International Civil Aviation Organization

SIXTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL REQUIREMENTS WORKING GROUP (MET/R WG/6) OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG)

Fukuoka, Japan, 15 – 19 May 2017

Agenda Item 5: MET information required to support end user systems

LAST MINUTE UPDATE OF METEOROLOGICAL INFORMATION TO PILOTS PRIOR TO DEPARTURE

(Presented by Hong Kong, China)

SUMMARY

This paper presents a new requirement for last minute update of meteorological information to pilots prior to departure expressed by a local airline.

1. INTRODUCTION

1.1 The weather information of a flight is provided to the pilot via the flight documentation in the flight folder and pre-flight briefing. After the pre-flight briefing at the dispatch office, pilots will normally no longer receive updates to the meteorological information except via the Automatic Terminal Information Service (ATIS) or Digital ATIS (D-ATIS) broadcasts or through ATC.

1.2 During a recent discussion with a local airline, the pilot representative has expressed a requirement for last minute update of meteorological information to pilots prior to departure. This paper summarizes the findings.

2. DISCUSSION

Reason for the requirements

2.1 While the pilots could obtain weather information from ATIS (or D-ATIS) broadcast, the provision of last minute update of meteorological information via ATIS (or D-ATIS) broadcast however has significant drawbacks: The information is provided in voice or text form. It is further limited by the broadcast and update schedules. This is particularly a concern when the weather conditions at the aerodrome and the terminal area are highly changeable (for example with the presence of developing convections) which may affect the safety and efficiency during takeoff. While the ATC could provide the most up-to-date information, it takes up radio communication time and increases the workload of ATC.

2.2 The Hong Kong Observatory (HKO), in consultation with local pilots, has come up with a list of requirements on the provision of last minute meteorological information to pilots prior to departure at the Hong Kong International Airport (HKIA). These include weather

information at the aerodrome (winds, RVR, temperature, etc.), in the terminal area (radar imagery, lightning locations, windshear and turbulence alerts, etc.) and updates to OPMET messages and other information in the flight plan.

2.3 Noting the increased use of tablets in the provision of weather and other operational data to pilots, it is considered that there might be a case for the provision of such last minute update to enhance the pilots' situation awareness so that they can better prepare for take off.

Similar implementations in other countries

2.4 Flight Information Service-Broadcast (FIS-B) is a ground-based broadcast service provided by Federal Aviation Administration (FAA) through the Automatic Dependent Surveillance-Broadcast (ADS-B) network. FIS-B enables ADS-B equipped aircraft that can receive data over 978 MHz, to receive and display a suite of weather and aeronautical information products. Products transmitted through FIS-B can be in text form, like METAR, SPECI, and TAF, or graphic form, like national weather radar composite reflectivity products. FIS-B meteorological products are transmitted at intervals ranging from 2.5 to 15 minutes with a specified interval for each product. Four new FIS-B products including lightning, turbulence, icing and cloud tops will be available in 2017.

2.5 The Aerodrome Weather Information Service (AWIS) and Weather and Terminal Information Reciter (WATIR) provided by the Bureau of Meteorology (BoM) of Australia provide actual weather conditions via broadcast at specified locations (see MET/R WG/6 IP/03). AWIS provides information from the Automatic Weather Station (AWS) while WATIR provides the AWS information with additional terminal information from the airport operator. Most broadcasts by AWIS and WATIR are continuous and updated every minute.

The Hong Kong, China initiative

2.6 To explore the initiatives, a prototype in the form of a mobile application utilizing the 3G/4G mobile or WiFi network for communication will be built. Apart from high updating rates, the prototype will only download and display information specific to the flight to minimize the bandwidth used and reduce the possibility of overloading the user interface.

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 matter as appropriate.

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