

Land Information System (LIS) Milestone I Test Report
Submitted under Task Agreement GSFC-CT-2
Cooperative Agreement Notice (CAN)
CAN-00OES-01
Increasing Interoperability and Performance of
Grand Challenge Applications in the Earth,
Space, Life, and Microgravity Sciences

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Version 0.1

1.0 Scope

This Test Report describes the software test plan for the Land Information System (LIS) Interoperability Test. LIS is a project to build a high-resolution, high-performance land surface modeling and data assimilation system to support a wide range of land surface research activities and applications. The LIS Interoperability Test will describe the testing done for LIS Milestone I, Interoperability Prototype from milestone "H" tested with improved codes.

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2.0 Software Test Environment

The software environment is fully described in the LIS Test Plan which can be accessed on the LIS web site <http://lis.gsfc.nasa.gov/documentation>.

3.0 Test Reports

Test 4.3.1 Internal Interoperability Test

Purpose: Demonstrate interoperability of LIS driver by adding the third Land Surface Model, VIC. Demonstrate that LIS/VIC combination works on SGI 3000.

Requirement: 7.6, 7.4

Verification methods: Completion of 1 day run and plot outputs. PI review of output.

Expected results: Successful completion of VIC run on SGI 3000 and LIS Cluster.

Outputs are comparable to each other and of previous runs.

Actual results: Completed VIC runs and plotted Soil Moisture, Precipitation, latent heat flux, sensible heat flux, radiation and others. PI reviewed plots. The LIS driver has also been used to easily add MOSIAC model and the CMAP input data sets to the system by collaborating team members.

Discrepancy reports: none.

Test 4.3.2 5km NOAH on LIS Cluster Test

Purpose: Verify that Noah V2.5 will run on the LIS Cluster at 5 km resolution.

Requirement: 7.5

Verification methods: Completion of 1 day run and plot outputs. PI review of outputs.

Expected results: PI judges output data acceptable.

Actual results: Completed Noah run at 1/4 degree resolution and plotted Soil Moisture, Precipitation, latent flux, sensible heat flux, radiation and others. PI reviewed plots.

Discrepancy reports: 5km runs are pending due to memory management issues due to the Fortran compiler on the LIS Cluster

Test 4.3.3 5km CLM on LIS Cluster Test

Purpose: Verify that CLM V2.0 will run on the LIS Cluster at 5km resolution.

Requirement: 7.5

Verification methods: Completion of 1 day run and plot outputs. PI review of outputs.

Expected results: PI judges output data acceptable.

Actual results: Completed CLM run at 1/4 degree resolution and plotted Soil Moisture, Precipitation, latent flux, sensible heat flux and radiation. PI reviewed plots.

Discrepancy reports: 5km runs are pending due to memory management issues due to the Fortran compiler on the LIS Cluster.

Test 4.3.4 ALMA Mandatory Outputs Test

Purpose: Verify ALMA mandatory outputs are available from CLM, Noah, and VIC.

Requirement: 4.4.9

Verification methods: Inspection of plots from 1 day CLM, Noah, and VIC runs.

Expected results: All supported mandatory variables available, unit and sign conventions correct

Actual results: All supported mandatory variables are available from CLM, Noah, and VIC. All variables were plotted and reviewed by PI for correct unit and sign conventions.

Discrepancy reports: none