

DAC Meeting September 16, 2016 Meeting Minutes

- Call to order
- Margaret Jenny, President of RTCA welcomed participants
- The Designated Federal Official (Victoria Wassmer) read the DFO statement
- FAA Administrator Michael Huerta delivered opening remarks
 - Mr. Huerta welcomed the members of the DAC to the meeting and thanked them for agreeing to serve on the committee. He stressed the need for a faster process for innovation to get into the NAS. The FAA has made great strides in integrating UAS through the UAV Registry and Part 107 rules release. The Drone Advisory Committee is modeled on the successful NextGen Advisory Committee and is expected to provide guidance to the FAA on what's important to the industry. The DAC has a mix of representatives to strengthen it and reflect the diversity of NAS users. Stating the DAC should create its own "to-do" list, he encouraged the committee to discuss the things that are most important to the industry as a whole.
- DAC Chairman Brian Krzanich delivered opening remarks for the committee
 - Over 400 applicants applied for the committee. The diversity of the selected members is a strength. The work the FAA has done to date to facilitate the integration of drones into the airspace must be recognized and the DAC work aligned with what came before: Registration ARC, Pilot Certification rules, Part 107 release, and the 333 Waivers. The next steps will help shape the UAS integration effort of the future. There will be quick wins, but the real work will be reaching consensus with such a diverse group of stakeholders. As Chair, he will ensure every voice is heard. That does not mean that everyone will get 100% of what they want, but that all members will have a chance to shape the recommendations to the FAA and so should also support what is recommended.
- The members then introduced themselves and the organization that they represent
- RTCA president Margaret Jenny then gave a brief overview for the Federal Advisory Committee Act (FACA) including:
 - Overview of RTCA & Federal Advisory Committees
 - FACA Guidelines & Principles
 - Consensus Process
 - Dissenting Opinion
 - Key Committee Positions
 - Terms of Reference: Charter for the Committee
 - Operating Norms
 - FAA Guidelines for Recommendations
 - FAA Response to DAC Recommendations

- Expectations of Committee Members
- Collaboration Workspace
- Chairman Krzanich then addressed his expectations for the members. The committee is a forum for ideas to be introduced and heard. Listen to comments from fellow members and act as a team. Consensus is the goal in all recommendations. The DAC is strictly an advisory committee. This first meeting will establish the goals of the committee
 - Hear what was done to date
 - Review the results of the DAC member survey
 - Set priorities for moving forward
- Mr. Marke “Hoot” Gibson of the FAA presented
 - The Objectives for the First Meeting
 - Develop a functioning team
 - Understand Federal Advisory Committee Act (FACA) rules
 - Review current UAS landscape
 - Discuss UAS activities in FAA Reauthorization
 - Review survey results and through discussion, drive toward focus areas for subcommittee work
 - Objectives for the First Year
 - Maintain working knowledge of FAA’s UAS integration strategy and its constraints
 - Advise the Administrator on gaps in the FAA UAS integration strategy & provide recommendations
 - Provide a consensus position on the FAA’s five-year UAS CONOPS and its priorities
 - Given FAA UAS integration plan advise on legislative strategy and priorities
- Mr. Earl Lawrence of the FAA presented the current landscape for drone integration, including:
 - Current Regulatory Environment
 - Growing Stakeholder Community
 - Unmanned vs. Manned Aircraft Registration
 - Part 107 Daily Recap – September 14
 - Remote Pilot Forecast
 - Small UAS (non-model) Fleet
 - UAS Strategic Priorities
 - FAA UAS Integration Strategy
 - Key 2016 and Key 2017-18 Milestones

- Consensus-Building is Key to Speed
- FAA Assistant Administrator of Policy, International Affairs & Environment Jennifer Solomon then delivered an address on the current FAA Reauthorization Act. Including:
 - Since the expiration of that law last year, the FAA has had three short term extensions. Most recently, on July 15th, the President signed the HYPERLINK "http://h" \h FAA Extension, Safety, and Security Act of 2016, which extends FAA authorities through September 30, 2017.
 - ·And while the authorization is short, it's also packed with new requirements that the agency must complete on the compressed timeline. Roughly 20% of the law is devoted to new UAS policy.
 - ·These provisions were not developed in a vacuum. Some reflect the concerns and fears articulated in front page stories about drones near airports or UAS interfering with wildfire suppression, others seek to address very specific industry interests, and others stem from ideas over how the federal government should prepare for future growth in the industry.
 - ·When you hear the FAA speak about the importance of building consensus around priorities for drone integration, it's helpful to remember that the FAA is working with finite resources, and the budget is a zero sum game.
 - ·New taskings that do not come with new resources will draw directly from ongoing work, slowing or stopping progress in those areas.
 - ·It behooves all of us to work together to identify clear priorities, elevate the best solutions, and build broad consensus to support those objectives. That will enable the FAA to execute drone integration in the most effective manner possible.
 - ·Another key element of success for the FAA, or for any large, operational organization, is a stable and predictable environment. A focal concern with the most recent authorization is that it extends the FAA's authorities by less than 15 months, which does not provide the agency with the long term stability needed to effectively manage and implement our key initiatives.
 - Chief among the FAA's priorities is the passage of a long-term reauthorization that ensures stable and predictable funding. ·This overarching priority enables the FAA to move forward with other priorities. Not all of these will apply to each segment of the aviation community, but the FAA provides an airspace system to all users, and improvements in one area offer benefits to many.
 - Congress is very interested in the UAS question; Solomon reminded the committee that before the FAA can act on any direction from Congress, funding must be secured and allocated; Authorization extends out less than 15 months which gives little ability to set long term goals. Nearly 20% of the Reauthorization wording is devoted to UAS. Her final message was that the best way to move the needle on UAS integration is through the DAC venue, and not through legislative direction.
- RTCA Vice President and DAC Secretary Al Secen then presented a summary and analysis of the results of the DAC Survey that members completed prior to the meeting. The survey was created to gain insight into members' priorities, sensitivities, and organizational goals. The

survey asked members to weigh in on Top Priority Issues the DAC should tackle. A summary of their input follows:

- There is near consensus on perceived public concerns; FAA strategic plan alignment and top technological concerns for industry
- Consensus is yet to be reached on: Pace of integration efforts; Focus of priorities going forward; Top three issues facing UASs in the airspace
- Access to airspace is a priority;
- Safety is essential and must be addressed;
- Drone applications are many and diverse;
- Operational priorities include low altitude BVLOS, VLOS;
- The most pressing public perception issues are: safety and privacy;
- DAC members raised a broad array of regulatory concerns, with safety assurance high;
- In the technology arena: collision avoidance ranked #1;
- Most members are seeking access in 6 months to one year;
- The pace of integration is between appropriate and too slow

The committee members discussed what they should tackle with respect to certification, and agreed it included Certification; BVLOS Conops; Performance Standards; Software/Hardware; Autonomous Operations. Ms. Jenny also reiterated the FAA and DAC Chairman's belief that they should quickly establish DAC Subcommittee staffed with a representative from each DAC member along with additional member organizations from pool of DAC applicants and others as appropriate to address high priority issues. The first meeting should be scheduled prior to the end of October. Ms. Jenny provided an example of a similar advisory committee, the NextGen Advisory Committee, and how its subcommittee operates. It was suggested that the first task for the DAC Subcommittee would be to prioritize the remaining list of issues for the DAC to take on.

- The committee then discussed the survey results. Key points of the dialogue are captured below:
 - Safety is very important and the privacy of the public must be maintained
 - Basic guidelines for UAS use are needed because there are no clear guidelines for what can fly and how
 - Pathfinders are nimbler and of greater value to the UAS community than large efforts or contracts
 - Initiatives on specific outcomes need to be addressed: challenges abound; research efforts not regulatory efforts are needed
 - The DAC need to think like futurists: autonomy and UAS will intersect earlier than later. There needs to be a social science view to integration
 - Safety and trust are mutually agreed upon by all members: the public wants these two aspects to be front-and-center to any integration effort
 - There needs to exist a list of questions that, when answered, will indicate if a UAS design or operator is ready to integrate into NAS. A checklist of items that can be answered

Yes/No, or short answer that will give a clear indication to operators/manufacturers of whether they are cleared to fly

- Many UAS users are not educating themselves to be good citizen UAS operators; More education is required
 - Safety and cybersecurity are tightly bound in the airspace integration problem space
 - Public perception is evolving; aviation is an enviably safe industry, but is very cautious. Those two attributes are linked; Quick and innovative necessarily clashes with safety culture. We must determine what the country wants
 - How will the public be engaged in this discussion? The whole scope of UAS must be addressed and, if the DAC finds it necessary, may engage the public in some way yet to be determined.
 - There is concern among the innovators that the FAA will be too conservative and restrictive
 - The issue of pre-emption was introduced: the FAA has the authority to control the airspace; the public reasonably expects peace and privacy: UAS conflict with that; Local officials representing constituents shared that people want a clear Federal pre-emption process to allow localities to set UAS rules – this needs to be answered
 - The survey provides insight but is not exhaustive or scientific, and so additional work must be done to identify the top priorities for the DAC
- The committee broke for lunch at 12:00
 - Upon return from lunch, the committee began the discussion to identify issues with the direction that they not SOLVE the issues, simply identify them. Discussion areas included:
 - Certification
 - Certification means different things to different people and can cover many areas. The DAC members listed the following as pertinent to drones and therefore areas the DAC should consider. Beyond Visual Line of Sight; Performance Standards; Software/Hardware issues; Federal Pre-emption; Privacy; Cybersecurity; and autonomous operations
 - The DAC is not limited by size or class of UAS in its discussions
 - Collaborative versus non collaborative UAS have to be addressed, perhaps developing specific Detect and Avoid scenarios
 - A regulatory framework that is easy to navigate would be beneficial
 - Roles and responsibilities of the various players in the UAS industry and NAS must be discussed
 - An “appropriate level of safety” must be defined, risk averse versus risk tolerance
 - Don’t ignore software issues as it’s a significant component of UAS and the ground control
 - Should system safety requirements be commensurate with the size of the aircraft?

- What are the relative roles of certification and minimum operational performance standards (MOPS)? Could MOPS help with certification?
- Lost link procedures have to be taken into account by any safety assessment
- Reuse existing frameworks as much as possible
 - It is felt that reusing manned aircraft certification frameworks would be onerous to UAS
 - There needs to be a tailoring mechanism for the size and capabilities of the UAS – Global companies build UAS, so there needs to be global harmonization
 - The existing framework “buckets” are valid – we just need to tailor them
 - A safety certification philosophy, not prescription, will allow innovation to prevail
- We should consider the need not only for minimum performance standards, but also more prescriptive interoperability standards where necessary to ensure that many drones can operate at the same time in shared airspace.
- Privacy Pre-Emption
 - The committee discussed the privacy issues and the question of who has jurisdiction over them
 - It was noted that the FAA only regulates for safety – not the use of the vehicle
 - Many members felt that the DAC should try to provide some clarity to prevent future problems regarding roles and responsibilities with respect to privacy
 - There are over 280 State bills affecting UAS – chaos results when too many local laws are enacted – a strong federal role is needed
 - There is a strong need to work with local and state government and outreach to educate and inform
 - There needs to be a national guideline created that local government can use to set policy
 - Where do federal agencies enter into the effort when an airport is forced to investigate a UAS sighting in their airspace?
 - Helicopters operate in airspace that is similar in nature to UAS operations. They often must deal with local laws and governments – the helicopter industry understands and supports federal oversight of the rules
 - Can technology be used to answer the question? Blackout maps and geo-fencing?
 - Data gathering by UAS are of great public concern
 - If necessary, the DAC will need to interface with the proper federal agency in this space, explain our role and concerns and let them take the lead
 - The DAC should review the output of NTIA as a starter for any work in this area.

- Beyond Visual Line of Sight (BVLOS). The DAC discussed the desire to move from Visual Line of Sight (VLOS) to BVLOS. Numerous questions were posed that the DAC felt need to be answers, including:
 - How will BVLOS be prioritized in the NAS?
 - What are the operations going to look like? Segmented airspace? How will efficiency of Passenger and Cargo flights be measured against UASS? There has to be a hierarchy of priorities
 - Can/should we develop a set of operations concept to drive any standards?
 - It was suggested that regulations should be tied to Tiers of risks of applications and operations and the ops concepts should document the level of risk.
 - The communications links required to maintain control of the UAS will have to be encrypted

- Several members offered additional direction to the subsequent task groups that will be established to address the top two priorities:
 - Certification and access to the airspace: is there a short list of to-do's (a recipe) that can be put together that make it clear to a potential operator what he/she has to do to gain access without a waiver?
 - Must address how do we (FAA and industry) will pay for it?
 - There should be a list of questions for operators: if they answer YES to all, they can fly
 - Develop minimum standards (performance and more proscriptive as necessary for interoperability) to have UASs interoperate and avoid conflicts
 - Determine how this will scale to bigger aircraft and higher density or more complex airspace
 - Need to be mindful of resources required to address reauthorization-related directions to the FAA and what resources are needed to implement DAC recommendations

- Action Items:
 1. Establish a standing DAC Subcommittee (DACSC) to include a representative from each DAC-member organization and additional members from among those who applied for the DAC as well as other stakeholders and expertise needed for the DACSC to accomplish its mission. Task the DACSC to establish a ranked set of priorities among the remaining drone integration issues the DAC identified at its inaugural meeting
 2. Draft a task statement to define: "What Will it Take to Gaining Access for Drone Operations?" –
 3. **Establish a task group** to develop a minimum set of requirements, a recipe, that operators can follow to gain access to airspace for a specific set of

operations/applications. As a part of this task, the WG should establish a tiered grouping of operations/applications from low to high risk and make a set of recommendations for the lower tiers. We will incorporate all the inputs that we captured from the discussion among the DAC members during the meeting. Note that the FAA plans to provide briefings and educational materials to the TG at its onset to ensure the members are aware of completed and ongoing work relevant to the task.

4. Draft a task statement to define: Pre-Emption and Privacy: Roles and Responsibilities –
 5. **Establish a WG** to describe the privacy concerns, and to identify the respective roles and responsibilities for dealing with privacy concerns across local, state, regional and federal entities. Make recommendations regarding pre-emption. Note that the FAA plans to provide briefings and educational materials to the TG at its onset to ensure the members are aware of completed and ongoing work relevant to the task.
- FAA Assistant Administrator of Communications Lisa Jones provided a recap of the key messages, including:
 - The energy around the room today has been very positive. By coming together as the Drone Advisory committee with industry and other stakeholders and the FAA, the DAC can find consensus and speak as one voice.
 - Given the changing nature of public opinion on our integration activities, it is important to get public insights and feedback. Everyone here today has agreed that safety is paramount, but the trust of the public is also important.
 - The Administrator has asked the DAC to begin to develop a To Do list. Although the list is long, it will help us begin to prioritize the next steps.
 - It was clear that this group of individuals are committed to coming together to work through issues and are not reluctant to openly discuss their points of view. We expect to hear different opinions but we know that this group has the energy and commitment to find consensus to help move us forward.
 - The Next Meeting is tentatively planned for January 4, 2017 location TBD
 - Following meetings tentatively planned for June 2017 and October 2017
 - RTCA will set dates for 2017 DAC meetings within next couple weeks
 - Meeting adjourned by the chairman at 4:00 PM

Drone Advisory Committee Meeting September 16, 2016

Company	Name	Role
Intel	Krzanich, Brian	Group Chair
Federal Aviation Administration	Wassmer, Victoria	Designated Federal Official
CNN	Agvent, Greg	Member
Stanford University	Alonso, Juan	Member
Aircraft Owners and Pilots Association	Baker, Mark	Member
Airspace Systems Inc.	Banga, Jaz	Member
AOPA	Barkowski, Justin	Guest
Bateman Law, LLC	Bateman, Courtney	Guest
Riley County, Kansas	Boyd, Robert	Member
Air Line Pilots Association	Canoll, Tim	Member
Toy Industry Association	Carroll, Molly	Guest
Technatomy	Chauhan, Vik	Guest
Hogan Lovells/the Commercial Drone Alliance	Clark, Matt	Guest
Cherokee Nation Supporting NOAA	Coffey, John	Guest
Measure	Courtney, Chris	Guest
American National Standards Institute	Cox, Kelley	Guest
Sagetech Corporation	Davis, James	Guest
FAA	Davis, William	Guest
3D Robotics	Egan, Nancy	Member
Slipstream Strategies, LLC	Ehrich, Rob	Guest
Leidos	Erny, Bill	Guest
Los Angeles World Airports	Flint, Deborah	Member
K&L Gates	Garland, Brody	Guest
Facebook	Gomez, Martin	Member
BNSF Railway	Graetz, Todd	Member
Edison Electric Institute	Graham, Randall	Guest
NASA	Grindle, Laurie	Guest
Insitu Inc.	Hartman, Ryan	Member
Drinker Biddle & Reath	Heppen, Jonathan	Guest
American Airlines	Ince, Lhan	Guest
American Airlines, Inc.	Isom, Robert	Member
RTCA, Inc.	Jenny, Margaret	Manager
Consumer Technology Assoc	Johnson, Doug	Guest
FAA	Kaliardos, Bill	Guest
Aviation Management Assoc. INC	Keegan, Charles	Guest
Amazon Prime Air	Kimchi, Gur	Member

The Mitre Corporation	Kirkman, Deborah	Guest
Lobbyit.com	Koch, Zachary	Guest
Aerdos-Steve Moir	Kyrazis, Geeter	Guest
San Francisco, California	Lee, Ed	Member
Associated Builders and Contractors	Libertini, Liz	Guest
FAA	Lin, Richard	Guest
Fletcher, Heald & Hildreth, PLC	Markman, Jonathan	Guest
Academy of Model Aeronautics	Mathewson, Dave	Member
Rockwell Collins, Inc.	Mattai, Nan	Member
Insitu, INC	McDuffee, Paul	Guest
Airlines for America	McGraw, Paul	Guest
International Brotherhood of Teamsters	McLuckie, Frederick	Guest
General Atomics-ASI	McNall, Pete	Guest
Union Pacific Railroad	Meder, Robert	Guest
EASA	Mickler, Thomas	Guest
United Parcel Service	Mills, Houston	Member
Bicallis, LLC	Mixon, Michael	Guest
Property Drone Consortium	Monaco, John	Guest
Toy Industry Association	Mond, Rebecca	Guest
President PDC	Mondello, Charles	Guest
Reno-Tahoe Airport Authority	Mora, Marily	Member
UAS ExCom	Orner, Jeffery	Guest
Evans Incorporated	Osantowske, Andrew	Guest
National Press Photographers Association	Osterreicher, Mickey	Guest
DOD PBFA	Owens, Barney	Guest
AT&T	Penrose, Christopher	Member
FAA	Pilj, Gerald	Guest
Williams Mullen	Pomfret, Kevin	Guest
U.S Senate Commerce Committee	Reynolds, Michael	Guest
ASBU for Future GmbH	Rudolph, Peter	Guest
Professional Helicopter Pilots Association	Rush, Steven	Member
The MITRE Corporation	Ryals, Lillian	Member
Lockheed Martin Corporation	Samanta Roy, Robie	Member
Matternet	Santana, Paola	Member
Harris Corporation	Sayadian, Ed	Member
DJI Technology	Schulman, Brendan	Member
RTCA, Inc.	Secen, Al	Secretary
AFPM	Shvab, Andriy	Guest
Garmin Ltd.	Straub, Phil	Member
General Electric	Szabolcs, Borgyos	Guest

AIG	Taylor, Dan	Guest
Hitachi Data Systems Federal	Theon, Christopher	Guest
Google	Vos, Dave	Member
Small UAV Coalition	Walden, Gregory	Guest
Dentons	Williams, James	Guest
ATAC Corporation	Wright, Steve	Guest
Association for Unmanned Vehicle Systems I...	Wynne, Brian	Member
Precision Hawk USA Inc.	Young, Robert	Member
Helicopter Association International (HAI)	Zuccaro, Matthew	Member