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LACIE EXPERIMENT DESIGN

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The LACIE was a major effort toward the development and demonstration of the technology for an operational global crop inventory system. Specific planning for what eventually became the LACIE was initiated within NASA as early as 1973 and provided for the design and implementation of the Applications Evaluation System (AES) the quasi-operational¹ element of LACIE responsible for the acquisition and analysis of Landsat, meteorological, and ancillary data to make experimental estimates of wheat area, yield, and production and the assessment of system performance.

A significant portion of the basic design and implementation of the AES was accomplished before the initiation of LACIE and was based on existing research and development components and experience. However, because no similar system had been previously designed, much of the knowledge had to be obtained within the LACIE experience, resulting in significant evolution from the initial system. That such a system was designed, implemented, and operated with the performance achieved within the time frame of LACIE is considered a major and significant accomplishment by LACIE participants. Numerous technological issues for an operational crop inventory system have been identified and resolved through the AES experience.

¹"Quasi-operational" describes an experimental system which is technologically and functionally equivalent to an operational system. The quasi-operational AES extensively utilized existing hardware, software, and procedures to meet resources and schedule constraints while it also allowed for development and test of the technology.