



Summary of the AMOS Dialogue in Tokyo

Feb. 26, 2014

On Feb. 26, 2014, the Secure World Foundation (SWF), the Maui Economic Development Board (MEDB), and the Japan Space Forum (JSF) held the AMOS Dialogue in Tokyo, just prior to JSF's 3rd International Symposium on Sustainable Space Development and Utilization for Humankind (IS3DU 2014), in Tokyo, Japan. The goal of the Dialogue was to foster discussion among space situational awareness (SSA) providers and end users, thereby promoting greater collaboration and cooperation toward SSA-enabled safe and responsible space operations. The Dialogue involved representatives from the current SSA sharing programs and initiatives around the world with a variety of end users and stakeholders. Topics addressed included current status of SSA programs and sharing initiatives, identification of areas for further improvement or collaboration, gaps in coverage or meeting end user needs, and future steps. The Dialogue in Tokyo built off of discussions which began at the initial AMOS Dialogue held in September 2013 in Hawaii, United States, in conjunction with the Advanced Maui Optical and Space Surveillance Technologies (AMOS) Conference.

The AMOS Dialogue in Tokyo was held under Chatham House Rule, meaning that while topics can be summarized in this report, specific remarks or opinions will not be attributed to any particular participant.

Main takeaways from the discussion included slow but steady progress on several major governmental SSA efforts while small but faster-moving progress on efforts by the private sector. This indicates positive change, but there are still many questions about how these various efforts will interact and whether they will be complementary or competitive. There is also significant promise in SSA helping to promote transparency and confidence building measures (TCBMs) and norms of behavior, but the discussion is still in the early stages.

In 2012-2013, U.S. Strategic Command (USSTRATCOM) and the National Reconnaissance Office (NRO) did a joint, year-long study of information sharing. They hope to get a 'sharing strategy' signed by the head of USSTRATCOM soon that would allow them to share more accurate information. USSTRATCOM would like to educate users on how to use data from spacetrack.org: while the high-volume users are doing okay, it is the others who have problems sometimes. SSA sharing is perceived to require a whole-of-government approach and require political commitment from the highest levels. There was also an update given on the Space Data Association (SDA)'s work. They are striving to increase their number of members in the Asia-Pacific region in 2014 and will be revamping their data-sharing agreements. SDA is

trying to get maneuver plans so that they will have a more complete picture. One big problem for SDA members is that USSTRATCOM's Joint Space Operations Center (JSpOC), which issues conjunction summary messages (CSMs) giving warning about potential collisions, does not issue CSMs on weekends.

The SDA's Space Data Center (SDC), which is run by Applied Graphics, Inc. (AGI) was also discussed. The SDC combines owner-operator data sets from a lot of different operations as part of its SSA work for the JSpOC. AGI will be setting up its own commercial space operations center, using existing technology and sensors (but eventually will be putting out own sensors). The goal is to increase transparency, drive the industry forward, and try to include maneuver detections.

It was noted that data policy and governance are the big issues for SSA. For example, many space surveillance tracking assets are run by military entities, so there is a big challenge in sharing data in a manner that also protects national security interests.

The SSA capabilities and interests of several countries were discussed. To begin, Australia will be host to an old U.S. C-band radar, which is being moved from Antigua to western Australia, and also the Defense Advanced Research Projects Agency (DARPA)'s Space Surveillance Telescope (SST). Both of these should be up and running around 2016-2017, will be operated by the Australian Air Force, and will be providing data to the U.S. Space Surveillance Network. Australia is going through the process of taking data and passing it to USSTRATCOM; this process is taking a lot longer than anticipated. It was pointed out that SSA capability is not simply just about technology but about human capabilities as well. Along those lines, the University of New South Wales in Australia is starting up a Cooperative Research Centre For Space Environmental Management, which will strive to increase Australia's ability to track space debris in orbit.

The European Council had to give approval for European Union (EU)'s space surveillance tracking program, which is more of a network than an operationally new program. It uses data from existing European ground- and space-based sensors for its network.

Singapore is relatively new to the space game, as it only has three satellites. So it is looking for commercial justification for continuing to invest in space assets: if that does not exist, they cannot do it. Meanwhile, the Japanese government was given a report in September about various SSA options but no there has been no forward movement.

In discussing how SSA can be applied to international space sustainability initiatives, the United Nations' Committee on Peaceful Uses of Outer Space (COPUOS)'s Long Term Sustainability work was brought up. Their efforts with four different working groups have yielded over 30 recommendations that cover aspects of space sustainability that include space for sustainable development on Earth; space debris, space operations, and SSA; space weather; and regulatory regimes and guidance for new actors. In particular, Russia's proposal for a clearinghouse of information (validation of data and so forth) was put forward as an example of how to potentially increase data sharing.

The Group of Governmental Experts (GGE) on Transparency and Confidence-building Measures (TCBMs) in Outer Space Activities, or GGE on space TCBMs, was convened by the United Nations Secretary-General Ban Ki-moon in 2011 to discuss methods for improving cooperation in space and to reduce the risk of misunderstanding, mistrust, and/or miscalculations. A consensus report by the 15 nations represented in the GGE discussions was generated in July 2013 and presented to the UN Secretary-General last fall. It was pointed out that while SSA was only mentioned twice specifically in the GGE report, SSA in general can help achieve the objectives of the GGE in that SSA can serve as a deterrent: it will not prevent irresponsible activity on orbit, but it can at least help create an atmosphere of understanding as to what sorts of activities will help increase TCBMs. In discussing the economics of SSA, it was pointed out that the economic value of satellites is not necessarily felt primarily by those who own satellites but those who use and depend on them the most. The question is where the dollars are, and the United States still spends every 2 out of 3 dollars in space. Another person commented that while space is important for the economy, it is critical for national security. The military believes that at the end of the day, it may need to carry out missions alone, and builds assets accordingly. There is no policy support for the idea that commercial providers will be protected, even if providing national security capabilities. Until we have the ability to attribute actions in space, can't really evolve norms of behavior.