



International Civil Aviation Organization

**NINETEENTH MEETING OF THE METEOROLOGY SUB-GROUP
(MET SG/19) OF APANPIRG**

Bangkok, Thailand, 3 – 6 August 2015

Agenda Item 6: Research, development and implementation issues in the MET field

6.2) Observations and reports

HIMAWARI-8 BEGAN OPERATION

(Presented by Japan)

SUMMARY

This paper announces that Japan's new geostationary meteorological satellite, Himawari-8, began operation on 7 July 2015.

1. INTRODUCTION

1.1 The Japan Meteorological Agency (JMA) launched its next-generation geostationary meteorological satellite, Himawari-8, on 7 October 2014. After the testing and checking of Himawari-8 and related systems, JMA finally started Himawari-8 operation at 02:00 UTC on 7 July 2015, replacing the previous operational satellite, MTSAT-2. Himawari-9 will also be launched in 2016 as a backup and successor satellite. Both satellites will be located around 140 degrees east, and will observe the East Asia and Western Pacific regions for a period of 15 years.

1.2 Himawari-8 and -9 have 16 bands, which is more than three times the 5 bands of the previous MTSAT series. Three of these are visible bands corresponding to red, green and blue to enable the creation of true-color images. Full-disk imagery is obtained every 10 minutes, and the target area observation at 2.5-minute intervals is conducted. Furthermore, the horizontal resolution is double that of the MTSAT series. These significant improvements opened the door to the new generation of satellite meteorology.

1.3 JMA provides the introduction, the operational information and the data dissemination methods on Himawari-8 on the following website. Sample data and sample source codes to read Himawari-8 are also available: <http://www.jma-net.go.jp/msc/en/>

2. DISCUSSION

2.1 Satellite data is indispensable for monitoring various phenomena such as tropical cyclones, developed cumulonimbus clouds, yellow sands, volcanic ash clouds, polar ice and glaciers. Even during the testing period, Himawari-8 has shown its excellence.

2.2 First example is its effects onto volcanic ash-related operations. There are nine Volcanic Ash Advisory Centres (VAACs) in the world which are responsible for monitoring volcanic eruptions and providing information on the locations and movement of volcanic ash clouds as well as an outlook for their regions of responsibility. JMA has one of the centres called VAAC Tokyo. It was thus far monitoring volcanic ash clouds, water vapor and heat in satellite imagery, while SO₂ detection is possible with sensors newly installed on Himawari-8. This makes it easier to detect volcanic ash clouds because they are expected to be near the area where SO₂ exists. In addition, SO₂ is also a useful index to grasp the current status of volcanic activity if its amount can be obtained from satellite data. Therefore, JMA is now working on the development of SO₂ amount identification. Besides the benefit of SO₂ information, Himawari-8 contributes more timely advisory issuances with its frequent data provision. Considering the impact of volcanic ash into aviation safety, it is essential to provide volcanic ash advisories as quick as possible after an eruption. Full-disk imagery available every 10 minutes as well as imagery of rapid scan at 2.5-minute intervals in several regions will surely enhance VAAC Tokyo's services. The usefulness of imagery in color with higher resolution is significant, but it is a matter of course so no more explanation will be needed here.

2.3 JMA also provides regional advisory services for tropical cyclones as the Tropical Cyclone Advisory Center (TCAC) Tokyo. Higher resolution and more frequent scanning of the Himawari-8 enables TCAC Tokyo to monitor tropical cyclones more precisely. Moreover, rapid scanning at 2.5-minute intervals of Himawari-8, which is conducted for observation of tropical cyclones, makes it possible for TCAC Tokyo to issue more accurate and appropriate information.

2.4 Satellite imageries, such as VIS, IR, and WV, are operationally used in JMA's aeronautical meteorological services for monitoring weather conditions like CBs, Clear Air Turbulence, and Jet streams precisely. Himawari-8 enables aeronautical meteorological forecasters to monitor local growth and decay of CBs, and issue more accurate aeronautical meteorological information like TS SIGMET in a timely manner. Furthermore, from the Asia/PAC regional perspective, for the States within the observation area, more precisely monitoring of the CBs is very helpful to improve their skills in issuance of SIGMETs.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.
