Advisory Committee on Commercial Remote Sensing (ACCRES)

Wednesday, April 12, 2017 – 9:00 AM – 3:00 PM

Meeting Attendees

- **Herb Satterlee (Chair)** , Unaffiliated, formerly of McDonald, Dettwiler and Associates Information Systems, Inc., (U.S. Subsidiary)
- **Scott Pace (Vice-Chair)**, Space Policy Institute, George Washington University
- **John Charles**, National Geospatial-Intelligence Agency
- **Joanne Gabrynowicz,** University of Mississippi School of Law
- **Todd Harrison**, Center for Strategic & International Studies
- **David Langan**, Umbra Lab, LLC
- **Bhavya Lal,** Institute for Defense Analyses
- **Roberta Lenczowski**, AmericaView and American Society for Photogrammetry and Remote Sensing
- **Benjamin Malphrus**, Space Science Center, Morehead State University
- **Keith Masback**, United States Geospatial Intelligence Foundation
- **Walter Scott,** DigitalGlobe
- **Catherine Steele**, The Aerospace Corporation
- **Rich Leshner**, Planet Labs, Inc.
- **Stephen Volz**, Acting Assistant Secretary of Commerce for Environmental Observation and Prediction, NOAA
- **Mark Paese**, Deputy Assistant Administrator for Satellite and Information Services, NOAA
- **Tahara Dawkins**, Director of Commercial Remote Sensing Regulatory Affairs and Committee Designated Federal Official, NOAA
- **Glenn Tallia**, Office of General Counsel, NOAA

Meeting Minutes

21st Meeting of the ACCRES Committee

ACCRES Introduction – Mark Paese

- Mark Paese welcomed the Committee back for the 21st ACCRES meeting. Mark is currently the Deputy Assistant Administrator for Satellite and Information Services (NESDIS) at the National Oceanic and Atmospheric Administration (NOAA).
- Mark congratulated NOAA licensees who have recently had successful launches. Planet Labs, also known as Planet, launched a record-breaking 88 satellites into orbit on February 14th, the largest fleet of satellites in history. Additionally, Black Sky Global launched Pathfinder-2 on September 25th, and DigitalGlobe launched WorldView-4 November 11th at the end of last year.
- Mark introduced Tahara Dawkins, who is the Director of the Commercial Remote Sensing Regulatory Affairs (CRSRA) office and the Committee's Designated Federal Officer (DFO).
- Mark introduced Dr. Stephen Volz, who followed Mark with the opening remarks. Dr. Volz is the Acting Assistant Secretary of Commerce for Environmental Observation and Prediction and, the Assistant Administrator Satellite and Information Service Office (NESDIS).

Opening Remarks – Dr. Stephen Volz

- As the Acting Assistant Secretary, Dr. Volz sees more of the commercial space side than he did as Assistant Administrator for NESDIS. In this role, he has been helping the new administration in balancing commercial and government space initiatives. He noted the new administration wants to enhance U.S remote sensing capabilities.

- As the Assistant Administrator for NESDIS, he focuses primarily on NOAA's capabilities; however, he does have some insight in commercial space, specifically, his responsibility to sign off on all the NOAA licenses.
- Overall, Dr. Volz sees a real need to change the way commercial remote sensing is regulated, especially with the growing number of remote sensing satellites and capabilities. As such, there are a few items that NOAA needs help updating to better suit the needs of the industry now and in the future. NOAA is seeking advice from ACCRES on:

  1) Updating the current data protection plan to fit overarching compliance requirements

  2) Implementing new licensing standards

  3) Providing Congress with a set of recommendations on improving the commercial remote sensing statute and related regulations

- Dr. Volz also thanked the Committee for providing the quick turnaround of recommendations on updates to the commercial remote sensing statute in the National and Commercial Space Programs Act of 2010. The recommendations ACCRES provided were included in the U.S. Commercial Space Launch Competitiveness Act Section 202 report. However, due to the change in Administration the report is still being reviewed at Office of Management and Budget. Some of the recommendations have been helpful and CRSRA has already begun making changes based on those recommendations.

ACCRES Welcome & Introduction from the Chair and Vice-Chair – Herb Satterlee and Scott Pace

- Herb and Scott welcomed the Committee for the first meeting of this year and set the year's agenda.
- Herb noted ACCRES needs to set up task teams to work on the priorities Dr. Volz outlined in his speech – one for revamping the data protection plan, another for licensing standards and the third for providing Congress with a set of recommendations on improving the commercial remotes sensing statute and related regulations. The task groups will begin their work and report back at the next ACCRES meeting in August.
- He also noted that ACCRES Committee Member, Dr. Joanne Gabrynowicz, will be presenting at the August meeting on the non-discriminatory access policy.

Commercial Remote Sensing Regulatory Affairs (CRSRA) Update – Tahara Dawkins, Director

- Tahara provided a summary of calendar year 2016 and updates on licensing and compliance since the last ACCRES meeting.
- In 2016, NOAA Licensing has seen a large increase in the number of people that have reached out to us, with 41 people who have submitted an initial inquiry to determine their need for a NOAA license. CRSRA evaluated every request and determined that 26 did not need a license and 15 were told they do. This evaluation process has become more intricate as CRSRA is approached with unique, never-seen-before missions. NOAA has issued 14 new licenses and completed a total of 33 actions, a 136% increase over the previous year. Actions include amending licenses, foreign agreements, and waivers.
- Similarly in 2016, NOAA Compliance saw an increase in the number of ground stations. At the end of 2015, there were 83 operational sites and by the end of 2016, there were 102, a 23% increase. Currently there are 108 sites at 99 different world-wide locations. CRSRA anticipates an additional 15 sites by end of 2017 including locations in 9 countries not currently having any operations by licensees.
- In 2015, NOAA had 58 satellites licensed in orbit, currently there are 180.
- 2017 Licensing Activities:
  - CRSRA has so far evaluated 19 mission inquiries (13 were evaluated as not needing a license). As of meeting date, CRSRA was processing 16 actions.

- CRSRA has added a new member to the team, Kera Bumbray and has also begun making other improvements to the licensing process. Applicants can now submit a digital Initial Contact Form on our website. Furthermore, CRSRA is making improvements to its website as well.
- Please address mail to the Commercial Remote Sensing Regulatory Affairs, not NESDIS. Due to a mailing issue, it takes 2-3 days longer for the mail to get to CRSRA when it's addressed to NESDIS.

- 2017 Compliance Activities:
  - NOAA Compliance has completed 6 inspections so far this year, and plans on completing 19 more by the end of the year, which means there's a gap between total operations sites and the number of inspections that can be done.
  - CRSRA is hoping to lessen the paperwork burden especially for audits and is working towards developing a digital information management system containing all forms.
- Challenges:
  - Licensees fail to notify CRSRA regarding:

    1) Foreign ownership greater than 5% and any foreign agreements as defined by 15 CFR 960.8

    2) New ground stations/terminals or if the ground station is closed/inoperable

    3) Changes in launch schedules and when satellites have de-orbited
- Tahara emphasized that NOAA is bound by the Trade Secrets Act, so letting NOAA know of any new technological developments sooner rather than later, enables the interagency review process to run faster and not impact integration or launch dates.
- Joanne asked what 9 new countries have been added to the site list. Dennis, the CRSRA Compliance Officer, responded that it includes Canada, Iceland, Ecuador, and a few Asian countries.
- Josef Koller (DOD) asked why many of the initial inquiries don't need a license. Al Robinson, the CRSRA Senior Licensing Officer, responded by saying some are USG owned (for example, CRSRA sees some university-based missions that have NASA-owned satellites), or some may have missions that have no remote sensing capability.
- **Discussion:** Walter Scott asked if there is a way to alleviate some of the issues with the time delays in the licensing process, specifically by creating criteria for auto-license approvals.
  - Mark responded that this is something the USG is working towards. Tahara mentioned an Interagency MOU was in the process of being reviewed by agency heads would help to alleviate some of the time delays.
  - Ben thought a form with checkboxes next to different criteria could help in making auto-approval determinations.
  - Todd asked if staffing still remains an issue, specifically asking what the current staffing profile is of CRSRA. Tahara responded that there are 2 people in licensing (Al and Kera); however, one is likely to shift over to compliance in a year, 1 in compliance (Dennis), herself as Director, and she receives contract support from Samira and support from Office of General Counsel (Glenn and his team).
  - Herb mentioned that the 120 day time delays are a major issue to companies because their investors withdraw, killing the company.
  - Joanne mentioned that stopping the clock to ask questions attributes to the time delays. Tahara responded that the clock is stopped only in the first 30 days, only to request information that was not provided in the original application that the interagency needs to come to a decision. Walter asked how many of the requests are stopped due to requests for more information and how many because

of something else? Tahara said a 100% are due to requests for more information. Glenn noted that NOAA is still required to look at national security concerns per the regulations.

- Scott noted that the time delays are a symptom rather than the root problem, which is that new technologies and capabilities are hitting the government at the last minute, so the government has to conduct studies during the application review process rather than earlier.
- Todd asked how many applications are denied approval. Tahara responded no one has ever been denied. Todd followed, "then why conduct the studies?" Josef responded that they are necessary to determine how the government is going to react on how to mitigate risks.
- Rich mentioned that it seems like sensor capabilities are the hook to regulate space images themselves when there should only be the specific shutter control restriction when it is deemed necessary.
- Keith interjected by saying that ACCRES captures recommendations each time, but there never seems to be any movement forward, only a rehash of what was previously discussed. How can ACCRES see more actions emerge from their recommendations?
- Mark mentioned that NOAA is trying several strategies to make processing more efficient. Specifically, NOAA is looking at binning technologies as a way to move applications forward.
- Walter mentioned that there still needs to be greater clarify on what really needs to be regulated by the USG.
- John (a new member) introduced himself as a representative of NGA's Commercial Imagery office. He observed that NOAA seems to have a lot of low-hanging fruit that can easily lead to actionable items to improve. An example is looking at improving process for those with technological capabilities that would get auto-approval. Glenn responded that the Interagency MOU that is to be signed soon will include action-enforcing mechanisms to move applications forward.

Discussion of New Licensing Standards and Implementation – Josef Koller, Department of Defense

- Josef introduced himself. He works in the Office of the Under Secretary of Defense, which means that he is the point of contact to receive all NOAA licensing actions, which he then distributes across DOD for review. He thanked license applicants, who are constantly developing new things, and without whom the government wouldn't move forward.
- There will be no restrictions to off-nadir imaging.
- Non-Earth Imaging (NEI): Want to discourage paparazzi satellites where one satellite is taking pictures of another satellite. For Consenting Imaging Operations (CIO), such as imaging during satellite docking, the licensee will need permission from the imaged object's operator/owner and inform the USG at least 90 days prior. For Non-Consenting Imaging Operations, licensees can take/retain unresolved images or resolved at 3 x 3 pixels or coarser than 50 cm, and disseminate it without the attached metadata.
  - Walter wanted to know why the NEI conditions are different when taking space-based pictures with a high-resolution telescope from the ground rather than taking images with a space-based system.
  - Joanne said that both are based on different legal regimes.
  - David asked about imaging another satellite to record any unsafe/dangerous behaviors. Would there be a mechanism for emergencies in which there wouldn't be time to request permission 90 days in advance, like in cases where something is undermining space safety.
- Electro-Optical Night-Time Imaging (NTI): Previously held restrictions held in abeyance have been removed. NOAA and the interagency will work with the company to determine their needs for implementation.
- Geographic Exclusion Areas (GEA) and Modified Operations: GEAs are currently being developed.

- Rich asked for clarification on whether the GEAs would be on an emergency or permanent basis. Josef responded that permanent is not the right word, but that they will be dependent on the timelines of certain special military/intelligence operations. Herb mentioned that this sounds close to violating shutter control law, which says such modified operations measures should be temporary in nature and operations could go on for some time. Josef responded that the goal is to make such measures as temporary as is possible based on the operations.
- Walter asked if sensor capabilities are taken into consideration for the formulation of these new licensing standards. Josef responded that they have been from the beginning.
- Keith relatedly asked if there is anyone during interagency reviews represented commercial company interests. Josef said U.S. companies cannot be in the room for these discussions. Todd asked if there is a way to bring companies to the table when such decisions are made. Walter added that it would be good to have a place where the company has the ability to explain itself and be a helpful resource as well. Josef responded that companies have the opportunity to provide briefings. Tahara also added that Commerce is in the room to present the commercial side, specifically through Office of Space Commerce, which has a seat at the table. She mentioned the interagency is trying to be more transparent and meet companies face-to-face when necessary.
- Bhavya asked if USG has agreements with other countries regarding their capabilities, especially if USG is considering placing conditions on US company capabilities; i.e. the case with Astroscale, a Singapore company. Glenn responded that yes, Department of State is involved in discussions with other countries regarding capabilities.
- Josef clarified in the afternoon that modified operations are applied to only 2 capabilities.

Public Comments – Morning Session

Jim Armor, Orbital ATK: Do the licensing standards for NEI cover orbital station keeping? Josef responded that one would need permission as it is related to SSA tracking.

Michael Gold, SSL MDA: He wanted to thank Josef for being so responsive to the commercial satellite community. The level of responsiveness that Josef has provided definitely is different from before, and a great positive shift. He mentioned it's a misconception the USG is against U.S commercial companies. In fact, USG want their companies to succeed. He continued that it is not an us versus them situation. Additionally, he asked about the development and implementation of the National Space Council as discussed in recent news from the White House.

Eve Douglas, Office of Space Commerce (OSC): She clarified that OSC is charged with bringing the national interest for industry at the table. She also noted that she sees a lot more people representing this interest at the table than before, which is a leap forward.

Marcy Steinke, DigitalGlobe: She noted the Commercial Remote Sensing Working Group (CRSWG) conversations are great, and more of those are needed. It would also be good to know who is responsible for understanding the technical aspects during the decision process.

Matt Jones, Boeing: He said that he did not have any difficulty briefing the national security community, but it is more difficult if there is a national security concern that is classified because then communication isn't as transparent. He also agreed with John Charles that there is some low-hanging fruit that can be identified and dealt with when the interagency makes decisions. Josef agreed, pointing to the idea of categorizing and binning capabilities to make the license review process go faster.

NOAA Licensing Jurisdiction – Glenn Tallia, Chief Counsel

- Glenn noted that there is much confusion and misperception of what NOAA can and cannot license.

- 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. "Person" is defined broadly to include corporations, partnerships, associations, subsidiaries, and other entities, and it covers both commercial systems and non-profit systems. However, USG owned systems are not covered.
- Furthermore, NOAA's authority is to license systems "capable" of sensing the "Earth's surface", "from space" regardless of intent and extends to some other specific system operations such as data protection, system disposal, etc. However, it doesn't extend over non-remote sensing instruments.

- He noted that the Statute, the National and Commercial Space Programs Act of 2010 (and predecessors), have been a way for the U.S. to fulfill its obligation under the Outer Space Treaty, even if it's not all encompassing.
- He also noted that one of the ways NOAA reviews companies up front is through the determination of findings, process which determines a potential licensee's trustworthiness.
- Bill Manly from the audience asked how jurisdiction applies to the new licensing standards? Glenn responded the standards would be specified as licensing conditions. Ben mentioned this would be most practical for university licensees.
- Rich asked where exactly the authority for licensing a system with the capability to perform remote sensing versus actual remote sensing operations comes from. Glenn responded that the regulations broadly mention remote sensing systems.

Building a Compliance-Focused Data Protection Plan (DPP)– Kara Cunzeman, The Aerospace Corporation, and Tahara Dawkins

- Kara explained DPPs and the context:
  - It's the licensee's plan to protect data and information through the entire cycle of tasking, operations, processing, archiving and dissemination. At a minimum, this includes appropriate protection (encryption, cyber, etc.) for all transmissions such as communications links and/or delivery methods for tasking of the satellite, downlinking of data to a ground station (including relay stations), and delivery of data from the satellite to the licensee's central data storage facilities.
  - A DPP should include protection of entire ground segment (which includes physical security, but also all other aspects of ground segment security).
  - All licensees need to submit a data protection plan which needs to be approved no later than one year prior to launch.
  - In the past, the emphasis was on physical security, such as locks, fences, and access cards and there were few ground stations. The biggest concern was if someone would break into the mission control center or malware could be installed on the satellite system.
  - Now, in the digital age there are greater concerns over information technology protect from hacking and other cyber attacks. There are many more ground stations all over the world, and capabilities of systems are much greater. This means the focus has increased on encryption, firewalls, and conducting penetration tests (pen tests).
  - There should be a more proactive approach to data protection, data integrity and stewardship.
  - Tahara asked how this can be better integrated into the DPP. How do we get a DPP that meets real compliance requirements within contemporary issues.

- Tahara explained that she hopes to synchronize DPPs licensees currently have with the compliance reporting requirements, especially for inspections. She mentioned the CRSRA used to work additional measures through the State Department, but these were not enforceable.
- Walter mentioned that based on the statutory requirement, it makes sense to have compliance for confirming conditions are being upheld, but how does data protection fall under the scope of NOAA? Glenn responded that it is because data storage is regulated. Scott also asked, how much under the regulations is considered "notification". Ben asked, how much of this applies to International Space Station (ISS) or USG owned data?
- Walter mentioned that there are definitely some areas of the DPP that are not applicable at all.
- Herb asked for volunteers for the task group that will provide recommendations on how to improve the DPP.

Legislative Reform of the Commercial Remote Sensing Statute – Michael Mineiro, Counsel to House Science, Space, and Technology Subcommittee

- Mike introduced himself as Counsel to the House Science, Space and Technology Subcommittee. He noted this committee has jurisdiction over Title 51, the commercial remote sensing statute. NOAA also has two reporting requirements to the subcommittee under the 2015 Commercial Space Launch Competitiveness Act. However, the subcommittee has not yet received the Section 202 report, which asks for NOAA to solicit advice from ACCRES on recommendations to update the commercial remote sensing statute.
- He said the Chairmen of the subcommittee have been active in trying to understand the commercial industry. They believe the statute follows a Cold War mentality and needs updating to reflect the current perspective of the industry. It is a priority for the subcommittee to reform the regulatory aspect of commercial space.
- Mike also elucidated the subcommittee has been busy. Recently they held a congressional hearing and Chairman Babin authored an article in SpaceNews, specifically outlining that the burden of regulation should not be on the industry, but on the government.
- Walter noted that the USG's interpretation of the statute seems to lean towards more, not less regulation. He asked, what does Congress thinks about these interpretations? Mike responded the subcommittee is in receiving mode, but he believes the Congressional hearings do a better job of shedding light on the philosophical leanings of various Congressional members.
- Scott pointed out that there are concerns of checks and balances, of competing national interests as well. Mike noted there are so many considerations to take into account, it's tough to decide on who makes those determinations.
- Rich asked if there was a threshold for when the subcommittee targets somethings versus leave something alone? Mike responded it's a political question as there are many different stakeholders involved in the process. Mike emphasized the subcommittee is upset with how the USG lost the SAR capability in the 1980s, which pushed the industry back. They want to limit effects like this on the current satellite industry. They are also upset about the time delays in processing licensing applications and requests.
- Joanne noted that as a way to alleviate some of the issues, Congress should appropriate more money to CRSRA, as they are currently overburdened.

Global Industry Trends and Responsive Policy Reform – Bhavya Lal, Institute for Defense Analyses

- Bhavya noted that there was a need for great policy reform in the satellite industry, especially given the burgeoning industry and gaps in regulation. She believes it is important to learn from the current trends so the U.S. doesn't make the same mistakes.
- She noted companies care most about certainty and transparency in regulation. Specifically, some offices can be leveraged more, with explicit roles such as the Office of Space Commerce. In other instances, there needs to

be greater coordination. Scott mentioned that export controls and other commerce functions can be leveraged if they are coordinated well.

- Bhavya mentioned regulatory policy is not about a one size fits all solution, but is made up of discrete activities.
- Walter mentioned it makes sense to regulate through agencies like FCC and FAA who manage frequency bands and space safety.

Public Comments – Afternoon Session

- Jim Armor, Orbital ATK: He mentioned there seem to be hidden regulations at agencies like the FAA, NOAA, etc. that front for the State Department and national security agencies. They should be a part of the process up front, instead of hiding it. He also recommended expanding export control regulation, but not technical capability jurisdiction.
- Scott responded that export controls are outside the line currently and turn-key systems are becoming an issue. He noted the USG was definitely surprised by the technologies emerging from industry. USG expected to maintain technological lead. Herb said the government would have tried to regulate earlier and more if they knew then what has happened with the technology boom in this industry. Herb asked for volunteers for the third task group, which is to provide recommendations on improving the regulations and related law.
- Russ Matijevich, HawkEye 360: He believes that it is important for NOAA to stay in their lane and not begin to regulate other capabilities such as Radio Frequency (RF) sensing. [He has also provided a correction to previous comments he made at the September meeting.]

Closing

- Thank you to all that came.
- Committee took a 15 minutes break, and met back for the closed afternoon session to continue a one-hour Classified Follow-On Discussion and Commercial GEOINT Activity (CGA) update.
- Actions: Herb and Scott asked for volunteers for the following task groups: 1) Licensing Standards Implementation Analysis 2) Reforming the Data Protection Plan 3) Regulatory and Statutory Reform. Task groups will meet between now and the next ACCRES meeting, where they will report out.
- The next ACCRES meeting will be on Thursday, August 24th.