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Hosted Payload Advances *from HPA*

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Message from the HPA Chair

2013 is turning out to be an exciting and eventful year in hosted payloads with several new developments taking shape. Of recent, GeoMetWatch/AsiaSat, EMC/Arabsat and Harris/Iridium have all announced hosted payload agreements. Both the commercial industry as well as global government agencies are seeing the value of hosted payloads and developing innovative strategies to capitalize on the clear benefits they provide.

The U.S. Air Force Space and Missile Systems Center (SMC) has released the final RFP for the Hosted Payload Solutions (HoPS) ID/IQ contract, which has the potential of being a true game changer for the future of commercially hosted government payloads. To be awarded in early 2014, HoPS will establish the contractual framework for SMC to leverage the commercial industry for satellite hosting opportunities. SMC has indicated the contracting vehicle will be available to multiple government entities with NASA as an early adopter. Alignment of government and commercial timelines has long been cited as challenge to hosted payloads. HoPS promises to take a significant leap forward in addressing this concern.

The Hosted Payload Alliance has an active calendar for the remainder of 2013 as we continue our mission to advocate and educate for hosted payloads. Conference participation includes the Hosted Payload Summit, SATCON and Reinventing Space. We are also in the early planning stages of our second congressional outreach activity to ensure law makers are fully informed of the benefits of hosted payloads. Finally, we will continue with our media campaign to ensure broad

outreach into the aerospace community.

The HPA believes the momentum is building for hosted payloads and together with our 19 corporate members, looks forward to the seemingly endless possibilities resulting from increased access to space.

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HPA Holds Capitol Hill Event

The Hosted Payload Alliance held an outreach event for Congressional members and staffers on July 24 in the Capitol Visitor Center. The event featured a facilitated panel of industry experts who each tackled a hosted payload related topic of interest to legislators.

The panel featured Janet Nickloy, HPA Chair and Director of Strategy and Business Development at Harris Corporation; Dave Anhalt, HPA Secretary and Vice President, U.S. Government Solutions at Space Systems/Loral (SSL); and Jim Simpson, Vice President, Missions & Programs, Boeing Space and Intelligence Systems. The panel was moderated by J.R. Jordan, HPA Treasurer and Senior Manager, Strategy and Business Development, Raytheon Space and Airborne Systems.

Although a variety of discussion points were covered during the event, the theme that tied the panelists' talks together is that hosted payloads are achievable and deserve further investigation, and the space industry stands ready to work with the US government in this worthy endeavor.

"Traditionally, hosted payload programs consisted of government payloads on government satellites," said Nickloy during her remarks. "In this environment of tough choices and tight budgets, innovative solutions such as commercially hosted payloads (government payloads riding on commercial satellites) can deliver cost-effective benefits and enable unique mission solutions." Hosted Payloads are not a solution for all space applications; however, when investigated as part of a complete mission architecture solution, this business model may provide the right mix of capabilities to build resilient capabilities and leverage the cost benefits of the commercial marketplace in a way that provide for operational advantages.

Government agencies in both the civil and national security arena are examining commercially hosted payloads as a means to improve access to space. Anhalt's remarks focused on examples of commercially hosted initiatives already underway in the Air Force, NASA and DARPA. "These departments and agencies have recognized the value of leveraging the commercial space sector," said Anhalt. "They have initiated space programs designed from inception to be commercially hosted and are working with commercial industry to create the interface definitions and contracting mechanisms necessary to synchronize government procurement processes with the streamlined management practices of commercial space ventures."

Anhalt added that what we are now witnessing is the economic convergence of the three great sectors of space: commercial, civil and national security. And the commercial space sector stands

ready to expand from solely commercial endeavors to adjacent markets directly serving military and civil customers with affordable hosting solutions.

Simpson pointed out that there have been demonstrable successes with hosted payloads in recent years: the Commercially Hosted Infrared payload is a prime example of success at hosting a government instrument on a commercial satellite; another is the Federal Aviation Administration hosting of GPS augmentation (Wide Area Augmentation System or WAAS) on several commercial satellites. “Along the way to these successes, there arises a unique set of technical, contractual and operational challenges,” said Simpson. “Technical challenges are typically addressable through proven engineering practices, whereas contractual and operational challenges require creativity and a revisit of industry paradigms. Communicating what has and hasn’t worked in all phases of the process is vital in ensuring the success of future collaboration between government and industry.”

Image: HPA Treasurer J.R. Jordan, Raytheon Space and Airborne Systems, moderates the HPA event on Capitol Hill. © HPA 2013

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Northrop Grumman Delivers Second Hosted Payload for Enhanced Polar System Protected Communications

Northrop Grumman recently delivered the second of two payloads that will be hosted on government-owned satellites to bring next-generation protected, Extremely High Frequency (EHF) communications to users in the north polar region (above 65^0 North).

Developed for the U.S. Air Force’s Enhanced Polar System (EPS), the payload efficiently leverages hardware and software designs Northrop Grumman originally developed for Advanced EHF (AEHF) protected military communication satellites. The EPS network will replace the current Interim Polar System and serve as a polar adjunct to the AEHF system.

The Air Force plans final operational capability for EPS for calendar year 2018. EPS consists of two EHF payloads hosted on government satellites, a Gateway Segment to connect modified Navy Multiband Terminals to other communication systems, a User Terminal Segment and a Control and Planning Segment (CAPS). Northrop Grumman was recently selected to develop the EPS CAPS to operate the EPS payloads.

The MILSATCOM directorate at the Air Force’s Space and Missile Systems Center at Los Angeles Air Force Base, California, is acquiring the Control and Planning and Gateway Segments.

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HPA Protests Proposed ITAR Restrictions

The U.S. State Department, Office of Defense Trade Controls Policy has recently proposed changes to current ITAR restrictions surrounding the use of Hosted Payloads by the Department of Defense. These changes have been proposed to better serve the needs of the DoD; however, the Hosted Payload Alliance has suggested that these changes will have the opposite effect and impede the use and resulting benefits of hosted payloads on commercial systems for non-DoD specific requirements. The HPA therefore sent comments to the Department of State prior to the July 8 comment-period deadline, addressing these proposed changes and their unintended consequences. The following are the recommendations that the HPA made:

1. **DoD-funded payloads that do not otherwise have a military function should not be subjected to ITAR control.**

   Doing so would frustrate the objectives of DoD and harm other U.S. Government agencies planning to use DoD funding mechanisms for non-military hosted payloads. Hosted payloads are a critical part of the DoD's business plan. Lieutenant General Ellen Pawlikowski, who commands the Air Force's Space and Missile Systems Center, has stated that "hosted payloads provide an opportunity to deploy capabilities at a fraction of the cost of [DoD's] current systems." One of the key elements to implementing this plan is a contracting vehicle called the Hosted Payload Solutions Indefinite Delivery Indefinite Quantity (HoPS). This contracting vehicle is a DoD mechanism (awarded and managed by the Air Force) that other government agencies will be able to use to obtain services from commercial satellite providers. For example, one of the first Hosted Payload Solutions mission candidates is NASA's TEMPO mission. TEMPO will measure atmospheric pollution in North America and create a dataset to provide understanding and improve prediction of air quality and measure effects of greenhouse gases. Similarly, NOAA is considering using DoD-funded payloads for weather monitoring. Both of these missions would be areas where NOAA and NASA would potentially want to coordinate with other international organizations interested in climate change. If DoD-funding alone would require such payloads to be treated as ITAR-controlled, the export control restrictions would unnecessarily increase the cost and complexity of those procurements and hamper international cooperation without any national security benefits, which would be contrary to the objectives of export control reform advocated by DoD.

2. **DoD funding should not be the only criteria for ITAR control**.

   Making DoD funding the only criteria for ITAR control would sweep many dual-use technologies requested and funded by DoD under ITAR control. For example, DoD has indicated it is interested in a steerable beam option to allow it to track certain activities by adjusting the area covered by the beam in real time. This "steering" of a beam is also desired by commercial customers such as airlines who may want to track their fleet crossing similar but not identical paths simultaneously. This steering technology is useful for cruise ships and naval vessels as well as commercial airlines and military aircraft. Similarly, the DoD may be interested in funding enhancements to the Ku-band transponder, which may benefit military unmanned aerial vehicles and also benefit greater broadband use services available on commercial airlines. In light of the interrelated nature of military communications and commercial communications, it is particularly important that the ITAR controls for hosted payloads be specific to the military technologies that DoD intends to protect. Subjecting dual-use technology enhancements to ITAR-control solely due to DoD funding imposes licensing costs and delays that would impede the capability of U.S. industry to competitively serve DoD's interests without a corresponding benefit to national security.

3. **New ITAR restrictions such as those currently proposed are unnecessary because**

existing ITAR clauses would be sufficient to control critical technologies funded by DoD.

For example, other HoPS mission candidates, such as infrared payloads like those used on CHIRP for missile warning detection, would clearly be covered under existing policy. Alternatively, to the extent DDTC and DoD intend to include a 'catchall' for future technologies potentially not contemplated by current ITAR regulations, DDTC has potentially less overly broad options than "DoD-funding" to achieve that objective. For example, it could include a catch all for experimental technologies developed by DoD for a potential military end use as opposed to scientific experimental technologies.

The recommendations suggested above should permit DoD to ensure national security without negatively impacting its own procurement objectives and the commercial benefits it seeks to gain through partnerships on hosted payloads with companies such as those represented by the Hosted Payload Alliance.

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Overview of Activities

Key Issues Workshop and Panel at NSS
HPA held a Key Issues Workshop in conjunction with the National Space Symposium (NSS) in Colorado Springs despite the reductions in funded travel for U.S. Government employees and contractors. The full-day program "Hosted Payloads Key Issues Workshop" was held on Monday, April 8. Local representatives from Air Force Space Command participated in the interactive full-day workshop in person, whereas government representatives from Los Angeles and Washington, D.C., participated via live two-way video connections at U.S. Air Force Space and Missile Systems Center and NASA Headquarters, respectively. The Workshop facilitated open dialogue between government and industry, tackling key issues that are potential obstacles for more widespread use of hosted payloads. HPA also presented a one-hour panel discussion, "Hosted Payloads: Issues & Evolution," on Wednesday April 10.

Satellite 2013
HPA hosted a panel at Satellite 2013. Moderated by David A. Turner, Deputy Director Space & Advanced Technology, U.S. Department of State, panel informed and educated best practices to-date on the issues and mutual benefits of hosting government payloads on commercial satellites. Reflecting a range of experience from both government and industry, the panel included Dylan Browne, Vice President Business and Market Development, Astrium Government Services, Inc.; Prasun N. Desai, PhD, NASA; and William Gattle, Vice President, Aerospace Systems, Harris Corporation.

HPA Hill Day
HPA held its first Capitol Hill Outreach event on July 24 in the Capitol Visitor Center. The event featured satellite industry experts speaking on the government advantages of leveraging hosted payloads to increase accessibility to space.

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