

## International SSA Data Providers and Satellite Owner/Operators Workshop September 29, 2022 Key Findings

### EXECUTIVE SUMMARY

The workshop was organized into a main session followed by four breakout groups that allowed for “not for attribution” discussion. The workshop’s goal was to provide insights to policymakers on operator perspectives. The main session included a keynote address, a paper presentation, with open discussion following both. The keynote address was an update given by Richard DalBello, Director, Office of Space Commerce, NOAA, U.S. Department of Commerce. Lauren Hale from the Aerospace Corporation presented the paper, [Partnering Not Bossing: Better Leveraging International Capabilities for Space Domain Awareness](#). The four breakout sessions provided participants with an opportunity to prioritize technical and non-technical interoperability issues affecting SSA data and information sharing; lessons learned from current SSA info sharing best practices; and promising hybrid solutions.

The key takeaways from the workshop were that regular international dialogue builds consensus among partners in identifying technical and non-technical challenges and opportunities; prioritizing and synchronizing actions collectively; building trust; and spreading lessons learned. Importantly, the breakout groups consistently identified the need to *create incentives* for SSA data providers and satellite owner/operators’ to voluntarily participate in efforts to overcome the identified issues. This finding suggests that efforts to create incentives should be given higher priority.

### BACKGROUND

The Maui Economic Development Board (MEDB) and The Aerospace Corporation led the 7th Annual International SSA Data Providers and Satellite Owner/Operators Workshop on 29 September 2022. 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. This year’s workshop was a hybrid format. The workshop included government, and non-governmental organization (NGO) representatives from Canada, ESA, EU, France, Germany, Japan, NASA, the United Kingdom, and U.S. government (Department of Commerce, Department of State, the Federal Aviation Administration, and U.S. Space Force).

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 participants in a small and medium sized group setting. This year’s session was cohosted by the Space Agency of the Deutsches Zentrum für Luft- und Raumfahrt (DLR) and the Centre National d’Etudes Spatiales (CNES).

## DESIRED OUTCOMES

This year's desired outcomes were to 1) build relationships across the international SSA operator community; 2) re-emphasize and report progress on existing SSA operator community priorities; and 3) identify new challenges, opportunities, and priorities for SSA data providers and satellite owners/operators concerning interoperability, data and information sharing, norms, and best practices. Ultimately, the workshop's goal was to provide insights to policymakers on operator perspectives.

## KEY FINDINGS

1. The main outcome from the workshop is that regular international dialogue builds consensus among partners in identifying technical and non-technical challenges and opportunities; prioritizing and synchronizing actions collectively; building trust; and spreading lessons learned.
2. The workshop categorized several technical and non-technical communication and data sharing **issues that inhibit getting decision quality data to operators**. Several of those identified were consistent with past workshops.
  - Needs mainly **technical** in nature are:
    - Develop 1) standardized SSA data formats and coordinate systems; 2) standardized SSA sensor calibrations and processes for SSA sensor configuration control
    - Develop a technical mechanism for sharing data such as machine interfaces/sharing mechanisms and communication paths
    - Address issues with data storage and network issues, ephemeris standards, formats, validation, accuracy, and sharing mechanisms, and standards latency (new spacecraft but historical standards)
  - Needs mainly **non-technical** in nature are:
    - Establish 24/7 points-of-contact and communication means among all operators
    - Continue to address declassification issues
    - Tailor data to various users and use cases with different interests
    - Understand boundaries of "good enough" data
    - Nurture and enable the market base to meet demand and different business models (incl. not "paying twice" for same data/ buying and then sharing)
    - Address legal, liability, and proprietary information issues
3. The workshop identified several potential **means for making progress** to address these communication and data sharing issues.
  - Create incentives for SSA data providers and satellite owner/operators to:
    - participate and promote current and additional initiatives, organizations, workgroups, consortiums and so forth dedicated to developing solutions, and increasing opportunities for the international community and other stakeholders to interact

- voluntarily conform with emerging standards, mechanisms and other tools to help overcome the issues
  - Develop voluntary, agreed upon standardized SSA sensor calibration criteria and configuration control.
    - voluntary sensor *certifications criteria* could incentivize operators to conform with agreed upon calibration standards and configuration controls.
  - Develop clear regulatory direction.
  - Develop feedback mechanisms to allow timely course corrections as the dynamic environment creates constantly evolving problem sets and solutions.
4. The workshop also identified several **lessons learned** over the last few years:
- Multilateral engagements in regular recurring format make a difference.
  - Starting with small first steps among smaller, multilateral coalitions has had success.
  - Achieving technical and operational bases of cooperation help build wider buy-in.
5. It should be noted that participants re-endorsed the 2019-2021 priorities list for development of SSA/STM standards, guidelines, and best practices. Previous priorities were to develop the following:
1. Operationally useful, consensus-based standards for timely, transparent, trustworthy, secure, SSA/STM data sharing (data base/data repository/data exchange) that is capable of automation.
  2. A reliable, 24/7/365 system of rapid communication among operators that enables transparency and coordination for the operational community.
  3. National SSA/STM regulatory frameworks that can evolve into an international framework.
  4. Operationally useful standards for on-orbit operations.
  5. Methods for incentivizing positive behavior.

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## International SSA Data Operator Exchange Workshop Program September 29, 2022

### 09:45 Welcome Remarks

Leslie Wilkins, Maui Economic Development Board (MEDB)  
Jamie Morin, The Aerospace Corporation

### 09:50 Update from Richard DalBello, US Department of Commerce

10:10 Paper overview , Lauren Hale, The Aerospace Corporation: [\*Better Leveraging International Capabilities for Space Domain Awareness\*](#)

### 10:20 Breakout groups

Group 1: Interoperability constraints, challenges, and opportunities  
Group 2: Technological challenges and opportunities

Group 3: Lessons learned from current info sharing, promoting norms, best practices  
Group 4: Potential cross-domain/hybrid solutions/architectures

11:05 Breakout group briefings

11:30 Synthesis

11:45 Closing Remarks – Leslie Wilkins, MEDB