C6 MODIS Land Science Test Plan

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MODIS/VIIRS Science Team Meeting
May 14-16, 2008

C6 strawman time-line

May 2008	List of L1 C6 changes defined
June 2008	List of Land C6 changes defined and straw-man C6 plan developed
June/July 2008	Period for community comment/review on proposals
July to Dec 2008	Science Tests of C5 Atmos and Land products with C6 L1 software *(C6 L1 may not be available until Sept/Oct 2008)*
Sept to Dec 2009	Delivery of Land C6 algorithms *(start early with incremental updates – July/Aug 2009)*
Oct 08 to May 09	Science testing of Land C6 algorithms *(start in July/Aug with C5 L1 and then switch to C6 L1)*
Jan 2009	Start C6 L1 production with current C5 Atmos and Land algorithms
June 2009	Start of Land C6

Science Test: Scope, Types and Data

- Types of Test
  - Global Tests
  - Time series Tests
  - Targeted Tests
- Test Phase
  - First Phase: Terra only. *Combined products can be generated using the C6 Terra only (or using C6 Terra and C5 Aqua).*
  - Second Phase: C6 Aqua only and C6 Terra/C6 Aqua combined products
- Input Data
  - Use C5 product as baseline
  - Use two 16-day periods of data for global tests – summer and winter
  - Limited number of tiles for time series test
- Production at MODAPS
  - Production rate ~ 2x – 4x
  - Subsets for validation community (?)
- Test data distribution
  - Available through LAADS to Science Teams
  - Available to User community (?)

Cloud Mask and L2G-lite

- Evaluation of MOD09 internal cloud mask
  - Test1: Compare with cloud mask from MOD35 using C5
  - Test2: Duplicate MOD09 internal cloud mask in the MOD35 cloud bit of MOD09 and run downstream.
- Update L2G-lite
  - Update the C5 L2G-lite algorithm
  - Run a 16-day global test using C5 data
    - MODAGAGG/MODHDFSR (updated to read L2G-lite)
    - MOD09A1 and BRDF/Albedo

C6 Science Test Plan

- Pre- Collection 6 testing (June 01, 08 – July 15, 08)
  - Evaluate MOD09 Cloud Mask, Fix and test L2G lite
- 1st Terra 32-day global test (July 16, 08 – Aug 31, 08)
  - Use C5 L1, C6 L2/L2G and C5 L3
- 1st C6 L1B Land Test (Sept 01, 08 – Sept 30, 08)
  - Use C6 L1, C6 L2
- 2nd Terra 32-day global test (Oct 01, 08 – Nov 15, 08)
  - Use C6 L2/L2G/L3
- 1st Terra Time Series Test (Nov 16, 08 – Jan 31, 09)
  - Use C6 L2/L2G/L3
- 3rd Terra 32-day global test (Feb 01, 09 – March 15, 09)
  - Use L1 C6/Land C6
- Targeted Tests (global/time series) (Mar 16, 09 – May 31, 09)
  - Terra C6 Land
  - Terra C6 processing starts in June 09
- Aqua 32-day global test (May – June 2009)
  - Aqua C6 L2/L3 and C6 Terra/Aqua combined
- Aqua Time Series (July 2009)
  - Aqua C6 reprocessing starts in Aug 2009.

VIIRS Land Product Quality Evaluation and Testing

VIIRS Land Product Quality Assessment

- **Pre-Launch**
  - **Ensure that the VIIRS land product meet specifications**
  - **Suggest and evaluate update to VIIRS land algorithms using MODIS C5 data product as the standard or reference for comparison.**
  - **Identify and develop tools to support operational pre and post-launch VIIRS Land algorithm evaluation**
- **Post-Launch**
  - **Long term Data Quality Monitoring**
    - **Validate using data product from other instrument**
    - **Validate using Aeronet data/Core site data**

VIIRS Land Product Quality Assessment LDOPE's Role

- LDOPE suggests the required science test in consultation with the Science Teams.
- LDOPE evaluates the test results, if necessary consults Science Teams for expert evaluation.
- LDOPE in consultation with the Science Team either suggests updates to the algorithm or approves the tested version of the algorithm based on the evaluation of the test results.
- LDOPE will maintain set of websites similar to those used in MODIS for communicating the results of the QA
- Pre-launch testing is conducted by running the VIIRS algorithms on MODIS proxy data (MODIS instrument data mapped to the VIIRS bands with MODIS viewing geometry and VIIRS viewing geometry)
- Test results are evaluated
  - Compared to C5 MODIS products
  - Compare Land PEATE generated DDRs to the C5 MODIS tiled products

Land PEATE: Land Quality Assessment

http://landweb.nascom.nasa.gov/NPP

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NPP- Land Product Evaluation and Testing Element

VIIRS Land Product Quality Assessment

VIIRS Land Data Definition:

- Land Products (xDRs)
- Land DDRs
- File Specifications
- Land ATBDs
- Land Product Interdependency

Science Tests:

- Test Description & Status
- Test Results (Browses, Issues etc.)
- Production and Data Ordering
- Closed SPCRs

NPP Tech Memo

VIIRS Land Data QA Tools Metadata Database

Help/FAQ
VIIRS Science Team
QA Personnel

Link to ERoom(Access Permission Required)

Welcome to the NPP VIIRS Land Product Quality Assessment Web Page

The objective of the VIIRS (Visible Infrared Imaging Spectro Radiometer Suite) Land Product QA is to evaluate and document the science quality of products made from the remotely sensed data acquired using VIIRS. Results of quality assessment of samples of VIIRS Land products made at IDPS (Interface Data Processing System) and results of evaluation of improvements to the VIIRS Land Science algorithms derived by analyzing the products made at Land PEATE (Product Evaluation and Testing Element) using the new algorithms are placed on the web pages located at this site.

NPP (National Polar Orbiting Earth Sattellite System Proparatory Project) satellite will be launched no earlier than Spring 2009. Land PEATE is in the early stage of development. Evaluation of products produced at Land PEATE and evaluation of science algorithm improvements are done at LDOPE (Land Data Operational Product Evaluation). Currently all tests and evaluation are done using simulated or proxy MODIS data.

Please direct your questions and comments to Sadashiva Devadiga (devadiga@ltpmail.gsfc.nasa.gov).

Science Test Description and Status

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NPP- Land Product Evaluation and Testing Element

VIIRS Land Product Quality Assessment

VIIRS Land Data Definition:
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VIIRS Land Science Test
Test Description and Status

Introudction:

The NPP VIIRS Land Science Version of the Codes developed by the NPP Land Science Software developers at NGST and the Operational Version of the code developed at the IDPS are downloaded from CasaNOSA and are integrated into the NPPDAPS at Land PEATE. The science and ops version of the PGEs thus developed are tested using proxy data. Two types of proxy data are used in the tests.

MODIS Proxy data - MODIS instrument data mapped to the VIIRS bands with MODIS viewing geometry.

The objective of these Science Tests during the pre-launch period is to evaluate the VIIRS land product algorithms by comparing the products produced from the science test using these algorithms to the Colleciton 5 MODIS land data products. Science test results are evaluated by LDOPE and the VIIRS Land Science Teams. The science or ops version of the algorithms are updated at Land PEATE or at the individual Science Facilities. The products from the science tests are made available to the NPP land science teams and ldope through a password protected ftp site lpeate.nascom.nasa.gov. For user name and password please contact Gang Ye (gye@saicmodis.com), Alice Isaacman (alice@saidmodis.com) or Sadashiva Devadiga (devadiga@ltpmail.gsfc.nasa.gov).

Science Tests:

VIIRS Pre-Launch Land Algorithm Testing and Evaluation

- Build 1.5 completion – Summer/Fall 2008
- Launch ready system – March 2009
- Test data: 16-day MODIS proxy almost ready – 2003193 Aqua mapped to VIIRS bands with VIIRS geometry
- Global Test
  - Evaluate using DDRs
- Time Series Test
  - Using limited number of tiles