**Land Information Sensor Web**

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**Objective**

This project will develop a prototype Land Information Sensor Web (LISW) by integrating the Land Information System (LIS) in a sensor web framework. Through continuous automatic calibration techniques and data assimilation methods, LIS will enable on-the-fly sensor web reconfiguration to optimize the changing needs of science and solutions. This prototype will be based on a simulated interactive sensor web, which is then used to exercise and optimize the sensor web - modeling interfaces. In addition to providing critical information for sensor web design considerations, this prototype would establish legacy for operational sensor web integration with modeling systems.

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**Approach**

This work will be performed in six steps:

- Scenario development: a synthetic global land “truth” will be established
- Sensor simulation: a model of a future land sensors will be established
- Sensor web framework: sensor web communication, reconfiguration and optimization will be developed
- Evaluation and optimization metrics: various land surface uncertainty, prediction and decision support metrics will be established
- LISW experiments: to exercise and evaluate the system.
- Sensor web design implications: design trade-offs

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**Key Milestones**

- Scenario development  
  March/2007
- Sensor simulation  
  Sept/2007
- Sensor web framework  
  March/2008
- Evaluation and optimization metrics  
  Sept/2008
- LISW experiments  
  March/2009
- Sensor web design implications  
  August/2009
- Collaboration, Communication & Dissemination  
  August/2009

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**Co-I’s/Partners**

- James Geiger / NASA-GSFC
- Sujay Kumar, Yudong Tian / GEST-UMBC

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**Enabling LIS to interact with sensor webs with open protocols and web**