

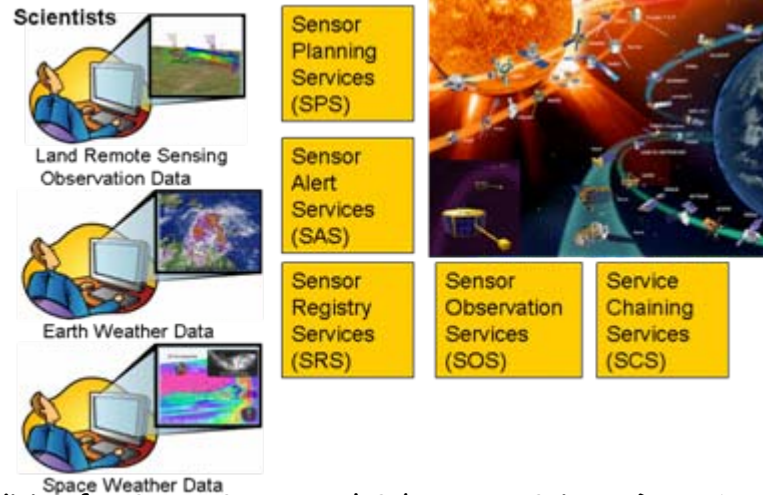


# An Inter-operable Sensor Architecture to Facilitate Sensor Webs in Pursuit of GEOSS

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## Objective

This project will develop the capability to generically discover and task sensors configured in a modular Sensor Web architecture, in space and in-situ, via the Internet. The proposed technology is thus well suited to assist future Earth science needs for integrating multiple observations without requiring the end-user to have intimate knowledge of the sensors being used. This project will demonstrate and validate a path for rapid, low cost sensor integration, which is not tied to a particular system, and thus able to absorb new assets in an easily evolvable coordinated manner. It will facilitate the United States contribution to the Global Earth Observation System of Systems by defining a common sensor interface protocol based upon emerging community standards.



Vision for Space Sensor and Subsequent Science Data Access Via Generic Web Services to Form Sensor Web

## Approach

This project will help improve data acquisitions by reducing response time and increasing data quantity and quality for the desired earth science data. This will be accomplished in the following ways:

- Provide an interoperability standard
- Enable instant discovery of available sensor resources
- Enable the ability to direct other sensors
- Enable the ability to specify how the available data should be delivered and combined

## Co-I's/Partners

- Robert Sohlberg, Chris Justice, John Townshend /UMCP
- Jeffrey Masek, Stuart Frye / GSFC
- Stephen Ungar, Troy Ames / GSFC
- Steve Chien / JPL

## Key Milestones

- Development of relevant science & operations concepts and scenarios June 2007
- 1<sup>st</sup> demonstration EO-1 "discoverable"/taskable via Internet and the use of SensorML & EO-1 Autonomy SW Sept 2007
- Augment demonstration 1 with GMSEC framework in testbed for 2<sup>nd</sup> demonstration June 2008
- Integration of SensorML, IRC, GMSEC, cFE and CHIPS or testbed into 3<sup>rd</sup> demonstration Mar 2009
- Full capabilities demonstration, 4<sup>th</sup> demo Sept 2009
- Identification of Earth Science mission infusion targets Ongoing

TRL<sub>in</sub> = 3

