

Advisory Committee on Commercial Remote Sensing (ACCRES)

Wednesday, September 21, 2016 – 9:00 AM-12:30 PM



Meeting Attendees

- **VADM Manson Brown**, 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
- **Herbert Satterlee (Chair)**, McDonald, Dettwiler and Associates Information Systems, Inc., (U.S. Subsidiary)
- **Scott Pace (Vice-Chair)**, Space Policy Institute, George Washington University
- **John Fenwick**, Terra Bella Operations, Google
- **Todd Harrison**, Center for Strategic & International Studies
- **David Langan**, Umbra Lab, LLC
- **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
- **Catherine Steele**, The Aerospace Corporation
- **David Turner**, U.S. Department of State
- **Michele Weslander Quaid**, Sunesis Nexus, LLC
- **Rich Leshner**, Planet Labs, Inc.
- **Marcy Steinke**, DigitalGlobe, Inc.
- **Sandra Webster**, National Geospatial-Intelligence Agency (NGA)

Meeting Minutes

20th Meeting of the ACCRES Committee

ACCRES Introduction – Mark Paese

- Mark Paese introduced the 20th ACCRES meeting and welcomed the Committee's new and re-appointed members. He thanked Aerospace for hosting the meeting at their new facility. Mark is looking to the ACCRES members to identify ways to improve the commercial remote sensing process and regulatory environment. Mark is currently the Deputy Assistant Administrator for Satellite and Information Services (NESDIS) at the National Oceanic and Atmospheric Administration (NOAA). His responsibilities include providing day-to-day oversight of the activities of NESDIS' satellite operations, data processing, service delivery, and research functions. This also includes oversight of Commercial Remote Sensing and Regulatory Affairs (CRSRA), which is responsible for the licensing and compliance of private remote sensing systems.
- Mark congratulated NOAA licensees who have recently had successful launches. Planet Labs, also known as Planet, deployed the final eight Flock 2e' Dove satellites into orbit from the International Space Station on September 14th, Terra Bella completed the successful launch of its SkySat-4 through 7 satellites aboard Arianespace's Vega flight VV07 on September 15th, and he is highly anticipating the upcoming DigitalGlobe WorldView-4 launch.
- Mark introduced Tahara Dawkins who is the Director of the CRSRA office and the Committee's Designated Federal Officer (DFO).

- Mark introduced Vice Admiral Manson Brown, who followed Mark with the opening remarks. VADM Brown is the Assistant Secretary of Commerce for Environmental Observation and Prediction and, as those at NOAA know him as, the Deputy Administrator for NOAA. VADM Brown strategically drives the Administration's policy, programming, and investments for all NOAA observing systems, including in situ instruments and satellites, and the process of converting observations to predictions for environmental threats related to weather, climate, water, oceans and space weather. VADM Brown has worked actively with ACCRES since joining NOAA.

Opening Remarks & Introduction of Chair and Vice-Chair – VADM Manson Brown

- VADM Brown was happy to see so many folks in the audience, and acknowledged what an exciting time this is for the commercial remote sensing world. The growth in the commercial remote sensing industry has been phenomenal. We see intellectual collaboration and tailored environmental intelligence. We have a new charter for ACCRES. We need legal and regulatory changes based on the new environment.
- VADM Brown has served as the political advocate for NOAA's mission, and by extension as the political advocate for ACCRES. He will be leaving NOAA soon with the change in Administration, but is happy to continue communications with the Committee. He will provide the Chair and the Vice-Chair with NOAA's Deputy Under Secretary, Ben Friedman's information, as Ben will continue to work with the Committee in the future.
- VADM Brown also introduced the newly appointed Chair and Vice-Chair of the Committee.
 - Herb Satterlee is the newly appointed Chair. He is currently the CEO of the independent U.S.-based subsidiary of McDonald, Dettwiler and Associates, MDA Information Systems, where he leads their efforts in providing government and commercial clients geospatial information using, amongst other technologies, remote sensing data. He has previously been the Chairman and CEO of DigitalGlobe and President and CEO of Novariant. [Herb clarified that he will soon be retiring from MDA.]
 - Scott Pace is the newly appointed Vice-Chair. He is currently the Director of the Space Policy Institute and a Professor at George Washington University's Elliott School of International Affairs. He has had a breadth of experience. He's previously worked for NASA in various capacities as Chief Technologist for Space Communications and as Deputy Chief of Staff. He has worked in the White House Office of Science and Technology Policy (OSTP), the National Security Council, and the RAND Corporation's Science and Technology Policy Institute (STPI).

Commercial Remote Sensing Regulatory Affairs (CRSRA) Update – Alan Robinson, Senior Licensing Officer

- Alan provided an update on the licensing aspect of commercial remote sensing. Al congratulated Tom Oldenburg, AT&L, on his upcoming retirement. Tom has worked commercial remote sensing for years and his expertise will be missed.
- Secretary of Commerce has been given the authority to license and regulate commercial remote sensing by law. The Secretary of Defense – to determine those conditions to meet national security concerns; Secretary of State – to determine those conditions to meet international obligations and policies; and the Secretary of Interior – to determine those conditions to meeting national archive concerns. All of these functions are delegated below Secretary level. By MOU, the Intelligence Community also determines the conditions to meet national security concerns. When there is a license dispute, it is elevated to the Secretary level and this has occurred 3 times.
- Licensing Statistics:
 - CRSRA has never denied or revoked a license. It was noted however that the process frequently takes well over the 120 day prescribed timeframe.
 - There has also been an explosion of new licensees. 26 licenses were issued from FY 96 to FY 10, 63 from FY 10 to present. 10 applications are in process and 29 have been told that they must apply.

- Al asked licensees with systems in orbit to send NOAA examples of non-Earth Imaging (NEI) images so they could be used to test the new government review process.
- There has been an explosion of foreign and domestic Ground Stations; however, in FY 15 only 43% of 80 sites have been inspected and in FY 16 only 27% of 91 have been inspected to date. Marcy asked where it was written that sites must be inspected. Tahara responded that as of now, a priority list is created for inspections, so the most important ones are completed within a given year. CRSRA is testing virtual inspections right now to see if this can be incorporated as a strategy for monitoring Ground Stations.
- Scott asked two questions: 1) What are the requirements for reciprocal agreements with foreign countries? 2) Has NOAA ever told an entity that they do not need a NOAA operating license? Al responded to 1) that Department of State manages agreements with foreign countries and to 2) that 6-10 entities have not needed licenses and the decision is made based on a jurisdictional determination. In one instance the potential licensee was launching the system for a USG entity, therefore, they did not need a license. Glenn Tallia said NOAA abides by the law, if a license is not needed we tell them that.
- Rich said that lack of clearances for companies is becoming an issue. Companies can't be told reasons for the restrictions. He stated we need to have open conversations to the maximum extent possible. Clearances and the need for transparency and open communications came up several times during the Open Session.
- Keith asked if the delays in obtaining a license has ever been debilitating for an entity. Additionally, has anyone stopped the process because they have given up with the application process? John clarified by also asking if the licensing procedures have ever been regressive, which seems to not be the case. Tahara responded by saying that the licensing process has never delayed a launch to her knowledge. Glenn also responded saying that there has been one case in which the delay was due to a regressive policy, but NOAA behaved in that case exactly as the law required it to – by escalating the issue to the Secretary level. This issue is still being reviewed. As for number of people who have given up obtaining a license, Alan responded by saying the number has been 3, but none because of delays in the licensing process.
- The Special Collect Operation Modes letter came up several times. ACCRES members said that the letter shocked ACCRES and industry. No one was given a heads up on the letter; no reasons for the restrictions were given. USG decisions like these impact current and future investors.

Euroconsult Earth Observation Report – Sima Fishman, Managing Director

- Sima provided a snapshot of the commercial remote sensing industry as well as a forecast of future trends.
- Important statistics to note: 163 satellites (>50kg) have been launched for civil and commercial Earth Observation from 2006-2015, from 35 countries. It's likely to expand to over 400 satellites from 2016-2025. Most of satellite imagery business is still driven by government needs. The commercial data market reached \$1.7 billion in 2015, defense market dominated that at \$1 billion, but enterprise markets are gaining traction.
- In terms of pricing, there is a chance that supply will outstrip demand. Euroconsult is seeing price declines for satellite imagery of 3-5% a year. Investment has slowed in the last 18 months, and investors are investing in companies with models that provide high resolution and lower prices. Herb asked if there would be a shift in government policy, where they may accept different lower resolutions of images? Herb believes that satellite imagery doesn't have the same weight with government today as 10-15 years ago due to other data sources.

The Aerospace Corporation's Results of Commercial Remote Sensing Statutory Research – Dr. Rick Heidner, Strategic Awareness and Policy Directorate

- Dr. Rick Heidner provided an overview of the statutory law issues in satellite remote sensing, and its inevitable impact on how private remote sensing systems are licensed and regulated.
- U.S. Government has chosen to regulate commercial remote sensing due to the fact that its imagery actually creates information, not just collect data. However, the U.S. is not leading in this area – what underlies leadership in this area includes turnkey export, tech transfer, and training.
- It is also important to note that emerging nations are beginning to operate remote sensing satellites and they want to work with the leaders in remote sensing. Foreign competitors are still seeing income from exports, and therefore are not inhibited by the current climate. Consequently, it is important that U.S. shifts to a risk management perspective, instead of a risk avoidance mindset.

Committee Discussion on Possible Statutory Updates to Commercial Remote Sensing Statute

- Overall, Committee members encouraged the need for the government to shift perspectives on the licensing of private remote systems from a “no, until we know more” to a “yes, unless” policy.
- Vice-Chair, Scott, began by providing an overview of how the original statute came about with the Land Remote Sensing Policy Act of 1992. The statute was written coming out of the Cold War, Landsat was not well understood, and the language for the statute had undergone an interagency review and comments from WorldView (a predecessor to DigitalGlobe) and Lockheed Martin. Commerce ended up with the job for licensing remote sensing systems because they had been responsible for licenses under the earlier 1984 Land Remote Sensing Act. However, only two licenses, one for Landsat and another for a Large Format Camera that was flown on the Space Shuttle, had been issued up to that point.
- Scott noted that the U.S. has succeeded in electro optical (EO), but has failed in synthetic aperture radar (SAR). The U.S. will succeed or fail with the new technologies. Although, the goals of NSPD-27 are still okay, the implementation actions are out of date. We have not lived up to the strategic objectives. Do we still believe in the words in the policy about winning and being dominant?
- The statute has not really been updated since the 1992 Act. As a result, Scott believes there are 3 concerns before the Committee as Congress considers updating the statute once more: 1) With an increase in globalized technology, we need to determine if the intent of the statute should remain the same or if it needs to change. The idea is for the licensing of private remote sensing systems to be fair and transparent and for the U.S. to “win” in this industry. 2) There needs to be clarity on the role of the interagency process. If it exists, there should be a direct escalation process in the event that there is an interagency dispute. 3) We need to balance technical risks and benefits using methods that allow predictable processes and rules for licensing new technology.
- Bobbi asked since no license has ever been denied or revoked, what is the purpose of licensing except to keep track. The Post-Cold War world is changing. The US industrial base is under stress.
- Ben asked what should we be regulating? We have a proliferation of SmallSats. We need to look at how we respond to and regulate constellations of 10’s to 100’s of SmallSats.
- Herb said that 10-15 years ago remote sensing was viewed very differently. Imagery was truth. Today we have social media, data mining, etc. Imagery is not always necessary. He quoted the Director of NGA, “I want the image I need, when I need it.” Herb said we US companies built the industry, how do we keep regulation from impacting our competitiveness?
- Rich mentioned the need to identify which changes that need to occur can be fixed quickly and which ones need more time.
- Marcy questioned if there was even a need to regulate commercial remote sensing, given the lack of regulation of other data sources such as social media, cell phones, and drones. If there is to be regulation, the timing of getting

licensed needs to be a priority as well as the escalation of disputes, which should be taken to the highest levels. If a national security concern can't be replicated by another means, then yes, it is a concern. If U.S. or foreign systems can replicate the capability, then don't regulate U.S. companies. The 0.25m resolution decision took 2 years. SWIR is going on 3+ years. Marcy believes that foreign competitors use burdensome USG oversight against US companies.

- Scott asked, "Does the government even have the capability to assess the risks associated with private remote sensing systems?" They need additional resources and experts to allow them to do so.
- Rich mentioned that the government tends to deny a technology first, and then review it to determine if it is safe, but there should be a shift to the opposite, and if a review is to be conducted, it should be prompt and escalated to the highest levels.
- Michele added that the burden of proof should be on the government to prove why a license should be rescinded, not for the licensee to prove why they require a license.
- Scott believes that the U.S. does have a regulatory advantage, however, as at least we have a structure in place and are not starting from scratch. It's really a matter of determining how to update it to work for the current state of commercial remote sensing. He noted that Japan is looking at a broader regulatory process.
- John believes that it would help for there to be predictability at least with the timing of licensing.
- Marcy said that the USG needs to relook at significant and substantial foreign agreements. The MOU needs to be updated to look at the bigger picture. Approval within the USG needs to be at more senior levels.
- Herb recommended we go back to the law and do a line-in, line-out review of 15 CFR 960.
- Todd noted, however, that the problem is the licensing process is already being used for purposes that have nothing to do with commercial remote sensing. Some licensees add the commercial remote sensing capability (the camera) so they can go through the interagency process because no other licensing process is available to them. And some government agencies may have a problem with a satellite or technology that is not at all related to commercial remote sensing and are using the license process to delay approval or force changes to a system.
- In specifically discussing the statute, some Committee suggestions included making clear which bands are crucial in the RF Spectrum, the section on enhanced versus unenhanced data is no longer applicable, and it would be helpful to take out references to Landsat. Any technologies that weren't well understood when the statute was first created can now be clarified in the statute as they are better understood.
- Dave Turner asked the private industry folks on the Committee where the real impediments are both internationally and domestically in terms of treaties, regulations, and law. John responded by saying that the three things that Terra Bella has had to deal with include 1) ITAR 2) FCC Regulation 3) NOAA Licensing. Marcy believes that in dealing with international competitors, the biggest issue DigitalGlobe has had is with timing, which means customers choose non-American companies as a result. Scott asked, what are the non-technical impediments?

Public Comments

- David Gemroth, XPressSAR: For the licensing of their SAR system, they believe that overall NOAA did a good job of keeping them informed and were happy with the amount of time it took to obtain their license. They believe there are a few things could be improved. 1) It was tough to understand all the starts and stops in the interagency review process, and this could be clarified. 2) The applications themselves need to be re-evaluated, as they are EO centric at present. For example, the questions related to radar/nadir were hard to understand. 3) There needs to be a harmonization of regulation, which means that regulation should allow for industry to participate in a broader constellation of systems. For example, how does one work with countries that aren't

allies? 4) Many companies don't have personnel with clearances; therefore, it's never clear what the associated national security risks are.

- Glenn mentioned that there has been a shift in the national security community in which they are now trying to work with each other to say yes in the interagency review process, rather than just saying no. John responded by saying that even with the shift to yes, it's hard when there are a 100 yeses needed per year. Todd suggested that it would be helpful to have an interagency MOU that states if certain conditions are met, no review is necessary and that criteria can go beyond just commercial remote sensing technology.
- Russ Matijevich, HawkEye 360: He has been having a similar problem in dealing with the gaps in regulation that NOAA does not provide as its jurisdiction is only related to commercial remote sensing technology. He tried talking to different intelligence agencies; however, he proposes that an alternate application form not related to Earth Observation would be helpful to fill out for other non-NOAA agencies. He would like for the private industry to be kept informed if NOAA expands its jurisdiction.

Closing

- Thank you to all that came.
- Committee took an hour break, and met back for the closed afternoon session to continue the Classified Follow-On Discussion for possible statutory updates.
- Due to the time crunch in getting the report on statutory updates to Congress by November 25, 2016, the Committee will provide further comments and recommendations to augment their 2015 Memo to the Secretary of Commerce within 72 hours. This can be a prioritized short list of what they believe needs to be changed. As per the 2015 U.S. Commercial Space Launch Competitiveness Act - Title II, Section 202, Department of Commerce and NOAA will then integrate the comments into the report, and consult with other appropriate federal agencies prior to submitting the report to Congress.