National Aeronautics and Space Administration

NASA earth

Commercial Satellite Data Acquisition (CSDA) Program Updates

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Why buy commercial data?

Enhances our science and makes unique contributions to our mission.

Complements existing NASA/US Gov satellite fleet with shorter revisit times, higher spatial resolution, and complementary or unique measurements.

What is NASA's role?

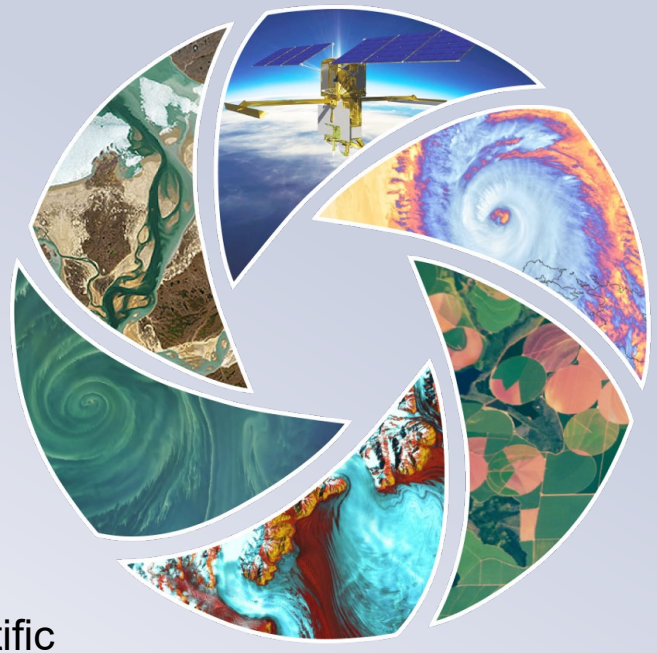
Acquiring, evaluating, using, and archiving the data.

NASA has broad expertise in the techniques as well as the research & application fields.

Partnering with other federal agencies to maximize the value of commercial data.

CSDA Program Mission

*Serves as the **central mechanism at NASA** for identifying, acquiring and evaluating commercial EO data that support NASA's Earth science research & application goals.*

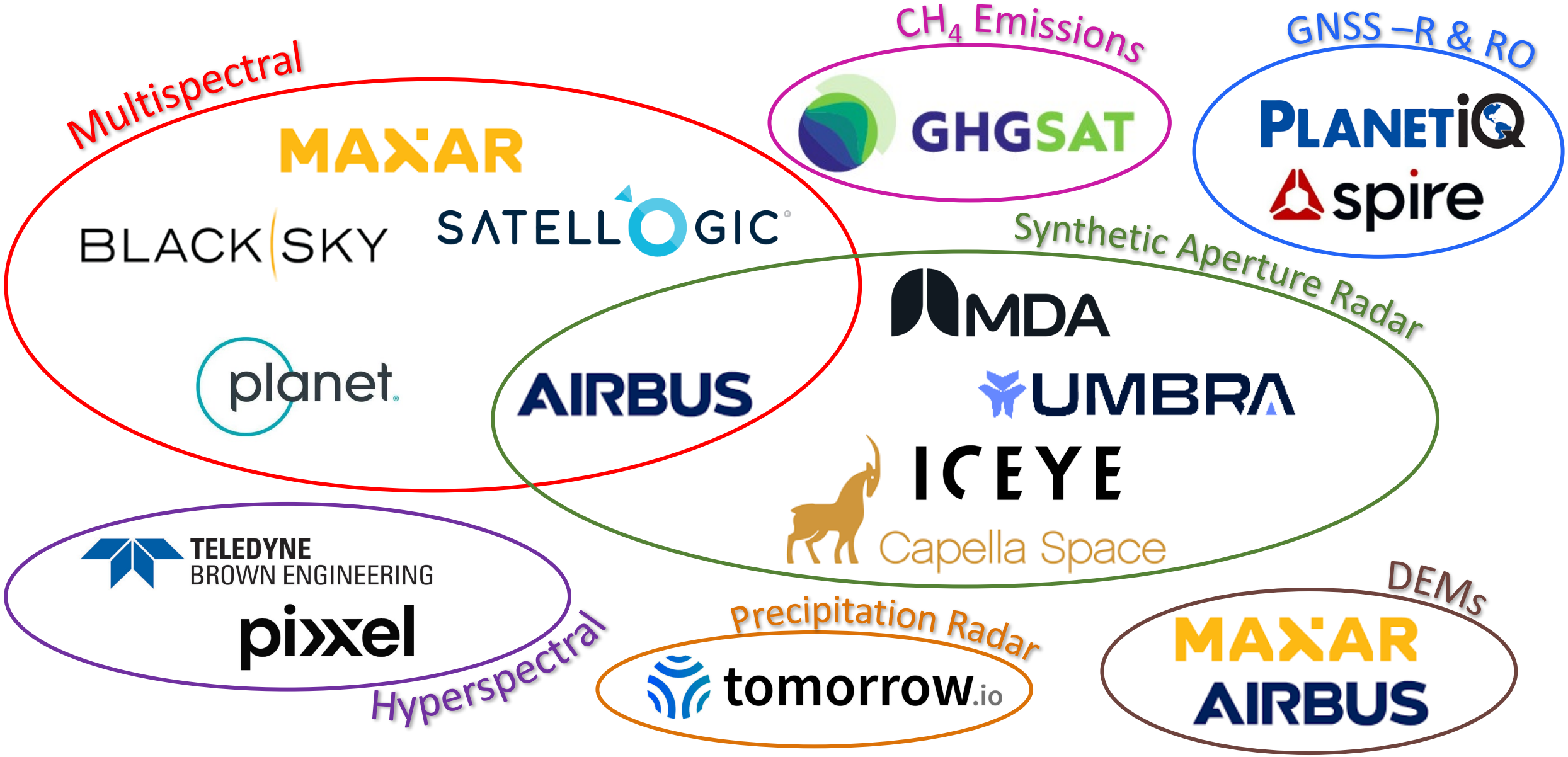


CSDA Program Goals

- Establish a continuous and repeatable process to on-ramp new commercial data vendors.
- Enable sustained use of purchased data for broader use and dissemination by NASA scientific community.
- Ensure long-term data preservation, access and distribution of purchased data and long-term access for scientific reproducibility.
- Coordinate with other US Government agencies and international partners on the evaluation and scientific use of commercial data.
- Compliance with 2003 US Commercial Remote Sensing Policy

Commercial Satellite Data Acquisition Program

NASA CSDA Vendors



Data Evaluation Criteria

1. ***Accessibility*** of vendor supplied imagery and data

   Ease and efficiency of search, discover, and download from vendor systems.

2. ***Accuracy*** and completeness of metadata

   Accuracy and completeness of metadata provided by vendor.

3. ***Quality*** of ***User Support*** Services

   Availability, responsiveness, and technical expertise required to answer PI inquiries.

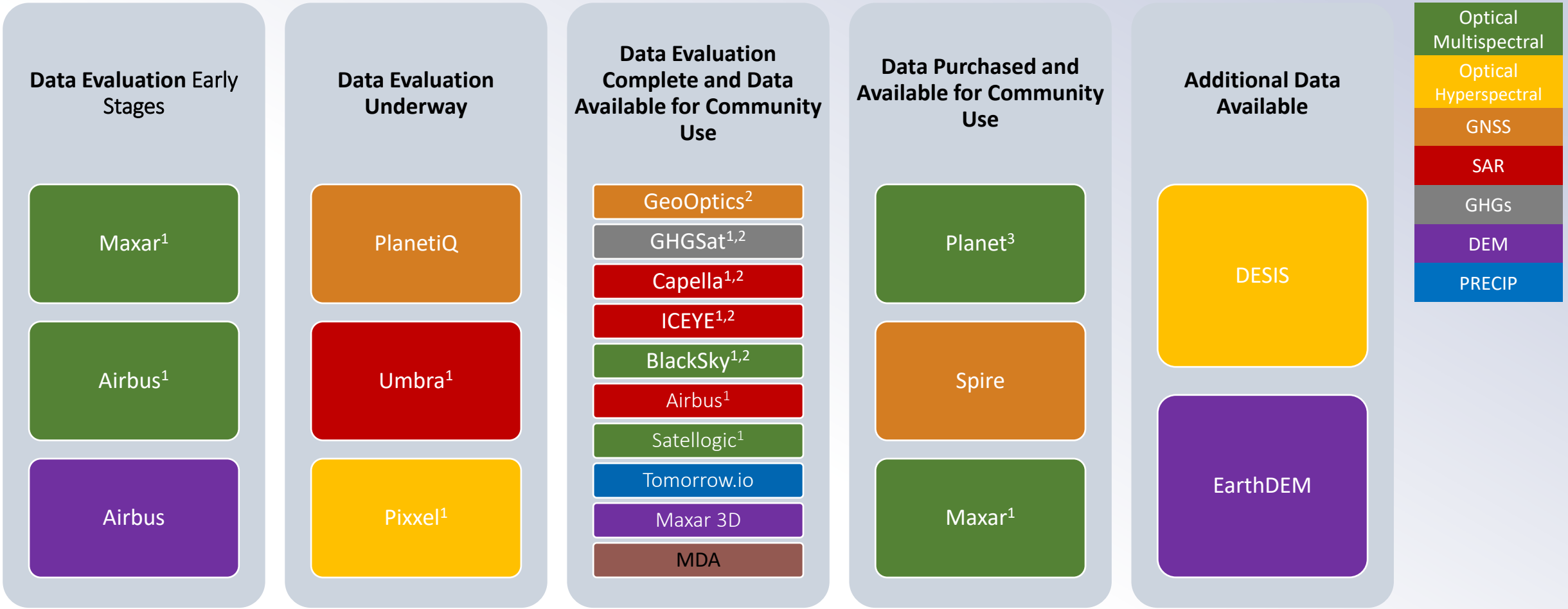
4. ***Usefulness*** of data for advancing Earth system science research and applications

   Ability of data to support Earth system science research and applications activities.

5. ***Quality*** of vendor supplied ***imagery and/or data***

   Data attributes such as geolocation accuracy, radiometric accuracy, and platform intercalibration. Data quality evaluation will use the ESA-NASA Evaluation Guidelines.

CSDA Program Evaluation Highlights



1. 12 tasking assets – tasking will be requested through CSDA tasking system starting in Spring, 2025
2. Final report pending

CSDA Program Highlights

- All new business is on-ramped via Indefinite Delivery Indefinite Quantity (IDIQ) process. Competitive task orders will be issued for vendors to propose under the established a three-tier of End User License Agreement (EULAs): Public Release, U.S. Federal Government Plus, U.S. Federal Government
- Ramping up our evaluations of commercial data and developing value-added products
- CSDA-acquired data is also being integrated into Earthdata Search for improved discoverability along side NASA supported mission and project data.
- Improving our collaborations with federal partners, as well as international partners.
    - Coordination of Commercial Data Purchase within the U.S. Government with other Federal Agencies, share evaluation processes and outcomes, and share data requirements and needs.
    - Continuing our collaboration with international partners in developing guidelines, data evaluations, and programmatic and technological processes.

JACIE
Joint Agency Commercial Imagery Evaluation
NASA • NGA • NOAA • NRO • USDA • USGS

esa
VH-RODA
Community

Three-Tiers of End User License Agreements (EULAs)

Authorized User Community	Type of EULA		
	Public Release	U.S. Gov Plus	U.S. Gov
U.S. Government defined under Title 5 U.S.C. 101-105	✓	✓	✓
The U.S. Gov Executive Office of the President (EOP), members of Congress, and Congressional staff	✓	✓	✓
State and Local Governments, Territories, and Tribal Authorities within the U.S.	✓	✓	✓
Non-Governmental Organizations and/or Non-Profit Organizations working for the purpose of U.S. Gov	✓	✓	✓
Contractors, subcontractors, partners, and/or grantees supporting the U.S. gov to execute their contracts	✓	✓	✓
Foreign Governments, intergovernmental entities, and International Defense and Coalition Partners for U.S. Gov purposes	✓	✓	
Public, Open Data	✓		

USG license is minimum level for CSDA
Scientific Non-Commercial Use License
Modeled after National Reconnaissance Office (NRO) Geospatial Intelligence Systems Acquisition Directorate Commercial Systems Program Office (CSPO) common, standardized family of EULAs.

Commercial Satellite Data Acquisition

Example—Synergies between a NASA radar satellite and small commercial satellites

GOVERNMENT SATELLITES

NASA-ISRO Synthetic Aperture Radar (NISAR)

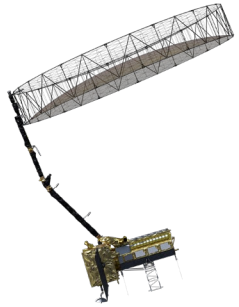
L-Band and S-Band SAR

Spatial resolution:

- L-SAR: 3-48 m
- S-SAR: 3-24 m

Temporal resolution: 12 day revisit time

Spectral coverage: L-band (24 cm), S-band (12 cm)



12 m reflector, 9 m antenna, ~ 2800 kg

Sentinel – 1A

C-Band SAR

Spatial resolution: Strip map: 5 m x 5 m, Interferometric Wide Swath: 5 m x 20 m, Extra Wide Swath: 25 m x 100 m, Wave: 5 x 5 m

Temporal resolution: 12 day revisit time

Spectral coverage: C-band at 5.405 GHz

3.4 m x 1.3 m x 1.3 m, ~ 2200 kg

COMMERCIAL SATELLITE COUNTERPARTS

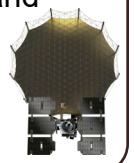
Capella: Acadia, Whitney

X-Band SAR

Spatial resolution: 1m - 30m

Temporal resolution: 3-6 hours, or 45 minutes for equatorial regions

Spectral coverage: X-band (500MHz-700MHz)



ICEYE: ICEYE Const

X-Band SAR

Spatial resolution: DWELL 25 cm, SCAN 15 m, SPOT 50 cm, STRIP 3 m

Temporal resolution: 3-20 hours

Spectral coverage: X-band (8-12.5GHz) 2.4-3.75 cm

MDA: SARnext/CHORUS

C-Band and Band SAR

Prototype development

Spatial resolution: 0.25 m

Temporal resolution: 9.85 days

Spectral coverage: C-band (4-8 GHz): 38-75mm, X-band (8-12 GHz): 24-38 mm

UMBRA: SAR Const

X-Band SAR

Spatial resolution: ≥0.15cm

Temporal resolution: <1 hour for latitude bands ±67 degrees

Spectral coverage: X-band (9.8 GHz)

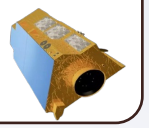
Airbus: SAR Const

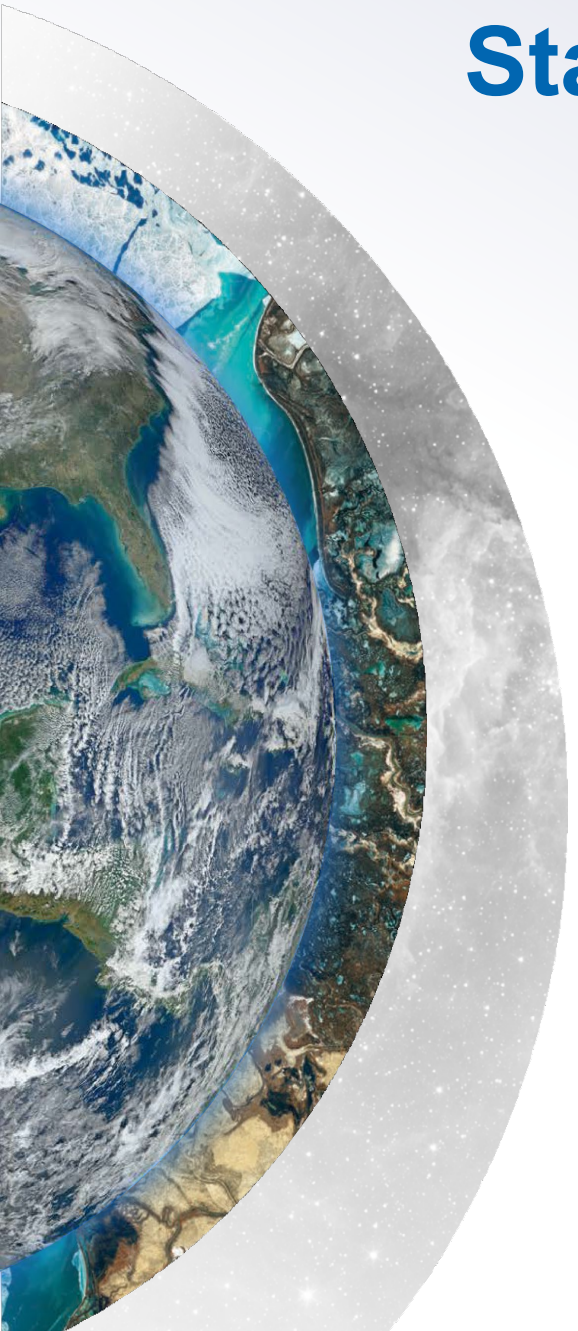
X-Band SAR

Spatial resolution: 25cm (spot) to 40m (wide scan)

Temporal resolution: global revisit 12 hours

Spectral coverage: X-band (8-12 GHz)





Stakeholder Engagement and Support

1. CSDA Program monthly webinar series with focus on
   - ***Vendors***
     - Presenting on their current constellation, Instrumentation updates, Data Products, Science Uses and Applications
   - ***Researchers***
     - How the data is being used in scientific research and application
     - Challenges encountered when using the data

2. Provide access to commercial data tools to support science research and applications use of commercial data

3. Improve and update the CSDA website highlighting vendors and the applications of commercial data

4. Engagement with the community at conferences, workshops, science meetings, and 1-on-1 meetings

Commercial EO Technical Exchange Meeting Oct 28-29

NASA earth

science.nasa.gov/earth

Your Home. Our Mission.