

Joint Air & Space Power - JAPCC Conference 2008

PANEL 3

"Space as a Critical Enabler of NATO's Operations"

Colonel Shearer - USA A, National Security Space Office

Salute to the JAPCC for bringing this issue forward. Environment more complex, state and non-state actors to deal with, budgets reducing, personnel reducing, NATO collectively needs to build an effective and efficient force. Actions that are correct, timely, net centric enabling dispersed forces. Space to the 21st century same as Sea in 19th, Air in 20th. Space is the strategic enabler that counters the "Fog of War." Imagine Air Operations without Space capabilities. Space provides NATO with opportunity to have asymmetric advantage over adversaries. A day without Space is not acceptable. How will NATO normalize Space activities? Make Space part of force planning? Identify Space requirements to take advantage of Space capabilities. Focus needs to be successful for effective operations. How can Space contribute to the deterrent calculus? Need for collective response. Four thoughts:

1. NATO must collectively utilize Space effectively and effectively doctrine, policy and concepts needed. Does Article 5 apply to Space/Cyber Attack? Does Space alter view of adversary?
2. NATO should normalize Space as part of force planning, etc. Need to build on JAPCC work.
3. NATO should consider options to acquire own Space assets. Need to think in an architecture way, needs to be done at beginning of planning process. Redundancy without duplication.
4. NATO should consider how to fight Space. Space Situational Awareness and Common Operational Picture. We must protect our Space assets. We must exercises like we fight. Above the Land is the Air, above the Air is Space.

Air Commodore Bates - GBR A, UK MOD, ACOS Capability HQ Air

Space matters. Not a large number of Space experts in the UK. Space permeates all aspects of modern warfare. There is an increasing reliance of Space to achieve Air effects. Suspects UK/NATO goal is to have an assured access to space. Strategy coordinated development. Need to increase Space awareness throughout all levels. UK has four Space-based requirements:

1. Data networks SATCOM net enabled; GPS/Combat ID.

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2. Surveillance from Space (Imagery and derived products),
3. Surveillance of Space. Awareness of adversarial capabilities in Space. - Need for Recognized Space Picture.
4. Space control – need for a suitable policy in the UK. Looking at alternatives to traditional relationships to maximize access to Space-based products. Dual use systems (civ/mil). Securing an independent ISTAR capability through use of smaller satellites.

Brigadier General Kriesel - DEU A, Director German Air Force Transformation Centre

Germany early into Space, but currently unaware of the strategic aspects of Space. “Space as the critical enabler of Space Operations”. Geographical Information System (GIS) and communications, are only half of the story. Efficient use of Space is critical to mission success. Germany getting into the Space game again. Five high resolution satellites SAR-Lupe, launched by Russia and fully operational by end of year. Bundeswehr has access to commercial SATCOMs, and will launch two dedicated military satellites next year. UAVs lead demand for more bandwidth. Germany is looking at EUROHAWK (SIGINT enabled). New technologies required (laser, etc) to enable the high requirements (Terabytes). Demand will exceed resources, regardless of number of satellites launched. Areas of interest SATCOM , reconnaissance, missile defence, protection of Space systems, access to Space, Space Situational Awareness. SSA element is to be stood up in Kalkar. Interest in developing a Recognized Space Picture. Capability will evolve over time, currently only small level available. European Security and Defence Policy (ESDP) missions require Space. A Euro Space Situational Awareness system is required. Merit in coordination with European efforts, possibly NATO. Germany is working on lots of Space activities. Plan to significantly increase organic capabilities.

M. Petitalot - FRA, Senior Space Advisor to French MOD Joint Staff

Two issues came up last week during a Space conference in Nebraska, USA:

1. Space Situational Awareness and international cooperation for military use of Space.
2. ISR cooperation must be focus, particularly IMINT. Lessons? We need to define forms of cooperation. Early engagement is too critical. Classification and standards issues needs attention. Priority to commercial clients. Ground segments with separated own national networks should be developed. FAQs – why should a nation benefit from my investments? Will I lose my

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autonomy? Will I maintain guaranteed access to my dedicated Space segment? Will my share of satellite capacity be lost with this cooperation? Do we need protection of code? HELIOS is a French development, the download goes direct to the European Satellite Centre in Torrejón, Spain. This is a good example of successful cooperation among countries. We need to be careful of engaging too many countries in a single capability.

Q&A

Q – I agree that Space is critical and with most of the opening statements. What kind of advantages are possible in asymmetrical conflicts? And why is Space not giving us the advantage we need in these conflicts?

A - Importance of Space is not known by all. We underestimate the critical aspects of Space. Nobody thinks about Space, assets are one thing, but we have to think Space and nobody in NATO thinks Space. Don't ask too much from Space, it cannot be expected to answer all requirements.

A - Where would we be without Space? If we wouldn't have communications, networks and reachback, we wouldn't be where we are today that is for certain.

A – We need to get the flow of information to the warfighter. We need to look back in history and how we would operate without Space.

A – I agree with the remarks. We put a lot of money on Space communications, but not enough in imagery and ground systems. Space is not sufficiently integrated into the chain of commands and we should bring Space much closer to warfighters.

Q – Rebuting a statement. Do we really draw a line between Air and Space? Don't we also need to look at possibilities of going from Air to Space and back to Air. Do we need multi-role Air and Space vehicle in future?

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A - We have not defined where the border is between Air and Space. As technology offers us new opportunities, for example nanotechnologies, new challenges emerge. We have to look at conflicts in 2030 time, we must think about this now and plan ahead or we will not be ready. We know the threats are increasing and need to look ahead, we could find ourselves in dire straits.

Q – My compliments to the JAPCC and the panel Two thoughts:

1. Normalization in short term: NATO nations have developed ISR capabilities. France with HELIOS, Italy, Germany, Canada and the US too. We should use ISAF as a way forward to a focusing debate and should create process to support of ISAF forces. Can we use now NATO systems?

2. How do we leverage technological trends of smaller satellites within NATO?

A - All of this is linked to military intelligence. Space lacks procedures to get national assets into a pool of available resources. German SAR-Lupe was developed in response to a lack of cooperation between nations. We need a request to go out to the nations to reach the use of Space systems.

A - First question: Collectively bringing all countries capabilities would be very powerful. Small satellite side: The trend in US is driven by technology and Cold War to build larger satellites. Smaller satellites may need to be looked at to eliminate redundancy as technology allows. There is a better way to collectively pool our resources and this would be more efficient.

Q – There is a need for active and passive protection of Space assets. Do you plan to have a strategy addressing international law and space debris? Do we protect in an active way and what are the consequences? What's the position of the other countries and US for competition in Space?

A - You cannot protect satellites 100%. Regarding debris, you have to declare when you launch a satellite. US propose when you move satellite, you declare it. You just can't do much regarding debris.

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A - In terms of protection, we're just not talking about the on-orbit. We need to think of telecommunications and must take a holistic approach. We must be able to track the cause of a problem regarding debris. Years later, if debris strikes space vehicle, we will have this debris tracked, currently working legal issues. CFE program currently shares orbital information with the globe and trying to enhance this program to avoid situation where we lose SA on orbit.

Statement from the audience - Thanks to the Belgian War College for coming to the conference. Once you identified challenge, and who will figure out what to do? If the challenge in US is to build Space expertise. Smaller countries have more challenges to develop Space expertise within their militaries, but need to be serious about building a Space cadre. We need to expand our thoughts on who can be an operator for Space Operations. How to get the right people into a CAOC with Space experience? We are far away from building Space Operations expertise.

Statement from the audience – No one disagrees with importance of Space. Space is the key to prosperity. NATO should develop Space capability focusing on easiest steps such as sharing information amongst systems, i.e. intelligence systems. I suggest to concentrate on SSA, and then on communications, and later to integrate into tasking and planning cycles. What is provided by Space into warfighting means?

Statement from the audience – NATO has to develop a Doctrine and Policy regarding Space. There are a lot of celestial bodies orbiting in Space besides debris, we need to look at threats to these orbiting bodies. It is necessary for all nations to cooperate in air and on ground regarding space. Need to include NATO partners in discussions regarding Space.

Q - What about the 30-40 situation? Can we assume that we will always have dominance in the Space realm? Concerns about EU power system controlled from Space.

A - We all become increasingly dependent on Space. There is too much at stake for warfighter and we have to make investments.

Q - Cyberspace threats. What kind of NATO cooperation and program to secure Cyberspace?

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A – There is a need to think about the asymmetric threats, for example from a person with a laptop.

A - UK is doing a lot regarding network defence. I am not sure about NATO.

Q - ACT is looking 20 years into future, but couldn't find anyone in NATO with expertise in Space. There was no political interest by ACT regarding Space. No money! Reality is that there is no money allocated by military committee regarding future Space issues. How do we overcome these challenges?

A - Everyone needs to take this information back to their MODs and provide feedback back to their respective countries.

Q - Three panel members are talking about a NATO solution, one panel member is talking about a European solution. What would be the advantage to excluding the elephant in the room as the most significant contributor to Space?

A - Space is marked too much by the intelligence community.

Statement from the Moderator – The big takeaway is that this topic deserves it own separate conference.