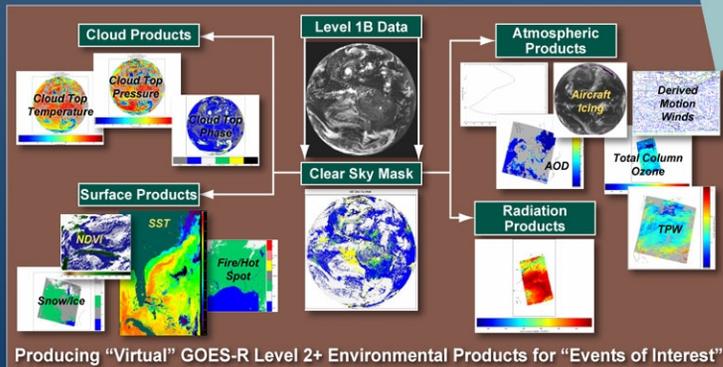
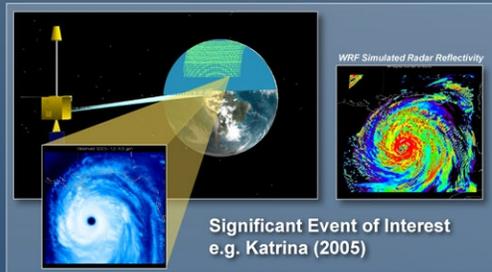
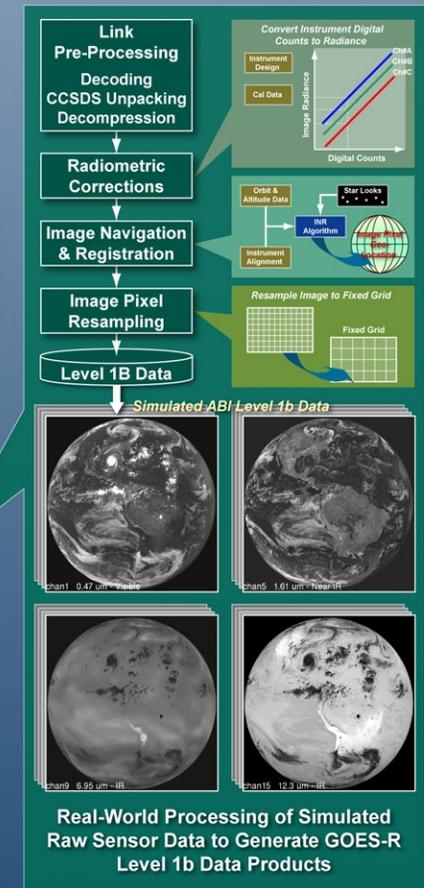
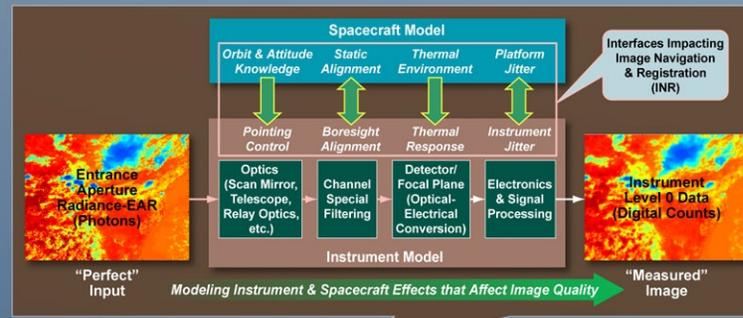
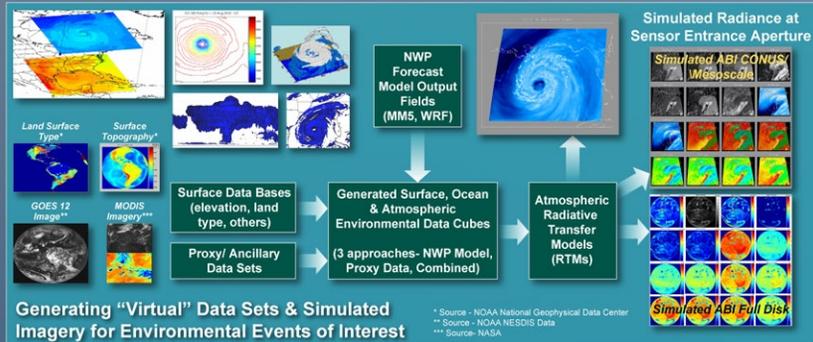


The Virtual GOES-R Observing Experiment System (VGOES) – A Strategy to Accelerate GOES Development & Benefits

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Abstract

The new Earth-observing instruments on the GOES-R system now in development will provide greatly enhanced terrestrial observations with dramatic advances in spatial, temporal, and spectral performance. These advances create challenges to both the data processing components of the GOES Observation System and to the wide range of users in the public and private sectors. The developers of the GOES-R data processing system and the users of the GOES-R data must prepare for new data products and the enhanced capabilities the GOES-R system will generate as soon as the satellite becomes operational. This paper describes the strategy and initial implementation of a Virtual GOES-R Observing Experiment System (VGOES) designed to simulate and validate the response of the entire GOES-R information system to a wide range of virtual environments. The VGOES integrates a number of independent capabilities to create an evolving terrestrial simulation environment, modeling all aspects of the GOES-R system starting from the environmental phenomenology an upward stream of radiation that would be sensed by the instruments, through instrument detection and finally a virtual GOES-R data processing system that takes the virtual data from the instruments and produces the stream of simulated GOES-R images and products. As the name implies, it is a virtual GOES-R observation system producing virtual products that describe a virtual environment. Wide ranges of resolution and performance capabilities will be available in the virtual system. Long before the launch of the satellite, VGOES will validate the performance of the data processing system and provide the simulated products required to design and validate the public and private systems that will access GOES products and data streams.

A "Virtual" End to End GOES-R Simulation System for Early Verification & User Preparation

