnel engaged in the provision of aeronautical information services (AIS) and aeronautical charts.

2.0   REFERENCE

2.1.   Regulation 18 of The Civil Aviation (Aeronautical Information Services) Regulations, 2022

2.2.   Regulation 28 of The Civil Aviation (Certification of Air Navigation Services) Regulations, 2022

2.3.   Regulation 270 of The Civil Aviation (Aeronautical Charts) Regulations, 2022

2.4.   ICAO Doc 10066 – PANS AIM

2.5.   ICAO Doc 9839 – Manual on the Quality Management System for Aeronautical Information Services

2.6.   ICAO Doc 8126 – AIS Manual

2.7.   ICAO Doc 7192 – Training Manual

2.8.   ICAO Doc 9868 – ICAO Training Manual

2.9.   ICAO Doc 9683 – Human Factors Training Manual

2.10.   ICAO Doc 9991 – Aeronautical Information Management Training Development Manual

3.0   GUIDANCE AND PROCEDURES

3.1.   General

3.1.1. Regulation 28 of The Civil Aviation (Certification of Air Navigation Services) and Regulation 270 of The Civil Aviation (Aeronautical Charts) Regulations, 2022 require the air navigation service provider (ANSP) and the ACSP respectively to develop a training programme for all technical staff which covers initial, on the job, recurrent and specialised training; as well as develop annual training plans detailing and prioritising the type of training to be provided, covering recurrent training.

3.1.2. Regulation 18 of The Civil Aviation (Aeronautical Information Services) and Regulation 270 of The Civil Aviation (Aeronautical Charts) Regulations, 2022 similarly require the AISP and the ACSP to respectively ensure that the personnel assigned to perform each function are appropriately trained.

3.1.3. Formal training of the personnel shall be carried out in Approved Training Organizations/Institutions recognised by the Authority. This is essential as it will ensure that the training is standardized and meets the required regulatory and operational requirements.

3.2. Structure of the AIM and Aeronautical Cartography Training

3.2.1. The purpose of training is the acquisition and maintenance of the competencies required to perform functions associated with the provision of the service or product. It includes the following situations: newly appointed personnel; current personnel moving to a different job function; current personnel acquiring additional skills to perform additional functions; to advance towards specialized functions; as a result of system upgrades or changes to procedures; and training required after a prolonged absence.

3.2.2. The AISP and ACSP should structure the training of the technical personnel in such a way that it is continuous and puts into consideration the regulatory, operational, technical and organisational environment including safety context and performance components, applicable to the specific domain.

3.2.3. The guidance provided in this advisory circular is intended to be one component to aid an AISP and ACSP to meet the stated objectives through training the workforce to become and remain competent in the roles and responsibilities that they have been assigned. The training should focus on each workforce member's performance, knowledge, skills, and abilities (KSAs) to meet the quality objectives in all functional areas of AIS/ AIM and aeronautical cartography. Since training is one of the most important elements of quality management, each organisation must establish standards for the required competency level for the workforce. When the standards are identified, then training can be an effective component that has a direct result on the performance level of individual members within the workforce.

3.2.4. The AISP and ACSP should ensure that the technical personnel receive appropriate training to obtain the necessary KSAs to enable them to perform the tasks as assigned competently. The organisation should offer trainings to their staff as the need arises (throughout their career lives) and taking into consideration current trends in the industry and new requirements that have been promulgated by the Authority and the International Civil Aviation Organization (ICAO). The AISP and ACSP should divide the training of the technical personnel into the following different phases:

3.2.5. *Initial Training*

3.2.5.1. Technical personnel that require initial training should meet any prerequisites determined by the service provider. Additional training may be necessary to ensure trainees meet all the entry prerequisites for initial training. Examples may include proficiency in software programs, English language proficiency and aviation basic topics. Education requirements as well as experience in relation to each function of the job may also form part of the prerequisites to enter initial training.

3.2.5.2. Initial training contains core knowledge required by the technical personnel and is usually conducted only once. Initial training is the first phase of training where specific topics and criteria are covered per the Regulations/Annexes, PANS and other related guidance material documents.

3.2.5.3. The purpose of initial training is to provide basic knowledge and skills to newly hired individuals or those who have been recruited or transferred from non-AIS positions. Topics should include the regulatory framework, and aeronautical data and aeronautical information management like, for example:

a) AIS scope, relevance and importance;

b) responsibilities for a State, data originators, AIS, regulators etc.;

c) legislation: international and national legislation;

d) safety and quality management systems;

e) scope of aeronautical data and aeronautical information elements (based on the data catalogue);

f) aeronautical information products and services.

3.2.6. *Functional Training for specific functions*

3.2.6.1. Functional training may be conducted during or after initial training to ensure the acquired KSAs are understood and applied. Functional training is conducted for specific functions. The functional training curriculum would be developed from the competency standards and learning objectives. The purpose is to provide subject matter content based on the AIS and/or aeronautical cartography function, through OTJ training, theoretical training and continual feedback.

3.2.6.2. OTJ experience supports competency-based training, which is driven by performance rather than only acquisition of knowledge. It also provides training within the functions (data management, data publication, data visualization) to enable understanding and relationship between disciplines.

3.2.6.3. Functional training should be delivered by instructors in accordance with the training plan. It prepares the trainee to work independently, and ensures competencies are objectively assessed and documented. The functional training could be supplemented by simulation and theory instruction for instances that do not regularly occur.

3.2.7. *Specialized Training*

3.2.7.1. The purpose of specialized training is to provide the technical personnel with advanced KSAs to perform complex and unique functions. Advanced specialized training is provided to personnel responsible for more complex functions or systems. Examples of specialized training may include aeronautical cartography and digital data set preparation.

3.2.8. *Refresher or Recurrent Training*

3.2.8.1. The main purpose of refresher training is to ensure existing competencies and KSAs of personnel who perform AIS or Aeronautical cartography functions are reinforced or maintained, and to ensure new (or changed) regulations or requirements are being addressed. Refresher training should be provided on a routine basis and tailored according to the function; it may also be used to improve performance. Refresher training is essential for the on-going successful performance of duties within the department/section/unit. Refresher training and assessment is conducted multiple times, as needed, to ensure that competencies are maintained, or performance issues addressed.

3.2.8.2. Examples of refresher training include:

a) guidance, policy, procedures, or requirements;

b) hardware or software technologies;

c) organizational structure;

d) routine and non-routine situations;

e) human factors, and

f) best practices.

3.3. **Training Programme and Plan**

3.3.1. The training programme is an activity or activities that include undertaking one or a series of courses to boost performance, productivity, skills, and knowledge. Training programmes are considered an integral part of development for human resources. It is an organized tool for the development of specific skills to the desired standard with the help of information, instruction, guidance, and practice.

3.3.2. In order to satisfy these fundamental criteria, it is essential to determine the knowledge and skills requirements as well as develop a training programme for technical officers engaged in the provision of AIS and aeronautical charts (aeronautical cartographic services).

3.3.3. The AISP and ACSP should ensure that the technical personnel assigned to perform each function should be appropriately trained as well as have maintained appropriate training records so that their qualifications can be confirmed. These requirements necessitate the need to develop a training programme and training plan for each of the staff under the accountable officer's jurisdiction and implementation of the same.

3.3.4. In developing a training programme, the AISP and ACSP could use the following steps adopted in the competency-based training and assessment (CBTA) programme as explained below:

   a) Conduct a training needs analysis. The training needs analysis identifies any operational, regulatory, technical and organizational requirements that will affect any training course being planned. The purpose of the training must be determined and should specifically include the associated tasks.

   b) Establish a training specification. A training specification does not cover the progression of training but describes the end state to be achieved. It contains the outcome from the training needs analysis. A separate training specification is needed for each function within the training programme.

   c) Design an adapted competency model, the training plan and the assessment plan. The task list developed in the training specification is used to aid with the selection of the competencies from the competency framework. The operational, technical, regulatory and organizational requirements aid the development of the conditions and standards that will apply to the competencies and observable behaviours. The same task list and requirements are used to develop the training plan. This training plan is used to prepare the trainees to undertake assessment to determine if they are competent in accordance with the adapted competency model. Finally, the adapted competency model and the training plan are used to develop the assessment plan.

3.3.5. The AISP and ACSP should review the required training programme at intervals of not more than three years or less in accordance the organisation's document review schedule.

3.3.6. The service provider should ensure that the developed training programme contain and detail programmes on a progressive manner, including initial, functional, specialized, and refresher or recurrent training.

3.3.7. The training plan should be developed and implemented on an annual basis by the service provider. An annual review of the training plan should be undertaken by the service provider to ascertain the training's effectiveness. Furthermore, the training plan should indicate the order of priority of training to be provided. The training plan may capture the information detailed in Table below.

#	Officer's Name	Training Gap	Recommended Course	Date	Venue	Cost	Status

3.4. Training records

3.4.1. The AISP and ACSP shall maintain up-to date training records and be made available for inspection as well as confirmation of qualifications for all technical personnel.

3.4.2. The training records to be maintained shall include certificates, OJT tasks performed and reports thereof, and any other documents related to training and approval of jobs to be performed.

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Director Safety, Security and Economic Regulation

UGANDA CIVIL AVIATION AUTHORITY
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