International SSA Data Providers and Satellite Owner/Operators Workshop
September 18, 2024
Key Findings

EXECUTIVE SUMMARY

The workshop's goal was to provide insights to policymakers on operator perspectives regarding the emergence of multiple national and regional SSA/STM providers around the world and the urgency to make progress in understanding how each provider generates their products and standards so that differences in data and outputs may be understood and mitigated.

In a first, the workshop benefitted from the participation of two "heads of space agencies." The discussion profited from the participation of the Japan Aerospace Exploration Agency (JAXA) President, Hiroshi Yamakawa, signaling the growing importance of the workshop as a venue for critical international dialogue regarding SSA/STM. Likewise, the workshop benefitted from the participation of Jong-Shinn Wu, Director General of the Taiwan Space Agency indicating the growing attention senior space leaders around the world are giving to the international dimensions of SSA/STM.

As reflected in the agenda below, the first session included remarks by three distinguished invited speakers; and a joint presentation by experts from the U.S. Department of Commerce (DOC) and the European Union Space Surveillance and Tracking (EU SST) partnership. The second session began with a panel discussion among U.S. and European governmental and commercial SSA service providers. The panel's goals were to highlight areas where countries have different approaches to SSA services and identify what steps can be taken to enable national/regional SSA data centers to understand each other's data and products and thereby understand why there might be differences between the centers. A round-table discussion followed which provided an opportunity for representative from each participating country to provide brief country updates. The workshop concluded with keynote remarks by a representative from the U.S. National Space Council and the signing of a Memorandum of Agreement between the Maui Economic Development Board and the Aerospace Corporation's Center for Space Policy and Strategy.

The most striking outcome of the event came from the brief country updates during the last portion of the agenda. In the past eight years of this event, only a small number of countries reported progress in the development of their national-level SSA capabilities and in the development of their government's organizational structures to accommodate the SSA mission. This year, all participating countries reported significant progress in those areas. This unprecedented enthusiasm for countries to report progress in this venue emphasizes the rising salience of SSA/STM issue around the world, the tangible reality of emerging national and regional SSA providers, and the rapidly growing imperative for international leadership by like-minded nations.

BACKGROUND

The Maui Economic Development Board (MEDB) and The Aerospace Corporation led the 9th annual International SSA Data Providers and Satellite Owner/Operators Workshop on 18 September 2023. This was the latest in a series of invitation-only workshops held in conjunction with the Advanced Maui Optical and Space Surveillance Technologies (AMOS) Conference. The workshop included government, from Australia, Canada, EU, France, Germany, Japan, Poland, Spain, Taiwan, Thailand, the United Kingdom, and U.S. government (Department of Commerce, Department of Defense, Department of State, National Space Council, Federal Aviation Administration, NASA, and U.S. Space Force). The discussion also included participants from non-governmental organizations and industrial associations.

The enduring goal of the International SSA Data Operator Exchange Workshop is to provide an opportunity to develop and advance relationships and share insights among key international SSA data stakeholders including military, academic, civil, and commercial entities. To accomplish this, workshop organizers choose timely topics relevant to the global SSA community and encourage open discussion from all participates in a small to medium sized group setting. This year's session was cohosted by the Space Agency of the Deutsches Zentrum für Luft- und Raumfahrt (DLR), the Centre National d'Etudes Spatiales (CNES), and the EU SST partnership.

DESIRED OUTCOMES

Desired outcomes were to 1) discuss the status and plans for TraCSS, EU SST Spaceflight Safety and SSA, and other commercial and international initiatives that have potential to support responsible actions for a sustainable space economy; 2) build appreciation for different concepts of SSA services and what challenges those differences create for governmental and commercial operators; 3) identify the steps needed to make differing Collision Avoidance (CA) outputs from various governmental SSA data centers understandable and translatable among all SSA data centers and users. Understand the standard operating procedures, techniques, concept of operations, calibrations, algorithms and other factors that contribute to a SSA data center's finished products for end users; 4) Promote transparency among space operators and government entities providing spaceflight safety services; and 5) build and reinforce relationships. Ultimately, the workshop's goal was to provide insights to policymakers on operator perspectives.

KEY FINDINGS

1. More countries than ever recognize the importance of SSA and are investing resources in developing SSA capabilities and internally organizing their governments to bridge their civil and defense stakeholders, to encourage development of their commercial SSA service provider industry, and to interface with external, international stakeholders.
2. These globally expanding SSA activities signal an urgent need for like-minded nations to work together to provide international leadership to enable and cement a system of multiple national and regional SSA/STM providers.
    a. A centralized international approach such as through an Intergovernmental Organization or UN-level was not favored by attendees.

   b. The community did articulate a need for transparency and understanding of processes, data sources, and timely updates of that information that could be used to drive understanding and predictable action.
3. National and regional SSA/STM providers must be transparent in how they collect and process data (including any differences in input assumptions, processing algorithms and modeling)
   a. The ultimate goal is that when the different centers put out spaceflight safety information (Conjunction Assessment (CA), Reentry Warning, Launch Collision Assessment), differences in assessments are well understood. Routine coordination and shared definitions and understandings will be needed across the emerging system of national and regional SSA centers.
   b. While common solutions were not a goal, the community expressed a desire to come to common understanding in order to provide assurance for operator action.
4. The emerging commercial SSA provider industry likely will not survive if it lacks sufficient institutional/governmental customers for its SSA data and services. In addition, an enduring lack of clarity regarding what "basic services" means in general, and specifically in the United States compared to in the EU, inhibits commercial SSA industry development.
5. The working relationship between the U.S. DOC/OSC and EU SST Partnership is a useful model for recognizing opportunities for international collaboration and identifying technical, operational, economic, policy, and cultural challenges slowing greater progress.
6. The USSPACECOM and National Space Defense Center's Joint Commercial Operations (JCO) cell may provide another useful model for partners around the globe to share SSA/STM data, although translating from military-to-military relationships to civil relationships may present different challenges.

WAY AHEAD

7. The United States and the EU should define precisely what "basic services" means and bridge the differences between EU and US conceptions—or at minimum clearly define the differences—and remove doubt or ambiguity in meaning in order to enable the commercial SSA service industry to move forward. A joint product could be used as a basis of comparison for other national and regional centers and be built upon.
   a. In addition to the ongoing discussions between TraCSS and the EU-SST, the participants noted the need for discussions among the broader set of governmental and non-governmental SSA operators on their conceptions of "basic services."
8. The U.S. DOC/OSC and EU SST should deepen and broaden their working relationship. Additional, deeper joint studies and experiments will inform the discussion at national, regional, and international levels. Growing the working relationship to include non-EU and non-U.S. participants and contributions would bode well for the future.
9. A broader set of governmental and non-governmental SSA operators should be brought into the discussion on data sharing and interoperability.

International SSA Data Operator Exchange Workshop

Program on September 18, 2024

The emergence of multiple national and regional SSA/STM providers around the world increases the urgency for progress to be made in understanding how each generates their products and standards for sharing data and products between them.

Purpose: The international SSA operator community informs and shapes international SSA/STM policy priorities from an operator perspective.

Agenda

12:30 pm Welcome Remarks
Leslie Wilkins, Maui Economic Development Board
Jamie Morin, Aerospace Corp, Center for Space Policy and Strategy

12:35 Invited speaker - JAXA President

12:40 Q and A

12:45 Invited speaker – DOC/OSC
Topic - Implementing the SSA Global Vision

1:00 Q and A

1:10 Invited speaker – EU SST

1:20 Q and A

1:30 Presentation and Group Discussion: US/EU comparison of Basic Services
Presentation: DOC & EU SST (Mariel Borowitz, Cristina Pérez Hernández)
Exchange of views/feedback (all attendees). Moderator: Mick Gleason

2:00 Break

2:10 Panel Discussion - Moderated by Jamie Morin
Topics: Differences in SSA service approaches, data, and product

Panelists:

- US Dept of Commerce DOC/OSC
- EU SST
- USSPACECOM
- U.S. Commercial SSA provider
- European commercial SSA provider

2:55 Roundtable Discussion – Moderated by Brian Weeden, Aerospace Corporation

Purpose: Opportunity to provide **brief organizational updates** and share perspectives.

Participants:
Australia, Canada, France, Germany, Japan, Poland, Spain, Taiwan, Thailand, UK
United States: DOD, USSF, US DOC/OSC, FAA, NASA, NSpC

Academia and Others

3:25 Keynote remarks – U.S. National Space Council

3:40 Maui Economic Development Board (MEDB) and the Center for Space Policy and Strategy (CSPS), Memorandum of Agreement (MOA) signing.

3:50 Closing remarks – Mick Gleason and Brian Weeden

The exchange included international representatives from Australia, Canada, France, Germany, Japan, Poland, Spain, Taiwan, Thailand, the United Kingdom, and the EU Space Surveillance & Tracking (EU SST) Partnership. U.S. government representatives attended from the National Space Council, Department of Commerce (NOAA), Department of Defense, NASA, the Federal Aviation Administration, and the U.S. Space Force. Non-governmental organizations and individuals attended providing perspectives from the Aerospace Corporation, Aerospace Industry Association, Center for Global Security Studies-Lawrence Livermore, MITRE, Secure World Foundation, Space Safety Coalition, the SSA services industry, European SSA services industry, and Maui Economic Development Board.