WORLD METEOROLOGICAL ORGANIZATION
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COMMISSION FOR BASIC SYSTEMS
OPEN PROGRAMME AREA GROUP ON INTEGRATED OBSERVING SYSTEMS

INTER-PROGRAMME EXPERT TEAM ON SATELLITE UTILIZATION AND PRODUCTS

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Imagery and RGBs for SWFDP in RA II/V (SCOPE-Nowcasting Pilot Project 1)

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Summary and Purpose of Document

This document reports on the updates on progress in SCOPE-Nowcasting Pilot Project 1.

ACTION PROPOSED

The second session is invited to:

(a) Take note of recent activities of the pilot project;

(b) Provide comments and suggestions for enhancing progress.

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DISCUSSION

1. Introduction

The theme of SCOPE-Nowcasting Pilot Project 1 is basic satellite imagery; RGB composites and enhancements, visible and infrared imagery, precipitation potential products and cloud products. The target area coverage is the RA-II/V and SWFDP/SWFDDP regions.

Recent activities of the pilot project focus on RGB composite products. RGB compositing techniques offer the possibility of compressing multispectral information content for optimum visualization, while at the same time preserving pattern and texture of cloud and surface features as well as continuity in the time domain (WMO, 2007).

Himawari-8 satellite managed by the Japan Meteorological Agency (JMA) began operation at 02 UTC on 7 July 2015. Imagery from the multi-band, high-frequency and high-resolution observations of Himawari-8 is highly expected for severe weather monitoring and forecasting.

2. SCOPE-Nowcasting Pilot Project 1 Updates

Himawari-8 RGB composite images for SWFDP and SWFDDP
The Meteorological Satellite Center (MSC) of JMA launched the website for Himawari Real-Time Image. The website provides Himawari-8 images including RGB composite images for full disk and a selection of areas in real time.
http://www.data.jma.go.jp/mscweb/data/himawari/index.html

The RGB images at the JMA/MSC website are based on the recipes recommended at the RGB Composite Satellite Imagery Workshop (Boulder, US, June 2007). The details are provided in the users' guide on the website.

Himawari-8 imagery with heavy rainfall potential areas is provided at the following websites. The imagery indicates potential areas of heavy rainfall associated with deep convective clouds. The details are provided in the users' guide on the websites. The websites provides also basic images (e.g. VIS and IR) and RGB images.
http://www.data.jma.go.jp/mscweb/data/himawari/sat_hrp.php?area=r2s (for RA II)
http://www.data.jma.go.jp/mscweb/data/himawari/sat_hrp.php?area=r5s (for RA V)

These websites have been linked to the JMA website for RA II SWFDP (WMO Severe Weather Forecasting Demonstration Project) and RA V SWFDDP (WMO Severe Weather Forecasting and Disaster Risk Reduction Demonstration Project).
http://www.wis-jma.go.jp/swfdp/ra2_swfdp_sea_sat.html (for RA II)
http://www.wis-jma.go.jp/swfdp/ra5_swfddp_spi_sat.html (for RA V)

RGB training resources
JMA/MSC provides RGB training materials at their website.
http://www.data.jma.go.jp/mscweb/en/VRL/VLab_RGB/RGBimage.html
Useful online resources are provided by Australian VLab Centre of Excellence.
http://www.virtuallab.bom.gov.au/training/hw-8-training/introduction-resources-and-case-studies/

Presentations at AOMSUC-6
In conjunction with the sixth Asia/Oceania Meteorological Satellite Users' Conference (AOMSUC-6) held in Tokyo from 10 - 12 November 2015, a training event was hosted by JMA on 9 and 13 November 2015. The Australian Bureau of Meteorology, the Korea Meteorological Administration and JMA made their presentations on RGB at the training event. The China Meteorological Administration also made a presentation on application of satellite remote sensing in severe convective weather and heavy rainfall. The presentation files are available at the AOMSUC-6 website.
http://www.jma-net.go.jp/msc/en/aomsuc6/index.html

3. Next Steps

JMA/MSC will study colour tuning by adjusting parameters of the recipes so that RGB images would be more suitable to enhance meteorological phenomena in Asia-Pacific area.

The distribution pathways, formats, volumes and visualization software for RGBs will be discussed based on results of the RGB user survey to be conducted in the near future.

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