



NOAA's Commercial Remote Sensing Regulatory Affairs



Agenda

- What is CRSRA?
- Current Authorities
- Who do we work with?
- What do we do?
 - Licensing
 - Compliance
 - ACCRES
- Improving the Regulatory Process
- Staff Information
- Questions
- Back-Up Slides with General Statistics



What is CRSRA?

The Mission

The Commercial Remote Sensing Regulatory Affairs Office (CRSRA) regulates the operation of private Earth remote sensing space systems, subject to the jurisdiction or control of the United States, while preserving essential national security interests, foreign policy and international obligations.

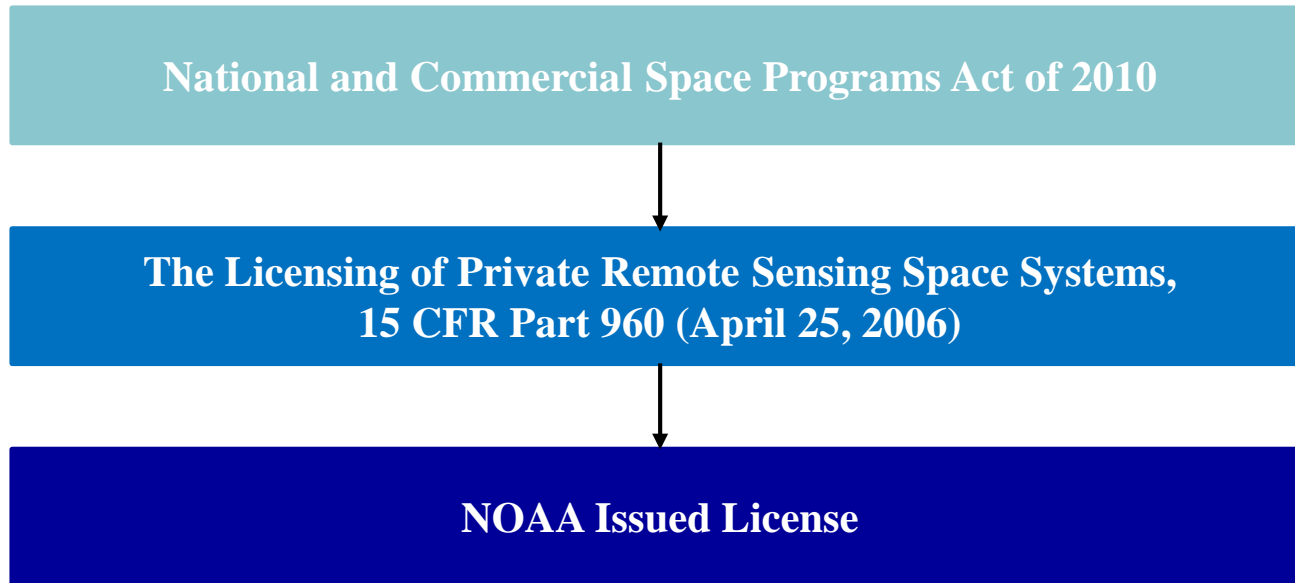
The Vision

To balance the commercial viability of private Earth remote sensing space systems with the protection of national security and foreign policy obligations through sound regulatory practices.



Current Authorities

Authority for Licensing and Enforcement:



Additional Guidance

- **Defense Authorization Act of 1997, the Kyl-Bingaman Amendment**
- **U.S. Commercial Remote Sensing Policy, April 25, 2003**
- **National Space Policy, June 28, 2010**



The Act

- ***The National and Commercial Space Programs Act of 2010***, (formally the Land Remote Sensing Policy Act of 1992), provides no person who is subject to the jurisdiction or control of the U.S. may operate a private remote sensing space system without a license
- The Act authorizes the Secretary of Commerce to license private parties to operate private remote sensing space systems
 - No jurisdiction to license U.S. Government systems
 - “Private” includes commercial systems as well as non profit systems (e.g. university owned and operated systems)
 - Authority has been delegated down to NOAA and is lead by the Commercial Remote Sensing Regulatory Affairs office
- The Secretary’s authority is limited to the remote sensing operations of a space system
- The Secretary can grant a license only upon determining the applicant will comply with the Act, regulations issued pursuant to the Act and applicable international obligations and national security concerns of the United States



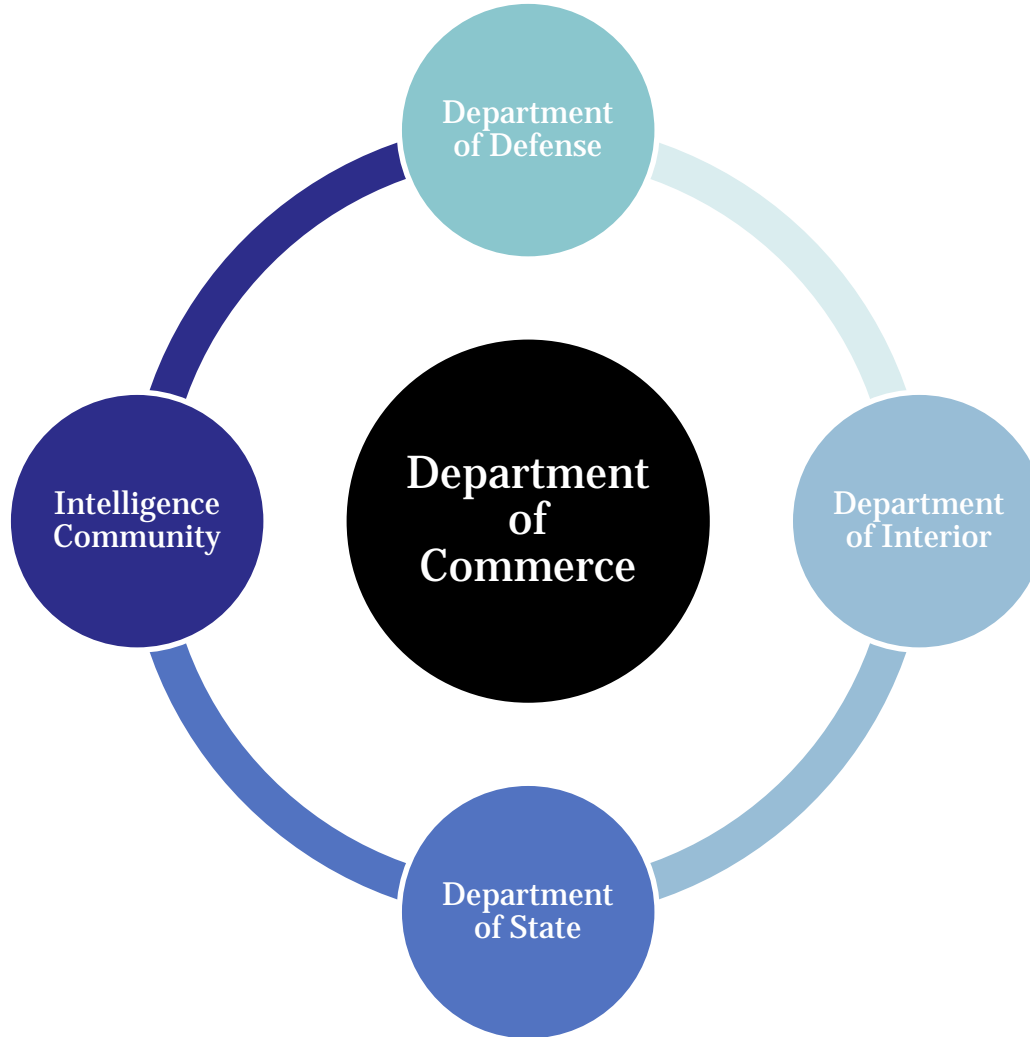
The Regulations -15 CFR Part 960

- Set forth the requirements for U.S. persons to obtain a license to operate a private space-based remote sensing system and NOAA's regulation and monitoring to ensure compliance with the Act
- Apply to any “person” subject to the jurisdiction or control of the U.S. who operates or proposes to operate a private “remote sensing space system,” directly or indirectly
- “Person” is defined broadly to include corporations, partnerships, associations, corporate subsidiaries or affiliates, etc.
- “Remote sensing space system” is defined as any device, instrument, the space borne platform (finite number of satellites) and related facilities “capable” of sensing the “Earth’s surface” “from space” making use of the electromagnetic waves emitted by the sensed object



Who Do We Work With?

U.S. Government Partners



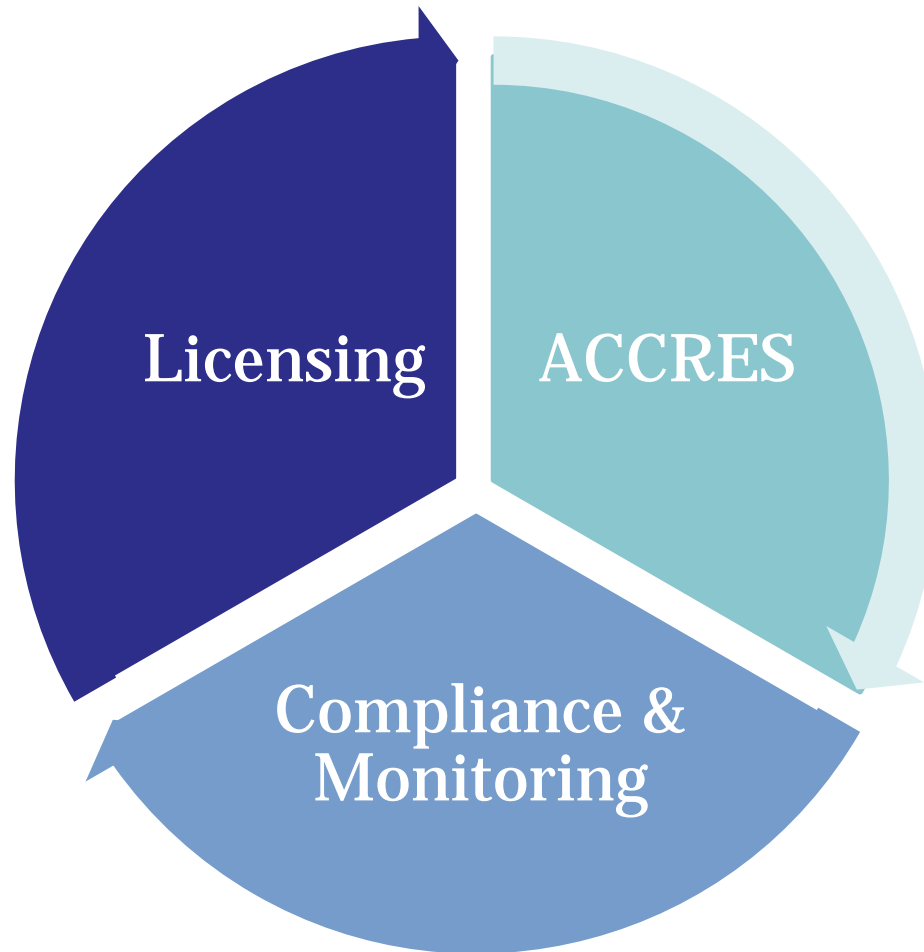


Memorandum of Understanding

- Among Departments of Commerce, State, Defense, and Interior, and the Office of the Director of National Intelligence
- The new MOU was signed into affect April 25, 2017, replacing the old MOU dated February 2, 2000
- New MOU:
 - Enables greater communication and understanding among the parties that help make licensing decisions
 - Helps decrease interagency review time
 - Outlines clear escalation process for actions without consensus
 - Can be found on the CRSRA website



What do we do?





Licensing

Objective: License commercial remote sensing satellite missions using informed and efficient licensing practices

Scope of Activities:

- Initial Queries & “If License Needed” Determinations
- License Applications...Issue Approved Licenses
- License Amendments and Changes
- Waivers to License Conditions
- Foreign Agreements
- Foreign Agreement Amendments
- Write and Update Regulations



General License Conditions

- Operate the System in a manner to preserve national security and observe foreign policy/international obligations of the United States
- Maintain operational control from within the United States
- Maintain records of operations and make available to the Secretary
- Ability to implement modified operations, as required
- Report deviations and anomalies (planned/unplanned)
- Dispose of system in a manner satisfactory to the President
- Submit a Data Protection Plan
 - Includes method for compliance with the Kyl-Bingaman Amendment that sets restrictions on the collection and dissemination of imagery of Israel
- Notify of Foreign Agreements
- Make data available to Department of Interior (USGS)



Specific License Conditions/Waivers

Specific license conditions may be included based on the satellite systems capability

- Developed and added to a license during the interagency review process
- Based on national security or foreign policy
- Must be consistently applied to all analogous satellites...EX all SAR licenses have the same specific conditions
- Must have sound rationale/science behind the requirement to add the condition
- Must be fully vetted and approved across the U.S. Government

Waivers

- A license condition can be waived by NOAA unless precluded by law
- Licensee must request a waiver and provide good cause why it should be approved
- Approval is granted by NOAA only after full interagency review process



All Data Sales Agreements

- NOAA has no authority under statute to monitor the end users of data
 - Authority is over the Licensee only
- NOAA requires that license conditions, including conditions addressing U.S. national security, flow down to resellers per the terms and conditions of the agreement. The Licensee is subject to possible enforcement action should the reseller fail to abide by the license conditions
- NOAA can, if necessary, require the Licensee to stop selling data to any reseller known to provide data to our adversaries since such sales could compromise US national security
- NOAA can, if necessary, request the licensee's customer information to ensure/verify there are no national security risks with respect to whom they are selling data, imagery, and/or products



Foreign Agreements

- The Licensee shall notify NOAA of any significant or substantial agreement (“the agreement”) the Licensee intends to enter into with a foreign national, entity, or consortium, at least 60 days before signing such agreement. The Licensee may not implement the agreement until NOAA has approved it in writing
- Significant or Substantial Foreign Agreement means:
 - Allows for foreign participation in operations
 - May provide foreign administrative control
 - Establishes a foreign equity interest in the licensee



Compliance and Monitoring

Objective: Monitor licensee satellite operations and ensure compliance with laws, regulations and NOAA license

Scope of Activities:

- Quarterly and Annual Audits
- On-Site Inspections
- Virtual Inspections
- Data Protection Plans
- Shutter Control
- Launch Inspections
- Enforcement Activities



Quarterly and Annual Audits

- Initiate Annual Audits reports on all Licensees to determine:
 - Compliance with the provisions of the Act, Regulations, and License
 - Securities and Exchange Commission filings
 - Corporate Information
 - Foreign Ownership, Control or Influence
 - General Security Concerns
 - Concept of Operations
 - Operational Conditions
 - Spacecraft telemetry
 - Tasking logs
 - Imagery data purges
 - Foreign Agreements
 - Waivers



Quarterly and Annual Audits

- Initiate Quarterly Audit reports on all operational Licensees to identify:
 - System anomalies
 - Operational and technical changes
 - Corporate information



Inspections

To assure compliance by licensees with U.S. law, regulations, policy and the terms of the NOAA License, the Compliance and Monitoring Program performs inspections to verify:

- Pre-launch Inspections
 - Spacecraft and instrument parameters and performance
- Mission Control Centers
 - Command and Control of the spacecraft
- Bent Pipes – Remote Ground Terminals (RGT)
 - Ensure data stream remains encryption
- Direct Access Facilities (DAF)
 - Limited control of spacecraft instrument and resolution restrictions
- Processing Centers and Resellers
 - Compliance with restrictions on processing and distribution of data products

If circumstances indicate, we will investigate:

- Imagery sales and distribution
- Violations of law, regulations, policy or the terms of the NOAA license
- Operational control and access



Data Protection Plans

Data Protection Plan (DPP) is the Licensee's plan to protect data and information through the entire cycle of tasking, operations, processing, archiving and dissemination.

- DPP template
- End-to-end process
- Program space segment
- Program ground segment
- Network and IT security incident response procedures
- NOAA-approved encryption required



Modified Operations

- The Licensee may be required by the Secretary of Commerce, after consultations with the Secretary of Defense or the Secretary of State, to limit data collection and/or distribution by the System as determined to be necessary to meet significant national security or significant foreign policy concerns or international obligations of the United States. NOAA will promptly notify the Licensee when such limitation may be required and the duration of the restricted period(s)
- Each operational Licensee is required to have the ability to comply with the Directive to command their satellite to limit data collection for the time and area specified



ACCRES

- Established 2002
- Serves NOAA as advisory body only
- Has no regulatory authority
- Discretionary committee
- Current charter: March 9, 2016
 - Valid for 2 years with option for renewal in 2018
- Convenes ~2 times a year with scope to establish task groups



Scope of Activities:

- Evaluates economic, technological, and institutional developments
- Submits recommendations to the Under Secretary on promising new ideas and approaches for federal policies and programs
- Serves as a forum for the discussion of issues involving the relationship between industry activities and government policies, programs, and regulatory requirements



Improving the Regulatory Process

Recent Updates:

Newly Instated Interagency Memorandum of Understanding (April 2017)

New Audit Forms and Timeline

Digital Initial Contact Form on Website

New Mailing Address:

Commercial Remote Sensing Regulatory Affairs, E/ACIO4

1335 East-West Highway, Suite G-101

Silver Spring, Maryland 20910

Upcoming Changes:

Data Protection Plans

New License Format

All New Licensing & Compliance Forms Will Be Made Accessible on Website



Goals for the Future

- CRSRA will need to provide stability in terms of its regulation of the industry, but with sensitivity to the Nation's national security concerns
- CRSRA will need to be sensitive to foreign partnerships and work with the Department of State to further communications with countries that have growing partnerships with U.S. entities
- CRSRA will need to work with the interagency and with technical experts to evaluate and be responsive to newer technologies as they emerge within this industry
- CRSRA will need to determine how it will regulate the newly emerging non-Earth imaging and satellite servicing missions
- CRSRA is working to streamline processes and move towards digitization in order to manage the growing number of licensees and shorten its processing times
- CRSRA is working to develop a digital database connected to online user portal



CRSRA Staff Information

Director

Tahara Dawkins

Licensing

Alan Robinson – Sr Licensing Officer

Vacant – Licensing Officer

Compliance

Dennis Mailhot – Sr Compliance Officer

Thomas Smith – Compliance Officer

Analysts

Kera Bumbray

Samira Patel (Aerospace contract support)

Team email address: crsra@noaa.gov

Website: <http://www.nesdis.noaa.gov/CRSRA/>



Questions?



Back-Up Slides



Before & After Snapshot

2010-2011

2016-Present

Initial Queries



Active Licenses



Licensed Entities



Satellites on orbit



Ground Stations



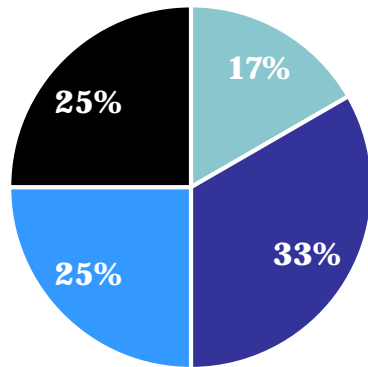
Licensed Satellites





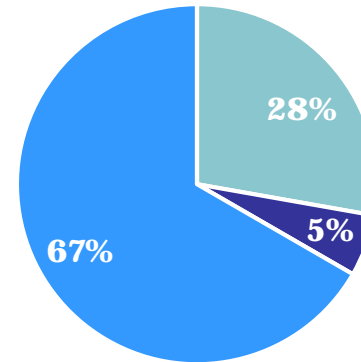
Who are the Licensees?

Licensee Type (2010-2011)



- Schools
- Large Defense Contractors
- Start Ups
- Other

Licensee Type (2016-Present)



- Schools
- Large Defense Contractors
- Start Ups
- Other



Licensed Ground Stations (including Mission Control Centers)



Global Presence

- Approximately 183 licensed ground stations (GS) and MCC locations.
- All 7 continents represented.
- 29 Countries, and Antarctica.

Most Utilized Countries:

1. United States: 104 Sites
 - A. California (20)
 - B. Florida (11)
 - C. Alaska (9)
2. Norway: 17 RGT
3. Antarctica: 7 RGT
4. New Zealand: 5 RGT
5. Singapore: 5 RGT



Current Trends

Clash of the Old & New Guard

Industry Reshaping:

- Company Acquisitions
 - MDA → DigitalGlobe
 - Planet → Terra Bella
 - Companies Seek to be One-Stop Shop
- Changes in Customer Composition
- Euroconsult: 2007-2016 (190 EO Satellites)
2016-2026 (600 EO Satellites)



Emerging Technologies:

- SWIR, SAR, Night-Time Imaging
- Non-Earth Imaging/Satellite Servicing Missions
- Changes in Data Processing, Storage (Cloud), and Accessibility (e.g. 24/7 real-time data over entire world available anytime)