International Civil Aviation Organization

FIFTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL REQUIREMENTS WORKING GROUP (MET/R WG/5) OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND MPLEMENTATION REGIONAL GROUP (APANPIRG)

Bangkok, Thailand, 19 – 21 April 2016

Agenda Item 5: Coordination between MET and ATM services

MET INFORMATION REQUIREMENTS FOR THE FUTURE AUSTRALIAN CIVIL-MILITARY AIR TRAFFIC MANAGEMENT SYSTEM (CMATS)

(Presented by Australia)

SUMMARY

This paper presents a summary of planning towards the planned Civil-Military Air Traffic Management System (CMATS), with particular emphasis on identified requirements for MET data to support the proposed ATM system.

1. INTRODUCTION

1.1 Air Traffic Services in Australia are currently delivered via separate Civil and Military ATM organisations and systems. Australia is working towards the implementation of a joint Civil-Military Air Traffic Management System (CMATS).

1.2 Airservices Australia and the Department of Defence are collaborating in the specification and implementation of the CMATS system. A preferred supplier for the new system (Thales) has been identified, and negotiations are continuing, to determine detailed requirements and specifications for the system as a whole.

1.3 The CMATS system is predominantly an Air Traffic Management System, and will have a requirement for certain MET products for internal processing, for Air Traffic Controller situational awareness, and ATC dissemination of MET information to pilots in flight. CMATS will have interfaces to either existing or new systems including pilot briefing and flight planning, and Air Traffic Flow Management / Collaborative Decision Making Systems, which will have their own, and potentially distinct, requirements for MET data.

2. DISCUSSION

2.1 The CMATS system will require MET data to support a range of applications which support the provision of tactical Air Traffic Management Services. The range of applications currently being considered for CMATS include:

2.1.1 Aircraft Trajectory Calculation – GRIB 2 data:

Aircraft trajectories (position, level and time estimates) will be determined using a combination of pre-defined aircraft profiles, planned true airspeed / mach number, and GRIB wind and temperature forecasts. The current civil ATM system (Eurocat) is limited to use of GRIB 1 format data, whereas the CMATS system will take advantage of the improved temporal, spatial and vertical resolution afforded by the GRIB 2 forecasts, to provide improved accuracy of trajectory calculations. The expected improvements in wind and temperature resolution, producing more accurate estimates for aircraft in flight, can be expected to improve air traffic conflict detection capabilities, as well as tactical flow management for arriving traffic at major airports.

2.1.2 Weather Radar display data for Air Traffic Control

The CMATS system will include a weather radar display with data sourced from the Bureau of Meteorology Weather Watch Radar network. This will provide the Air Traffic Controller with a timely (currently updated every 6 minutes) display of prevailing rain intensity and will serve to enhance situational awareness, particularly to support traffic management associated with aircraft diverting around thunderstorms. This information is available in the current ATM system via a separate display at the controller workstation; the CMATS will similarly display this prevailing weather information at an auxiliary display of a new design.

2.1.3 Provision of OPMET information

The CMATS system will support the presentation of OPMET information supplied by the Bureau of Meteorology. No new products are envisaged as a specific requirement of CMATS, however the system will be able to adapt as new products become available. Information will be provided to Air Traffic Controllers where relevant to their area of responsibility for the purposes of both ATC situational awareness, and for further distribution to pilots in flight (in particular to advise of significant deteriorations in weather affecting particular flights.

2.2 The CMATS will be developed in accordance with the prevailing data exchange standards for GRIB 2 and OPMET (WMO Publication No. 306, ICAO Annex 3 Amendment 78 – November 2018, and ICAO Doc 10003). It should be noted that development lead times may dictate that, if the WMO or iWXXM standards evolve after the baseline is set, the CMATS may not be able to support later versions until a subsequent system upgrade. Such limitations are not, of course, unique to CMATS, but during the system development and implementation phases, the ability to respond to changing standards may be limited, or delayed.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

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