**NOAA Okeanos Ocean Color Operational Product System: Status and Prospective**

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ABSTRACT

NOAA CoastWatch Okeanos Ocean Color Operational Product System is a flexible, expandable Linux system capable of processing multiple ocean color products satellite streams, e.g., Sea-viewing Wide Field-of-view Sensor, MEdium Resolution Imaging Spectrometer, Moderate-resolution Imaging Spectroradiometer (MODIS)/Aqua and MODIS/Terra, by using the CoastWatch Automatic Processing Software (CWAPS) including the Multi-Sensor Level (MSL) 12 algorithm. Current Okeanos system has evolved over time from an isolated VMWare environment to a system that incorporates the latest NESDIS Environmental Satellite Processing Center (ESPC) VMware technology that is consistent with the proposed future IT architecture. Since 2006, a series of OC operational products have been created from multiple satellite sensors in the Okeanos system. Current OC products include daily chlorophyll concentration (anomaly), water turbidity, remote sensing reflectance, and chlorophyll frontal products from MODIS/Aqua. The OC products have been widely applied to USA local and state ecosystem research, ecosystem observations, and fisheries managements for coastal and regional forecasting of ocean water quality, phytoplankton concentrations, and primary production. OC products will be extended to Suomi National Polar-orbiting Partnership (S-NPP) and Joint Polar Satellite System (JPSS) Visible/Infrared Imager Radiometer Suite (VIIRS) and other upcoming ocean color sensors in the next few years.

Recent efforts also provide a newly developed comprehensive Quality Assurance (QA) tool for monitoring Okeanos system, OC products processing and quality, associated with the GUI and web-based monitoring tools, referring to <http://www.ospo.noaa.gov/Products/ocean/color_new/color.htm>. The new QA monitoring tool includes the following advanced features applicable for MODIS/Aqua, NPP/VIIRS, and JPSS/VIIRS OC products. 1) Monitoring system performance, product processing, and product quality in near real time; 2) Monitoring the performance and stability of the system; 3) Monitoring the availability and quality of OC products with time; 4) Detecting anomalous OC products due to low valid pixels, deficient OC algorithm, or mis-matching OC products between the Near Infrared (NIR) from the NASA L2gen OC package and the Near Infrared - Short Wave Infrared (NIR-SWIR) algorithm from the NOAA OC processing package (Courtesy of Menghua Wang); 5) Notifying users of suspicious OC products and system problems.

It is expected that the Okeanos ocean color operational system in combination with the new QA monitoring tool will more efficiently ensure availability and quality of satellite operational OC products from Okeanos system to the user community. The QA tool also will provide much useful information of OC products quality and statistics to the OC user community.

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