Report of the Chairperson of session I : Xu Jianmin

Session I contained five presentations from CMA, KMA, JMA, EUMETSAT and NOAA/NESDIS. Those presentations introduced status and performances of operational AMV products, progresses on AMV derivation algorithm and future work plans.

FY-2C is the first operational meteorological satellite of China. It was launched on 19 Oct 2004. From 25 Nov 2005 on, BUFR code of FY-2C AMVs is transmitted through GTS. The performance of AMVs from FY-2C reflects the overall effect of satellite system and NWP system. Image navigation and calibration performance greatly influences AMV quality. At present, automatic image navigation accuracy for FY-2C images reaches pixel level. Height assignment is still one of the major uncertainty factors. For thin cirrus targets, the IR/WV height adjustment method does not perform well. In the future, NSMC will work at the following fields to improve AMV quality: to improve image navigation after orbital and attitude control; to improve calibration; to use height adjustment method in height assignment; to test geometry height assignment method and to have interaction with NWP.

AMV scheme of KMA is under development. Own developed program of AMV estimation has been tested with data from GMS-5, GOES-9, MTSAT-1R. The improvements of AMV estimation include use of flexible search area according to assigned height using NWP data; to improve AMV height assignment for semi-transparent clouds; validate using ground observation; reliable quality indicator with meaningful statistics. Study on the application of AMV to NWP model is initiated.

MTSAT-1R was launched on 28 Jun 2005. AMVs switched to MTSAT-1R on 18 Feb 2006. New features for MTSAT-1R AMVs include: 15 minute time interval images used for 6-hourly AMV; number of AMV increased; hourly AMV started. In the future, measures aimed at improving AMV height assignment will be adopted. Those include “use of higher resolution NWP fields”, “introduction of radiation transfer model” for re-estimating atmospheric absorption and “review of pixel selection used for height assignment”. Use of hourly AMVs in NWP by 4D-Var assimilation is also planned. The optical flow method is recently started as long-term work.

EUMETSAT currently derives meteorological products operationally

from four geostationary satellites. MSG-2 products are also derived routinely. Primary services are from 0º longitude; India ocean data coverage will be continued. Major changes since last IWWS include: new methodology introduced as recommended by IWWS7; scenes selection modified; cloud base re-assignment; use 12.0 instead of 10.8 for CO_2; atmospheric absorption above clouds corrected which mainly impact high level WV Cloud tracked winds. Other changes are: automatic quality control; tracking; observation time; HRV winds introduced; scenes and cloud analysis. The following upcoming changes will be adopted: introduction of Meteosat-9; recursive filter flag; height assignment and height assignment QI; derivation of divergence fields; introduction of higher resolution winds, not only more but also better; increasing process area.

GOES-12 continues to serve as the eastern operational geostationary satellite. GOES-10 continuous worked as the western one, it will be replaced by GOES-11. GOES-N is expected to be launched on 18 May 2006. New products (MODIS polar winds and GOES 3.9μm low-level cloud-drift winds) have been added to the GTS in BUFR format. Those winds are being assimilating in NWP systems worldwide. Field forecasters also access to a multitude of digital data to help them in their daily forecast

preparation. Improvements in AMVs derivation include: creation and distribution of BUFR messages for the 3.9um AMVs; pre-processing of MODIS Imagery for MODIS AMV generation; model pre-processing software modified to process all vertical levels of temp & moisture data available in GFS grid files and make them available to the AMV retrieval algorithms; correction to address missing GOES-10 IRCD winds in lat strip 0-15N. Coming updates include: system architecture change; availability of hourly AMVs over N. & S. Hemispheres; application of radiance bias correction for CO_2 height assignments; implementation of Expected Error (EE) Technique; MODIS winds upgrades; AVHRR winds capability. GOES-10 will be repositioned from its current position at 135ºW to 60ºW which will greatly improve environmental satellite coverage over South America. The GOES-N navigation will be improved with new spacecraft bus and use of star trackers. GOES-R baseline instruments will include: Advanced Baseline Imager (ABI); Hyperspectral Environmental Suite (HES); Geostationary Lightning Mapper (GLM); Solar Instrument Suite (SIS); Space Environment In Situ Suite (SEISS).