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|  | Company Name <p style="text-align: center;">የኢትዮጵያ ሲቪል አቪዬሽን ባለሥልጣን Ethiopian Civil Aviation Authority</p> | Document No. <p style="text-align: center;">ECAA/ANR/AC/027</p> | |
| Document Title: Guidance for the development of procedures for determining the capacity of the ATS system, including the number of staff required | | Issue No. <p style="text-align: center;">1</p> | Page No <p style="text-align: center;">Page 1 of 4</p> |

The Air Navigation Regulation Directorate has issued this guidance material to be used by ANSP to prepare procedure manuals and other working documents for implementation of ICAO SARPS and National Regulations.

It is important to note that this guidance material improve the safety of air navigation services within Ethiopian air space .

The Director General of Ethiopian Civil Aviation Authority has here by approved this guidance material on September 18,2017 to be used as a guidance to air navigation services provider..


Approved by



Date September, 2017

Wossenyeleh Hunegnaw (Col.)
Director General



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1. PURPOSE

1.1 This guidance provides instruction for the development and review of the procedures for determining the capacity of the ATS system, including the number of staff required.

2. REFERENCE

- 2.1 ECARAS Part - 14;*
- 2.2 ICAO PANS ATM DOC 4444 3.1, 2 & 3*
- 2.3 ICAO Doc 9426 – ATS Planning Manual*

3. BACKGROUND

3.1. The need for the ANSP to have these procedures in place for ATC Staff is to ensure that service provision is appropriate and adequate to determine the capacity of the ATS system, including the number of staff required.


4. GUIDANCE

4.1 The capacity of an ATS

4.1.1 The capacity of an ATS system depends on many factors,

- a) the ATS route structure,*
- b) the navigation accuracy of the aircraft using the airspace,*
- c) weather-related factors, and*
- d) Workload. Every effort should be made to provide sufficient capacity to cater to both normal and peak traffic levels; however, in implementing any measures to increase capacity, the responsible ATS authority shall ensure, in accordance with the procedures specified in Chapter 2, of doc. 4444 that safety levels are not jeopardized.*

4.1.2 The number of aircraft provided with an ATC service shall not exceed that which can be safely handled by the ATC unit concerned under the

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prevailing circumstances. In order to define the maximum number of flights which can be safely accommodated, the appropriate ATS authority should assess and declare the ATC capacity for control areas, for control sectors within a control area and for aerodromes.

4.1.3 ATC capacity should be expressed as the maximum number of aircraft which can be accepted over a given period of time within the airspace or at the aerodrome concerned.

4.2 in assessing capacity values, factors to be taken into account should include, inter alia:

4.2.1 The level and type of ATS provided;

4.2.2 The structural complexity of the control area, the control sector or the aerodrome concerned;

4.2.3 Controller workload, including control and coordination tasks to be performed;

4.2.4 the types of communications, navigation and surveillance systems in use, their degree of technical reliability and availability as well as the availability of backup systems and/or procedures;

4.2.5 Availability of ATC systems providing controller support and alert functions; and


4.2.6 Any other factor or element deemed relevant to controller workload.

4.3 Enhancement of ATC capacity the appropriate ATS authority should:

4.3.1 Periodically review ATS capacities in relation to traffic demand; and

4.3.2 Provide for flexible use of airspace in order to improve the efficiency of operations and increase capacity.

4.4. In order to prevent and mitigate against the effect of fatigue, the following guidelines are proposed to be implemented and monitored during the

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implementation of the ATCOs’ rostering system. The rostering system shall include activities intended for the provision of ATC service and non-operational but profession-related activities of ATCOs.

Activities considered to be duties may be:

- 4.4.1 ATC service provision*
- 4.4.2 Preparing, attending and delivering training*
- 4.4.3 Medical and language checks for certification purposes*
- 4.4.4 Maximum hours per duty period*
- 4.4.5 Maximum consecutive working days with duties*
- 4.4.6 The number of consecutive early morning shifts*
- 4.4.6 The average rest period after a duty period*
- 4.4.7 Breaks within a duty period*
- 4.4.8 Maximum time providing ATC service without breaks*