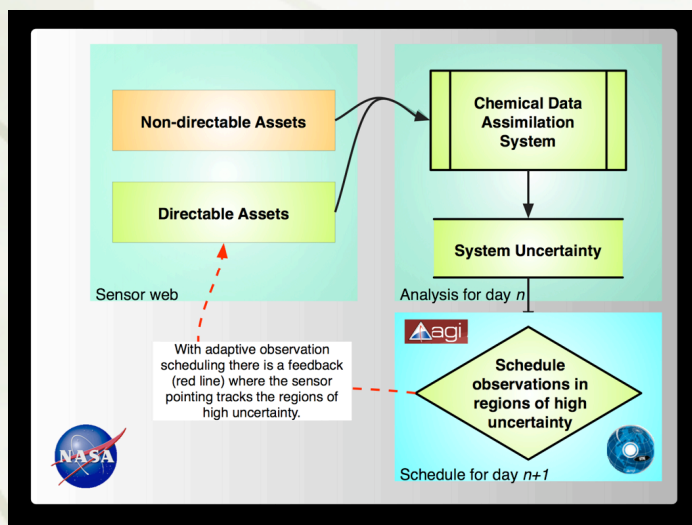# Objectively Optimized Sensor Web

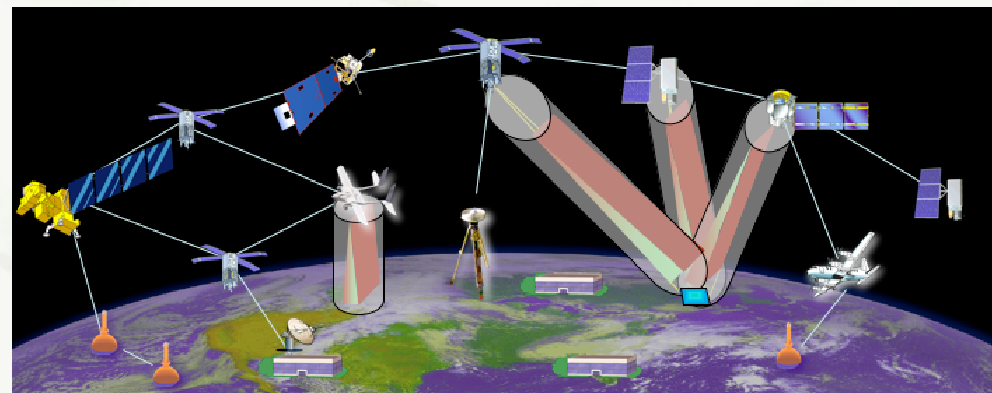*David Lary, Mark Schoeberl, Stephen Talabac, Mike Seablom*

An autonomous Objectively Optimized Observation Direction System (OOODS) is of great utility for NASA's earth observation and space exploration objectives. We are developing an OOODS designed as a sensor web element (plug-in) that is of use both now and for future NASA observing systems. The OOODS operates on generic principles and could easily be used in configurations other than the specific example used for the prototype.

• Metrics of what we do not know (state vector uncertainty) are used to define the required mode, time and location of the observations that are needed, i.e. the system targets.

• Metrics of how important it is to know this information (information content) are used to assign a priority to observing these targets.

The metrics are then passed in real time to the system observation scheduler.

Schematic of operation cycle

An example schematic representation of the type of assets that the retrieval direction system would interact with and/or direct.