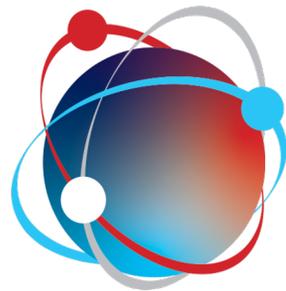


## **Presentation for the International Astronautical Federation (IAF) Space Security Committee**

2022 International Astronautical Congress, Paris  
19 September 2022



**6<sup>th</sup> PSSI Space Security Conference**  
**The Global Space Competition:  
Security, Markets and Sanctions**  
Prague, 19–21 June 2022



<https://youtu.be/wyU8YIciN8M>

# Summary



- Some 200 experts from 26 allied countries
- 6 panels, Special Session, Special Guest Speaker
- Participants included senior military and civil government officials, industry leaders, and distinguished NGOs, academics and media representatives
- High-level military officers from the U.S., Japan, UK, France, Germany, Belgium, Italy, Spain, Czech Republic, and NATO.

# Keynote Speakers



- **Lt. Gen. John E. Shaw**, Deputy Commander, U.S. Space Command
- **Yasuyuki Kasai**, Director General of the National Space Policy Secretariat, Cabinet Office of Japan's Prime Minister
- **Tomáš Kopečný**, Deputy Minister of Defence for Industrial Cooperation
- **Jiří Schneider**, former First Deputy Minister of Foreign Affairs, Czech Republic



# Key Trends



- Ever greater dependency on space-based technologies and services in the developed world for socioeconomic and security/defense-related needs;
- Increasingly diverse environment with more nations seeking space-derived benefits and indigenous space capabilities;
- New private sector actors entering the space domain at an unprecedented rate;
- Greater public enthusiasm for human space travel and habitation;
- Pressure to improve space domain awareness (SDA);
- Intensification of threats to space operations due to the development of sophisticated counterspace capabilities, heightened geopolitical tensions and the ability to deliver asymmetric, strategic effects.

# Quotes



- **Lt. Gen. John E. Shaw**, Deputy Commander, U.S. Space Command  
*„There will be future collisions in space. They will happen. There will be deaths in space. The question is - will we have done everything possible to minimize these occurrences?“*
- **Kevin O’Connell**, Founder and CEO, Space Economy Rising LLC  
*„We need to have a comprehensive understanding of how global economic changes impact our space industry.“*
- **Pascal Faucher**, Chairman, EUSST Consortium  
*„In Europe, the EUSST was recognized as the operational capability for the newly adopted Space Traffic Management.“*
- **Paul Graziani**, CEO, COMSPOC Corp.  
*“Commercial data, tools, and platforms are important enablers for partner Space Domain Awareness.”*

# Quotes



- **John Huth**, Defense Intelligence Officer for Space and Counterspace, US Defense Intelligence Agency  
*"Global space competition has evolved from strategic weapons monitoring and delivery and the pursuit of manned and unmanned spaceflight for national prestige to an ecosystem that impacts all instruments of national power including, increasingly, the economic component."*
- **Maj. Gen. Michel Friedling**, Commander, French Space Command  
*„We all want to cooperate but we have much difficulty with sharing information.“ „There is a misalignment between our strong will to cooperate and the real world.“*
- **Kai-Uwe Schrogl**, Special Advisor for Political Affairs, European Space Agency  
*"Leadership has to also be built by a strong economic partnership among the allies. There, we have our shared principles and norms, which we should jointly establish and apply to the whole global space economy."*

# Quotes



- **Peter Marquez**, Head of Space Policy, Amazon Web Services  
*„Certain commercial companies are investing more in space than some space agencies. We have a vested interest in how space is going to be used now and in the future.“*  
  
*“There is no such thing as ‘space deterrence’. You deter an actor, not a domain.”*
- **Tomáš Kopečný**, Deputy Minister of Defence for Industrial Cooperation  
*“There is not only a new space race among the major powers but also private enterprises and mid-size space powers.“*
- **Richard Buenneke**, Senior Advisor for Space Policy, US Department of State  
*“We must not only sustain the current international system, but also modernize it. Unfortunately, the foundations of the current international order are under serious sustained challenge by Russia.”*

## Key Themes

### **Space Threats Profile Update**

- The war in Ukraine has highlighted the critical nature of space and real-time information flows, as well as the importance of industrial supply chains;
- Currently there is no clear understanding of what constitutes aggression and intentionality in space which makes it difficult to craft legally-sound responses;
- To operate in an increasingly contested, congested and competitive environment, allies need to successfully protect intellectual property, enforce treaties, agreements and sanctions, and construct robust Space Domain Awareness (SDA) to enable verification and compliance with behavioral norms.

# Key Themes



## **Architectures and Policies for Partner Space Domain Awareness**

- SDA is fundamental to the security and resilience of space assets, but also for transparency and verification to help avoid miscalculation and misinterpretation;
- SDA enables users to anticipate, detect, characterize, monitor, verify, and respond to threats that are intentional;
- SDA architectures require extensive planning, but there is an urgent need to field these capabilities in the very near-term;
- Civil SSA enables users to incorporate innovative technologies more quickly, including data management, data visualization, analytics and other areas, and achieve greater transparency concerning the safety of space operations;
- Strong, cooperative SDA will be imperative to defending our freedom of action in space.

# Key Themes



## **Collaboration of Allied Space Commands**

- As space is a global theater, partners are necessary to strengthen SDA, enhance resilience, fill capability gaps and shape the environment or battlespace;
- Given the rapid evolution of space technologies and the establishment of new space commands of allied militaries, adequate coordination to effect faster response times and more creative and compelling remedies takes on outsized importance;
- Obstacles to enhanced collaboration include economic competition, classified information-sharing, and, at times, the lack of a common assessment of the threat to the space environment;
- The goal should be to expand from operational collaboration to comprehensive strategic cooperation.

# Key Themes



## **Allied Options for Strengthened Cross-Domain Deterrence**

- Deterrent capability involves denial of benefits, signaling, attribution, and credibility. Space is an integral part of the broader deterrence strategy involving diplomatic, intelligence, military, and economic capabilities;
- Debris-creating hostilities in space cannot be safely responded to in kind, hence the need to react in a different domain, such as economic and financial penalties or political isolation;
- Possessing deterrent capabilities does not equate to stopping an act of aggression;
- Adversaries' concept of deterrence and 'compellence' differs from Western concepts.

## Key Themes

### **Requirements for Maintaining Global Space Leadership**

- Clear communication of national interests is essential for fruitful space sector cooperation;
- Effective responses to common threats ideally require interoperable systems, fulsome intelligence sharing, and coordinated crisis protocols and procedures among allied space commands;
- Sustainable space governance demands countering the institutionalization of alternative norms offered by authoritarian space powers inconsistent with democratic principles and values;
- Joint positions need to be forged as early as possible to enable the common promotion of shared priorities and principles globally.

# Key Themes



## **Industry Perspective On Expanding Allied Partnerships**

- Open interfaces between governments and their respective space industries is desirable in support of innovation and fueling a corporate appetite for large-scale space investment;
- Governments need to establish clear parameters for public-private partnerships in the space domain on an ongoing basis so that both domestic and foreign companies can operate in a predictable, durable environment conducive to long-term investment and fair competition;
- Industry needs clarity vis-a-vis regulations aligned with the fast-paced technological evolution.

# Key Themes



## **Bolstering Allied Space Enterprise Architecture**

- An integrated, interoperable architecture is key to strengthening alliances and partnerships as it enables coalition planning, training, and doctrine;
- Although the allies generally agree on overarching strategic objectives, this has yet to translate into effective rule-making, common policies, coordinated investments and "rapid-response" actions that would enable a flexible architecture incorporating the constantly evolving threats, deterrence posture, and new technologies;
- Clarity on government communications with industry regarding perceived requirements and desired end-results is key to an agile and dynamic space architecture;
- A capabilities approach to space-related acquisition should be seriously considered to provide faster integration and more flexibility for commercial space companies.

## Key Themes



## **Economic and Financial Dimensions of Space Security**

- Economic and financial inducements offered aspiring space nations by authoritarian space powers to lure such nations into dependency-creating transactions, compromised space sectors and sole-source contracts urgently needs to be recognized as a challenge to space security.
- Proper utilization of the West's dominant leverage in the economic and financial domain is required if the allies are to avoid proliferation of state-led economic model and strong-arming tactics design to "persuade" dozens of countries to support an alternative – authoritarian -- brand of standards and norms at multilateral fora and elsewhere.
- Capital market sanctions need to be part of the allied tool kit to deter or penalize hostile, reckless and/or irresponsible actions in space by adversaries.



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Thank you.

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