

# RTCA DIGEST

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RTCA SPECIAL EDITION | SYMPOSIUM 2015

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## RTCA Symposium Examines Issues - Features Collaboration

The RTCA 2015 Global Aviation Symposium two-day event was attended by nearly 350 participants from across the aviation industry at the National Press Club (NPC) in Washington, DC. The conference began with a welcome from the NPC President John Hughes, who covered aviation for over a decade of his career, and an Opening Keynote from FAA Administrator Michael Huerta.

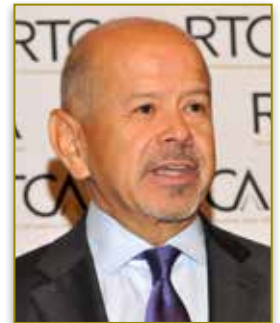
Administrator Huerta spoke of the inter-dependency of every entity represented at the Symposium and how these diverse groups must come together to tackle the challenges facing the future of aviation amid new technologies, financial uncertainty and cultural shifts. "We wouldn't be where we are today without RTCA," he said.



**John Hughes**, President,  
National Press Club

*It's important we all work together for knowledge and international cooperation and consensus.*

—Michael Huerta



**Michael Huerta**  
Administrator, Federal Aviation  
Administration

With aviation accounting for twelve million jobs and \$1.5 trillion, Administrator Huerta highlighted the importance of FAA reauthorization and the challenge of meeting the demands of the future amid budget instability. He outlined the goals of closely managing investments with tangible results, even amid fiscal uncertainty, and called RTCA an "indispensable partner" in their efforts to move forward with NextGen and the future of aviation and praised the work of RTCA's NextGen Advisory Committee, set to celebrate its fifth anniversary this-coming fall.

"It's important we all work together for knowledge and international cooperation and consensus," said Huerta, who urged the industry to come up with a single set of safety standards, which would lead to seamless transitions across the globe.

In the conclusion of his formal remarks, Huerta predicted the continuation of the strength of the partnership between the FAA and the RTCA in the future.

"We rely on and benefit from RTCA to build the foundation for the future, for the safest possible aviation system," said Huerta. ■



Administrator Huerta speaking to Symposium attendees

RTCA

1150 18th St., NW  
Suite 910  
Washington, DC 20036  
Phone: 202-833-9339  
Email: [info@rtca.org](mailto:info@rtca.org)  
[www.rtca.org](http://www.rtca.org)

## NTSB Chair Acknowledges RTCA's Role in Safety Improvements

During the Awards Luncheon, Chris Hart, Chairman of the NTSB, spoke and offered kudos to RTCA for working in harmony with the NTSB and recognizing the broad value of collaboration. He stated the FAA also relied heavily on RTCA and lauded that partnership for lowering commercial aviation's accident rate.

*We recognize RTCA's role to optimize safety, to identify and bring resolution to these issues.*

*—Chris Hart*



NTSB Chairman Chris Hart and RTCA President Margaret Jenny

"The NTSB," Hart said, "advises the FAA and RTCA, but counts on RTCA to solve the problems it outlines." He also spoke of the NTSB's pivotal role in investigating incidents and accidents such as the well-known issue of the freezing pilot tube condensation that brought down Flight 447. In the future, Chairman Hart said he expects the NTSB and RTCA to continue to work together to advance their common goal of aviation safety.

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## Luncheon Panel Presents A Conversation on FAA Reform

**Moderator:** John Hughes, President, National Press Club; Editor for First Word, Bloomberg News

**Participants:** Ed Bolen, President and CEO, National Business Aviation Association  
Craig Fuller, Chairman, The Fuller Company  
David Grizzle, CEO, Dazzle Partners LLC  
Paul Rinaldi, President, National Air Traffic Controllers Association

Moderated by National Press Club President John Hughes, the panel brought together diverse views on potential changes in structure, funding, and governance for the FAA, as the existing authorization legislation expires in September.

Ed Bolen said for decades, the U.S. has had the largest, safest, most efficient and most complex aviation system in the world and must continue to evolve, transition and take on new technology. He said the goal must be to improve safety by improving situational awareness and that the industry must always serve the public.

Craig Fuller agreed, saying we need more flexibility when it comes to reform. Paul Rinaldi expressed caution, reflecting the importance of the aviation community and the need for reliable funding for the system.

The panel then debated the issue of removing air traffic control operations from the FAA. They spoke again about the instability of funding through the annual Congressional appropriations process and the inherent problems keeping the system modernized. The panelists raised concerns about the current low level of staffing of air traffic controllers.

David Grizzle said that we need rigorous debate, and the pace and understanding of implementation would be due to RTCA bringing together the players to measure consensus. Fuller said, moving forward, the most important component of this ongoing debate is trust. "RTCA is a place people come together to trust each other, otherwise we'd keep going to Congress as a referee."



## DAY 1

### Prioritize, Plan, Implement, Repeat: How the FAA & the NIWG are institutionalizing a repeatable process for NextGen

**Moderator:** Tim Campbell, Senior Vice President Air Operations, American Airlines

**Panelists:** Dan Allen, Senior Manager Air Traffic Operations, Fed Ex Express  
Ed Bolton, Assistant Administrator NextGen, FAA  
Peter Challan, Vice President Government Relations, Harris Corporation  
Captain Steve Dickson, Senior Vice President-Flight Operations, Delta Air Lines, Inc.  
Jeff Hamiel, Executive Director, Metropolitan Airports Commission

The opening panel focused on the special collaboration between the FAA and the industry in implementing the four NextGen priority areas identified by the NextGen Gen Advisory Committee in a plan presented to Congress late last year. The group agreed that what needs to be done is to develop a set of metrics to measure success and create a common yardstick with which to measure the success. This would result in all parties agreeing on a goal and a shared vision, which will help inform the industry and general public.

"This makes RTCA's role increasingly important," said Delta Captain Steve Dickson. "RTCA, in my opinion, has been a great venue and a forcing mechanism to bring everyone to the table to speak with one voice to set industry priorities."

Executive Director Jeff Hamiel spoke of a delicate balance, making sure the community is not negatively impacted. He said by increasing communication with the community and taking the time to thoughtfully implement changes, citizens can recognize that benefits outweigh disadvantages as air traffic increases. FedEx's Senior Manager of Air Traffic, Dan Allen, concurred, saying that from a cargo perspective, time and cost concerns show how important even one minute of time is, and Allen said the RTCA has taken into account community needs.

In addition to the public at large, members of the panel said Congress must also be informed of the current status of all components of the aviation system and its future trajectory. FAA's Ed Bolton said fortunately, he has experienced a positive learning curve, as lawmakers have learned the benefits of NextGen and the benefits to the taxpayers.

All panelists agreed that moving forward, the industry must balance safety, noise impacts, transparency, managing a tremendous amount of change, working within the constraints of the current system as change is implemented, the impact of social media on messaging and dealing with public feedback, coming up with consensus and standards, dealing with unforeseen consequences as change happens, evaluating data and studying metrics, environmental concerns and the ever-increasing demand for air travel.





## NextGen: Safety Matters

**Moderator:** Paul Engola, Vice President Transportation and Financial Solutions, Lockheed Martin

**Panelists:** David Batchelor, Liaison Officer, SESAR Joint Undertaking  
Mel Davis, NextGen Liaison, National Air Traffic Controllers Association  
Joe DePete, First Vice President, Air Line Pilots Association  
John Hickey, Deputy Associate Administrator for Aviation Safety, FAA  
Jerry Johnson, Director of Engineering, Thales ATM U.S.

**Video:** Patrick Ky, Executive Director, European Aviation Safety Agency

Panelists discussed the safety benefits of NextGen, especially removing the risk of human error and using technology to provide pilots and air traffic controllers with more information and data that's actionable. NextGen Liaison for NATCA, Mel Davis, explained that the NextGen portfolio must invest in technology not only to maintain safety, but to increase it.

Building on comments in a pre-recorded message made by EASA's Executive Director Patrick Ky, SESAR's Liaison Officer David Batchelor said automation tools decrease human error and uncertainty about weather, and in the congested air space over Europe, he sees the impending growth in air travel looming on the horizon, and what is needed to keep aircraft separate since they are accommodating greater traffic.

While lauding NextGen for its benefits, and speaking about the need for international harmonization to be "baked in" to the process, the panel also discussed the limitations and inherent concerns when it comes to safety. With NextGen, there exists a concern that humans will rely too much on this technology, and the skills they were formerly required to use could risk atrophy without repeated training of skills and without simulation time. The panelists agreed that an increase in safety and chasing lower levels of risk is what is happening with NextGen.



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## Spectrum: Protecting the Current Aviation System & Introducing New

**Moderator:** Steve Brown, COO, National Business Aviation Association

**Panelists:** Chris Hegarty, Director, CNS Engineering & Spectrum, The MITRE Corporation  
George Ligler, Consultant, Project Management Enterprises, Inc.

Moderator Steve Brown, began the session by saying, "Spectrum is a commodity more valuable than gold," and led the discussion concerning GPS, bandwidth and how UAS can be integrated into airspace safely.

Panelists discussed developing standards and robust equipment, classifying UAS flight into different classes of airspace, and timing and coordinating of standards. Both panel members said RTCA is helping to bring international entities into the discussion and is helping to develop much-needed standards.

Licensing of foreign satellites is a concern, and consulting with other countries will be ongoing. The U.S. government's role will be to work on its Broadband Initiative and to be proactive in this arena as it moves forward with its ultimate goal being safety.



## Performance-Based Navigation

**Moderator:** Captain Bryan Quigley, Managing Director of Flight Operations, United Airlines

**Panelists:** Gary Beck, Vice President, Flight Operations, Alaska Airlines  
Jim Crites, Vice President for Operations Division, Dallas Fort Worth International Airport  
Jodi McCarthy, Director Airspace Services, FAA  
Captain Brian Townsend, Technical Pilot – Airspace Optimization, American Airlines  
Emily Tranter, Government Relations Specialist at Lockridge Grindal Nauen, Federal Government Relations Group and Representative from the National Organization to Insure A Sound Controlled Environment (NOISE)  
Jeff Woods, Optimization of Airspace In The Metroplex Project Representative, National Air Traffic Controllers Association

Moderator Bryan Quigley opened the panel with a brief background on Performance-Based Navigation (PBN) and its importance as a cornerstone in system improvement that has been a key part of the NextGen Advisory Committee (NAC) engagement. Panelists emphasized the importance of having the right members on the PBN implementation team and making sure that everyone is on the same page with the same goals and strong and consistent leadership. They cited that this collaboration has brought focus, purpose, unity and continuity to the process of developing PBN.

Gary Beck commented, "I can't emphasize enough how important it is to have the right members on the team, making sure we're on the same page with the same goals and strong and consistent leadership."

This discussion echoed earlier messages throughout the day, that as changes are embraced, caution is warranted and consensus is needed.

"Each stakeholder group has individual needs," said Jim Crites, Vice President for Operations at DFW. "We need to get each to come together. While they may not be synergistic with each other and we'll run into challenges, through collaboration, we will formulate a plan and work toward a unifying goal. This is the largest thing we've learned: we're a team and need to come together to leverage our accomplishments."

Several panel members stated the importance to be sensitive to local environmental concerns related to noise. For operators, Brian Townsend suggested that pilots and airspace designers operate as if fuel were \$100/barrel. Townsend also talked about the reality that pilots often traverse different air space all the time, while controllers work the same air space typically for many years and know the intricacies inside and out. He and the rest of the panel emphasized the importance of collaboration and how that impacts performance, on-time arrivals and ancillary benefits.





# RTCA AWARDS CEREMONY

Congratulations to RTCA's award winners, who were honored during the 2015 Awards Luncheon. Because of their hard work and dedication, they have helped to make this association the premier public-private partnership venue for aviation modernization in an increasingly global enterprise. "As President of RTCA, this is one of my favorite parts of the Symposium," said Margaret Jenny. "We recognize and honor the people who work so hard behind the scenes to develop the products that have led to so much innovation and made possible the continued modernization of the global air transportation system." RTCA and the aviation community have all benefited greatly from the service of the RTCA volunteers. We cannot thank them enough for their hard work and dedication to develop comprehensive, timely and tangible results.

## ACHIEVEMENT AWARD

The Achievement Award is RTCA's most prestigious award, selected by the RTCA Policy Board and given to recognize those who have made significant contributions to the successful accomplishment of the RTCA mission and support of the aviation community over the past year or over a sustained period. This year's recipients, the NextGen Integration Working Group (NIWG), have underscored the principle of government/industry collaboration, the very foundation of RTCA's service to the aviation community.

Faced with the threat of budget cuts in the summer of 2013, the FAA Administrator and Deputy Administrator asked the NextGen Advisory Committee (NAC) for a recommendation prioritizing NextGen capabilities. A response was developed and based on a review of FAA's plans that identified ranked capabilities. Over one hundred representatives from the Industry and the FAA came together to form the NIWG to develop a set of plans for four focus areas of NextGen capabilities. The goal of these plans is to deliver measurable benefits which will increase the flying public's confidence in NextGen.

### RTCA ACHIEVEMENT AWARD WINNERS

Congratulations to the NextGen Advisory Committee's NextGen Integration Working Group Leadership:

 Dan Allen FedEx Express	 Gary Beck Alaska Airlines	 Ed Bolton Federal Aviation Administration	 Teri Bristol Federal Aviation Administration
 Steve Dickson Delta Air Lines, Inc.	 Paul Fontaine Federal Aviation Administration	 Steve Fulton Sandel Avionics	 Rob Goldman Delta Air Lines, Inc.
 John Hickey Federal Aviation Administration	 Nick Lento Federal Aviation Administration	 Glenn Morse United Airlines	 John O'Sullivan Harris Corporation
 Melissa Rudinger Aircraft Owners and Pilots Association	 Paul Strande Federal Aviation Administration	 Jon Tree The Boeing Company	 Jesse Wijntjes Federal Aviation Administration

Not pictured: Lorne Cass (Federal Aviation Administration), Donna Creasap (Federal Aviation Administration), Josh Gustin (Federal Aviation Administration), Tom Skiles (Federal Aviation Administration) and Steve Vail (Mosaic ATM)



# RTCA AWARDS CEREMONY

## WILLIAM E. JACKSON AWARD

RTCA presents the William E. Jackson Award to an outstanding graduate student in the field of aviation electronics and telecommunications. This award memorializes William E. Jackson, a pioneer in the development and implementation of the nation's air traffic control system and an enthusiastic supporter of student engineers.

Dr. Kuangmin Li earned a BS in Physics from the University of Science and Technology of China, a MS in Physics from Ohio University and his PhD in Electrical Engineering from Ohio University in 2014 and completed his dissertation on *Enhanced Distance Measuring Equipment Carrier Phase*. Since 2010, Dr. Li has been a graduate research associate with the Ohio University Avionics Engineering Center. He has published one journal, 13 conference papers and is the recipient of several awards. In reviewing Dr. Li's dissertation, the William E. Jackson Selection Committee commented on his originality and innovative approaches when suggesting an upgrade to enhanced Distance Measuring Equipment (eDME) which would meet the most stringent NextGen alternative positioning, navigation and timing (APNT) navigation requirements.



*This award does not just reflect my personal work, but also work from all the faculty and staff members from Avionics Engineering Center. I'm just lucky to be selected as the Jackson Award recipient, as many others in the Center are also deserving.*

*—Dr. Kuangmin Li*



# RTCA AWARDS CEREMONY

## OUTSTANDING LEADER AWARD

The RTCA Outstanding Leader Award recognizes the added demands placed on the RTCA Committee Chairs and other RTCA participants who serve in leadership roles, to ensure that their respective Committee publishes high-quality documents by agreed-to dates.

## Congratulations to RTCA Outstanding Leaders!

**Mark Cardwell**

FedEx Express

**Bill Carson**

The MITRE Corporation

**Jérôme Condis**

Airbus

**Jim Crites**

Dallas/Fort Worth International Airport

**Matt de Ris**

Panasonic Avionics Corporation

**Tammy Farrar**

Federal Aviation Administration

**Johan Gericke**

Cobham Aerospace

**David Gray**

Federal Aviation Administration

**Brad Green**

Honeywell International, Inc.

**Philip Greene**

formerly of Garmin, Ltd.

**Jane Hamelink**

THANE, Inc.

**Michael Hooper**

Iridium

**Scott Jerdan**

Federal Aviation Administration

**Dan Johnson**

Honeywell International, Inc.

**Tom Kramer**

Aircraft Owners and Pilots Association

**Chuck LaBerge**

EFC LaBerge Engineering & Analysis, LLC

**Thierry Lelievre**

Altran

**Paul McDuffee**

Insitu, Inc.

**Thomas Mustach**

Federal Aviation Administration

**Dave Nakamura**

Advanced PBN Solutions/SAIC

**Stéphane Pelleschi**

Rockwell Collins, Inc.

**Frédéric Picard**

Thales Air Systems

**Tim Rahmes**

The Boeing Company

**Sylvain Raynaud**

Airbus

**Pascal Rohault**

Thales Air Systems

**Chuck Royalty**

The Boeing Company

**Greg Saccone**

The Boeing Company

**Paul Schaeffer**

U.S. Air Force

**Chuck Stewart**

United Airlines

**Brian Townsend**

American Airlines

**Don Walker**

Federal Aviation Administration

**Kenneth Webb**

Rockwell Collins, Inc.

**Dongsong Zeng**

The MITRE Corporation





# RTCA AWARDS CEREMONY

## SIGNIFICANT CONTRIBUTOR AWARD

The RTCA Significant Contributor Award recognizes individuals for very important and noteworthy contributions to their respective Special Committees.

## Congratulations to RTCA Significant Contributors!

**Randy Bone**

The MITRE Corporation

**Frank Box**

The MITRE Corporation

**Joe Bracken**

AvMet Applications, Inc.

**Willem Brondsema**

EUROCONTROL

**Kim Cardosi**

Department of Transportation

**Scott Conde**

National Air Traffic Controllers Association

**Michael Cramer**

The MITRE Corporation

**David Elliott**

The MITRE Corporation

**Eric Euteneuer**

Honeywell International, Inc.

**Izabela Gheorghisor**

The MITRE Corporation

**Joachim Hochwarth**

GE Aviation

**Matthew Johnson**

Noblis

**Tom Judd**

Honeywell International, Inc.

**Todd Kilbourne**

Systems Ingenuity

**Fabrice Kunzi**

Aurora Sciences, LLC

**Vinay Lakshminarayan**

The MITRE Corporation

**Jarrett Larrow**

Federal Aviation Administration

**Tracy Lennertz**

Department of Transportation

**Ted Lester**

The MITRE Corporation

**Tenny Lindholm**

University Corporation for Atmospheric Research

**Kara MacWilliams**

The MITRE Corporation

**Joe Marotta**

Honeywell International, Inc.

**John Moore**

Rockwell Collins, Inc.

**Madhu Niraula**

Rockwell Collins, Inc.

**Thomas Obert**

Airbus

**Dave Pierce**

GE Aviation

**Gordon Sandell**

The Boeing Company

**Sathya Silva**

International Center for Air Transportation

**Brandon Suarez**

General Atomics Aeronautical Systems

**Christopher Tracy**

Federal Aviation Administration

**Eric Vallauri**

Egis Avia

**Merrill Vaughan**

The Boeing Company



## Unmanned Aircraft System (UAS): Detect & Avoid, Command & Control

**Moderator:** Paul McDuffee, Vice President, Government Relations and Strategy, Insitu

**Panelists:** Rose Mooney, Mid Atlantic Aviation Partnership Executive Director, Virginia Tech Test Site  
Paul Schaeffer, Air Borne Sense and Avoid Program Manager, United States Air Force, Department of Defense  
Ed Waggoner, Director of the Integrated Systems Research Program Office, National Aeronautics and Space Administration  
Stephen George, Section Manager, FAA  
Brian Wynne, President and CEO, Association for Unmanned Vehicle Systems International

Panel Moderator Paul McDuffee of Insitu talked of the transition phase of solving technical challenges while coming up with a plan for accommodating UAS, integrating these systems and looking to solve the challenges to detect and avoid and command and control UAS. He suggested continuing to gather data, spending time and energy on safety and attempting to get subject matter experts to agree.

"It's about collaborating," said Paul Schaeffer of the USAF. "We're doing something new with things that are old. We're taking qualitative information and making it quantitative. It takes time and it's expensive." Schaeffer also highlighted the impact this would have on the air traffic control system and the need for integration.

FAA's Stephen George identified RTCA as a leader in providing advice on performance standards and stated that RTCA's work on detect and avoid has helped the FAA develop standards.

The panel also talked about the progress of partnering with NASA on simulation and modeling, which has proven to be helpful, and also about line-of-sight and beyond line-of-sight concerns. NASA's Ed Waggoner spoke of his organization's research and integration testing, the technical challenges of command and control, the prototype work to examine UAS performance in various conditions (over water, forests and cities) and human factors.

Brian Wynne of Association for Unmanned Vehicle Systems International brought up education advocacy, how to grow markets, how to build coalitions that point to the economic opportunities, how to communicate to diverse cultures like Silicon Valley and how to proceed safely and responsibly.

The panel agreed this would be a long, evolving process and showed appreciation for RTCA's engagement, singling out SC-228, which is tasked with developing standards and plans for specific UAS operations.



## DataComm

**Moderator:** Chuck Stewart, Chief Technical Pilot, United Airlines

**Panelists:** Steve Bradford, Office of the Chief Scientist, FAA  
Captain Perry Clausen, Manager ATC Systems, Southwest Airlines Flight Operations  
Jerome Condis, Multi-program Datalink and FMS Manager, Airbus Operations SAS  
Rick Heinrich, Director, Strategic Initiatives, Rockwell Collins  
Rob Mead, Chief Program Engineer, Air/ Ground Data Communications, BR&T Airspace and Flight Efficiency, The Boeing Company  
Don Walker, Surveillance Team Lead, FAA

Moderator Chuck Stewart led the panel through a discussion of both near-term implementation and future concepts of operation enabled by DataComm being addressed by RTCA Special Committee 214. The session panelists dealt with the transition from procedural control, where we “think” the aircraft is; to surveillance control, where we “know” the aircraft is; to trajectory control, where we “know” the aircraft will be.

Discussing the benefits of the FAA’s incentive program for air carrier equipage with DataComm, FAA’s Don Walker identified the lifecycle of the aircraft itself being extremely long, which makes a sweeping change extremely tough to implement. Rick Heinrich of Rockwell Collins brought up the costs issues with DataComm and the process to recertify the system.

Southwest Captain Perry Clausen said that his airline has embraced DataComm fully, equipping 700 planes already. He called DataComm the best planned and managed system, both in and out of his military experience, and that it is proceeding at the correct pace and has tangible benefits that can be sold to management. The problem, Clausen identified, is the cost.

Stewart agreed with Clausen that the program is extremely well run and that integrating pilots, air traffic controllers and IT at the beginning of the process has helped to develop testing, write manuals and with the deployment processes.





## DAY 2

### ADS-B: Preparing for Jan 2020 Mandate and Beyond

**Moderator:** Lillian Ryals, Senior Vice President, The MITRE Corporation

**Panelists:** Doug Carr, Vice President, Safety, Security, Operations & Regulation, National Business Aviation Association  
Bruce DeCleene, Manager, Flight Technologies and Procedures Division, FAA  
Marke Gibson, Executive Director, NextGen Institute, FAA  
Jens Hennig, Vice President Operations, General Aviation Manufacturers Association  
Captain Christian Kast, Advanced Flight Manager, UPS  
Lt Col Juan Narvid, Military Director, Policy Board in Federal Aviation, Department of Defense  
Melissa Rudinger, Vice President Government Affairs, Aircraft Owners and Pilots Association

Panelists examined the efforts of the industry and the FAA under NextGen's Equip 2020, and the work of the NAC's ADS-B Ad Hoc to identify issues and solutions associated with meeting the January 1, 2020 ADS-B equipage requirement deadline. FAA's Bruce DeCleene gave a brief history of events leading to the 2020 Mandate. He talked about the value and importance of follow-through while working through the agency ruling from 2007, the 2010 final ruling on ground infrastructure and radios that give a complete traffic picture, and the "call to action" meeting last fall.

DeCleene lauded the industry for making more progress in the last eight months than in the previous five years. NextGen Institute's Marke Gibson discussed the remaining issues that need to be worked out to meet the 2020 mandate including privacy, a path for non-integrated cockpit solutions and certification of the avionics and installations. He brought up the successes to date: dealing with the receiver issue with major carriers, lowering the costs by 50% and organizing grassroots communities.

UPS's Captain Christian Kast identified the three components to be in compliance: aircraft wiring, rule-compliant transponders and adequate position sources. He cited the lack of availability of some components as a problem he sees. Aircraft Owners and Pilots Association's Melissa Rudinger said the positive news is that 85% of their membership who responded to a survey said they are ready to equip, but cautioned that cost would be the number one issue for their members, who need to see the benefits outweigh the significant costs.

Col. Juan Narvid, with the Department of Defense, cited the size of the military fleet as the biggest challenge, particularly when it comes to equipping planes that already have complex encryption devices installed.

Jens Henning of General Aviation Manufacturers Association called for a consistent set of guidelines from the FAA in recognition of the concerns that come with equipping so many models of aircraft.



## An Evolving NAS: Implementation Challenges

**Moderator:** Trin Mitra, Program Director, RTCA

**Panelists:** Chris Baum, Manager, Engineering and Operations, Engineering and Air Safety Department, Air Line Pilots Association  
Jim Bowman, Vice President of Flight Operations, Fed Ex Express  
Mark A. Hopkins, Director, Air Traffic Management & Industry Affairs, Delta Air Lines  
Bob Lamond, Director of Air Traffic Services and Infrastructure, National Business Aviation Association  
Abby Smith, Director of Aeronautical Navigation Products, FAA  
Dale Wright, Director of Safety and Technology, National Air Traffic Controllers Association

“RTCA deserves a lot of credit for bringing stakeholders together—everyone who has skin in the game,” said Air Line Pilots Association’s Chris Baum. Delta’s Mark Hopkins added, “It’s all about stakeholder engagement and collaboration, as we take ideas and transition them into what’s reliable for the real, operational world.”

FAA’s Abby Smith offered that the evolving NAS has got to be made relevant to the public and cooperation with the public is needed. During the question and answer session, Smith urged for an updated way of assimilating information and not to be mired in the 1950’s mentality of classroom training and slow certification processes.

The panel discussed the need to address the mixed capability of navigation systems and how to blend aircraft with differing capabilities. NATCA’s Dale Wright said the concern controllers have is that they don’t want to feel that the new technology is taking away their ability to control traffic.

The panel agreed that training is crucial in order to keep pilots and controllers proficient. Wright brought up the point that training means controllers would have to spend time off the floor, which would mean paying overtime and dealing with what is already a decline in staffing. Hopkins focused on delivering the product to the customer and meeting their expectations of on-time departures and arrivals with no cancellations, and with an eye toward reducing or eliminating risks. He also talked about safety thresholds, scheduling implications and cause and effects at different airports, including second- and third-tier airports.

National Business Aviation Association’s Bob Lamond brought up the concern about spectrum and competition for adjacent bandwidth. He called for tighter control and increasing education on the issue.





## Global ATM Modernization: Implementing the ICAO Aviation System Block Upgrades

**Moderator:** Margaret Jenny, President, RTCA

**Panelists:** Chris Barks, Director of Western Hemisphere Office, FAA  
Carlos Cirilo, Regional Director Safety and Flight Operations, The Americas, International Air Transport Association  
Steve Creamer, Director Air Navigation Bureau, International Civil Aviation Organization (ICAO)  
Florian Guillermet, Executive Director, SESAR Joint Undertaking  
Christian Schleifer-Heingärtner, Secretary General, European Organisation for Civil Aviation Equipment (EUROCAE)  
Ikuo Takagi, Executive Director of ENRI

This panel brought together representatives of international organizations to discuss changes to the aviation system and global harmonization. Steve Creamer, Director of the Air Navigation Bureau for ICAO said, "Thanks to RTCA, we've made progress on a global navigation plan. It's a dedicated, extensive program to map out and show a way forward that lasts ten to fifteen to twenty years in the future."

Representing the interests of Japan, Ikuo Takagi, Executive Director of the Electronic Navigation Research Institute, spoke about the research and dedication that goes into a seamless sky and the challenge of responding to growing air traffic volume.

Representing Europe's SESAR System, Florian Guillermet talked about the need to convince politicians of the importance of modernizing the system while concurrently having to deal with increasing traffic and working to decrease the rate of incidents. Guillermet said clear objectives need to be mapped out, NextGen and SESAR need to coordinate and everyone needs to keep in mind that no one-size solution will fit all parties. Also representing the European perspective, Christian Schleifer-Heingartner, Secretary General of EUROCAE, called for involving Russia and China in the conversation. He said that since everyone is at a different place at the international level, everyone needs to work harder to proceed in harmonization, make use of the expertise of others and not duplicate efforts.

Chris Barks, Director of the Western Hemisphere Office for the FAA, spoke of the challenges unique to the Caribbean and Latin America. He said there are multiple partners bordering U.S. airspace and challenges of how to modernize and ensure standards across many stakeholders. He called for regional air navigation plans and said we must be aware of the area's resources, varying levels of expertise and the need for greater collaboration.





## Emerging Technologies: Automation, Cyber Security and Human Factors

**Moderator:** Pete Bunce, President and CEO, General Aviation Manufacturers Association

**Panelists:** Earl Lawrence, Manager Small Airplane Directorate, FAA  
Justin Ryan, President, BendixKing  
John Uczekaj, President and CEO, Aspen Avionics  
Mark Van Tine, CEO, Jeppesen

Moderator Pete Bunce began the session by highlighting the need to streamline the certification process for approving new technology for aircraft that leads to safety improvements.

Justin Ryan of BendixKing said that in his discussions with Congress, he found them to be mainly interested in using technology to drive efficiency. John Uczekaj of Aspen Avionics said he found that legislators want to know what to do, whether or not to decommission ground nav aids that are no longer needed, how Sequestration affects control towers and ADS-B In.

Earl Lawrence and Mark Van Tine discussed mobile devices in the cockpit. Van Tine said mobile devices are here to stay and the benefit is that they create situational awareness, which means we must embrace this technology. Lawrence agreed that time will lead to a change in culture and said this type of technology must be performance-based, and we need to look to the result we want to achieve.

The panelists addressed technology that allows pilots to develop a flight plan at home and then load it into the cockpit. They identified the need to help with cyber security that could mean cockpit panels would be equipped with validation tools to prevent hacking. They spoke of enhancing safety while going wireless and doing so at the application level. There was unanimous agreement that there would not be a “one size fits all” solution and that guidelines will be needed, with input from across the aviation system and the ability to change and develop as technology develops and matures.



## NextGen Advisory Committee: How the FAA and NAC are Collaborating to Facilitate the Successful Implementation of NextGen

**Moderator:** Tom Hendricks, President and CEO, National Air Transportation Association

**Panelists:** Richard Anderson, NAC Chair; CEO, Delta Air Lines, Inc.  
Mark Baker, President and CEO, Aircraft Owners and Pilots Association  
Ed Bolton, Assistant Administrator NextGen, FAA  
Frank Brenner, Director General, EUROCONTROL  
Teri Bristol, Chief Operating Officer Air Traffic Organization, FAA  
Chip Childs, President, SkyWest, Inc.  
Per Noren, Vice President Customer Solutions, The Boeing Company

The panel members uniformly emphasized the importance of transparency, collaboration and consensus, as they discussed the progress of the NextGen Advisory Committee (NAC), important areas for their respective organizations and goals for the upcoming meeting.

Delta's Richard Anderson said, "RTCA has been a standard setter for a very long time. They get together the important constituents in an organized way to lead efforts for general and business aviation. Success is measured by how well we perform. We have to implement (standards) in a collaborative way, we have to consistently measure them . . . the NAC can do that, can push the agenda aggressively."

FAA's Ed Bolton highlighted the successes of the NAC, having already accomplished nineteen objectives when the goal to date was seventeen. He later said the NAC needs a plan on how to oversee these goals, and metrics are needed to measure value. Bolton said transparency is important, as well as collaboration and consensus and concluded that the NAC needs to take in input and come back with recommendations and a new level of cooperation.

EUROCONTROL's Frank Brenner brought in Europe's perspective as a third-year NAC member. He said the most important direction moving forward was to make sure all continents know what the others are thinking at the early stages as they implement modernization. Without this cooperation at the early stages, he said, the flying public will suffer. Brenner also outlined the differences between the U.S. and Europe, as well as challenges specific to Europe: 41 countries and 63 centers versus 20 in the U.S., and 58,000 employees versus 35,000 in the U.S.

Boeing's Per Noren eloquently summed up the previous comments by saying we need to chart the course with high expectations and with safety, capacity and efficiency in mind, to give shareholders what they need and the flying public what they deserve. Noren later discussed metrics and said they must be presented in a simplified way so the public can clearly understand them. He said safety must come first, there needs to be a system of checks and balances, and noted that we cannot change the culture with the stroke of a pen.

Chip Childs of SkyWest, Inc. said we need to look at an upcoming pilot shortage, transformational aircraft, an aging fleet and uncertainty of funding, calling for NextGen to have a more stable model. He said regional pilots need to be considered, particularly those without relationships with major carriers.

FAA's Teri Bristol said teams must agree on goals and must establish clear metrics to measure effectiveness of programs and capabilities. Bristol said the NAS is huge and NextGen complex, so it must be continually monitored in order to adjust metrics. The value of this process is to present a unified message to Congress to say this is what we're doing and how we're moving. ■

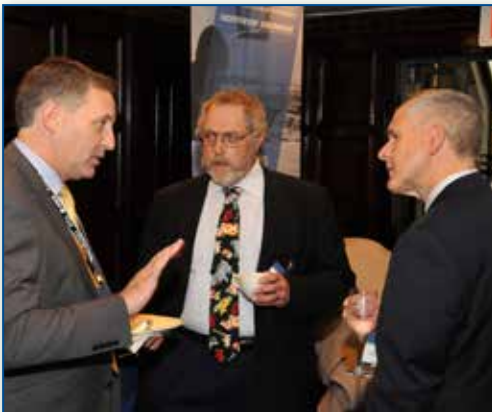


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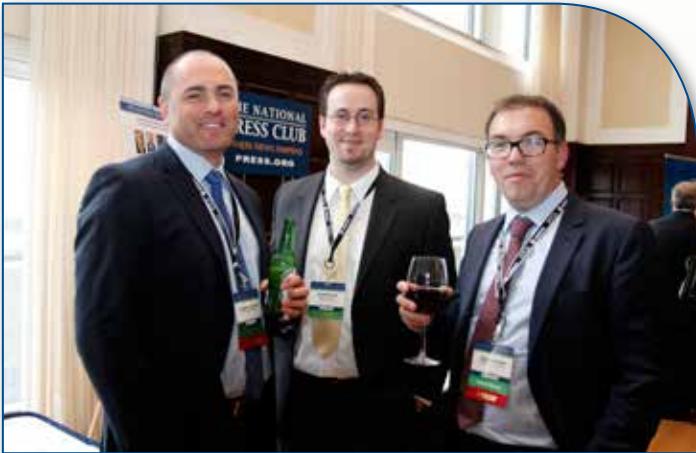




# SYMPOSIUM ATTENDEES IN ACTION



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# THANK YOU!!!

We hope the 2015 Global Aviation Symposium was informative and worthwhile! You helped to make this event a great success and your enthusiasm helped to make our time together productive and enlightening. We look forward to seeing you next year!

—Sincerely,  
YOUR RTCA Staff



**Margaret Jenny**  
President

**Blanca Aguado**  
Intern

**Sophie Bousquet**  
Program Director

**Marc Bousquie**  
Intern

**Andy Cebula**  
VP, Strategy & Programs

**Perla Domingo**  
Operations Administrator

**Marcelle Forrest**  
Executive Coordinator

**Mary Beth Guaspari**  
Director, Business Operations

**Karan Hofmann**  
Program Director

**Jennifer Iversen**  
Program Director

**Trin Mitra**  
Program Director

**Harold Moses**  
Program Director

**Samantha Palmer**  
Office Administrator/Receptionist

**Brandi Teel**  
Mission Support Administrator

