

TROPICAL CYCLONE PROGRAMME REQUIREMENTS

The purpose of this document is to inform CGMS Members on WMO's Tropical Cyclone Programme activities and related satellite needs.

It describes recent and planned activities related to the use of satellite data in tropical cyclone applications. It draws attention to the vital importance of satellite data to the detection, monitoring and structure characterization of tropical cyclones and for predicting their evolution.

The paper highlights the need to take actions to develop or confirm plans assuring the continued availability of specific satellite data types.

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Noting the data policy of EUMETSAT, which acknowledges the vital importance of satellite data to countries exposed to tropical cyclones, and noting also that the mission of METEOSAT-7 over the Indian Ocean could be discontinued after 2008, the Fifteenth WMO Congress requested EUMETSAT to consider the possibility of extending the mission of METEOSAT-7 until an operational satellite becomes available for the Indian Ocean Data Coverage (IODC).

During the 34th session of the WMO/ESCAP Panel on Tropical Cyclone (Malé, Maldives, 25 February to 1 March 2007), the Panel Members were invited to attend the EUMETSAT satellite application training course which is planned to be held at the Muscat Centre of Excellence during February 2008 where the use of satellite data to observe and track tropical cyclones will be covered.

The RA IV Hurricane Committee, at its 39th session in March 2007, noted that operational or R&D satellites are particularly useful for the detection, monitoring and structure characterization of tropical cyclones and for predicting their evolution. Observations of particular relevance are the frequent high resolution visible and infrared imagery from geostationary spacecraft, microwave sounding from LEO satellites (e.g. with AMSU instrument) to derive total precipitable water, microwave imagery associated with active microwave sensors for precipitation rate (like TRMM and the future GPM), as well as scatterometry, altimetry and/or microwave imagery to derive ocean surface wind fields (e.g. with Quikscat, Jason-1, or Metop/ASCAT).

The Committee reaffirmed the importance of capacity building in the application of satellite meteorology to tropical cyclone monitoring. It noted with pleasure the success of the High Profile Training Event (HPTE) that took place from 16 to 27 October 2006. In this regard, the Committee placed great emphasis on the activities of WMO/CGMS Virtual Laboratory Centres of Excellence in Region IV which include organizing training seminars, updating and disseminating information on the various methods for satellite image data reception, promoting the use of satellite information in the NMHSs, disseminating training material and promoting the participation of the focal points of the WMO Virtual Laboratory in weather discussions in real time.

As a component of its Technical Plan and Implementation Programme, the RA IV Hurricane Committee gave its priority attention to maintaining and operating the LRIT stations for the reception of satellite cloud imagery products from GOES and to any modified or new equipment necessary for the reception of information from the polar-orbiting satellite series.

In recognition of the integral part played by satellite data in the monitoring of tropical cyclones, the RA I Tropical Cyclone Committee identified satellite observations (e.g. Megha-Tropiques project, DMSP, TRMM, Aqua, Scatterometers and Windsat) as a main topic of its Regional Research Workshop on Tropical Cyclone Research (South-West Indian Ocean), which is planned to be held in La Réunion in May 2008.

The Sixth WMO International Workshop on Tropical Cyclones (IWTC-VI), which was held in San Jose, Costa Rica from 21 to 30 November 2006, requested the WMO



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Space Programme to convey to all consortiums and entities involved in the development of satellite programmes the importance of maintaining and even increasing the level of remote sensing coverage, with specific attention given to instruments that provide data for monitoring and prediction of tropical cyclones (microwave data, scatterometer data, altimeter data, total precipitable water data, etc.). It highlighted the risk of decreased scatterometer and altimeter data availability in the near future, which is a matter of major concern to the tropical cyclone community. The Workshop also requested the Space Programme to convey to the National Aeronautics and Space Administration (NASA), USA that the tropical cyclone community are looking forward to the realization of the planned Global Precipitation Mission (GPM) platform.