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INTER-PROGRAMME EXPERT TEAM ON SATELLITE UTILIZATION AND
PRODUCTS

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FIRST SESSION

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Preparation for Himawari-8

(Submitted by JMA)

Summary and Purpose of Document

This document reports on the latest information about Himawari-8 preparation.

ACTION PROPOSED

The first session is invited to:

- (a) Take note of the current status of Himawari-8 preparation; and
- (b) Provide comments, suggestions and recommendations for JMA.

Appendix: A. Himawari-8 AHI Specifications

DISCUSSION

1. Introduction

The world's first next-generation geostationary meteorological satellite, Himawari-8, was successfully launched on 7 October 2014. Himawari-8 carries the Advanced Himawari Imager (AHI) with 16 bands (See Appendix A for the AHI specifications). Himawari-8/AHI observes full disk at 10-minute interval, while it observes Japan area and target area at 2.5-minute interval. Himawari-8 has been undergoing in-orbit tests (IOT) at 140.7E longitude. Himawari-8 will take over as the primary operational satellite from MTSAT-2 in the middle of 2015.

Major Events

7 October	2014	Himawari-8 launched
18 December	2014	First images released
29 January	2015	Sample data from IOT observation released
29 January	2015	HimawariCast service started

Upcoming Events

March 2015	HimawariCloud service to be started with Himawari-8 test imagery
Middle of 2015	Himawari-8 will start its operation to replace MTSAT-2

2. Data distribution

The Japan Meteorological Agency (JMA) provides two types of method to distribute the multi-band, high-frequency and high-resolution data of Himawari-8. One is the HimawariCast service, which disseminates a primary set of imagery for operational meteorological services via a communication satellite. The other is the HimawariCloud service, which delivers a full set of imagery to the National Meteorological and Hydrological Services (NMHSs) via an Internet cloud service.

The HimawariCast service started disseminating the current MTSAT-2 imagery with 5 bands and 30/60-minute intervals on 29 January. After Himawari-8 becomes operational, Himawari-8 imagery will be disseminated via the service with 14 out of 16 bands and 10-minute intervals. The up-to-date information including the specification of receiving equipment can be seen on the following website. http://www.data.jma.go.jp/mscweb/en/himawari89/himawari_cast/himawari_cast.html

JMA plans to start operation of the HimawariCloud service in March 2015 with distribution of Himawari-8 in-orbit-test imagery. JMA will give accounts for accessing the HimawariCloud service to the registered NMHSs in due course. The following website provides the information such as the data set to be disseminated and how to download the data. http://www.data.jma.go.jp/mscweb/en/himawari89/cloud_service/cloud_service.html

3. Product Development

RGB composites

RGB composite products are created from IOT data using WMO standard recipe. Essential RGB products (images) from Himawari-8 will be provided from the website of Meteorological Satellite Center (MSC) of JMA when Himawari-8 becomes operational.

AMV and CSR

Atmospheric Motion Vector (AMV) and Clear Sky Radiance (CSR) are highly important products for use in Numerical Weather Prediction (NWP). JMA/MSC has developed Himawari-8 AMV and CSR, which will be distributed via GTS when Himawari-8 becomes operational. The distribution of MTSAT-2 AMV and CSR via GTS will be terminated at the same time. In order for NWP users to evaluate Himawari-8 AMV and CSR before Himawari-8 starts its operation, JMA plans to distribute Himawari-8 AMV and CSR via JDDS (JMA Data Dissemination System) from April 2015 to the

middle of 2015. After Himawari-8 starts its operation, MTSAT-2 AMV and CSR will be provided via JDDS in order to help NWP users' smooth transition from MTSAT-2 to Himawari-8. A NWP user announcement will be made for JDDS account application in March 2015.

Other major products

Objective cloud analysis information (OCAI) product from Himawari-8 has been developed. Himawari-8 OCAI will be used mainly by domestic users. The OCAI will be also provided to NMHSs of Indonesia and Myanmar in response to their inquiries.

Himawari-8 aerosol optical depth (AOD) product also has been developed. Himawari-8 AOD will be used for monitoring Asian dust.

4. Collaboration with professional users

- Australian Bureau of Meteorology and JMA/MSC start a discussion of cooperation on RGB product development.
 - A joint research study was launched between JMA/MSC and Earth Observation Research Center of JAXA so that Himawari-8 product developers can collaborate closely with product developers and scientists for GCOM-C, EarthCARE and GOSAT-2.
 - A working group for Himawari data application was established. Japanese scientists in the field of satellite remote sensing join the working group and discuss potential application of Himawari-8 data.
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Appendix A: Himawari-8 AHI Specifications.

Band	Wavelength [μm]	Spatial Resolution
1	0.47	1 km
2	0.51	1 km
3	0.64	0.5 km
4	0.86	1 km
5	1.6	2 km
6	2.3	2 km
7	3.9	2 km
8	6.2	2 km
9	6.9	2 km
10	7.3	2 km
11	8.6	2 km
12	9.6	2 km
13	10.4	2 km
14	11.2	2 km
15	12.4	2 km
16	13.3	2 km

For more information (e.g. SRF and SNR) about AHI, please see the website of JMA/MSC:
http://www.data.jma.go.jp/mscweb/en/himawari89/space_segment/spsg_ahi.html