

## Drone Advisory Committee (DAC) July 21, 2017 Meeting Minutes

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### Summary

The July 21, 2017 DAC Meeting was a virtual meeting, with several members attending at RTCA headquarters, 1150 18<sup>th</sup> Street, NW, Suite 910, Washington, DC 20036. The DAC received presentations from two Task Groups (TGs): TG1 – Roles and Responsibilities and TG3 – Unmanned Aircraft Systems (UAS) Funding. TG2 – Access to Airspace – did not present at this meeting. The co-chairs of TG3 presented a summary report of TG3's interim recommendations, including the background of the tasking statement as well as the guiding principles, methodology, and workflow used to develop the interim recommendations. TG3 leadership also outlined the next steps for refining the interim report into the final report to be delivered in November. The DAC also heard from TG1 on the status of evaluating State or local government interests that could form the basis for recommendations to the DAC for future Federal Aviation Administration (FAA) action. These actions are related to the relative role of State and local governments in regulating aspects of low-altitude UAS operations. The meeting discussions are summarized below.

### Designated Federal Officer Statement

Dan Elwell, Deputy Administrator and Chief NextGen Officer, FAA

The Designated Federal Officer (DFO) statement was read by FAA Deputy Administrator Dan Elwell at 11:02 AM.

### Chairman's Remarks

Brian Krzanich, CEO, Intel

DAC Chairman Brian Krzanich welcomed everyone to the virtual meeting and expressed his hope that the virtual meeting format would not be a hindrance to communications. He thanked the out-going DFO, Victoria Wassmer, for her service and welcomed incoming DFO Dan Elwell to the DAC. He then

thanked the rest of the FAA executive team for their guidance and assistance to the DAC Subcommittee (DACSC) and TGs, and finally he thanked the TGs and DACSC for their progress to-date.

Chairman Krzanich briefly recounted the events that led to the virtual DAC meeting, starting with the January 31, 2017 DAC meeting held in Reno, Nevada, where the TG1 and TG2 tasking statements were approved by the DAC. Since TG3 received their tasking statement after the January 31, 2017 DAC Meeting, this supplementary July Meeting was added (after the already-scheduled May 3, 2017 DAC Meeting) to the schedule to give them more time to prepare their input for the DAC. Chairman Krzanich said the DAC would hear updates from TG1 to make sure they are going in the “right direction,” in preparation for the November 8, 2017 DAC Meeting, and would hear from TG3. TG2 would report their recommendations in November. Chairman Krzanich reiterated that the virtual meeting was to ensure the November meeting would be as productive as possible. Note: RTCA provided instructions for participants on the virtual call to be recognized by Chairman Krzanich.

## Approval of Minutes from Previous Meeting

The minutes of the previous meeting were unanimously approved as distributed.

## RTCA Remarks

### Margaret Jenny, President, RTCA, Inc.

Margaret Jenny introduced the incoming DFO, Dan Elwell. Mr. Elwell was with the FAA under the Bush Administration from 2006-2008 as the Assistant Administrator for Policy and Environment. After that, he was in Vice President positions at the Aerospace Industries Association (AIA) and Airlines for America (A4A). He has over 6,000 hours as a military and commercial airline pilot, with over 20 years of flying experience. He also served as a legislative fellow for the late Senator Ted Stevens (R-Alaska). Most recently, he served as Secretary Chao’s (DOT) Senior Advisor on Aviation. He was sworn in as the Deputy Administrator on June 26, 2017, and is the new DAC DFO.

## FAA Remarks

### Dan Elwell, Deputy Administrator and Chief NextGen Officer, FAA

Mr. Elwell thanked Ms. Jenny for the introduction. He stated that he knows many of the committee members. He echoed Chairman Krzanich’s thanks to Victoria Wassmer for her service as the FAA’s Acting Deputy Administrator and previous DAC DFO. Mr. Elwell thanked Ms. Wassmer, Ms. Jenny, and those who have dedicated their time and energy to the DAC. He stressed that his previous work with the FAA and other organizations has highlighted the importance of listening. He indicated his eagerness to hear about the work of the TGs during the meeting and noted the recommendations being developed by the DAC will be an important factor in the unmanned aircraft policies that the FAA will institute, and

that the importance of the work being done by the DAC cannot be overstated. The FAA will build on the DAC's work presently being done and the work to be done in the future. Mr. Elwell mentioned that the Aviation Rulemaking Committee (ARC) for identification and tracking of drones during flight met for the first time on June 21, 2017. This ARC has formed three working groups: 1) existing and emerging technologies, 2) security and law enforcement, and 3) implementation. The FAA expects to receive recommendations from the ARC by September 30, 2017. The FAA has also signed a charter for an additional ARC that will help prioritize activities to integrate drones successfully into controlled airspace. These actions come as Congress, in both the House and Senate chambers, considers legislation that addresses unmanned aircraft. This underscores the importance and timeliness of the work being done by the DAC and the ARC, which has implications at the very basic levels of government and even at the constitutional level (interpretively).

## TG3 – UAS Funding Report Out

Mark Aitken, Director of Government Relations, AUVSI, and Howard Kass, Vice President of Regulatory Affairs, American Airlines

Chairman Krzanich thanked Mr. Elwell for his remarks and invited the leadership of TG3 to make their presentation. Co-Chair Mark Aitken began by thanking the DAC for the opportunity to report their interim (near-term) recommendations for UAS Funding. Because the team briefed at the last DAC meeting, it was expected that today's presentation would go quickly. The second phase of the task will be focused on longer-term funding activities.

Mr. Aitken presented TG3 assumptions and guiding principles:

- 1) There will be a combination of government, industry, and shared funding across the integration efforts.
- 2) Options for funding should not be constrained by the current traditional aviation funding structure, although in the near-term, a new model may be difficult to implement.
- 3) The recommended funding structure should not alter the current structure of funding for traditional, manned aviation.

TG3 used "Decision Lens" to rank all FAA UAS activities against a common set of criteria. The key take-away is the criteria that were decided upon by the team. The top criteria were safety among UAS operators, for people and property on the ground, followed by enabling UAS operations, and finally, economic benefits.

The team examined activities that the FAA conducts to integrate UAS into the airspace safely. TG3 was challenged by having to look across many lines of business within the FAA for their work. The prioritization exercise did not result in a large difference among ranked priorities. This led the group to

believe that all priorities are (relatively) of equal importance in achieving the goal of safe UAS integration.

TG3 reported that they had divided the group into teams that considered their prioritized results to define the short-term government, industry, and collaborative efforts to fund these activities, and then provided written (draft) recommendations. The reports were circulated and discussed, and consensus was reached on the recommendations. The groups also considered the following recommendations from TG2 to ensure there was common guidance across all three TGs:

- Prioritization of UAS beyond visual line of sight (BVLOS) operations within the Mode C Veil below 400 feet above ground level (AGL).
- Development of technology neutral navigation performance requirements.
- Evaluation of the ability of existing networks to meet low altitude UAS Command and Control requirements.
- Establishment of a 14 Code of Federal Regulations (CFR) part 135 regulatory pathfinder program for commercial UAS low-altitude BVLOS operations.
- Recommendations for a timeframe beyond 24-months.

TG3s interim recommendations, as reported, are:

- All regulations, policies, and standards necessary in the next 24 months should be developed primarily by the FAA with significant industry input. Congress should appropriate additional funding and increase FAA staffing to address this ambitious work schedule.
- The research and development, and system development necessary in the next 24 months, should be shared between government and industry.
- Communications, outreach, and training necessary in the next 24 months should be shared between government and industry, depending on the activity.
- Any recommended funding structure should not alter the current structure of funding for traditional, manned aviation.
- In the future, the UAS industry may be expected to pay for the operation, maintenance, and modernization of an automated Unmanned Traffic Management (UTM) system through a yet-to-be-created “pay-for-what-you-use” funding model.

Co-Chair Howard Kass stated that the regulatory framework is already underway to enable the commercialization of drone operations. Several ARCs have been established, and the FAA has held several meetings with other government agencies on the topic of UAS integration. These inter-agency meetings have included counter-drone discussions.

Mr. Kass noted that the FAA would normally carry the burden of cost for development of the policies and standards for drones, but the team believes that industry has a role to play in helping to pay for this activity. He observed that exciting work is underway in systems engineering and research and development (R&D). The industry has considerable experience conducting R&D and many activities can

be leveraged from these efforts (e.g., infrastructure build-out). The government track record in R&D is inadequate and so this may be an area where industry and government can collaborate, with industry leading the activities necessary to implement technology for the integration of UAS.

Outreach and training is an area where the FAA and industry both have extensive experience. As such, both government and industry will both have a role to play in paying for the outreach and education of their traditional constituents.

Mr. Kass acknowledged the efforts of Congress to aid in funding FAA activities in the Fiscal Year (FY) 2017 FAA Reauthorization Bill. There is concern that an FAA reauthorization bill will not be approved and enacted before the end of September 30, 2017.

Mr. Kass then described the future activities for TG3. At the May 3, 2017 DAC Meeting, the DAC instructed TG3 to divide its activities into near-term (24-month horizon) and long-term (5-year horizon). The long-term questions are more complicated, such as cost accounting measures. TG3 will consider options and identify self-sustaining and scalable funding sources. They will consider both government and industry funding sources. Further, they will work to identify a funding option for the UAS industry that is segregated from the mechanisms that funds manned aviation (it could be similar in structure, but they won't cross-pollinate). TG3 is cognizant of the possibility of far-reaching structural and governance changes that could affect the funding for UAS integration. The group will consider new sources of funding for the long term, including user fees, taxes, and/or similar pay-for-what-you-use services. Lastly, Mr. Kass reported that on July 14, 2017, the TG3 had a "listening session" to discuss long-term issues. It was open to the entire DACSC for as many options and voices to be expressed and heard. A priority issue that surfaced in addition to funding, was that the structure of the FAA will have an impact on the integration of UAS into the National Airspace System.

Ms. Jenny offered specific thanks to FAA's Aviation Policy and Plans Executive Director Nan Shellabarger for extraordinary assistance in educating and assisting TG3 on how the FAA budget works, as well as the intricacies of fees and taxes. The co-chairs agreed wholeheartedly with that recognition and offered their thanks as well.

**Question:** Did the team think about establishing a UAS Trust Fund similar to the Airport and Airways Trust fund?

**Response:** That will be addressed in the long-term focus work that will be tackled next, but has been mentioned in past discussions.

**Question:** It appears that the team is looking at the manned aviation funding and recommending changes to that mechanism as opposed to developing a whole new one. With Air Traffic Control

privatization efforts underway in Congress, has the team considered how its recommendations might be altered if privatization becomes reality?

**Response:** The team was very sensitive to possible structural change within the FAA. They intend to keep that possibility as a “reality” that any ideas must be weighed against. Given the uncertainty of the effort, nothing could be recommended against it.

**Question:** What are the team’s thoughts on the manned aviation funding mechanism of today and trying to have an effective change on those? Is that where we’re heading versus just concentrating on how the initiative for integration of UAS are going to be funded and leave the manned funding alone right now?

**Response:** The team’s focus is looking at the unmanned space.

**Question:** The concept of “pay as you go”, assumes there is a service to which an operator must be connected. If you break funding into: what is required to operate automated systems below 400 feet; no interoperability with manned aviation; what policy making, governance, and auditing is required to be in place; when interoperability is required between manned and unmanned aviation, that requires funding on FAA side. Decouple funding from architecture discussion. Industry may be better suited to introduce other architectures that are cheaper, more quickly.

**Response:** These comments align with why TG2 was consulted – fee for service models will be dictated by available services and those required to operate (i.e., command and control communications services). Additionally, scalability of operations plays an important part. Part 107 is only the tip of the iceberg for what commercial operators would like to see implemented. It will be hard to justify paying for services that aren’t available or tie in to ATC services that are not allowed in the operational environment. As we get a better understanding for what’s on the immediate regulatory horizon, it will help frame what should be pursued for funding.

**Comment:** Clarify: funding should be driven by the technology capabilities and the scenarios rather than what funding looks like in today’s system. The concept of segregation and integration should be understood that many DAC members believe in deeply integrating one set of standards for everyone in the air. The concept of separation of these activities is not a good idea. We may need tasking statement clarifications or high-level tenets to ensure this is maintained.

**Response:** As the team looks to all sizes of UAS, leading to full integration will help to inform the work stream (along the 5-year mark). The work done by TG2 will inform the work of TG3.

**Comment:** There was a reference to operations below 400 feet with no interaction with manned aircraft – helicopters operate below 400 feet routinely and will need the interaction.

**Comment:** Chairman Krzanich complimented the team on a great job and great progress, and is looking forward to the discussion in November.

## TG1 – Roles and Responsibilities Report Out

Brendan Schulman, Vice President of Policy and Legal Affairs, DJI Technology and Dr. John Eagerton, Chief, Aeronautics Bureau, Alabama Department of Transportation/National Association of State Aviation Officials (NASAO)

Chairman Krzanich called upon TG1 to provide a status update on their efforts. Co-Chair Brendan Schulman apologized on behalf of Co-Chair Dr. John Eagerton who was unable to attend the meeting due to a prior commitment. Mr. Schulman led the presentation for TG1 and briefed the DAC members on the history of the tasking statement and progress made since the May 3, 2017 DAC meeting. Since May, the team has incorporated guidance received from the DAC, namely, to set aside work on enforcement for now and focus more on roles and responsibilities task item. He reported that RTCA has added new member and observer participants (local/state government). The TG has conducted three days of in-person TG meetings (May 25 and July 10-11) and a conference call (June 14), and held extensive discussions on governing models (local, State, or Federal) based on altitude. Observing the number of public observers at this meeting, Mr. Schulman invited new members to join to help work on the TG's interesting and complex work.

Specific actions taken to inform the issues being worked included development of a "matrix" of existing roles and responsibilities ("This is a creative exercise – don't look at what exists today but on creative solutions that may not resemble today's reality."), fact gathering from two additional law enforcement subject matter experts, and an altitude drone flight observations "field trip."

TG1 continues to work towards developing consensus recommendations against their tasking. The discussion is spirited and thoughtful. The group's timeline will proceed with urgency, and work to deliver initial recommendations by the November 8, 2017 DAC Meeting, with further guidance from the FAA and DAC as to what is most useful.

**Question:** There was discussion at the last DAC meeting introduced by the local government representative, Mayor Lee, about a local representative's feelings that they were not being heard in the TG1 discussions. Have you worked with the mayor to develop a process to collect their comments?

**Response:** Mayor Lee's representative has been added to the TG. There are also efforts to reach out to the National League of Cities (NLC). When we started the DAC, it was very important to not meet just 3 or 4 times a year, but that there should be interaction and discussions outside of the DAC meetings (through subcommittee and TG meetings) and that has been taking place.

**Question:** American Legislative Executive Council – State Legislators discuss local issues. Which national state organization might exist that might be consulted? State legislators represent a great educational opportunity.

**Response:** We have engaged the National Conference of State Legislatures (NCSL), the National Association of Counties (NACo), and have a member of the Rhode Island legislature on the TG. Also, NASAO is represented as the co-chair on the TG.

**Comment:** The DFO requested information on who existed on the TG and who was added.

**Response:** RTCA took the action to provide the roster and history of the membership of TG1.

**Comment:** A member observed he is currently at the NACo convention and is participating in a MITRE effort to coordinate and educate NACo members.

**Responses:** RTCA clarified that this is not an RCTA initiative and we have received no feedback on this or a similar initiative by MITRE, MIT, and FAA at the Miami Beach, FL U.S. Conference of Mayors (USCM) annual meeting.

**Response:** Mr. Schulman mentioned he will be on a panel at the NCSL Legislative Summit in Boston, MA.

**Comment from a representative of Mayor Lee:** Mayor Lee was unable to participate in the virtual DAC meeting and sent a representative. The representative mentioned they were only observers on the TG. Mayor Lee wanted to reiterate his commitment to focus on local authority to make reasonable time/manner/place restrictions in low altitude airspace to ensure public safety. He remains concerned about privacy and ensuring broader input in the discussion from partners such as law enforcement agencies and other local government representatives. The desire is to have an equal, one-to-one representation of local government to industry members. The mayor introduced a resolution at the USCM Transportation and Communications Committee meeting that there are calls for State and local authority to regulate time/manner/place of drone operations within 200 feet of the ground. That resolution was approved by the USCM and was sent to Congress and the Administration as part of the USCM policy agenda. It received bipartisan support. He has encouraged fellow mayors to reach out and express their concerns so they can be passed on to the FAA.

**Response:** Ms. Jenny made a point of clarification that the mayor's representatives were added as members of the TG originally but were asked to be made observers only. She further went on to say that RTCA was very happy the mayor was undertaking an outreach and look forward to hearing from anyone who wished to become engaged. We have discussion in general about the difficulties securing resources to be involved that makes it difficult for cities to be actively engaged. We will be looking at

other innovative ways to get that input and how often and for how long the group meets. The mayor's office has given us good feedback which we are relaying to the TG leadership to accommodate that more balanced TG membership. This is a challenging work-in-progress.

**Comment:** The mayor is member of the DAC and is trying to engage other mayors, but the time commitment to take part in the TG is too great for most mayors. RTCA is encouraged to find additional mayors.

**Response:** RTCA has been in discussion with a few elected officials and also talking to associations that represent cities and mayors. It is good to have large cities represented (like Mayor Lee's), but to get the engagement, we may need to rely on mayors of smaller cities who may have more time available to support the DAC.

Any local or state government has been offered an opportunity to join. Sometimes associations (e.g., NLC or NCSL) can devote someone if the city or state cannot. Most associations have been offered a position but have declined. This TG has a variety of stakeholders that represent many disparate interests – manned, unmanned, airports, etc. Virtual meetings aid in allowing distant persons to attend.

After the conclusion of the TG1 discussion, the DAC revisited the TG3 presentation to accept the group's interim report formally. Chairman Krzanich called for any last comments on TG1's presentation, and there was none. He then called for additional comments and motion for acceptance of TG3 material. A motion to approve TG3's update was made and seconded, and was adopted with no objections.

## New Business

A call for new business was made by Chairman Krzanich.

**Question:** Given the uncertainty with the 2018 FAA reauthorization, is it appropriate, and is there a need, for long-term funding, or to have someone advocate for the DAC to allow continued work in the future?

**Response:** To reword the question, as the legislation moves forward is there a placeholder in there for UAS? That would be considered as part of the TG3's work, and they will account for the FAA funding overall in the development of their recommendations.

In terms of a placeholder, in the House version of the FAA bill, there is a section asking for a report out on these types of funding issues. TG3 remains mindful of what is happening in the bills as they go forward.

## Dates and Agenda (if known) for Next 2 Meetings

November 8, 2017: Seattle, WA.

### Action Items

Action	Responsible Party	Schedule	Status
<b>ACTIONS OPEN FROM PREVIOUS MEETING</b>			
RTCA to summarize the comments received for each TG and submit for their review and consideration.	RTCA	ASAP	CLOSED
TG1 re-look at priority 4 (State and Local Interest In and Response to UAS) with more attention.	TG1	July	CLOSED
RTCA to help identify DAC members who wish to assist in addressing county and city conventions, and to assist in defining what output can be produced that will benefit the two conventions; and work with DAC member Mayor Lee's office and Robert Boyd to get on the agendas.	RTCA	On-Going	OPEN
RTCA to coordinate a webinar for SC-228 that can be reviewed by all DAC members.	RTCA & SC-228	ASAP	CLOSED
<b>NEW ACTIONS</b>			
RTCA to send a roster of the government attendees to the DFO including add-date.	RTCA	July	CLOSED

### Closing Remarks

Chairman Krzanich expressed his thanks to the members for their preparation and participation. He believes that the committee is well-positioned for the November meeting.

Mr. Elwell also thanked the TGs for their time, hard work, and participation in the meeting. He expressed appreciation for the work being done on the country's behalf in this new technology. There are many activities involving UAS happening in Washington DC, and the FAA is providing assistance to Congress as the reauthorizations bills before them are worked. Between now and November 8, 2017, there may be new things to incorporate into the committee's work and the FAA looks forward to the next meeting and report of progress. On Administrator Huerta's behalf, he thanked all the members.

Ms. Jenny observed the extraordinary work of TG2, who although they did not report during this meeting, has submitted their final report to the DAC for review in November.

The meeting was adjourned at 12:35 PM EDT.

## Attachments

<b>DAC Meeting Attendance</b>	
<b>LastName</b>	<b>FirstName</b>
krzanich	brian
Elwell	Dan
Agvent	Greg
Aitken	Mark
Alvear	Jonathan
Angotti	Kathryn
Barkowski	Justin
Baum	Sophie
Bechdolt	Anne
Berg	Christopher
Boyd	Robert
Bramlett	Catherine
Bullard	Shawn
Caldwell	Nathaniel
Canoll	Tim
Carey	Bill
Carmel	Mark
cassidy	sean
Chasen	Michael
Chaudhari	Claudia
Cirillo	Michael
Crimaudo	Stephen
Crozier	Bill
Davis	James
DeAngelo	Mark
DeJong	Christine
Dygert	Jeff
Dyment	Michael
egan	nancy
Fanelli	Matt
Farnsworth	Andrew
Fishman	Aryeh
ford	nancy
Friedman-Berg	Ferne
Gielow	Ben
Gilbert	Patricia
Gilbert	Spencer
Goldstein	Noel

Gomez	Martin
Graetz	Todd
Graham	Randy
Greene	David
Grimsley	James
GUCKIAN	PAUL
Hansell	David
Hanson	Richard
Harm	Chris
Hartman	Ryan
Hartney	Maureen
Hawthorne	Robert
Heft	Laura
Hughes	Rob
Isom	Robert
Kass	Howard
keegan	Charlie
Kelley	Steve
Kenagy	Randy
Kimchi, Amazon	Gur
King	Lance
Kirov	George
Koch	Robin
Kohler	Brittney
Lamond Jr	Robert
Laris	Michael
Longsworth	Jeffrey
Madden	Mark
Malloy	Lisa
Martino	Chris
Matsuda	David
mattai	Nan
McCans	Stefanie
McDuffee	Paul
McNeal	Greg
Mihelic	Michele
Mikolajewski	Mary
Mills	Houston
Monaco	John
Mora	Marily
Murphy	Gerry

Mykityshyn	Dr. Mark
Naaden	Jennifer
Osit	Steven
Pann	Chin
Pierce	James
Quigley	Bryan
Resnick	Jon
Rhodes	David
Rice	Christian
Richards	Jeffrey
Rosenbloom	Scott
Rosia	Megan Rae
Rubenstein	Daniel
Ryals	Lillian
Schutt	Jeff
Secen	Al
Senkowski	Michael
Shellabarger	Nan
SIEWERDT	ENO
Snow	Joanne
Snyder	Kyle
Snyder	Tanya
Straub	Philip
Stull	Tim
Suarez	Brandon
Suzan	Kenneth
Swain	Kat
TEMPROSA	LAURALYN
Terry	Ryan
Walden	Gregory
Walsh	Matthew
warren	jennifer
Weidner	Steve
Wells	Jay
White	Greg
Whittaker	Rick
Williams	Dan
Wright	Steve
Zuccaro	Matt