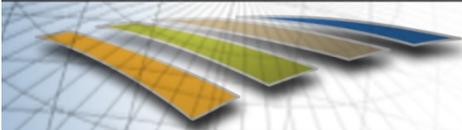




# Landsat Data Continuity Mission (LDCM) USGS Project Status Report

January 6, 2009

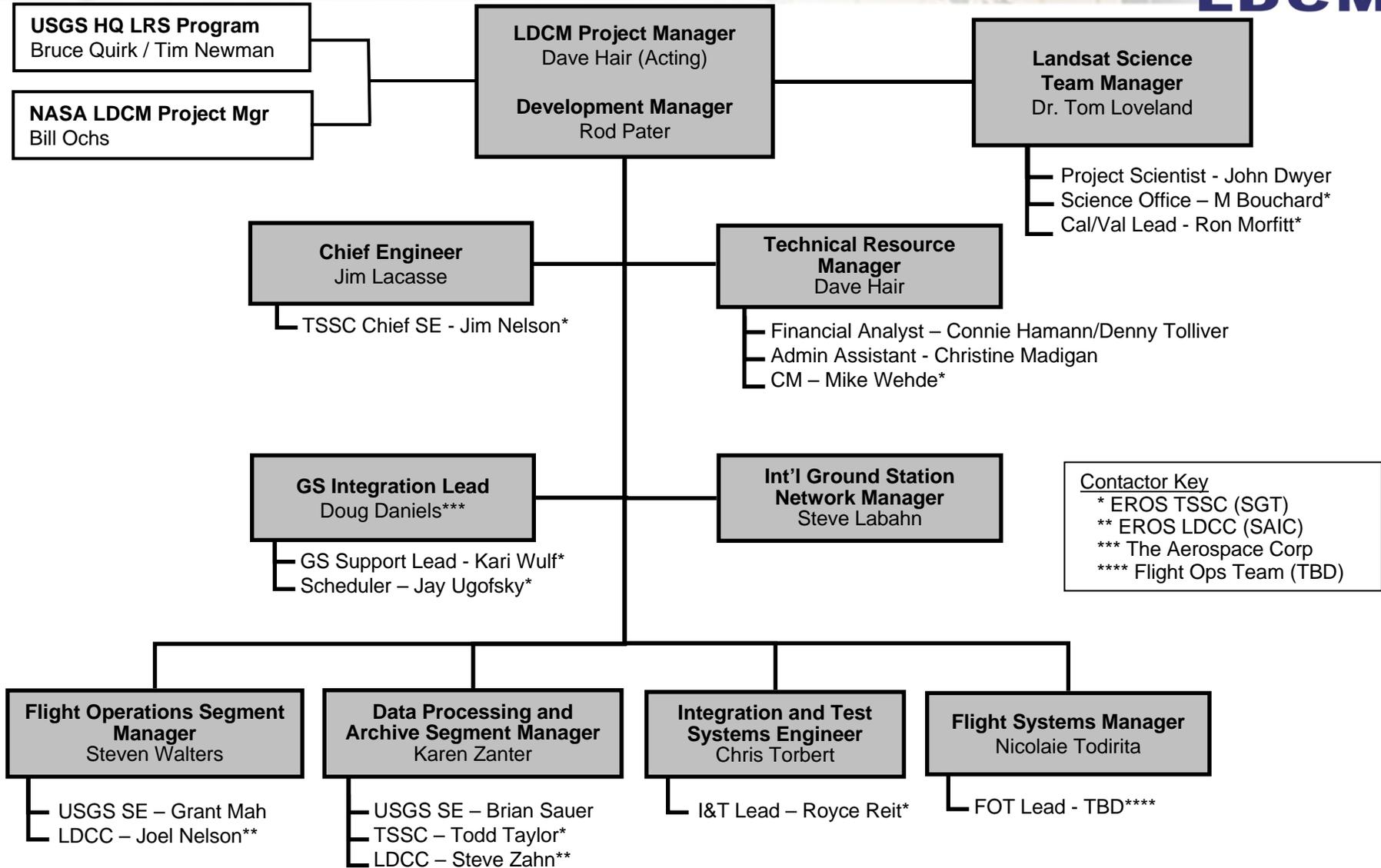
Dave Hair  
USGS LDCM Project Manager  
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 Topics**LDCM**

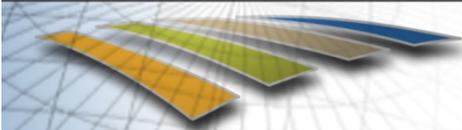
- ◆ USGS LDCM Project Team update
- ◆ Ground system development status
- ◆ Landsat L0R RFI Results
- ◆ Algorithm Delivery Status

# USGS LDCM Project Organization

**LDCM**



**Contactor Key**  
 \* EROS TSSC (SGT)  
 \*\* EROS LDCC (SAIC)  
 \*\*\* The Aerospace Corp  
 \*\*\*\* Flight Ops Team (TBD)

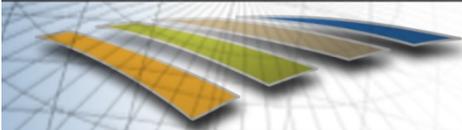


# Ground System Development Status

**LDCM**

## ◆ Accomplishments and Highlights

- ◆ Preliminary design nearing completion and critical design initiated
- ◆ Worked with NASA to the award of the Mission Operations Element contract
- ◆ Evaluated responses to Request For Information (RFI) for demodulators
- ◆ Space to Ground Interface Technical Interchange Meeting Nov 19-21
- ◆ Continued research on automated cloud cover assessment algorithm
  - Algorithm approach has been streamlined, i.e. eliminated time-series and parallax techniques
- ◆ Full-scene cloud and shadow masks have been developed for use in developing training statistics for decision-tree algorithms and for validating algorithm results
- ◆ Evaluating trade study hardware required for the internal cache
- ◆ OLI Calibration/Validation Technical Interface Meeting Dec 2-3. The flow for delivery of algorithms to the ground system was discussed, followed by in-depth technical discussions of algorithm-specific issues.



# Ground System Design Reviews

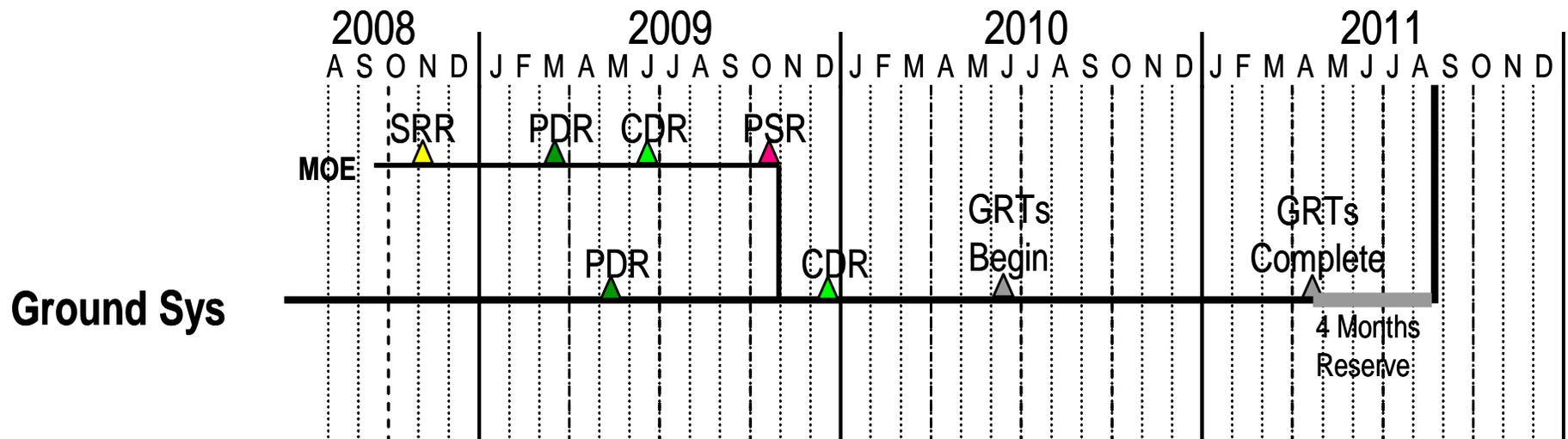
**LDCM**

<b>Preliminary Design Reviews</b>	<b>Date</b>
Collection Activity Planning Element (CAPE)	✓ Apr 2008
Infrastructure Element (IE) - Spiral	✓ Jul 2008
User Portal Element (UPE)	✓ Jul 2008
Storage and Archive Element (SAE)	✓ Aug 2008
Image Processing Element (IPE)	✓ Oct 2008
Ground Network Element (GNE)	Apr 2009
Mission Operations Element (MOE)	Apr 2009
Ground System	May 2009

<b>Critical Design Reviews</b>	<b>Date</b>
Collection Activity Planning Element (CAPE)	Jan 2009
Data Processing and Archive Segment (DPAS)	Jul 2009
Ground Network Element (GNE)	Sep 2009
Ground System	Dec 2009

# Ground System Schedule

**LDCM**



The banner features the text 'Landsat L0R RFI' in a large, bold, black font. To the left of the text is a graphic of several overlapping, curved bands in shades of orange, yellow, and green, representing satellite data. To the right is a faint, stylized world map. The background of the banner is a light blue and green gradient.

# Landsat L0R RFI

## Purpose

- ◆ Gage interest in historical Landsat L0R data (MSS, TM, ETM+)
- ◆ Determine interest in processing L0R data for custom product generation as a service to others
- ◆ Determine expectations of the USGS to provide the necessary processing software
- ◆ Determine the potential frequency and volume of requests

## Results

- ◆ Responses received from two commercial firms, both of which are interested in providing custom processing services
- ◆ Cost of L0R data will be a factor driving volume of requests
- ◆ Potential confusion in client base, i.e. free L1T from USGS vs. commercially provided products

Algorithm Delivery Status**LDCM**

- ◆ Total of 45 algorithms to be delivered for implementation to support on-orbit initialization and verification
  - ◆ Ingest
  - ◆ Image Assessment
  - ◆ Product Generation
  - ◆ CalVal Toolkit
- ◆ An additional 14 algorithms to be implemented by Initial Operations
- ◆ Algorithms are delivered in phases according to progression in the design and development of OLI instrument and Ground System Image Processing Element (IPE)
  - ◆ Phase 1 – completed for IPE PDR (Oct '08)
  - ◆ Phase 2 – to be completed by Data Processing & Archive Segment CDR (Jul '09)
  - ◆ Phase 3 – to be completed by Ground Readiness Tests (GRTs)
  - ◆ Phase 4 – delivered post-launch