C6 Land Science Test and Reprocessing Plan

Sadasiva Devadiga (GSFC/SSC)
Robert Wolfe, Ed Masuoka (GSFC)

MODIS Science Team Meeting
April 15-17, 2013
Outline

- **New in C6?**
- **C6 Land Science Test**
  - C6 L1B, Geolocation, Cloud Mask - Completed
  - Product Specific Algorithm changes – Current Status
  - What is next?
- **C6 Reprocessing Plan**
  - Reprocessing in two Tier
  - Reprocessing Time Line
  - Product Release
- **Questions**
New in C6

- Improvement in all land products - from improved C6 L1B, Cloud Mask, Geolocation and Land Water Mask
- Improvement in LSR, LST, AF, Snow and BRDF/Albedo from product specific algorithm changes
- LAI/Fpar and GPP/PSNnet produced at 500m resolution.
- VI suite of products generated from 8-day composite reflectance product (MOD09A1/MYD09A1)
- BRDF/Albedo produced daily, but product at 1km resolution is not produced.
- Expecting C6 LST to replace C5 and C41 and will include two new products – MO[Y]D11B2, MO[Y]D11B3.
- Snow will not include Snow Cover Map, and will include two new products
- New L2G-lite products – Snow, Ocean bands, thermal bands
• Science tests run to generate complete suite of land products from operational C5 land algorithms using C6 L1B, geolocation, cloud mask and profile as input.
• Test results compared to baseline C5 operational data generated using the C5 L1B as input.
• Approved C6 L1B, Cloud Mask and Geolocation
• C6 L1B Reprocessing completed and forward processing in progress
C6 Land Science Test
Current Status: Product specific Algorithm Changes

- **Surface Reflectance (PGE11/PGE75)**
  - Three revisions deliveries tested
  - C6 L2 LSR and CMG generated from C5 L1B Terra and Aqua
  - Reprocessing of C6 LSR from C6 L1B Terra in progress

- **LST (PGE16)**
  - Three revisions delivered
  - Global test and test of selected granules from Terra and Aqua generated
  - Test to generate 1-year of global data in progress

- **Active Fire (PGE30)**
  - Ran global tests for two revisions delivered

- **Snow (PGE07)**
  - New C6 delivery currently in testing
C6 Land Science Test

Current Status: Product specific Algorithm Changes

• Vegetation Index
  • PGE25 and PGE35 algorithm change delivered and tested
  • Evaluation in progress, further tuning may be required

• Lai/Fpar
  • Algorithm change to generate 500m product using L2G-lite delivered
  • Evaluation in progress

• BRDF/Albedo
  • Two revisions delivered, expecting one more delivery
  • Recent delivery in testing

• L2G
  • Several revisions delivered and tested. No new delivery expected

• New Products in Testing
  • MAIAC (Alexie Lyapustin)
  • LST (Simon Hook, JPL)
C6 Land Science Test
What is next?

- Global Land chain Test (SR, VI, BRDF/Albedo)
  - 1st test completed
  - 2nd test in progress (~1 month)
  - 3rd test required (~1 month)
- Product Specific Tests
  - To be scheduled upon delivery of revised version of algorithms
- Longer time series tests (over selected area)?
  - VI and LAI/FPAR
C6 Reprocessing Plan
Reprocessing in 2 Tiers

- Two set of products identified
  - C5 products for which C6 changes are nearly ready – Algorithms mostly stable and matured. Production rules and issues well understood.
  - New products, higher level products - C6 changes not ready, C6 changes and evaluation still evolving, Production effort yet to be estimated
- Waiting for all PGEs to be ready for processing could further delay the C6 reprocessing
  - 1st Tier Reprocessing: Will include most of C5 products
  - Delayed Tier: Higher level products and new products generated as the PGEs become ready - Burned Area, Land Cover, VCF, new products
## C6 Readiness
*(1st Tier, Delayed, Mixed)*

<table>
<thead>
<tr>
<th>Product</th>
<th>Delivery Expected Testing Required</th>
<th>New Products/ Format change</th>
<th>C6 Readiness</th>
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<tbody>
<tr>
<td>Surf Refl</td>
<td>Minor</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Surf Temp</td>
<td>Major</td>
<td>MOD11B2, MOD11B3</td>
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<tr>
<td>Fire</td>
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<tr>
<td>Sealce</td>
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</tr>
<tr>
<td>VI</td>
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<tr>
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<tr>
<td>MAIAC, ST</td>
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C6 Testing and Reprocessing Timeline

- **Final Land delivery for 1st Tire reprocessing**
- **C5 Land Processing and C4.1 LST**
- **Land Science Test**
- **C6 Land Reprocessing**
- **Delivery and Testing for products in Tier 2**
- **Begin Tier 1 Reprocessing**
Outstanding Issues

• Community Evaluation
  • Test results from final version could be released to public
  • Not expecting to hold back reprocessing for community evaluation.

• Time order of Processing
  • Processing from the beginning of mission
  • Processing more recent years (2009 – present) first and then process from early mission period

• Product Release
  • Release after initial review of data review
  • New products could be released with Beta maturity status