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QUALITY CONTROL AND BUFR ENCODING FOR THE EXCHANGE OF CLOUD MOTION WINDS

In response to the Action 29.40 of the CGMS XXIX meeting, JMA reports to CGMS XXX on the status of the preparation of the standardized BUFR encoding for the Atmospheric Motion Vector (AMV) products with quality indicators at the Meteorological Satellite Center (MSC) of JMA.

In this paper, the progress for the use of a standardized BUFR format to the encode satellite wind data is described.
In addition, the development of high-density AMV with EUMETSAT QI toward the introduction of the combined scheme for the BUFR format of the GMS wind products is presented.

No action is required on this subject.

QUALITY CONTROL AND BUFR ENCODING FOR THE EXCHANGE OF CLOUD MOTION WINDS

1 BACKGROUND

At the CGMS XXIX meeting, the Working Group III recommended the 6th International Winds Workshop to analyse the status of the implementation of quality indicators assigned to wind vectors and to report back to CGMS on current benefit to NWP in Action 29.40. The 6th International Winds Workshop suggested that further R&D to optimise quality indicators (RFF/QI). It also suggested satellite operators to provide QI with & without forecast.

JMA reports to CGMS XXX on the plan and status of the preparation for the standardized BUFR transmission of the Atmospheric Motion Vector (AMV) products with quality indicators at the Meteorological Satellite Center (MSC) of JMA. Japanese plan reflects the discussion in CGMS XXIX and the 6th International Winds Workshop.

2 DEVELOPMENT OF HIGH-DENSITY AMV

MSC has been working on producing high-density AMVs. At CGMS XXIX, MSC reported the transformation of AMV programs from the host computer into the workstation, the adoption of EUMETSAT QI and the investigation of it with MSC's AMV. Auto-editor technique of NESDIS as a QC is under investigation for RFF.

QI showed good performance with MSC's AMV as shown in the previous paper in CGMS XXIX. However in the tropical region the performance is worse than in the extra-tropical area. The performance also primarily depends on NWP check, therefore if QI is calculated without NWP data, it is foreseen that the performance is worse than present one. Confirmation has not been done yet but MSC plans to produce two QIs, with and without prediction data because NWP model would handle forecast check itself.

MSC could have good side effects of QI. MSC found the deficiency of height assignment for clear area WV-AMVs. The positive bias of low level AMVs were also found for high values of QI. This also suggests the problem with height assignment. These couldn't have noticed with MSC's conventional QC technique of reject-adopt scheme.

MSC is working on solving the problems found. The height assignment for clear area WV-AMV is adopted and at present under confirming. It will be adopted in the operational system. The effect of it is that the increase of WV-AMVs is expected by 60 % because present AMV system in MSC is not producing vectors in the clear region. The other problem won't be solved by the start of operational high-density AMV, but MSC will try to solve it.

3 TRANSFORMATION OF AMV TRANSMISSION FORMAT WITH AMV PRODUCT

MSC is preparing operational system to produce and transmit high-density AMV products. It is

producing high-density AMVs routinely in a test environment. The system will be put on the operational environment by the end of 2002 and have an internal operation check.

AMV products are transmitted in SATOB format except for BUFR encoded products of typhoon vicinity winds from MSC at present. MSC will distribute BUFR encoded products of the high-density satellite winds from June 2003. SATOB encoded products will continue to be distributed for the user's convenience. BUFR products are including QI with & without forecast and RFF as quality indicators. JMA will test the impact on the model using RFF as well as QI.