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Hosted Payload Advances *from HPA*

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Message from the HPA Chairman



Over the past 12 months we have seen significant momentum towards hosted payloads as an alternative for technology maturation, research and development and operational space missions. There is now, at a minimum, a panel on hosted payloads at every space-related conference, an evident sign that the awareness of and interest in hosted payloads is higher than ever before. I believe we can all look back at 2012 and identify key moments and events where hosted payloads gained traction in the market, and our annual meeting at SATCON was a shining example of just how far we have come in the past year.

The Hosted Payload Alliance has been instrumental in building awareness and educating potential users on the benefits and business opportunities associated with wider adoption of hosted payloads.

Whether supporting the development of a benchmarking report on current and historic hosted payload programs or organizing a hosted payload acquisition workshop with the U.S. Air Force Space and Missile Center and NASA, we have been successful in our mission of bringing together government and industry to engage in an open and honest dialog on the issues confronting the success of hosted payloads.

However, all the talk is useless unless there are actions that follow. So, what are the results? What are the tangible actions that have occurred over the past 12 months that point to progress on moving hosted payloads to a mainstream alternative? I'm happy to report there has been

tremendous progress and many examples of accomplishments, which can be seen in the Australian Defense Force payload on Intelsat-22, the Air Force's CHIRP program, Space Systems/Loral's LCDR hosted payload contract with NASA, European Commission's EGNOS payload on SES-5, and in the formation of Aireon, who will provide global space-based ADS-B through a hosted payload on Iridium NEXT. Euroconsult has also completed a study identifying 50 hosted payload programs launched or in progress and 11 scheduled for launch in the next 3 years – a testament to the HPA.

All of these accomplishments are certainly a start, but we have many challenges still ahead. For every panel discussion that helps increase the awareness of hosted payloads, more and more challenges are identified. There are challenges in the procurement processes and strategies that impede the success of hosted payload programs. There are challenges in aligning the planning process and timelines for government entities versus commercial companies. There are operational constraints between government hosted payloads and commercial operations. And of course, the ominous and omnipresent budget issues and the threat of sequestration. How do we take these sometimes seemingly insurmountable challenges and build on these successes?

I believe the first step in finding answers is through the leadership of the HPA. As an organization, we have been tasked with the education of users and raising the awareness of hosted payloads as a viable alternative to access space. The expertise that lies within our 14 member companies is unmatched, but we have only begun to roll up our sleeves and dive deep into these challenges that confront us all.

As the Chairman of the HPA Board of Directors, it has been an honor to participate in the many endeavors of the HPA over the past 12 months. In the next year it will be important for the HPA to focus on the challenges confronting hosted payloads and how we can find solutions. I can think of no other group better equipped to address these challenges and continue the momentum we have already seen in the industry.

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HPA 2012 – A Year in Review

From its inception, the Hosted Payload Alliance (HPA) has adhered to the original purpose idealized by the founding seven company members: to increase awareness of the benefits of hosted government payloads on commercial satellites and bring together government and industry in an open dialogue. The original seven company members – Boeing, Intelsat, Iridium, Lockheed Martin, Orbital, SES and Space Systems/Loral – carried through on this vision, and the HPA was officially born on January 1, 2012.

2012 was an extremely busy and productive year for the HPA: seven additional Executive Members joined: Arianespace, ATK Space Systems, EADS NA, Harris, Inmarsat, Northrop Grumman and Raytheon, while two Associate Members – International Launch Services and Thales Alenia Space North America – also joined.

Conference Sessions

HPA has worked diligently to promote the concept of hosted payloads by holding panel sessions and workshops throughout the year. The first was the Hosted Payload Forum back in March at Satellite 2012 in Washington, D.C. The full-day forum explored a broad range of critical and exciting issues such as CHIRP, non-traditional acquisition initiatives and joint capability procurement methods, and in typical HPA style, the panels featured both domestic and

international expert speakers.

This was followed by the 2012 National Space Symposium in Colorado Springs, Colorado, in April, where the HPA organized a well-received panel session entitled “Hitching a Ride – All About Hosted Payloads” moderated by General Lance Lord, USAF (Ret), with Arnold Friedman of Space Systems/Loral representing the HPA.

Other notable engagements in 2012 included “Reinventing Space” in May, where Board Member Jim Mitchell (Boeing) presented “Governments Turn to Hosted Payloads for Cost Savings & Risk Sharing” on behalf of the HPA. The Alliance also had a presence at the Future Space Leaders Seminar in Washington, D.C., in July, where Don Thoma (Iridium), Dave Anhalt (Space Systems/Loral) and Tip Osterthaler (SES) participated in a panel session entitled “Leveraging Hosted Payloads and Next Generation Satellite Systems.” The September Hosted Payload Summit was very well attended with a large number of members serving as panel moderators and speakers, including HPA Chairman Don Thoma, who delivered the opening remarks for the event.

Rounding up the year’s busy conference schedule, the Hosted Payload Alliance organized a conference session at SATCON in New York in November. Don Brown of Intelsat General moderated the session titled “A New Political and Economic Environment for Hosted Payloads?” (See article in this newsletter titled [“Food Trucks and Hosted Payloads – HPA AT SATCON 2012”](#))

Special Activities and Events

In May, the HPA Key Initiatives Committee produced a position paper providing recommendations for changes to the U.S. Space Transportation Policy. The position paper recommended adjusting the foreign launch exemption process to facilitate solutions for U.S. Government payloads hosted on commercial satellites that are likely to be launched overseas. This paper was sent to officials at NASA, NOAA, the U.S. Department of Defense and the White House National Security Council.

In July, a contracting workshop was held between Air Force SMC and the HPA with a focus on procurement best practices, resulting in more than 600 pages of notes, and these are currently being distilled by an ad hoc committee into a white paper. HPA workshops serve as key elements in shaping future government procurement activities as related to hosted payloads.

The HPA Communications Committee was instrumental in partnering with SatNews to initiate a standing monthly editorial spot – “HPA Corner” – in each issue of the publication, which features recurring topics and perspectives from HPA member organizations. HPA Corner debuted in October and discussed the Foreign Launch Exemption Process for Hosted Payloads and the U.S. Space Transportation Policy White Paper. The November issue focused on recent legislative activities regarding commercially hosted government payloads in the aptly named “Hosted Payloads and Capitol Hill: The Good, The Bad and The Ugly.”

HPA partnered with Euroconsult to deliver the hosted payload benchmarking project results via HPA’s first ever webinar in October. The webinar, entitled “Unleashing the Potential of Hosted Payloads,” featured HPA members Don Brown (Intelsat), Dave Anhalt (Space Systems/Loral) and Don Thoma (Iridium), as well as Colonel Scott W. Beidleman (U.S. Air Force SMC) and was moderated by Susan Irwin and Nathan De Ruiter of Euroconsult. The webinar revealed key findings of “Hosted Payloads: A View From Within,” a work that produced comprehensive analysis of the current and future status, trends and opportunities for government payloads riding on commercial satellites, recently published by Euroconsult.

To round out the year, the HPA combined forces with NASA on a working meeting to discuss topics revolving around policy, business and technical aspects of hosting NASA science

instruments and technology demonstration payloads on civil and commercial spacecraft. This working meeting was held at the NASA Headquarters in Washington, D.C., with Lori Garver, NASA Deputy Administrator, as the Keynote Speaker.

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HPA Board Welcomes New Executive Committee for 2013

HPA is pleased to introduce the incoming Board Officers for 2013. The Chair, Vice-Chair, Treasurer and Secretary are elected annually by the Board of Directors. In addition to the Immediate Past Chair, these Officers constitute the Executive Committee and carry out the directions and decisions of the HPA Board between its monthly meetings.

Chair Janet Nickloy

Janet Nickloy is the Director of Aerospace Mission Solutions for Harris Government Communications Systems (GCS). GCS develops, produces, integrates and supports advanced communications and information systems that solve the mission-critical challenges of its defense, national intelligence and civil agency customers worldwide. In this capacity, Ms. Nickloy has primary responsibility for establishing and executing growth strategies within Aerospace Systems. Aerospace Systems encompasses payloads, electronics and structures for commercial and government space platforms; avionics and electronics and communication systems for airborne platforms; and networks, strategic and tactical terminals for military applications.

Prior to being named to her current position, Ms. Nickloy served as the Director of Business Development for the Space Communications Systems business, leading the organization to unprecedented growth in Harris' space payload business. Before that, she was the Director of Programs for Harris' NASA business. Previously, she served as Vice President of Engineering for the National Programs Business Unit, responsible for technical management of approximately 2,000 engineers servicing the Intelligence Community and adjacent government and commercial markets.

Ms. Nickloy holds Bachelor and Master of Science degrees from the University of Cincinnati, graduating summa cum laude. In addition, she is a graduate of the Mahler Advanced Management Program and the Leadership Directions Program at the University of Virginia Darden School of Business.

In addition to her role on the board of the Hosted Payload Alliance, she serves on the advisory council of the Space Coast Economic Development Council. She is also a member of the American Institute of Aeronautics and Astronautics (AIAA) and Women in Aerospace (WIA).



**Vice-Chair
Nicole Robinson**

Nicole Robinson joined SES Government Solutions (SES-GS) in November 2007 and currently serves as the Vice President of Marketing and Corporate Communications. Ms. Robinson provides the strategic direction for all external marketing and communications initiatives for the company, with the objective of raising awareness of SES and the role of commercial satellite operators in meeting the communications needs of the U.S. Government. In this position, she is also responsible for shaping the corporate Government Affairs strategy.

As an advocate of innovative ways of utilizing commercial satellites to deliver time and cost effective solutions to the government, Ms. Robinson serves as the Communications Committee Chairman of the Hosted Payload Alliance and is also the recipient of a 2012 Future Leaders Award by the Society of Satellite Professionals International.

Prior to joining SES, Ms. Robinson served as the Strategic Communications Lead at the U.S. Joint Forces Command's Standing Joint Force Headquarters (SJFHQ). As an on-site contractor with General Dynamics, her responsibilities included the facilitation of Public Affairs campaigns and activities between the headquarters office and rapidly deployed Joint Task Force Headquarters led by flag level officers and established in locations around the world. These activities range from annual and campaign-specific Strategic Communications plans to management of all media relations activities for the SJFHQ as well as media training for more than 80 senior military officers.

Before joining General Dynamics, Ms. Robinson managed the promotional and communications activities in support of the U.S. Army Center of Military History's project, the National Museum of the U.S. Army. She is certified in Federal Financial Management by the Federal Training Center, completed her bachelor's degree in communications at Radford University, earned an MBA from Liberty University, and is a graduate of the Senior Executives in National Security Program at Harvard Kennedy School of Government.



**Treasurer
J.R. Jordan**

J.R. Jordan is Senior Manager of Strategy and Business Development for Raytheon Space and Airborne Systems, Space Systems product line. In this position, he is responsible for leading, developing, coordinating and directing all existing and developing sales efforts, as well as marketing and business development strategies for Mid-Sat class of electro-optical, infrared class satellite payloads. He is also responsible for identifying and creating competitive advantages to position space systems for continued growth.

Before joining Raytheon in 2011, Mr. Jordan served in the United States Air Force at the Space and Missile Systems Center in Los Angeles, where he was Vice Wing Commander for Space Superiority and the Mission Director for the Space-Based Space Surveillance System. He has held a wide range of program management positions, managing and directing programs within the Air Force, Joint Staff and joint agency arena. His leadership was crucial in the development of the F-16, Missile Defense, high-energy weapons, strategic missile warning and space superiority systems.

Mr. Jordan holds a bachelor's degree in industrial systems technology from the University of Nebraska, as well as several master's degrees. He is a graduate of Defense Systems Management College at Ft Belvoir, VA, and National War College at Ft. McNair, Washington D.C.



Secretary
Col. David A. Anhalt

Col. David A. Anhalt, USAF (Ret), joined Space Systems/Loral (SS/L) as Vice President of U.S. Government Solutions in February 2011. Mr. Anhalt leads selected strategic initiatives in the company's current and adjacent markets and promotes new technology, business approaches and product offerings supporting future growth in the national security space sector. He is also an Associate Fellow in the American Institute of Aeronautics and Astronautics.

Mr. Anhalt's 28-year military career included a broad array of research and development, test operations and program management responsibilities in both the airplane and space sectors. His final military assignment was Chief of the Space Control and Advanced Technologies Division for the Undersecretary of the Air Force where he directed the development and procurement of defensive and offensive counterspace systems. Prior to that, Mr. Anhalt was the Air Force Military Assistant to the Director of Net Assessment, Office of the Secretary of Defense, where he directed comparative analyses of U.S. and foreign use of precision strike weapons and space systems in warfare.

Mr. Anhalt is a graduate of the U.S. Air Force Test Pilot School and has held several key positions in the test and evaluation of air and space systems including flight test engineer for the Airborne Laser Laboratory and the F-117 stealth fighter; chief scientist for acquisition, tracking and pointing at the Strategic Defense Initiative Organization in the Pentagon; and director of engineering for the combined contractor-government test team for the Joint Surveillance Target Attack Radar System (JSTARS). Mr. Anhalt earned a BS degree in Electrical Engineering from the U.S. Air Force Academy. He holds an MSE degree in Aerospace and Mechanical Sciences from Princeton University; an MEEE degree in digital design and control theory from the University of Idaho; and a Masters in international relations from Queen's University in Ontario, Canada.

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Joint Working Meeting Hosted by HPA and NASA Headquarters

NASA and HPA held a successful joint Working Meeting on Wednesday, December 12, at NASA Headquarters in Washington, D.C. The meeting, which was open to the public, brought in more than 125 attendees. The purpose of the Working Meeting was to discuss policy, business and technical aspects of hosting NASA science instruments and technology demonstration payloads on civil and commercial spacecraft. The principal organizations involved in the meeting were the Technology Demonstration Missions (TDM) Program of NASA Space Technology Program Directorate, the Earth Science Division (ESD) of the NASA Science Mission Directorate (SMD) and the Hosted Payload Alliance (HPA).

The agenda focused on policy and business issues concerning the commercial hosting of government payloads. Organized as a series of moderator-led panel discussions, the program featured topics including the planning and decision process; mission-dependent architectural

considerations; procurement practices, acquisition models and contracting guidelines; policy enablers and inhibitors; and the path forward for hosted payloads.

The following day, NASA hosted the Common Instrument Interface (CII) Guidelines Working meeting. Its focus was on the technical issues of NASA hosted payloads, specifically the CII deliverables as they apply to Low Earth Orbit and Geostationary Earth Orbit.

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Iridium Finalizes Joint Venture with NAV CANADA

Aireon, a new joint venture that will deliver the first-ever space-based global aviation surveillance system, is one step closer to reality now that Iridium has finalized its agreement with NAV CANADA.

Representing a huge achievement for the entire hosted payload community, Aireon demonstrates how commercial entities can successfully leverage extra space on their satellites to help solve the challenges that many governments are facing within their space programs. By deploying ADS-B receivers on Iridium satellites, Aireon is able to extend the reach of all the ADS-B ground stations that are being built today in the U.S., Canada and around the world.

“Aireon is yet another example of how Iridium has used its unique global satellite network to be at the forefront of innovation. Finalizing this joint venture is a milestone achievement for commercially hosted payloads, and I am proud that Iridium is leading the charge with our Iridium NEXT constellation,” said Matt Desch, CEO, Iridium.

Through an innovative public-private partnership, Aireon will utilize the hosted payload space on the Iridium NEXT constellation to offer a revolutionary capability to the aviation industry. This unique opportunity is so transformational for Air Traffic Management that NAV CANADA will be both a joint venture partner and a customer of Aireon. As the second largest ANSP in the world by traffic volume, NAV CANADA will use the service to monitor air traffic in the busy North Atlantic airspace, potentially resulting in \$110 million in fuel savings per year.

The creation of this joint venture is an important step in bringing critical innovation to market and demonstrates how industry and governments can come together to utilize commercially hosted payloads to bring a global solution to fruition.

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European Payload Launches On Board SES-5

The European Geostationary Navigation Overlay Service (EGNOS) was contracted with SES in order to provide European navigation services alongside the American GPS, the Russian-led GLONASS systems and for the future European GALILEO system.

SES is supplying the first two commercial payloads for EGNOS following two completely separate tenders by the European Commission. These two tailor-made payloads operate in the L-band to help verify, improve and report on the reliability and accuracy of positioning signals in Europe.

The first EGNOS payload was hosted on board the SES-5 satellite, built by Space Systems Loral, and launched on July 10, 2012. The second payload will be on an SES satellite scheduled for launch in 2013.



Photo courtesy of SS/L

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Hosted Payload Launch Wrap-Up for ILS for 2012

International Launch Services (ILS) launched its first hosted payload for 2012 for Intelsat with the Intelsat-22 satellite with a specialized UHF communications payload for the Australian Defence Force.

This supersynchronous transfer orbit (SSTO) mission for ILS Proton resulted in 18 years of operational maneuverable lifetime for Intelsat-22.

The Y1B satellite, launched in April 2012 for Yahsat of Abu Dhabi, included a payload to serve the UAE government and military as well as commercial customers. The third hosted payload delivered this year by ILS was on the SES-5 satellite, launched on July 10. SES-5 carried the first EGNOS (European Geostationary Navigational Overlay System) payload developed by the European Commission (EC) as well as capacity for SES' commercial customers.

Three out of the eight ILS Proton missions launched in 2012 included hosted or dual-use payloads to serve government clients to deploy civil or military applications. Upcoming for ILS is the Anik G1 satellite for Telesat, which includes an X-band payload for Paradigm.

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Food Trucks and Hosted Payloads – HPA at SATCON 2012

Lori Garver, Deputy Administrator, NASA, suggested that the Food Truck Association has much in common with the Hosted Payload Alliance, at the Hosted Payload Alliance organized panel session on Thursday, Nov. 15, at the SATCON Conference in New York. She noted that hosted payloads are like food trucks – they offer a quick and cost-effective solution to meet an important and immediate need.

She went on to say that beginning with ice cream trucks, the food truck industry has evolved to providing new, more creative offerings. Just like hosted payloads, food truck solutions are driven

by advances in new technologies, such as phone apps, and require a whole new set of regulations and policies. Food trucks are a great way for the consumer to get more high-quality calories per dollar spent than they would at dedicated restaurants. But she said they will never put restaurants out of business, in the same way that government agencies will continue to require dedicated satellites even though hosted payloads can provide viable solutions for a variety of missions.

The panel discussion, titled “A New Political and Economic Environment for Hosted Payloads?” was moderated by Don Brown of HPA member company Intelsat General. Brown commended Ms. Garver for helping to pave the way for real change. Ms. Garver referenced the recently awarded Tropospheric Emissions: Monitoring of Pollution (TEMPO) project as an example of NASA taking advantage of commercial GEO satellite capabilities to get an earth sciences instrument on orbit in five years instead of ten, at one-third of the cost of a dedicated mission. She mentioned TEMPO as an example of how hosted payloads will enable more science sooner.

Ms. Garver wasn't the only one on the panel to suggest a colorful analogy for hosted payloads. Patrick Campbell, Partner, Washington, Paul, Weiss, Rifkind, Wharton & Garrison LLP, said that he was surprised that we don't see even more regulatory issues related to hosted payloads. Campbell suggested that hosted payloads are more like antennas that are placed on top of buildings. He said that you don't need to build an entire building if your goal is to provide a service from an antenna on the roof; however, he noted that the government has to act more like a commercial organization. He said he has seen situations where a deal is almost completed, and then at the last minute it falls apart because the customer doesn't get the appropriation.

The panel discussion ended on a positive note and the Hosted Payload Alliance was commended for influencing NASA and the Air Force SMC Hosted Payload Office to work together to address the obstacles of putting government missions on commercial satellites. Ms. Garver said that the biggest obstacle is overcoming the status quo and that the operational issues are less of a challenge than the trust required to work across agencies and industry. She noted that the key element needed is leadership, and the private sector has an important role to play.

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