



INTERNATIONAL CIVIL AVIATION ORGANISATION
AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP (APIRG)
FIRST MEETING OF THE ATM/MET TASK FORCE (ATM/MET/1)
(Nairobi, 10 – 11 June 2013)

Agenda Item : 5 Future Work Programmes

METEOROLOGICAL FUTURE REQUIREMENTS

(Presented by South Africa ATNS Central Airspace Management Unit (CAMU))

SUMMARY

This Information Paper Discusses meteorological future requirements for input into the ATNS CAMU system to optimise traffic flows

Conclusion is at paragraph 3.

1. INTRODUCTION

1.1 The primary role of weather information is to enable the identification of where and when aircraft can/cannot fly. Weather information is not just an end product to be viewed in a stand-alone display. Rather, weather information is designed to integrate with and support CAMU decision-oriented automation capabilities and human decision-making processes. Weather information supports trajectory-based planning and decision-making.

1.2 Weather information in the form of meteorological variables that are observed or forecasted (e.g., storm intensity, echo tops, etc.) must be translated into information that is directly relevant to CAMU ATFM system users, such as the likelihood of a flight deviation, airspace permeability, and capacity. Uncertainty in meteorological phenomena that have significant impact on system capacity should be managed through the use of probabilistic forecasts. These forecasts are in a quantitative format, covering location (three-dimensional space), timing, intensity, and the probability of all possible outcomes, each with an associated likelihood of occurrence

2 DISCUSSION:

2.1 Future weather requirements

2.1.1 Weather information's update frequency should be commensurate with the need to react to unanticipated, rapidly changing circumstances. For instance, airspace structural changes should be better customized in response to changing weather conditions (e.g., be able to realign sectors to conform to a line of thunderstorms). Also, future weather capabilities should allow for rapid notification (automation-to-automation) of changing weather situations to strategic and tactical CAMU decision makers.

2.1.2 Required weather performance should be a prerequisite for aircraft acceptance into busy airports and airspace severely impacted by weather. The ability of aircraft to detect weather hazards varies enormously with equipage and flight crew training. For many aircraft, on-board information enables the air crew to better avoid safety-critical conditions. Strategic separation of aircraft from weather by Air Navigation Service Providers (ANSP) should be proactively provided for those aircraft operators seeking such service or due to lack of on-board capabilities.

2.1.3 Weather information should be tailored to user needs and flight-specific situations. Higher spatial resolution could be used for shorter-term forecasts while lower resolution could be used for longer horizon forecasts. In addition to standard flight planning and Air Traffic Management (ATM) decision-making information, weather information should support the following wide range of weather-related circumstances and needs:

- More precise forecasting of the timing and location of weather that present hazards blocking arrival and departure routes or that temporarily shutdown airports, or constraints that impact traffic flows.
- Rapidly updated weather forecasts (e.g., surface winds, convective weather) to predict the need for reconfiguration of terminal airspace or an airport.
- Availability of ceiling and visibility information for improved airport arrival flow decisions (especially for aircraft not fully performance capable).
- Real-time weather hazard reporting in support of equivalent visual operations and super density operations.

3 CONCLUSION

3.1 In conclusion the meteorological inputs should be tailored to meet unique and changing requirements in the aviation community which will be formulated by the Task Force for inter alia consideration and possible inclusion in the ATMOC.

— END —