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WF-2307 Feasibility of integrating UAS multi-spectral and thermal-infrared data at very fine pixel resolutions with the two-source (TSEB) and other energy balance models

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Roles and responsibilities

Management and enforcement of our open data policy will be the responsibility of the Principal Investigator in cooperation with USDA Contact. Prior to beginning research activities, project members will develop a data processing plan that lists data/research products to be created, file formats to be used, and plans for publication. Plans will be reviewed by the Principal Investigator and will be revised by project participants if/when the scope of data creation activities changes. USU Team members will be responsible for interim management of datasets within project tasks and for depositing finalized datasets and descriptive metadata into University's official institutional data repository (DigitalCommons@USU). PI will be primarily responsible to secure and configure the project shared storage resource. USU has secured storage resources for the early stages of the project in USU's BOX unlimited file shared system, and time has been budgeted for each team member to participate in data management activities.

Types of data

Because of the nature of this project, data in diverse formats will be produced. In addition, data production for some tasks will be of daily/weekly frequency at different spatial scales (e.g. AggieAir, prescription maps, weather sensors, etc.) To address these characteristics of the data of this project, standardized data acquisition/quality assurance methodologies will be utilized to assure accuracy and precision. In addition, PI and will be responsible for data management including quality assurance, data handling, analysis, and distribution, and will participate in program reviews with the USDA Contact.

Types of Data: These types of data are identified to be produced in this project:

*   **Raster and Vector Data:** Aerial imagery from AggieAir in Geotiff format as well Results from project analysis derived from aerial imagery.

*   **Farm Data:** Ground samples collected along with sUAS flights during the irrigation season, including data from sensors (e.g. weather), which are stored/managed by USDA Contact.

*   **sUAS Analytics and User Interface Code and Software:** Including models for evapotranspiration and developed models for this project.

*   **Metadata:** Information about data nature, model/software version used, etc.

Policies for access and sharing and appropriate protection and privacy

All types of data and products (excepting sensitive or personal information used in this project) will be made freely available by the time of publication or the end of the funding period. When data are associated with a publication, the data and associated analysis will be archived per the publication's policy. Prior to the end of the funding period data will be made available by request with the stipulation that if the data are used in publication then the researchers that collected the

data need to be informed of the planned use and be offered authorship as appropriate. Data in electronic format are stored on University's official institutional data repository (DigitalCommons@USU).

Given their diverse nature, it is expected that not every produced data in the project will be possible to be distributed or accessed through DigitalCommons@USU. It is expected that this project will generate about several intermediate products of internal use by the models to be developed. It will not be feasible, or necessary, to make output data available on-line. Input data sets will be made available on request. In addition, specific requests or sample raster data can be available on request. Any requested data will be publically available within a reasonable time (within 2 weeks), once the project implementation has been completed.

Data storage and preservation of access

Data will be managed, sustained, processed, and archived on a University's official institutional data repository (DigitalCommons@USU). During project implementation, data will be updated semi-monthly and supplemented with quarterly/biannual status reports on each project task. The DigitalCommons@USU repository will be set up and configured to share specific data under criteria of the PI and USDA Contact. Because certain data is private or personal (e.g. E&J Gallo agronomical information), a strong privacy control policy will be implemented on the data distribution. Non-personally identifiable information will be shared using a password-protected standard network protocol will be in place to avoid breach of data privacy issues.

Additional possible data management requirements

Intellectual Property Rights: Principal Investigators, their institutions and the research partners hold the copyright for the research data they generate. The intellectual property rights for specific applications will be handled accordingly to the Cooperative Research Agreement document. By depositing data related to this project in DigitalCommons@USU, investigators do not transfer copyright but instead grant permission for USU to use the data as necessary to protect respondent confidentiality, improve usefulness, and facilitate preservation. USU's networked server will disseminate the data upon PI and USDA Contact's authorization.