Knowledge base working group

Thursday, October 27, 2011
8:32 AM

Do a white paper and a website - use the paper as a guideline for the website

Format - can occur later

Content

What do you need to address your science question(s)?

1. Site design
    a. Experimental design/statistical considerations
    b. Need for security of system
    c. Topography
    d. Ease of access
    e. Ability to communicate - line of sight, placement of cables (e.g. animals chewing, soil conditions)
    f. Need for 2-way communications
    g. Budgetary issues

2. Sensor choices will be a tradeoff between the following factors:
    a. Precision
    b. Accuracy
    c. Cost
    d. Ease of deployment
    e. Calibration
    f. Maintenance
    g. Reliability
    h. Power consumption/availability
    i. Longevity/robustness
    j. Communication protocols
    k. Compatibility/software to manage data from multiple data loggers
    l. Sensor validation/calibration protocols
    m. Appropriateness for the environment under study
    n. Amount of human hands-on time needed
    o. Ease of access to the sensor placement site
    p. Configuration of hardware in the field
    q. Maximum distance between sensors
    r. Need for smart sensors

3. Sensor platforms
    a. Tripod
    b. Tower
    c. Tram
    d. Airplane
    e. Pole
    f. Satellite

g. Tree
h. Kite
i. UAV
j. Below ground surface
k. On ground surface
l. In water
m. Rugged containers or shields

4. Data collection issues
    a. Frequency of data collection
    b. Data logging/initial processing
    c. Onsite buffer/storage
        i. Security
        ii. Size of storage
    d. Smart sensing

5. Data transport/transmission
    a. Streaming: Wired, wireless, satellite, phone (mobile)
    b. Human collection of memory cards, etc.

6. Data processing middleware
    a. Aggregation
    b. Storage
    c. Formatting
    d. Filtering
    e. Documentation
    f. Software/middleware
        i. Proprietary
            1. Hobo
            2. Vista Data Vision
            3. LoggerNet
        ii. Proprietary with limited open source or free package (or free package that will fit into a proprietary package)
            1. GCE MatLab Toolbox
        iii. Open source
            1. Data turbine with onramp
            2. Kepler
        iv. Homegrown software

7. Data archiving tools
    a. Databases
    b. File systems
    c. Netcdf, RDF, etc.

8. Data access/publishing for different groups of users (public, internal science, internal technicians/info managers)
    a. Download

    b. Visualization
    c. Querying

9. Glossary - use existing glossaries as a reference or backbone