

NGAC Landsat Advisory Group (LAG) Subcommittee Update



NGAC Meeting
October 28, 2020

Frank Avila, LAG Chair
Roberta (Bobbi) Lenczowski, LAG Vice-Chair

LAG Mission

***Provide advice** to the Federal Government, through the Department of the Interior National Geospatial Advisory Committee, **on the requirements, objectives and actions of the Landsat Program** as they apply to continued delivery of societal benefits for the Nation and the global Earth observation community*

LAG was established in April 2012 as a subcommittee under the NGAC.

Landsat Advisory Group Intro

Tim Newman,
National Land Imaging Program

LAG 2020 Membership

Name	Organization
Frank Avila (<i>LAG Chair, NGAC Member</i>)	<i>National Geospatial-Intelligence Agency (NGA)</i>
Bobbi Lenczowski (<i>LAG Vice-Chair, NGAC Member</i>)	<i>Roberta E. Lenczowski Consulting, LLC</i>
May Yuan (<i>NGAC Member</i>)	<i>University of Texas-Dallas</i>
Vasit Sagan (<i>NGAC Member</i>)	<i>Saint Louis University</i>
Mariel Borowitz	<i>Georgia Institute of Technology</i>
Steven Brumby	<i>National Geographic Society</i>
Keith Masback	<i>Plum Run, LLC.</i>
Anne Hale Miglarese	<i>Saildrone, Inc.</i>
Walter Scott	<i>MAXAR</i>
Robbie Schingler	<i>Planet</i>
Federal Contacts: Tim Newman, Tim Stryker, Greg Snyder, Peter Doucette <i>USGS/National Land Imaging Program</i>	

LAG Task #1

- ❖ **Task: Report on Landsat data as a community standard for data calibration.**
 - USGS is requesting the LAG to develop a report that captures the essence of Landsat’s “gold” standard standing. Terminology, descriptions, and specific examples should be presented at a layperson’s level. Concepts should emphasize radiometric, geometric, spectral, and cross-sensor calibration. Applications should emphasize change detection, time-series analysis, and data fusion / harmonization / integration.
- ❖ **Team:** Walter Scott (Lead), Frank Avila, Steve Brumby, Bobbi Lenczowski, Vasit Sagan, Robbie Schingler
- ❖ **Actions:** The completed report was approved by the LAG on October 16, 2020.
- ❖ **Target Due Date:** September 2020
- ❖ **Target NGAC Approval:** October 2020 Meeting

LAG Task #2

- ❖ **Task: Formulating a Big Data Science challenge for land imaging time-series data.**
 - USGS is requesting the Landsat Advisory Group to investigate the formulation of a Big Data Science Government Challenge (e.g., implemented via an Xprize-like mechanism) to incentivize exploration into the utility and efficacy of ML/DNNs methods for purposes of exploiting Landsat ARD for time-series analysis and land change forecasting applications, and to augment those developed as part of the USGS LCMAP initiative.
- ❖ **Team:** Anne Miglarese (Lead), Frank Avila, Vasit Sagan, Robbie Schingler, May Yuan
- ❖ **Actions:** The team has met several times to discuss the framework, scope and intent of Task #2. The LAG has reviewed and discussed an initial draft report. General procedural guidance for a science challenge has been provided. Options for USGS selection of a likely first topic are in work.
- ❖ **Target Due Date:** November 2020
- ❖ **Target NGAC Approval:** December 2020 Meeting

LAG Task #3

❖ **Task: Modernized interpretation of the Land Remote Sensing Policy Act of 1992 (Public Law No: 102-555)**

- USGS is requesting the LAG to provide a modernized interpretation of the current language of PL 102-555 that can serve to inform future Land Remote Sensing policy formulation among decision makers, and which remains consistent with the spirit of the existing language. Factors to consider include technology trends in space and ground mission segments, public-private partnering opportunities, and evolving user needs across a broad range of applications.

❖ **Team:** Keith Masback (Lead), Mariel Borowitz (Co-lead), Bobbi Lenczowski, Anne Miglarese, Robbie Schingler, Walter Scott, May Yuan

❖ **Actions:** The team has met several times. An MS Teams site for document and reference sharing has been established. An initial framework, outline, and text has been completed. Additional research and writing is on-going.

❖ **Target Due Date:** November 2020

❖ **Target NGAC Approval:** December 2020 Meeting

Task #1

Final Report Presentation:

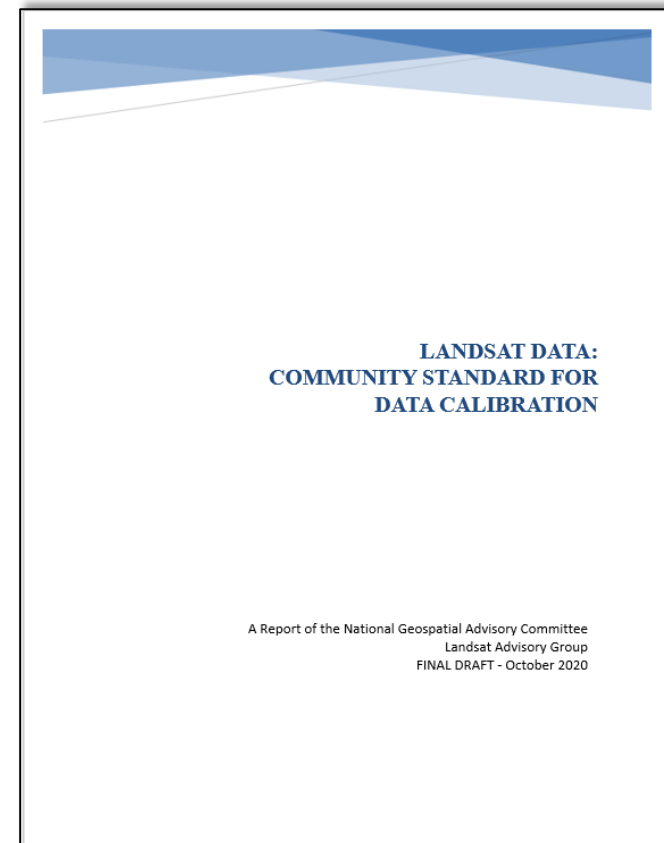
Landsat Data as a Community Standard for Calibration

Lead – Dr. Walter Scott - Maxar

Task #1 – Report Goal and Outline

This paper aims to better communicate the fundamental importance of Landsat in making Earth observation data more accessible and interoperable for global users, in a way that is understandable to general audiences

- ❖ What is Calibration?
 - ❖ General discussion on Geometric, Spectral, and Radiometric calibration
- ❖ Illustrative Examples
 - ❖ Visual examples of satellite images before and after calibration has been applied
 - ❖ Applications examples highlight the value of image calibration for accurate change detection, time-series analysis, crop type mapping and data fusion
- ❖ Leveraging the Calibration Efforts and Sharing the Benefits
 - ❖ Leveraging Landsat's reliable calibration to enhance data quality of other civil and commercial earth observation systems
- ❖ Landsat Calibration and Derived Societal Benefits
 - ❖ Examples of the employment of Landsat's historical archive documenting change and enabling dependable Earth science research and analysis, facilitating development of commercial and government applications to address societal challenges.



Questions/Discussion



Published LAG Reports

[Evaluation of a Range of Landsat Data Cost Sharing Models – June 2019](#)

[Landsat Future Mission Recommendations – April 2018](#)

[Landsat Data Cube Feasibility for Forecasting – April 2018](#)

[Analysis of Non-Federal Landsat User Requirements – June 2016](#)

[Sentinel Data Use Policies – December 2015](#)

[The Value Proposition for Landsat Applications – December 2014](#)

[Cloud Computing: Potential New Approaches to Data Management and Distribution – December 2013](#)

[Comments on NRC Report: Landsat and Beyond: Sustaining and Enhancing the Nation's Land Imaging Program – December 2013](#)

[Product Improvement – Advice USGS on Potential Means of Modifying the Current Products to Make Them More Useful to Commercial Information Providers and Value-added Analysts – December 2013](#)

[Statement on Landsat Data Use and Charges – September 2012](#)

[The Value Proposition for Ten Landsat Applications – September 2012](#)

Documents can be accessed at www.fgdc.gov/ngac/key-documents