

Panelists Address the Whys and Wherefores of Privatization

As Congressional representatives mull legislation re-vamping the nation's air traffic control (ATC) system, privatization has become a pressing topic. During a Wednesday morning session, a panel of ATC stakeholders offered insights into three key questions posed by moderator Stephen Van Beek, ICF International:

- What is the problem, if any, with the way we deliver air traffic control?
- What are the solutions or alternatives for addressing any problems, and what are the politics of reforming air traffic control?
- Can we develop a consensus for whatever reforms are necessary?

Van Beek also brought up a key fourth question: "Are we just going to kick the can down the road for several more years?"

Bob Poole, Reason Foundation, responded that now may finally be the time for sweeping ATC reform. "I think we are at a moment in time that we've never seen before. There's major dissatisfaction from two big users: airlines and controllers," he said. "And that's opening a window of opportunity. The stars are lining up in a way that may make privatization possible."

Paul Rinaldi, NATCA, agreed. "The status quo is unacceptable. We're in a moment of time where we have a window to get something positive done." Rinaldi said air traffic controllers are "open to the discussion for some type of new structure, but we don't want to change just to change."

"First and foremost, we need more

Continued on page 4

SID KOSLOW RECEIVES GILBERT AWARD



Sidney (Sid) Koslow accepts the 2015 Glen A. Gilbert Memorial Trophy. Vice President and Chief Technology Officer of NAV CANADA, Canada's Air Navigation Service Provider, Koslow "truly embodies the spirit of the Gilbert award," said Neil Planzer, ATCA's Chairman. "He has been an agent of progress through multiple roles and organizations, and has made a lasting impact on a global level through innovation and professionalism." (See Gilbert Gala photos on page 7).

Bristol Discusses the Future of the ATO



In 1985, the movie "Back to the Future" predicted that drones would be zooming through our skies on Oct. 21, 2015. If a similar movie were made today, what would the U.S. airspace look like three decades from now? Or two decades, one decade, or even one year from now?

Teri Bristol, chief operating officer of the Air Traffic Organization (ATO) at the Federal Aviation Administration (FAA), posed those questions during her "State of the

ATO" presentation on Nov. 4.

While even Doc Brown doesn't know what types of aircraft will be flying decades from now, Bristol did give a glimpse of what next year's airspace will look like, based on the following ATO priorities:

Safety. The FAA's voluntary safety reporting initiative, Technical Operations Safety Action Program (T-SAP), yielded more than 700 reports and 122 corrective actions last year, Bristol said.

Top 5 Hazards in the NAS. Bristol said the 2016 list focuses

Teri Bristol, Chief Operating Officer, ATO, delivers the Keynote Address: State of the ATO on Nov. 4.

Continued on page 10



#ATCA60

@HarrisCorp

Congrats #HarrisCorp 's John O'Sullivan, recipient of the 2015 George W. Kiske Memorial Award presented at #ATCA60!

@RC_ARINC

Thank you to members of both our commercial #aviation team and our Washington office for a great week at #ATCA60

ATCA TODAY

60th ATCA Annual
Conference & Exposition

Annual Conference Committee

Patrick Forrey, SAIC
Jim Ries, CSC
Maureen Woods, Rockwell
 Collins/ARINC
Tony Ioannidis, SAIC
Jerry Hoff
Ivan Bekkers, Crown
 Consulting
Pamela Whitley, FAA
Roger Stern,
 Lockheed Martin
Mike Ball, Northrop
 Grumman
Mike Borden, General
 Dynamics Information
 Technology
Tony Militello, MITRE
David Batchelor, SESAR
 Joint Undertaking
David Heron, U.S.
 Department of Defense
Jessie Hillenbrand, Aireon
Bill Colligan, Architecture
 Technology Corporation
Mark Rodgers, CSSI, Inc.
Mike Hawthorne, Noblis
Katie Kondub, Noblis (YAP)
Bruce Carmichael, NCAR
Kara Evanko, Metron
 Aviation
Mary Griggs, HPE
David Grizzle, Dazzle
 Partners, LLC
Jonathan Fath, Harris
Mark Rodgers, CSSI
Eric Nixon, Engility
 Corporation
Jim Johnson, JVS Solutions
Donna McLean, Donna
 McLean Associates, LLC

ATCA Staff

Peter F. Dumont
 President and CEO
Marion Brophy
 Director, Communications
Ken Carlisle
 Director, Meetings and
 Expositions
Theresa Clair
 Associate Director,
 Meetings and Expositions
Ashley Haskins
 Office Manager
Kristen Knott
 Writer & Editor
Christine Oster
 Chief Financial Officer
Paul Planzer
 Manager, ATC Programs
Rugger Smith
 International
 Accounts
Ashley Swearingen
 Press and Marketing Manager
Sandra Strickland
 Exhibition and Events
 Coordinator
Tim Wagner
 Membership Manager

UAV Safety and Management Goes High Tech

In the near future, unmanned aerial vehicles (UAV) could deliver 6 billion packages per year in crowded urban airspaces, said Dave Vos, PhD, during a keynote address Nov. 2.

That's why it's key that the fledgling UAV industry collaborate with the established aviation industry, said Voss, project lead for Project Wing, Google [X]'s unmanned vehicle delivery program.

"We want to be plugging into airspace, not demanding that the airspace plug into us," he said. "We're building a culture where we're the new guys so we will get out of the way, rather than saying 'We're the new guys so you need to get out of our way.'"

But with the exploding growth, "we can't wait for the typical rule-making process," Vos said. "We need to deliver near-term solutions that help build this community so there's a greater level of accountability. We're working with a new domain of people who are not bad people, but are just simply not informed as to what the consequences can be of operating something in the air."

About 2 million UAVs have been sold in the last one to two years, Vos said, and that's compromising safety of all aircraft.

"Serious issues are happening and we really do need to take responsibility as a budding, exciting industry," he said. "We need to figure out ways to collaborate with the current aviation community, and not have to relearn the aviation lessons learned over the last half century."

Vos said within the next 12 months, the UAV industry wants to implement a plan for registration, identification, and authentication of small UAVs that fly below 400 to 500 feet.

"We are really focused on low-altitude, class G airspace in pop-



Google [X]'s Dave Vos gave attendees a potential drone delivery launch date on Nov. 2.

ulated areas," he said. "In that domain, a lot can be done in this marketplace without displacing manned aviation."

The plan is to register UAVs by tail number and operator name, and then securely authenticate them via the Internet. "This shows thorough and due respect for the way the aviation world works today," Vos said

"We need to figure out ways to collaborate with the current aviation community, and not have to relearn the aviation lessons learned over the last half century."

— David Vos, Google [X]

But getting hobbyists to register their UAVs can be difficult. Vos compared it to buying a cellphone. Most users throw out the box and instructions and just start punching buttons, he said. A difficult or time-consuming registration technique could cause non-commercial UAV users to simply bypass that step.

That's why developers are looking at "very scalable solutions," such as apps people can use to register their UAVs, he said. "The registration step needs to be really elegant, seamless, and smooth, so you just do it by course."

Once people are registered, they and their aircraft are identifiable. "And traceability and responsibility comes with publishing your identity," Vos said. "It encourages the entire safety level of the industry to come up." For instance, there could be apps in which users could flag UAV operators who are misusing the airspace. "Your cellphone should start yelling at you in a really big way if you're flying incorrectly," he said.

There are also plans underway to equip every UAV with low-power automatic dependent surveillance-broadcast (ADS-B) receivers and to increase low-power ADS-B equipage in helicopters. This would allow UAV users in high-traffic, urban areas to listen to other users in the same or nearby airspace and coordinate their flying patterns.

The cellphone industry is very

Continued on page 8

ENGAGE WITH ATCA



Join ATCA's LinkedIn Group
www.linkedin.com/groups?gid=1823489



Visit ATCA's Flickr Photostream
www.flickr.com/ATCA_now



Like us on Facebook
www.facebook.com/AirTrafficControlAssociation



Follow us on Twitter
www.twitter.com/ATCA_now

ATCA and the FAA Catch Up by the Fireside

The fireplace for the Nov. 3 fireside chat between ATCA President and CEO Pete Dumont and Federal Aviation Administration Administrator Michael Huerta may have been virtual but the conversation was real, honest, and insightful.

Here's a summary of what was top of mind for these aviation leaders.

Dumont: What keeps you up at night?

Huerta: We are in a period where we're seeing accelerating change in the aviation industry. For instance, the UAV (unmanned aerial vehicles) registration task force just kicked off. According to the Consumer Electronics Association, 700,000 UAVs will be sold between now and the end of the year, which means we soon will have more unmanned than manned aircraft.

I also worry about cyber threats. Are we becoming too dependent on the system and losing our essential safety skills? Then there's the workforce – all of us are getting older. But overall, I'm optimistic. This is an

industry that's always been able to adapt to changes.

Dumont: The comment period for the UAV task force is under-way now, with a report scheduled for Nov. 20. Will the quick timeline mean quick implementation of the recommendations?

Huerta: The UAV task force is probably the most desired assignment the FAA has ever had. My recommendation to them is to think big – what does the industry need? The idea is we want to have something we can implement by the end of the year.

The current legal framework requires registration of aircraft and unmanned aircraft. So we're looking at what the FAA may choose to exempt. The current registration process for aircraft is like buying a house – it requires financial documentation and establishing property interest. Those aren't the same issues for a \$200 aircraft. But we do want an ability to tie an individual to a particular aircraft.

Continued on page 11

FAA Administrator Michael Huerta and Peter F. Dumont, ATCA's President & CEO, had a far-ranging chat Nov. 3. Topics included the UAV registration task force recommendations, FAA reform, and the future of the industry.



SUNHILLO



Introducing the Sunhillo **RICI 5000**. The Next Generation of our extremely successful RICI 4500 radar data distribution and conversion product. MPS Version available.



*RICI 5000 dual mount

www.Sunhillo.com



Award-winning subsidiary of Sunhillo Corporation providing qualified, competent, and customer focused talent to the FAA WJHTC and partners throughout the industry.

www.SunhilloTS.com

ISO9001:2008 Certified

In the SWIM: Past and Present Managers Analyze the Program's Worldwide Influence

The Federal Aviation Administration's SWIM Connect 2015 education series at the 60th ATCA Annual closed with a look at SWIM's global impact in the past, present, and future.

A trio of former SWIM (System Wide Information Management) program managers, along with current manager Jeri Groce, gave their perspectives on the massive program's implementation, funding, and influence on other countries' air traffic control computer systems.

Mike Hawthorne, who is now with Noblis, said in SWIM's infancy there were a lot of questions about its value. "Some of those questions exist today," he said. "SWIM is a great enabler, but it's difficult to develop hard facts about the benefits. It was a very hard sell to the JRC (Joint Resources Council of the FAA) because it's about data, not about moving boxes. We were asking for a huge agency investment that's about stakeholder management rather than contractor management."

The key, he said, was to "figure out what SWIM means to us. Even the term means something different to different parts of the world. We made a very deliberate decision to get our own house in order, figure out the value proposition of SWIM, and explain why we thought that was important. And then we were able to take it to the international community."

But as painful as the SWIM evolution has been, Hawthorne believes stakeholders today realize the extreme importance and pervasiveness of the program.

In fact, he said, "Most people don't realize when you dial back 10 years, ADS-B (Automatic Dependent Surveillance-Broadcast) and SWIM were the two jump-start trends for NextGen. So SWIM predated NextGen and was foundational for it. You literally can't do NextGen without SWIM."

Ahmad Usmani, FAA, said today, "we see a lot of other countries trying to do what we've done. We really



Ahmad Usmani, FAA (far right), talks about his experience with SWIM as colleagues, Don Ward, FAA, Mike Hawthorne, NOBLIS, and moderator Jeri Groce, FAA, look on during a SWIM Connect 2015 presentation Nov. 4.

are world leaders when it comes to SWIM, and I think that's something we need to try and protect as things evolve internationally."

Usmani said the Asia Pacific Common Virtual Regional Private Network (CRV) is working on building a regional version of SWIM. "I'm guessing something similar will

happen in Europe and the Americas, and then all of those networks will link together," he said.

Don Ward, FAA, said it's important to keep in mind that those networks will likely have different architecture than SWIM, so "we'll need to figure out how to work together."

Privatization

Continued from page 1

stable funding," he said. "Funding starts and stops, and short-term extensions play into uncertainties. And the FAA has to plan for all uncertainties. We spent a lot of time, energy, and money planning for the sequester."

Peter Challan, Harris Corp., agreed. "The dysfunction in the budget has a ripple effect on the ability of the FAA to execute its mission. I honestly believe had we not had the sequestration, we would not be here today, discussing privatization."

But other panelists weren't so sure privatization is on the horizon. Mark Baker, Aircraft Owners and Pilots Association, said a temporarily stabilized FAA budget may have diminished the appetite for change.

"Our organization doesn't have a problem with the current system," he added. "We think it's actually working pretty good from a user standpoint."

Challan agreed that "the two-year deal has largely sucked the air and the energy out of (ATC) transformation." But he believes there's another factor in play—the flying public may actually be advocating for FAA change. "As a community, we don't publicize and articulate the advances we make in the national airspace system," he said. "I think that's a significant problem. The people who fly

"There's major dissatisfaction from two big users: airlines and controllers," And that's opening a window of opportunity."

—Bob Poole, Reason Foundation

don't understand the system."

David Grizzle, Dazzle Partners, posed his own question: "Why can't we just say there's a better way to fund the system through charging users for the costs they impose on the system, and wouldn't that flow to the balance sheets of users?"

But that would only solve part of the problem, he said. "Even if you have funding that has a better relationship to the people who provide the services, there's still a fundamental problem with the way the FAA conducts its procurement and provides human resources." Hiring processes in particular still "bear the same encumbrances you see elsewhere in the federal system," he said.

The ATC also hasn't been able to modernize systems, even when it has larger, more stable budgets. "We're not able to update obsolete equipment, and not able to manage human capital. We're way behind in training," Grizzle said. "Merely fixing the budget issues will not fix all three of those problems."

The large airlines may be advocating for privatization, but the smaller users aren't.

"We believe the fuel tax is the best possible mechanism for the aviation community to pay for its use of the system," said Ed Bolen, National Business Aviation Association. The fuel tax is easy to understand, easy to pay, and there's no recordkeeping or policy burden, he said. "Contrast that with user fees in the rest of the world. Everywhere we see a privatized ATC, it's funded with user fees. We haven't seen a privatized ATC that works in the way we would like in the United States."

Moving to the question of how a privatized ATC would be managed and governed, Poole said Congress tends to micromanage. But you won't hear that from the FAA, which can't speak openly about its bosses.

"The lesson I draw from over 50 countries that have self-funded their ATCs is that they have depolitized," and are run by a board of directors rather than the government, Poole said.

Other panelists brought up NAV CANADA as a possible U.S. model.

Rinaldi said NATCA is open to having discussions about a NAV CANADA-type system. Grizzle said he likes how the Canadian ATC fundamentally changed its relationship with vendors when it privatized.

"They moved to a system of incrementally refreshing their technology, just as you would do in private enterprise," he said. In contrast, he believes the current U.S. system places an incredible burden on vendors by requiring that technology be delivered 10 years out, with no changes in funding.



#ATCA60

@ascheirer

Airplanes can now self-separate. but system doesn't let them. What's the next vision? -Planzer #atc #nextgen #atca60

@ThalesUSA

To #FlyNextGen means improving efficiencies in the skies and on the ground. Thales shares that vision. #ATCA60



THE INTEGRATED TOWER SOLUTION THAT CHANGES AIR TRAFFIC MANAGEMENT

Our NAVCANatm fully integrated suite of air traffic management tools is designed to innovate and simplify controller workstations by delivering mission critical air traffic control information safely and efficiently. Scalable and customizable, this advanced technology offers a complete automation platform to support airport, tower and terminal ATC functions.

NAVCANsuite tower automation products provide controllers with an integrated platform for surface management, electronic flight data exchange, departure sequencing and scheduling, surveillance data integration, and enhanced data exchange with external stakeholders. Platform-independent and developed on an open architecture, this system is highly adaptable to any working environment.

Experience a solution that is proven worldwide and that controllers and airport operators trust. A system that changes air traffic management.

navcanatm.ca

NATO Director Outlines Five Specific Areas for Improvement

Aviation is one of the key weapons in the North Atlantic Treaty Organization (NATO) arsenal, said Ludwig Decamps during the Nov. 2 afternoon keynote address.

But because of the growing number of worldwide military conflicts, there's a pressing need for enhanced civil and military cooperation in five specific areas, said Decamps, NATO's director of armaments and aerospace capabilities.

In particular, the "new Russian attitude" changes the European environment and NATO's defense strategy, Decamps said.

"There are huge air limitations due to conflicts," he said. "If NATO had to start an operation tomorrow in the vicinity of one of the Middle East, African, or Baltic conflict areas, just imagine the huge impacts on civil air traffic if we had to close additional areas because of military operations."

Decamps said he and other NATO representatives are attending the CMAC conference and ATCA Annual in part to learn more about U.S. civil and military aviation cooperation.

"With an increasing focus on promoting cross-border operations in Europe, the airspace is so fragmented that it's very difficult to run

operations," he said. This is complicated by varying viewpoints among NATO's member states about what is acceptable when civil aircraft operates in support of NATO, he said.

Military Aircraft Requirements

Overall, Decamps said there needs to be increased recognition of military aircrafts' on-board requirements. "In the early days, aviation was military-heavy, but now it's civil-heavy, and the question is how should the military adapt to that changing environment?" he asked.

In particular, Decamps said it's important to understand what a single European sky means in terms of military training not only in Europe, but for American military operating in Europe. He believes NATO can be a facilitator in the standardization between military and civil operations.

Regarding performance equivalents, Decamps said it's key for NATO to build a common understanding among its 28 allies. This includes educating members about how performance equivalents can be implemented as an alternative method of compliance. NATO is establishing an equiptage database to help member nations develop a common understanding, he said.



Ludwig Decamps, NATO, discusses a shift in Russian attitudes and the resulting changes in European defense strategy at his Nov. 2 keynote address.

Cyber Defense Cooperation

Cyber defense is another area that needs enhanced civil-military cooperation. "NATO has a very integrated air control system. You could argue it's a kind of military SESAR," Decamps said. But the challenge is connecting this integrated system to a single European sky civil environment. This is an area where NATO can benefit from the U.S. experience of working in a single civil environment without compromis-

ing military security networks, Decamps said.

In regard to unmanned aerial vehicles (UAV), Decamps said NATO needs to set standards—perhaps incorporating American and European standards. NATO is buying five Global Hawks next year, and in light of difficulties with the Euro Hawk program, Decamps said NATO needs more experience in running UAV operations in support of NATO.

Post-NextGen, What's on the Horizon?

During a Nov. 3 keynote address, ATCA Chairman and Vice President of Boeing Airspace Solutions—ATM Neil Planzer looked to the future.

"The window for change in NextGen and SESAR is closed," he said. "NextGen in principle is done; SESAR in principle is done. So the question is what's next; what's over the horizon?"

Privatization and regulation of unmanned aerial vehicles (UAVs) are definitely issues on the horizon, but Planzer said neither is a long-term goal for the aviation community.

Instead, he believes aviation issues over the next 20 years will be driven by four market trends: growth spurred by emerging economies and low-cost carriers, a much more diverse and balanced market, continued strong aircraft replacement demand, and new airplanes and capabilities opening new markets.

Planzer said Boeing's Current Market Outlook, which tends to be historically accurate but on the conservative side, predicts that over the next 20 years the number of airline passengers will increase by 4 percent, and air traffic will grow by 4.9 percent.

Airlines will need 38,000 air-

planes, valued at \$5.6 trillion, to accommodate that growth. The Boeing report predicts 38 percent of those purchases will be in Asia, followed by North America at 21 percent, Europe at 19 percent, and the Middle East at 8 percent.

In essence, the global fleet will double, Planzer said, and not all of that will be replacement aircraft. In fact, Boeing predicts 58 percent of that growth will be in new planes.

The result? A strain on air traffic control. To help relieve that strain, Planzer believes there will need to be harmonization in system communications.

There are different harmonization solutions, depending on your perspective. From the airplane perspective, the horizon has to do with aircraft technology, he said.

"Our current system was created in the '50s and '60s to manage dumb airplanes," he said. "The system is fundamentally unchanged, but layered with much more capable technologies."

The result is that today's airplanes do some things better than ground technologies, Planzer said. The issue, then, is how to design a system that's geared toward what airplanes do best and what ground technology

"NextGen in principle is done; SESAR in principle is done. So the question is what's next; what's over the horizon?"
—Neil Planzer



does best.

"We're not talking about eliminating controllers, or autonomous airplanes with no pilots on board," he said. Instead, the goal is to figure out what needs to be done to generate optimal safety, efficiency, and capacity for the system.

Some solutions are already underway, Planzer said, like automatic dependent surveillance-broadcast (ADS-B) technology that allows five-mile aircraft separation over oceans. Other solutions include more focus on point-to-point airline systems that don't eliminate hubs, but allow incre-

mental growth.

He pointed out that in 2013-14, nearly all capacity growth was accommodated by frequencies and direct flights. That continues this year with innovations like a newly launched 787 route between Austin, Texas, and London Heathrow. "It's what passengers want—not bigger airplanes," he said.

Planzer closed with a question and an opinion. "What will the next vision need to be? If we don't replace SESAR and NextGen with a next vision, a next capability, then the system will get layered and its capacity will get strained."

Sid Koslow Receives 2015 Glen A. Gilbert Award



Sid Koslow is congratulated by family members and other gala attendees, after being presented the 2015 Glen A. Gilbert Award during a dinner at the 60th ATCA Annual and CMAC.



Sid Koslow gives heartfelt remarks during the evening's event.



The Capitol Steps perform during the 2015 Glen A. Gilbert Award Dinner.



ATCA President & CEO Peter F. Dumont (middle); his wife Vanessa Dumont (left); and Teri Bristol, Chief Operating Officer, ATO, FAA, enjoy a performance by the Capitol Steps, a comedy troupe, at the 2015 Glen A. Gilbert Award dinner.



Sid Koslow greets well wishers at the reception before the Glen A. Gilbert Award Gala Dinner.



FAA Assistant Administrator for NextGen Ed Bolton, Jr., laughs during a performance by the Capitol Steps, a comedy troupe at the 2015 Glen A. Gilbert Award dinner.

Space-Based ADS-B Launches to Begin Soon



Space Based ADS-B: Optimizing the North Atlantic by 2018.

ATCA Conference Proceedings Winners Announced

Thanks to all who participated by submitting 60th ATCA Annual Conference Proceedings – submissions were of high quality and were judged using a matrix evaluating the following areas:

- Technical Merit: Does the subject matter advance the sciences?
- Impact on Aviation: What is the likelihood of creating changes and being embraced by a larger segment of the industry?
- Currency/Timeliness of Topic: Is the paper in the right position in terms of timeliness to cause change?

First Place

Learning Aircraft Behavior from Real Air Traffic

By Arcady Rantrua, Eric Maesen, Sebastien Chabrier, Marie-

Pierre Gleizes

R&D Dept, Sopra Steria, Toulouse, France

SMAC Team, Paul Sabatier University, IRIT, Toulouse, France

Second Place

Standards for Data Quality Assurance in ATM Modernization Initiatives

By Aleksandar Balaban, mclick.aero, and Charles Chen, Skymantics, LLC

Third Place

Who's in Control? Securing Commercial Unmanned Aerial Systems Command and Control – A Methodology and Way Ahead

By Riverside Research, EWA Government Systems Inc.

In partnership with industry leaders and air navigation surveillance partners around the world, Aireon will be launching 66 automatic dependent surveillance-broadcast (ADS-B) satellites, making global air traffic surveillance a reality with the next few years.

During a presentation Nov. 2, Aireon Vice President of Sales and Marketing Cyriel Kronenburg said the aviation company is “very close” to the launch of the first ADS-B equipped satellite in Russia. After that, 10 satellites will be launched at a time, with completion scheduled for 2018.

“We’ll be able to see ADS-B traffic throughout the world with the same performance an ADS-B antenna provides,” Kronenburg said. But the advantage to a space-based ADS-B is that it works even when there’s no visibility because of line-of-sight and other restrictions.

It also can triumph over environmental and terrain issues, said Vinny Cappezzuto, Aireon’s chief technology officer and vice president of engineering. Ground-based ADS-B systems require real estate negotiations, access, and power. Some are so remote, they’re not accessible in winter.

That’s the case in northern Canada, said Larry Lachance, vice presi-

dent of operations for Nav Canada.

“We realized very soon there is a limitation to our capability of expanding surveillance in the remote areas of north Canada and over the north Atlantic,” Lachance said. This is particularly problematic because Air Canada is accountable for surveillance of oceanic traffic over the north Atlantic. Space-based ADS-B can make remote areas like Hudson Bay, which is twice the size of France, instantly surveillance capable, Lachance said. As a result, “when ADS-B is fully mandated worldwide we’re going to be ready,” he said.

Kronenburg said Nav Canada is an investor in Aireon’s space ADS-B system, along with ENAV of Italy, Navair of Denmark, and the Irish Aviation Authority.

Peter Kearney, director of air traffic management operations and strategy for the Irish Aviation Authority (IAA), said one way the IAA will use Aireon’s space ADS-B is for safety issues.

“When this is operational in 2018, we will be in a position to provide assistance to any aircraft,” he said. With a data refresh rate of eight seconds, IAA can notify search and rescue operations in almost real time. “It’s a massive advancement in safety for aircraft operations around the world,” Kearney said.

Heard in the Exhibit Hall

“Every time I hear, ‘Wow I didn’t know Booz Allen did that,’ I’m reminded of the value of exhibiting at ATCA and the opportunity to help the FAA advocate NextGen benefits through solutions like the Magic Map.”

— Josh Elliot, Booz Allen Hamilton (Booth #501)



UAV Safety

Continued from page 2

interested in this domain, Vos said, and is working on long-term evolution (LTE)-enabled devices that aren’t coordinated by air traffic control towers, and thus “don’t pollute the ADS-B system. It’s not feasible to command a huge amount of bandwidth and attention from air traffic controllers. We would provide info to ATCs as needed and desired by ATCs.”

Tech industry companies are also working on building airborne surveillance platforms (ASPs) that communicate directly with commercial and hobby UAV operators. Vos said the vision is to create an ASP

network in which any company can set up a data source that can be accessed by something as simple as a cellphone app.

“It’s a for-profit endeavor, open to anyone who wants to start a business that meets privacy and connectivity requirements,” he said. “There are already five to 10 companies working on these types of ASPs.”

These open-source ASPs encourage competition and advancement, Vos said. And they have redundancy, so if one network goes down, UAV operators can access other networks.

Within two years, it could be possible for UAVs to have on-board capability that wouldn’t even allow them to go into certain areas, Vos said.

Engaging Industry's Future Leaders by Thinking Outside the Box

The Bureau of Labor Statistics reports that 24 percent of the U.S. workforce is under the age of 30. But a new Partnership for Public Service survey found that age group only comprises 6.5 percent of the federal workforce.

During the session *Fostering the Future of Aviation* on Nov. 3, a group of industry experts discussed how to correct that issue and prevent the brain drain in the aviation and aerospace industry.

"We're having a problem as an industry in attracting the best and brightest," said panel moderator Katie Kondub, senior program analyst at Noblis. The problem is multifaceted, panelists agreed.

First of all, the aviation and aeronautics field needs an image overhaul, said Ariel Scheirer, senior financial analyst with Ascent Consulting and chair of ATCA's Young Aviation Professionals committee.

"The industry is not building practical tools to reach out to millennials," she said. "Millennials are the selfie generation, a generation focused on imagery. But most of the stock images of aviation are pilots—typically fighter pilots," she said.

Kyrandgel Rios of NATCA noted

that "the aviation industry has done a great job of making pilots rock stars, and now we need to do that for people like engineers, who are the masterminds of aviation."

Other panelists pointed out that the image overhaul needs to focus on educating young people that there are other careers in the industry besides piloting and air traffic control.

There's a whole automation system that's "clearly becoming the backbone" of aviation and aeronautics, Scheirer said. "How do you articulate that and demonstrate that to future generations?"

One idea is to engage STEM (science, technology, engineering, and math) teachers and students who traditionally don't focus on the aircraft industry.

Mike Greco, manager of the Federal Aviation Administration's (FAA) Air Transportation System Evaluation Branch, detailed the success of the Pathways internship program at the William J. Hughes Technical Center in New Jersey. Students majoring in STEM careers can intern in a variety of NextGen technologies not traditionally associated with the aviation industry. "We've got 180,000-190,000 square feet

"Millennials are the selfie generation, a generation focused on imagery. But most of the stock images of aviation are pilots – typically fighter pilots."
— Ariel Scheirer, Chair, ATCA's Young Aviation Professionals Committee



Rocio FrejVitalle, CSSI, and Ariel Scheirer, Ascent Consulting, share a laugh during the *Fostering the Future of Aviation* panel discussion.

of laboratories where they can get hands-on experience," Greco said.

NASA has a similar internship program, said George Finelli, aeronautics director at NASA's Langley Research Center.

Internships also help address another hiring issue: losing STEM majors to Silicon Valley companies that offer higher-paying, more flexible work.

It's hard for the government to attract people who can be hired to a \$250,000 programming job in their 20s, Finelli said. The government hiring process is also not as nimble as the private sector's, so the best talent can get multiple job offers while waiting for approval of an FAA or NASA job.

But on the positive side, Finelli

said Pathways interns can get experiences they can't get anywhere else. That includes being involved in research in unmanned aerial vehicles (UAVs). "Giving people the opportunity to put their hands on things and fly them is invaluable," he said.

At the end of the day, attracting millennials has a lot to do with non-traditional incentives, Rios said. "To quote Justin Timberlake, we've got to bring sexy back. Private industry does that through empowering people with the innovation process."

Added Rocio Frej Vitalle, systems engineer at CSSI: "It's more than pay. It's more about being part of the change, being part of the engagement. We need to feel like we are part of the industry, part of moving NextGen to the next level."



Mark Your Calendar for World ATM Congress 2016

BROADEN YOUR HORIZONS



World ATM
Congress 2016

8-10 March 2016
Madrid, Spain
IFEMA, Feria de Madrid

Make the
future of ATM
your business.

CANSO, the Civil Air Navigation Services Organisation, and ATCA, the Air Traffic Control Association, are delivering the innovation and education you need to meet ATM's future head-on. A global mix of ANSPs, ATC experts, and leading product developers and service providers will converge in Madrid, 8 – 10 March 2016, at the fourth annual World ATM Congress—the largest international exhibition and industry forum of its kind.

Register today at: WorldATMCongress.org

60th ATCA Annual and CMAC: One for the History Books



Tuskegee Airmen visited with attendees at the ATCA booth on the Exhibit Hall floor on Nov. 4.



Attendees network near the Boeing booth in the Exhibit Hall.



Exhibit Hall attendees visit the NAVCANatm booth on the last day of the 60th ATCA Annual and CMAC.



Peter F. Dumont, ATCA President & CEO, and FAA Administrator Michael Huerta share a lighter moment after discussing issues at the forefront of aviation.

Bristol

Continued from page 1

on helicopter operations, visual scanning by controllers, access

to weather hazard information, and two corrective standards associated with wake turbulence.

Runway safety. Serious runway incursions have been reduced by 44

percent, Bristol said.

Airspace. Terminal Automation Modernization and Replacement (TAMR) is in full production mode, Bristol said, and the NextGen Priorities Joint Implementation Plan has been submitted. This is a three-year rolling plan to address changing needs. Stable funding remains a key issue, Bristol said. "There is some certainty for the next two years, but we'll have to wait for final budget numbers to come in before we can set priorities."

Metroplex. When operations were launched in March in Denver, there were 1,200 required navigation performance (RNP) procedures, Bristol said. Within the first month of implementation, that number increased to more than 1,800.

SWIM Visualization Tool

(SVT). This technology has been installed at eight terminal radar approach control facilities (TRACONS). "Controllers are calling SVT a game changer," Bristol said.

Wake regulation standards. Due to wake turbulence recategorization (Wake RECAT), Bristol said FedEx reported 17 percent capacity gain at the Memphis airport.

Performance-based navigation (PBN). Bristol said this is a key part of NextGen, but there have been challenges in some locations regarding noise and other issues. "We're looking at ways to back up the process and engage much earlier with communities and other stakeholders—as early as the study phase," she said.

Teri Bristol, FAA Chief Operating Officer, ATO, talks with Peter F. Dumont, ATCA President & CEO prior to her Keynote Address: State of the ATO.



Huerta

Continued from page 3

So the questions are how do we make UAV registration quick and easy, how do we tie it to technology, and should we view this as an opportunity to educate UAV users? Who's exempt from registration? Should it be dependent on size and performance, how high they fly?

Another issue is that there are very distinct cultures that characterize aviation and aerospace on the one hand, and technology and innovation on the other. Aviation has a high safety culture. Technology is characterized by getting products to market quickly and improving them from there. In essence, we're all kind of beta testers with our cell phones, which reflects how the industry is constantly making their products better.

But the aviation industry is not interested in beta testing when requiring safe separation of aircraft. Everyone in the UAV industry realizes an accident could be the worst thing to happen in terms of setting the industry back. It's important we each understand and respect the different cultures, and get the right balance between how we achieve safety

We need more budget stability. We need to ensure there's a match between the resources needed to support the agency and the costs. We need flexibility to establish priorities.
—FAA Administrator Michael Huerta

and how we foster innovation.

Dumont: What are you thinking about FAA reform? So far your statements have been broad.

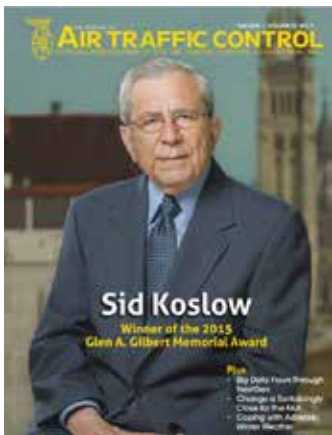
Huerta: We need more budget stability. We need to ensure there's a match between the resources needed to support the agency and the

costs. We need flexibility to establish priorities. A structure alone does not necessarily address those issues. We need to look at how are we going to be addressing larger questions like paying for the system.

It's mostly correct that the FAA is supported by user fees, but I believe

that structure is probably not sustainable over the long term. Ancillary airline charges like seat fees and baggage fees are exempt from the ticket tax. So in reality, ticket tax fees are relatively flat. The FAA also gets significant revenue from the airline fuel tax, but we're focused on how we help users burn less fuel. So right there we have a disconnect.

Those are the kinds of discussions we need to be having—how do we align where the revenues are coming from and how we pay for the cost of the system?



Congratulations to our *Journal of Air Traffic Control* Winners!

- 1) Integrated Traffic Flow Management (Q1, Spring 2015) by James Hayes, CSC
- 2) Air Traffic Control Restructuring – The What and Why of it All (Q2 Summer 2015), David Grizzle, Dazzle Partners
- 3) Avoiding Clouds Associated with Core Engine Icing (Q4, Winter 2014), Dr. Julie Haggerty, Project Scientist, National Center for Atmospheric Research; Jennifer Black, Associate Scientist, National Center for Atmospheric Research

*This year's winners were selected by the ATCA Publications Committee.

See You Next Year!

OCTOBER 16-19, 2016

Gotta Be at...



61st Annual
Conference
and Exposition
ATCA



Thanks to Our Sponsors

Grand Benefactors



TETRA TECH

THALES

Benefactors

Supporters

Contributors



LS TECHNOLOGIES, LLC
Trusted Experience. Practical Solutions.

NORTHROP GRUMMAN



VERITAS™

Patron



MITRE

Mentors

Additional Sponsors



Basic Commerce and Industries, Inc.
Systems and Software Engineering
"Tomorrow's Solutions Today"



GENERAL DYNAMICS

