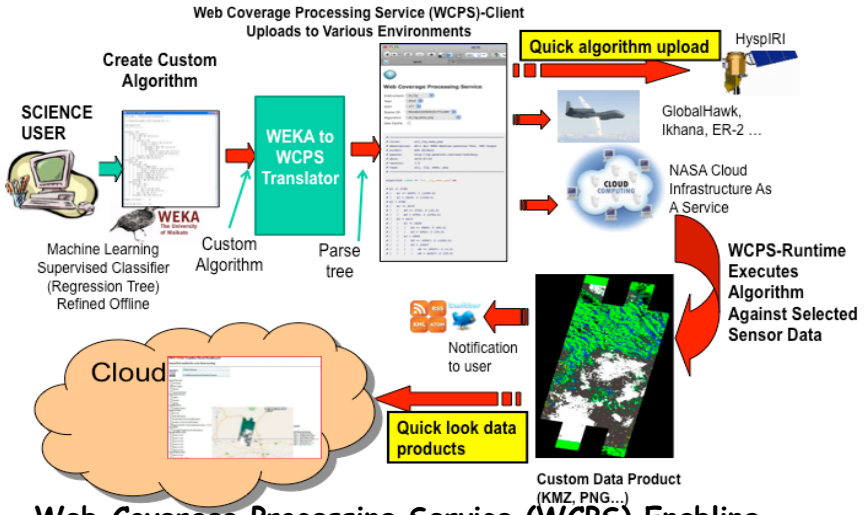
Sensor Web 3G to Provide Cost-Effective Customized Data Products for Decadal Missions

PI: Dan Mandl, NASA GSFC

Objective

- Demonstrate a standardized interface, specification language, and a set of open visual tools to enable scientists/non-programmers to easily perform custom on-demand processing on satellite image data
- Leverage Web 2.0 software, Elastic Cloud technology, Resource Oriented Architecture (ROA) approach and Open Geospatial Standards (OGC) to facilitate ease of creation of the products
- Enhance HyspIRI Visible Short Wave Infrared (VSWIR) Imaging Spectrometer (which shares heritage with Earth Observing 1 Hyperion and Advance Land Imager) data processing capabilities to enable generation and rapid delivery of customized products



Web Coverage Processing Service (WCPS) Enabling Science As A Service

Accomplishments

- Built Web Coverage Processing Service (WPCS) based on OGC standard and capabilities such as atmospheric correction, co-registration
  - Developed capability for science user to create, edit and test custom algorithms in the target environment, the Cloud or flight system
- Successfully demonstrated WCPS operating on EO-1 data in both a Cloud environment and on a realistic multicore processor flight testbed with operational flight software components
  - Collaborated with NSF Open Cloud Consortium to provide Matsu Cloud to demonstrate WCPS in the Cloud
  - Leveraged GSFC IRAD-built flight testbed based on future space computation elements, SpaceCube and Tilera/Maestro, to test and demonstrate WCPS

Co-Is/Partners: Pat Cappelaere,Vightel; Stuart Frye, SGT; V. Ly, M. Handy, T. Ames, GSFC; Robert Sohlberg, Tim Creech, UMD; Don Sullivan, ARC; Steve Chien, JPL; R. Grossman, Open Cloud Consortium

$TRL_{in} = 4$ $TRL_{out} = 6$