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Author: Dr. Wenjian Zhang
Switzerland, wzhang@wmo.int

THE ROLE OF WORLD METEOROLOGICAL ORGANIZATION IN DEVELOPING A
SPACE-BASED ARCHITECTURE FOR CLIMATE MONITORING. WENJIAN ZHANG. WMO SPACE
PROGRAMME. WORLD METEOROLOGICAL ORGANIZATION (WMO)

Abstract

The development of an architecture for climate monitoring from space, formally initiated by the Sixteenth World Meteorological Congress (Geneva, 2011). The architecture will initially build upon a constellation of research and operational satellites currently existing or planned programmes by space agencies, supported by open data-sharing policies, contingency planning, surface observations for validations and user interface seeking feedback, monitoring deliverables and meeting user-service needs. The task of climate monitoring, however, has requirements that must extend beyond the capabilities of one-time research missions and operational satellite systems in existence today. The role of WMO in developing the space architecture for climate monitoring will mainly the following: 1) Requirements Analysis and Consolidation: to set broader requirements for climate monitoring by consolidating the requirements from climate programmes and initiatives like IPCC, GFCS, GCOS and WCRP; 2) Promotion of climate data and products policy; 3) Coordination on Space capability assessment, planning and implementation: WMO Space Programme will work together with Committee Earth Observation satellites (CEOS) and Coordination Group on Meteorological Satellites (CGMS) to define future CGMS baseline and CEOS Virtual Constellation meeting the needs of climate monitoring requirements, detailing missions and instrumentations, and coordinating the implementation. 4) Data management, access and dissemination: The role of WMO Information System (WIS) in the space architecture development is to ensure timely accessibility of observations and products in compliance with agreed interoperability standards. Metadata, catalogue interfacing, and formats should be standardized in compliance with the WIS standards for WMO Members. 5) User interface and Feedback: WMO as an organization will be a natural user interface with its Members as the key end users community for climate monitoring and services should be maintained in order to seek feedback, monitor deliverables and use the products from the architecture for climate monitoring services. The annual WMO Statements on the Status of the Global Climate, one of the operational and visible publications of WMO to Members, UN agencies and the general public, will benefit from the development of the architecture by using more timely products and information of climate monitoring from space.