RTCA

THE GOLD STANDARD FOR AVIATION SINCE 1935

Overview of RTCA & Federal Advisory Committees for DAC Leadership

September, 2016

Outline

- FAA Utilization of RTCA as FAC
- Tackling Policy and Technology
- Minimum Performance Standards
- FACA Guidelines
- Consensus Process
- Roles and Responsibilities
- Committee Charter
- Expectations of Members
- Operating Norms

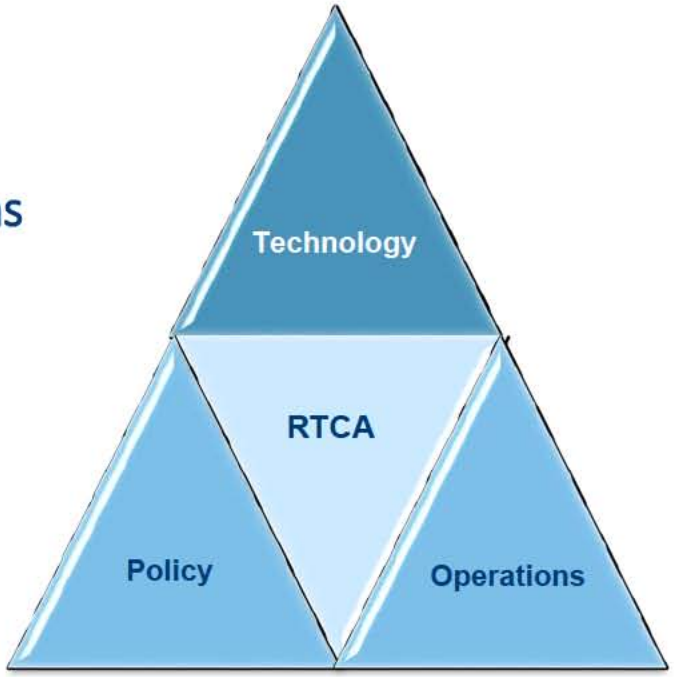
RTCA

Working at the Nexus of Technology, Policy and Operations

Mission Statement

To be the premier Public-Private Partnership venue for developing consensus among diverse and competing interests on resolutions critical to aviation modernization issues in an increasingly global enterprise.

Our recommendations — whether technical, policy, financial or operational — lead to positive, timely, tangible and measurable results, returning value to all who participate.



Utilized by FAA to Operate Committees

- RTCA Chartered by the FAA
- Operates under Federal Advisory Committee Act (FACA)
- Delivers Consensus-based, Objective, Independent Recommendations
- Provides Anti-trust Protection
- Policy and Operations
  - FAA and Industry investments, priorities and commitments
- Technical - Minimum Performance Standards
  - Basis for certification
  - Define ***minimum operational***, safety & performance requirements
- Drones (work in progress)
- Committee Members Selected from RTCA Members

Policy Consensus Advice

- Airspace Modernization More than Technology
- Critical Components of Success:
  - Airspace Access Policies
  - Investment Incentives
  - Investment Priorities
  - Operational Concepts
  - Regulations and Certification
  - Airport Community Outreach
  - Training (Pilots, Controllers, Others)
  - Performance Measurement and Reporting
  - ~~~
- Drones will introduce new set of policy challenges

Technology Consensus Advice: Minimum Performance Standards

- Drive Innovation, Expand Markets
- *NOT* design standards
- End-to-end System and Component Level
- Based on Specification of Operational Environment
- ***Minimum***
  - Strive not to over-specify
- ***Performance***
  - To meet safety, efficiency, security requirements
- ***Standard***
  - Ensure interoperability
- Committee Drive Speed of Production

FACA Guidelines & Principles

- Promote Openness, Accountability, Balanced Viewpoints
- Membership Balanced Representation from Community
- Competing Interests Welcome
- Potential Conflicts of Interest Must Be Disclosed
- Limit FAA Membership, Serve as Ex-officio Members
- Committee Meetings Open to the Public
- Agenda in Federal Register 15 Days Prior to Meeting
- Agendas, Meeting Minutes & Materials Posted on Web
- All WG Recommendations Vetted through Parent Comm
- Parent Committee Not a “Rubber Stamp” of Subcomm
- Non-member Allowed to Speak with Prior Approval

Consensus Process

- Consensus is the Essence of the Value that RTCA Brings to the Aviation Community
- Role Of Chairman is to Ensure Consensus
- Opportunity for All Voices to Be Heard
- Analytical Basis for Decisions
- Transparent Process
  - Documentation captures discussion & resolution
- Consensus is not Always 100% Agreement
- Members “Can Live With” & Support the Results

Dissenting Opinion

- If an issue cannot be resolved in timely manner, dissenter encouraged to document non-concur
- Dissenting opinion presented to FAA along with committee's consensus
- Committee leadership document why the committee believes its position is the superior one

RTCA Role

- Committee Establishment
- Input on Member Selection
- Secretary
- FACA Transparency Compliance
- Committee Support
- Chairman Support
- FAA Communication
  - Tasking letters from FAA to committee
  - Recommendations to FAA from committee

RTCA Program Director Support

- The Role of the RTCA Program Director is to Assist The Committee and its Leadership in Achieving Its Goals
  - Adhering to TORs, meeting deadlines
  - Achieving consensus
  - Analysis, decision-making
  - Logistics, calendars, info sharing, meetings
  - FACA rules
  - Delivering products in accordance with templates
  - Establishment and sun-setting of work groups

Key Committee Positions

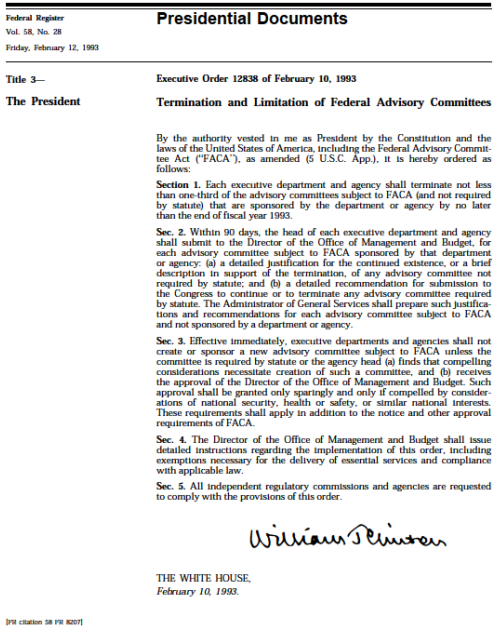
- A Minimum of Three Key Roles Must be Filled:
  - Chair(s)
  - Designated Federal Official
  - Secretary

Designated Federal Officer

- The FAA assigns the Designated Federal Officer (DFO) to the DAC in accordance with FACA
- DFO Works with RTCA to Determine Appropriate FAA Participation on the DAC
- DFO or FAA Designated Alternate Must be Present (in person) for all Plenary Meetings
  - If DFO is unable to attend Plenary, (s)he is responsible for finding an approved alternate
    - Alternate details should be shared with RTCA Program Director at least 5 days prior to meeting

Responsibilities of Designated Federal Officer

- Approve Agenda for Each Mtg
- Read DFO Statement / Public Announcement at each meeting
- Adjourn a meeting if in the public's interest



Federal Register
Vol. 58, No. 28
Friday, February 12, 1993

Presidential Documents

Title 3—
The President

Executive Order 12838 of February 10, 1993

Termination and Limitation of Federal Advisory Committees

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the Federal Advisory Committee Act ("FACA"), as amended (5 U.S.C. App.), it is hereby ordered as follows:

Section 1. Each executive department and agency shall terminate not less than one-third of the advisory committees subject to FACA (and not required by statute) that are sponsored by the department or agency by no later than the end of fiscal year 1993.

Sec. 2. Within 90 days, the head of each executive department and agency shall submit to the Director of the Office of Management and Budget, for each advisory committee subject to FACA sponsored by that department or agency: (a) a detailed justification for the continued existence, or a brief description in support of the termination, of any advisory committee not required by statute; and (b) a detailed recommendation for submission to the Congress to continue or to terminate any advisory committee required by statute. The Administrator of General Services shall prepare such justifications and recommendations for each advisory committee subject to FACA and not sponsored by a department or agency.

Sec. 3. Effective immediately, executive departments and agencies shall not create or sponsor a new advisory committee subject to FACA unless the committee is required by statute or the agency head (a) finds that compelling considerations necessitate creation of such a committee, and (b) receives the approval of the Director of the Office of Management and Budget. Such approval shall be granted only sparingly and only if compelled by considerations of national security, health or safety, or similar national interests. These requirements shall apply in addition to the notice and other approval requirements of FACA.

Sec. 4. The Director of the Office of Management and Budget shall issue detailed instructions regarding the implementation of this order, including exemptions necessary for the delivery of essential services and compliance with applicable law.

Sec. 5. All independent regulatory commissions and agencies are requested to comply with the provisions of this order.

William J. Clinton

THE WHITE HOUSE,
February 10, 1993.

[FR citation 58 FR 8207]

Chair Responsibilities

- Facilitate Compliance with TOR
- Set Schedule in Accordance with TOR to Ensure Delivery On-time with Stated Dates
- Forge Consensus, Manage Non-consensus as Necessary
- Coordinate Routinely with RTCA President & VP, and DFO
- Routine Communication with Committee Members
- Deliver Recommendations to FAA

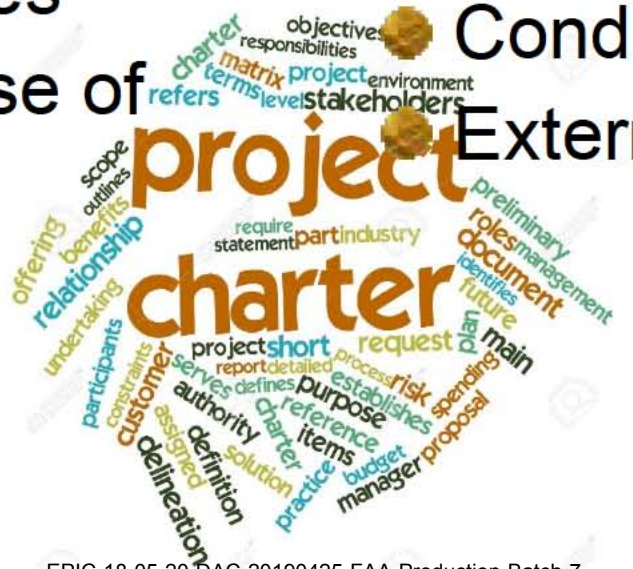
Secretary*

- Keep Committee on Track to Meet its Milestones
- Help Committee Produce Quality Product(s)
- Post Agenda in Federal Register Prior to Mtg
- Produce Meeting Summaries and Post Publicly
  - Key Actions
  - Presentations
  - Attendance
- Provide Logistics, IT and AV support
- Track Attendance
- Support Review and Commenting Process

* RTCA PD and support staff provide support to Secretary

Terms of Reference: Charter for the Committee

- Committee Leadership
- Background
- Purpose and Scope
- Structure of Committee
- Responsibilities
- Envisioned Use of Deliverables
- Membership Makeup
- Tasking
- Operating Norms
- Oversight
- Conduct of Meetings
- External Coordination



TOR: Purpose and Scope of the DAC

Facilitate Safe, Secure & Efficient Integration of Drones into the NAS

- Assist FAA in Setting Priorities for Tackling Issues
- Provide an Open Venue for FAA and UAS Stakeholders
- Forge Single, Consensus-based Set of Recommendations
  - Recommendations may be for tactical and strategic planning purposes
- Venue for New Entrants and Traditional Aviation Collaboration
  - Learn from each other

From the Draft TOR

Operating Norms

- Guide, Track & Report Progress of WGs & Task Groups
- DAC - Coordinate Products for Submittal to the FAA
- Term limits
- Consensus and Non-concurs
- 3 Plenary Meetings per Year
- ~6 DACSC Meetings
- Potential for Work Groups and Task Groups

Responsibilities

- Drone Advisory Committee
  Overall direction of DAC
  - Review and approve recommendations to FAA
  - Field requests from FAA
  - Review and approve creation of Work Groups, as appropriate
  - Meet three times per year in Plenary (open to public)
  - Direct work of DACSC

From the Draft TOR

- *Potential* DAC Subcommittee
  Staff to DAC
  - Guide and review selected work of WG/TGs, present findings to DAC
  - Meet bi-monthly or as needed
  - Forward recommendations and other deliverables to DAC for consideration
- Task Groups / Work Groups
  - Created to address specific tasking
  - May be short-term or standing activities

DAC Recommendations

- Output of the DAC is Expected to:
  - Inform the FAA of consensus industry positions on topics that will advance UAS integration into the NAS
  - Increase safety, security, capacity, and efficiency
  - Be consensus based & articulate required resources
  - Define requirements for joint private/public partnership activities

From the Draft TOR

Guidelines for Recommendations

- Advance UAS Integration into the NAS
- Increase Safety, Security, Capacity and Efficiency Of NAS
- Be Consensus-based and Articulate Required Resources
- Define Requirements for Public/Private Partnership Activities
- Be Actionable With Specific Outcome
- Articulate Assumed Capabilities, Policies, Ops Concepts and FAA's Role
- Address Whether Conops are Flexible Enough
- Address Whether Conops Impact Safety, Security or Efficiency?
- Address Whether Recommendations Require and Inform New Performance Standards?
- Address Interoperability Issues?
- Include Duration of Proposed Recommendation
- Address Whether Recommendation Require Rulemaking?

FAA Response to DAC Recommendations

- Could lead to:
  - Additional Tasks
  - New WGs or TGs formed
  - Tasks to other groups such as ARCs
  - Tasks to Standards Committees
  - Tasks to Research Organization

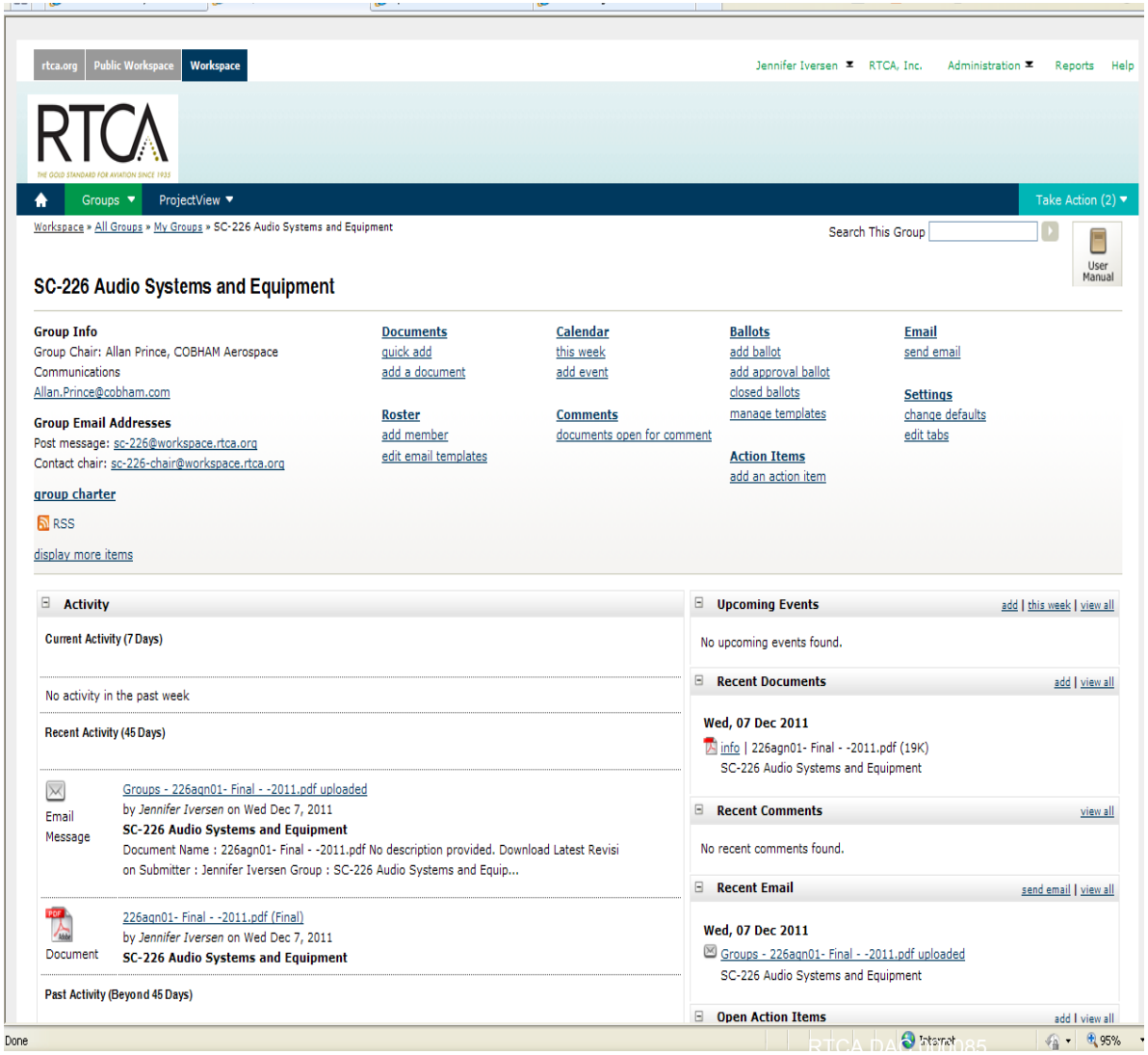
Expectations of Committee Members

- Must fill out Special Committee Application
- Must represent a relevant stakeholder
- Must commit to attending meetings and contributing to the creation of products
- If members are replacing members from their organization, it is expected that the new member is fully briefed on the actions of the committee
- Keep workspace profile information up-to-date
- RTCA Members

Managing Committee Membership

- Chair/DFO/RTCA Review Roster Periodically to Ensure:
  - All contact information is up-to-date
  - Assess level of participation
    - Members may be reminded of the responsibilities they agreed to when signing up to be on the committee
- Chair, DFO & PD Will Annually Review Membership to Ensure Roster Captures and Retains Contributing Members
- Term Limits: FAA/RTCA/Chair to Coordinate on Replacements

Collaboration Workspace



RTCA maintains a "Go To" place for members only

- Meeting/Attendance information
- Calendar
- Agenda
- Meeting Summary
- Committee Papers
- Documents
- Doc commenting tool

Meeting Summaries

- Secretary will capture Meeting Summary
- Committee Chair will certify the accuracy of Summary for approval by the committee
  - If meeting minutes are changed during Plenary approval, changes should be captured in summary of next Plenary meeting
- Meeting action items are captured and tracked

Standard Operating Procedures

- DAC Chair will coordinate routinely with RTCA
  - Calls 1-2 times per month
  - Develop DAC Meeting Agenda for DFO approval
  - RTCA assist in Annotating Agenda
  - Set DAC Meeting Schedule & Location
- DAC Chairman Outreach to DAC members
  - Calls
  - Emails
- Official Delivery of Recommendations to FAA
  - RTCA will draft for Chairman's review

In Summary

- FAA to use Consensus-driven Process to Drive to Timely, Targeted Solutions to Most Vexing Issues Regarding Integration of Drones Safely and Efficiently in the Airspace

RTCA

transparency
EXCELLENCE
objectivity
CONSENSUS
commitment
trust
LISTENING
measurable
inclusiveness
accountability

RTCA

THE GOLD STANDARD FOR AVIATION SINCE 1935

Drone Advisory Committee Training
Link to Recorded Session

September 7, 2016

Training Session Link

- Please follow the link below to access the WebEx recording of the Drone Advisory Committee Training session held on September 7, 2016.
  - You may be required to download a recording viewer
  - The filename is nbr2player.msi and the file is 16.7 Mb in size
  - If you have difficulty with this link, contact RTCA.

DAC RTCA Training Session-20160907 1707-1

Wednesday, September 7, 2016

2:06 pm | Eastern Daylight Time (New York, GMT-04:00)

Play recording

Play recording (56 min)

Recording password: (This recording does not require a password.)

DAC Webinar Script
September 7, 2016
Recording: Sep 7 & Sep 8, 2016

[Victoria on camera] Victoria Wassmer: Welcome, I'm Victoria Wassmer, the Acting Deputy Administrator of the FAA and the Chief NextGen Officer. Thank you for joining us on the Drone Advisory Committee – or the DAC. We are all looking forward to working with you and your staff.

The challenge we are facing is a very large one. It's the integration of unmanned aircraft into the National Airspace System, or the NAS, as we call it. We have not dealt with a challenge like this at the FAA in many decades.

Consider some of the numbers so far. Just this year, more than 520,000 people have registered as recreational UAS owners and more than 25,000 commercial operators also have registered their UAS. In the first week of the Part 107 rule, more than 2,500 people passed the

Remote Pilot Knowledge test, and we've processed more than 5,000 applications, including many from operators who already hold pilot certificates. And that was just in the first five days. That type of demand is a great example of how fast we are growing and how many people are involved in the UAS field.

When we established the UAS Integration Office, our first priority was to make sure everyone in the agency was on the same page on UAS integration. Integration isn't confined to just one office. We need agency-wide buy-in to one vision and one plan of action, and that's not easy in an organization as big as the FAA. We are looking to the DAC to help refine our goals and priorities and to create a collective vision for the future. We have a lot of work to do, but we're moving in the right direction, and we're moving faster every day. And now I'll turn it over to my colleague, Earl Lawrence, who is our Director of the UAS Integration Office.

Hi –I'm Earl Lawrence. As Victoria said, I am the Director of the UAS Integration Office at the FAA.

Earl Lawrence: Strategies and implementation planning are key to our success. [slide 1 – Strategic Initiatives] All the FAA's strategic planning efforts flow down from the Administrator's Strategic Priorities, which are:

- [click] Make aviation safer and smarter using risk-based decision-making,
- [click] Deliver National Airspace System benefits through technology ,
- [click] Enhance our Global leadership, and
- [click] Empower and innovate with the FAA's workforce of the future

[click – mission statement] We developed the UAS mission statement with all of those initiatives in mind. [Earl on camera] Our UAS mission is:

- "For the United States to establish and maintain the global standard for safe and innovative adaptation of UAS technology, and efficiently integrate UAS operations in our national airspace system using risk-based decision making, performance-based regulations, and industry consensus standards."

This mission statement helped lead to the development of our [double click to trigger movement left – Strategic plan] strategic priorities, which are meant to drive the Agency's overarching philosophy for UAS integration. These strategic priorities are:

- [click] Safety: we need to enable *safe* UAS operations within the NAS;
- [click] Adaptability: we also need to create an environment where emergent technologies can be safely and rapidly introduced into the NAS; and
- [click] Global Leadership: we want to shape the global standards and practices for UAS through international collaboration.

[click to center chart – transition to slide 2] We've followed up that strategic plan by developing an [click – IP text] Implementation Plan over the past four months. We included all of the FAA offices in this effort, and we gave everyone an objective to rally around: What will it take for us to have the required rules and operational policies in place to support the full spectrum of UAS operations by the end of 2020?

Meanwhile, we've developed budget and staffing plans to support this effort, [click – Business plans] which are being built into business plans across the FAA.

[Earl on camera] The Implementation Plan is a living 5-year planning document meant to be updated yearly. It is in final executive review and doesn't provide all the detail we would like, particularly past the initial two-year outlook, but we are already seeing benefits from it. Those include better alignment of activities within the agency and better identification of gaps needed to achieve our stated goals.

As FAA Administrator Michael Huerta often says, UAS technology is moving at the speed of our imagination, and we cannot keep moving at the speed of government. That is why the FAA is building a regulatory framework that is flexible, responsive, and phased to accommodate UAS operations.

Our integration strategy is straightforward. [slide 3 – blue box with axis labels] It is a phased approach that facilitates [click] low-risk operations first, and then works up [click] to full UAS integration. The development of operating standards will take us from low-risk, segregated operations to full integration. Along this path, the degree of integration increases with each step. [click] Section 333 exemptions were a start, but the [click] Part 107 rule that just took effect on August 29 is clearly the beginning of our rulemaking efforts and serves as the basis for everything to come. The next step will be [click[flights over people, and after that we'll be looking to expand Part 107 to included click] extended and beyond visual-line-of-sight operations. We've already

learned a lot about these types of operations through our three Pathfinder partnerships with industry, and we'll learn still more as we continue to issue waivers to Part 107. [click] Farther down the road, our regulatory framework will adapt to enable increasingly non-segregated operations [click].

[Earl on screen] As integration increases, the level of risk also increases, and the level of standards development must *also* increase to maintain a societally acceptable level of risk. More effort will be needed by the FAA, the UAS industry, and our government partners as the risk and operational complexity increase.

Now I'd like my colleague Bill Davis to share some insight into airspace management plan.

Bill Davis

[Bill on screen] Hello, my name is Bill Davis, Director of Emerging Technologies for the FAA's Air Traffic Organization.

On August 29th, the small UAS rule became effective. As you know the rule focuses on small UAS operations at low altitudes. [slide 4] Since we are at the beginning of UAS integration into the national airspace system and also because speed is important, we are relying on near-term procedural controls to manage UAS operations as we develop longer-term technological solutions. Some of these procedural controls are items such as:

Altitude limitations: these are necessary to help maintain segregation from the minimum safe altitude of manned aircraft operations. Another is

- Airspace restrictions: As you may know, there is [slide 5] controlled and uncontrolled airspace in the NAS. You can think of controlled airspace as airspace where the FAA is providing air traffic control instructions, and it is referred to as Classes A, B, C, D and E. [click] Class A airspace is the airspace that you cruise in between airports. [click] Class B airspace, is used for the largest

and most complex airports and [click] classes C, D, and E airspaces are used around airports and other areas that are progressively less busy. [click] You can think of uncontrolled airspace as regulated airspace, in which the FAA does not provide air traffic control services, this is referred to as [click] Class G airspace. With regards to the Small UAS Rule, Class G is now open for UAS operations 400ft and below, while entry into Classes B, C, D, and E airspace will require specific ATC authorizations.

[slide 6 – transparency effect is automatic; *ideally, start the visual with the picture transparent*] There are several other procedural controls in which you'll be very interested. [click] One is restrictions on the proximity to people and another is the requirement [click] to stay within visual line-of-sight of your UAS.

We expect industry to push the envelope of what is possible, so numerous sections of the Small UAS Rule are designed to be waiverable, including the sections that I just noted. [click – text and

picture fades] As Earl said earlier, this waiver process will help us learn how to enable UAS operations in a more streamlined way.

It is our expectation that as we move to the future we will rely less on procedural and airspace controls and [click – green bar] more on technological advancements. We are counting on the DAC to help us find the best way forward.

As you know there is a need to evolve our NAS infrastructure to enable scalable UAS operations. [click – picture fades in] Historically, our NAS infrastructure was designed for point-to-point traffic management of manned aircraft between airports. Our legacy NAS infrastructure is complex and not easily scalable to accommodate UAS operations. [click – picture fades, text starts] Therefore, we need to adopt new concepts such as [click] data exchange capabilities that are both scalable and cost effective. The FAA is looking to industry to help provide some of these solutions, as well as to help create new services

for UAS operators. To achieve these changes, we realize that we will need to enable innovation and flexibility.

One way we will create flexibility is through the use of [click] performance-based standards, which will give industry the flexibility to build solutions around ***performance*** **targets** rather than FAA requiring specific regulatory solutions. [Bill on screen]

My colleague Steve Bradford will now talk about the FAA's more long-term vision for our airspace system.

Steve Bradford

[Steve on screen] Hi all – I'm Steve Bradford, Chief Scientist in the FAA's NextGen organization.

[slide 7] By the far-term, the National Airspace System will have evolved into two separate but collaborative airspace management systems: On the one hand, the *Air Traffic* Management (or ATM) [click – ATM text] system – where there is direct interaction between the

operator and Air Traffic Control; and on the other, the *UAS Traffic* Management (or UTM) system [click – UTM text] – where the interaction is more indirect and is based on the sharing of information on airspace constraints and notification of flight intent.

[click – half transparency, should last for duration of ATM talk – I set for 20 seconds to start but timing should match audio] For unmanned aircraft in the ATM system, communication, navigation, and surveillance are essential to knowing who is operating an aircraft, where the aircraft is, and where it intends to go. Technology and established policy and procedures provide the necessary information to enable the appropriate air traffic management. For some UAS operations, movements require us to issue advisories to manned aircraft. For others, limited instructions, such as stoplights or geo-fences are required. For the rest, detailed air traffic interactions and instructions are required to fully integrate and safely separate

unmanned aircraft from manned aircraft because the aircraft occupy the same airspace.

The FAA has collaborated with NASA on studies advancing air traffic control interoperability with UAS using detect-and-avoid systems in controlled airspace and will continue to do so as needed. We will also continue to collaborate with industry on flight tests to validate standards for detect and avoid systems, as well as command and control radio links.

[click – UTM half of picture fades back in, ATM fades out] For small UAS in the UTM system, there is a cooperative interaction between operators and the FAA to determine and communicate real-time airspaces status. The UAS operator is responsible for navigation, communications, "surveillance", and separation from other aircraft. The FAA is working with NASA and the UAS community to better define UTM across the range of operations that will support operators by strategically and tactically separating their vehicles.

[Steve on camera] And with that, I'll turn it back over to you Earl.

Earl Lawrence

[Earl on camera] Thanks Steve.

As we all start to dive into the issues and challenges around UAS integration as a community, we've noticed some recurrent themes. Communication is, as always, the biggest barrier, particularly as it relates to the FAA's roles and responsibilities for: privacy, interdiction of non-cooperative aircraft, applied research, and our interaction with local governments. Understanding the requirements of the federal government's rulemaking process, *and* how public and industry consensus can speed up that process, is a frequent challenge. I also want to point out that the latest FAA Reauthorization came with a number of mandates for us to tackle, some more complicated than others. We won't go too into the weeds right now, but understand that we're not ignoring any of these issues.

I'd like to leave you with some of the key milestones [slide 8] we have accomplished this year, and what we're looking to do in the near future. Here are some of our key integration milestones in 2016, categorized by [click] research, technical activities, strategic planning, major events, and rulemaking.

[you can time clicks for each – they're all manual] There was a lot of activity over the past year. We developed research plans and technical standards. We reconvened and expanded the UAS ExCom, which is our partnership with other federal agencies. We drafted a Strategic Plan and an initial Implementation Plan. And we are integrating these into the business plan and budget for each FAA office for 2017. We also conducted a tremendous amount of outreach last year, including the first UAS Symposium, which was held in Florida in April. The Symposium was an unprecedented effort, with every key director responsible for UAS integration presenting on airspace, rulemaking, security, and communications. All of this culminated in our

effort to now charter this group, the Drone Advisory Committee. [Earl on camera] The designated federal official for the DAC is FAA Acting Deputy Administrator Victoria Wassmer.

[Victoria on camera] Victoria Wassmer: We look forward to working with you, and having your expertise and insights help us shape the future.

You will all play a key role in defining significant milestones in the coming years. With your input and effort, we will be able to focus our efforts in the most productive way to support the rapid integration of UAS into the NAS.

Finally, I wanted to wrap up by showing you how -- as members of the DAC – you and our partners at RTCA fit into our efforts to lead the integration of UAS into the NAS.

[slide 9] We're separated into three core parts that are really a circle and it's a continuous operation. As the designated federal official, I will task the group and provide data and education to all the DAC members

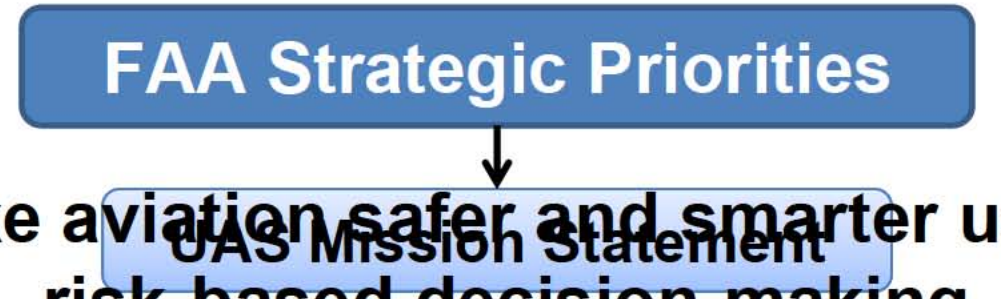
on the FAA's processes and procedures and rulemaking activities so you are informed about our work. I will also provide specific taskings and ask questions that we would like your help to resolve. Then the information will flow to RTCA, which will facilitate the consensus-building process and brings additional stakeholders together where necessary to develop a consensus position for the DAC to debate and finalize. As the DAC provides responses to these issues, it will also be making recommendations for additional taskings. And with that, we will start the circle once again, providing the information and resources on what the government is doing so you can assist us to develop consensus positions on those subject areas.

This has just been a snapshot of all the various activities going on within the FAA. And I'm sure you'll learn over the next few years, we're doing far more than we can present in this short forum. But we will be sharing many resources with you in the coming months that will help enable you to best determine how all stakeholders can support this effort.

I thank you for your service and leadership and look forward to working with each and every one of you.

Drone Advisory Committee

Setting the Stage



Make aviation safer and smarter using risk-based decision-making

Deliver National Airspace System benefits through technology

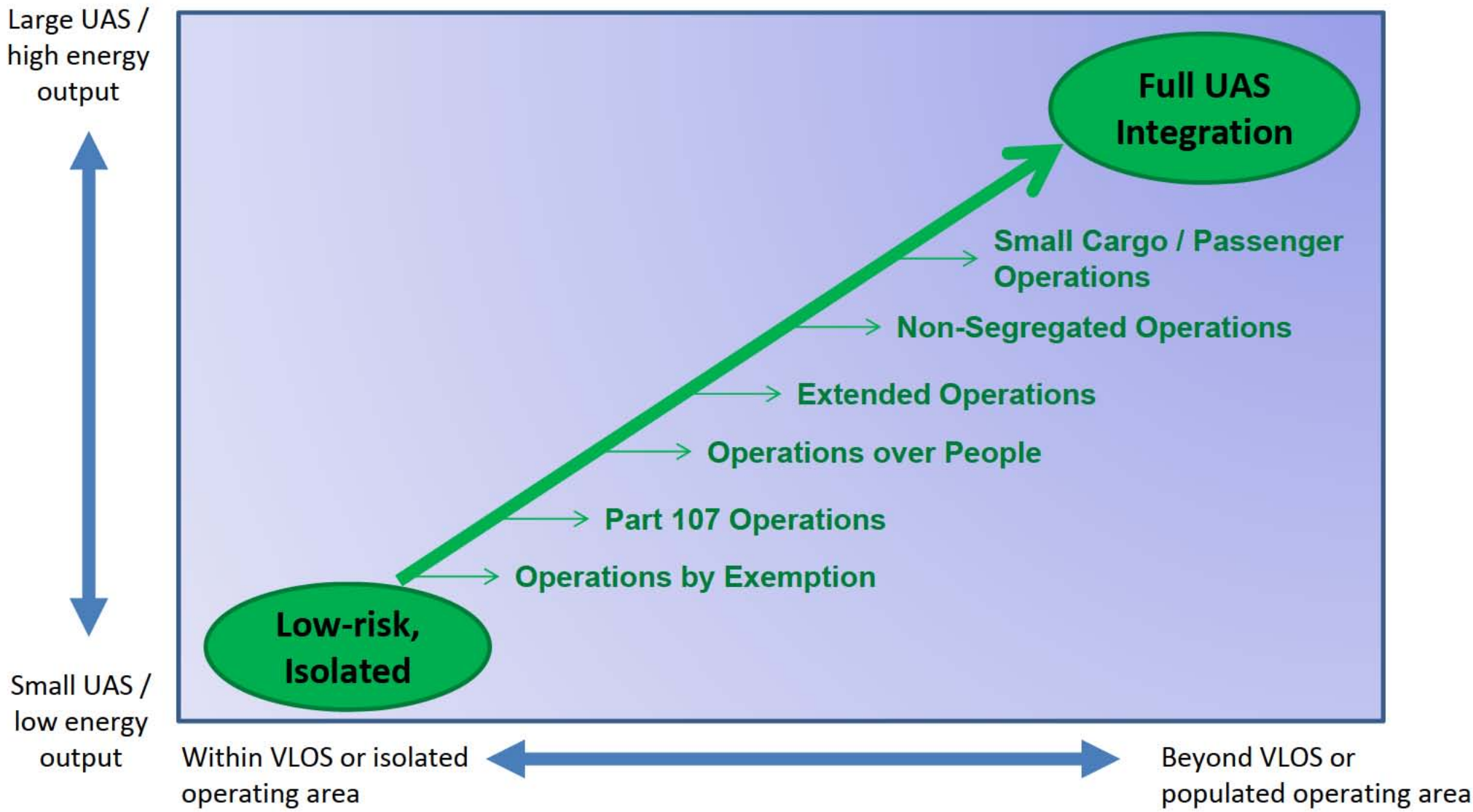
Enhance our global leadership

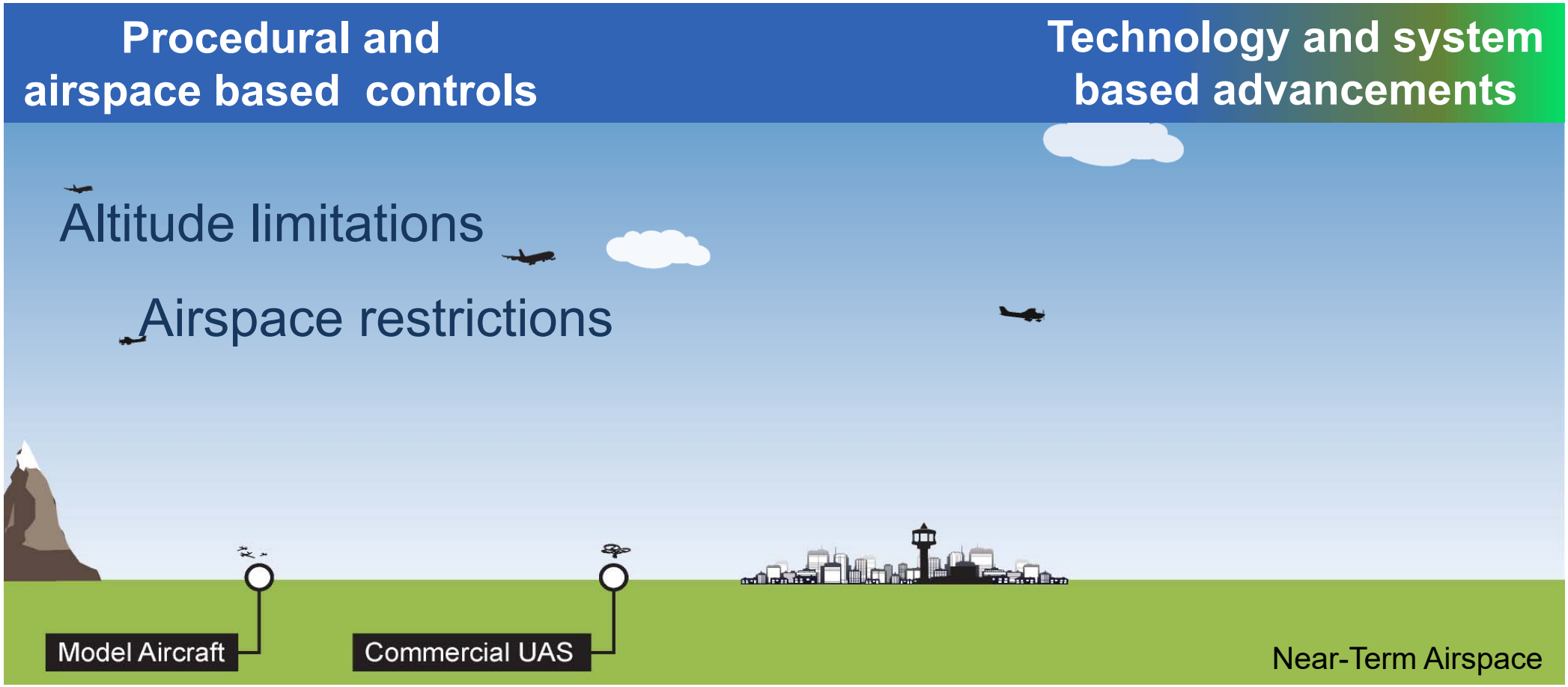
Empower and innovate the FAA's workforce of the future

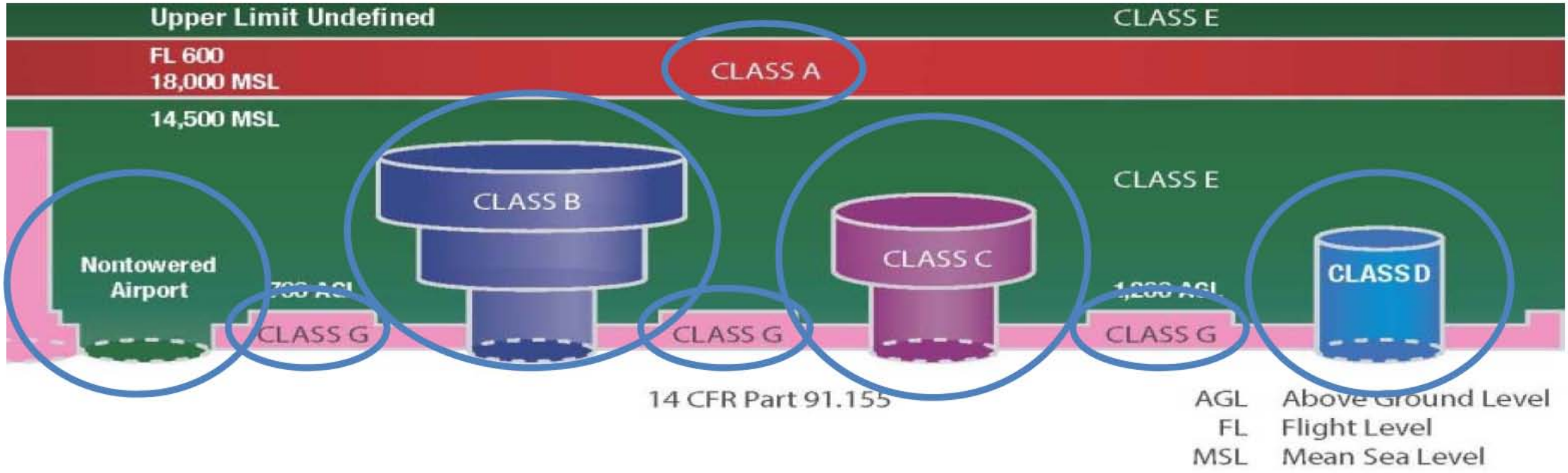
Safety: *Enable safe UAS operations within the NAS*

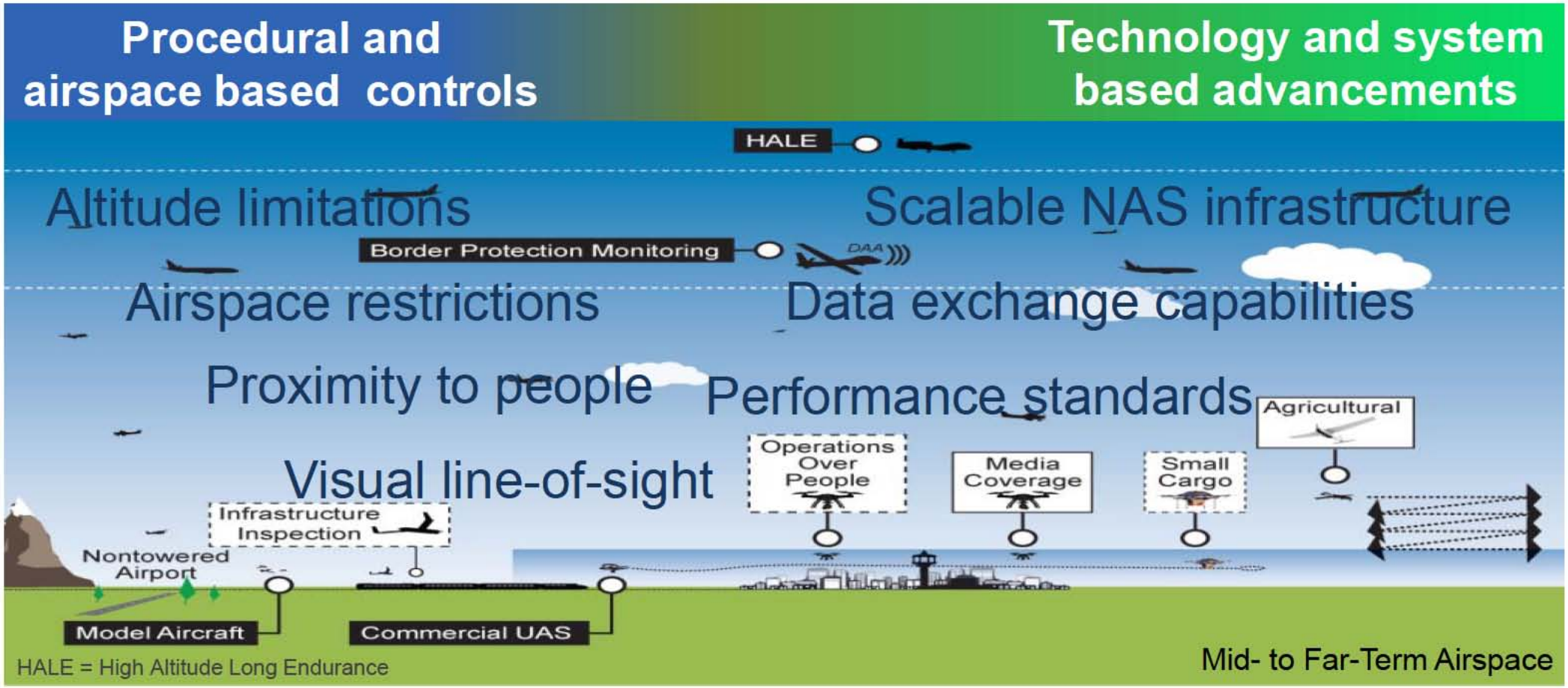
Adaptability: *Create an environment where emergent technology can be safely and rapidly introduced into the NAS*

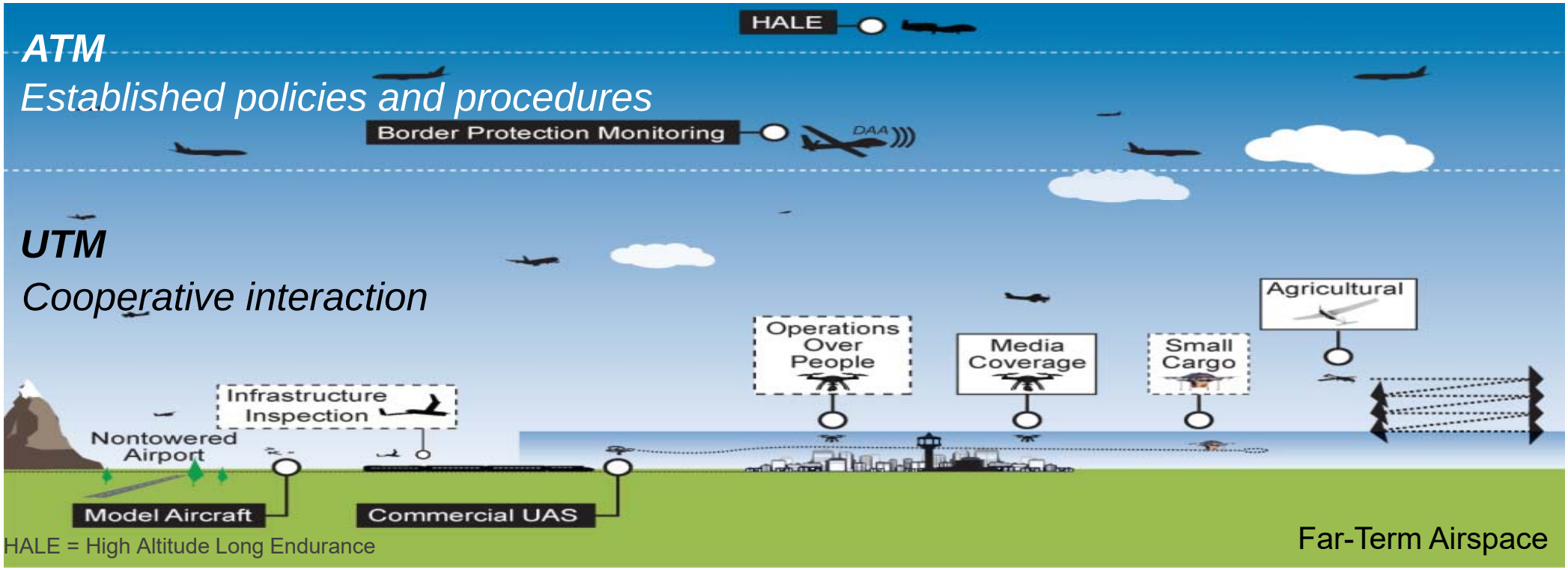
Global Leadership: *Shape the global standards and practices for UAS through international collaboration*

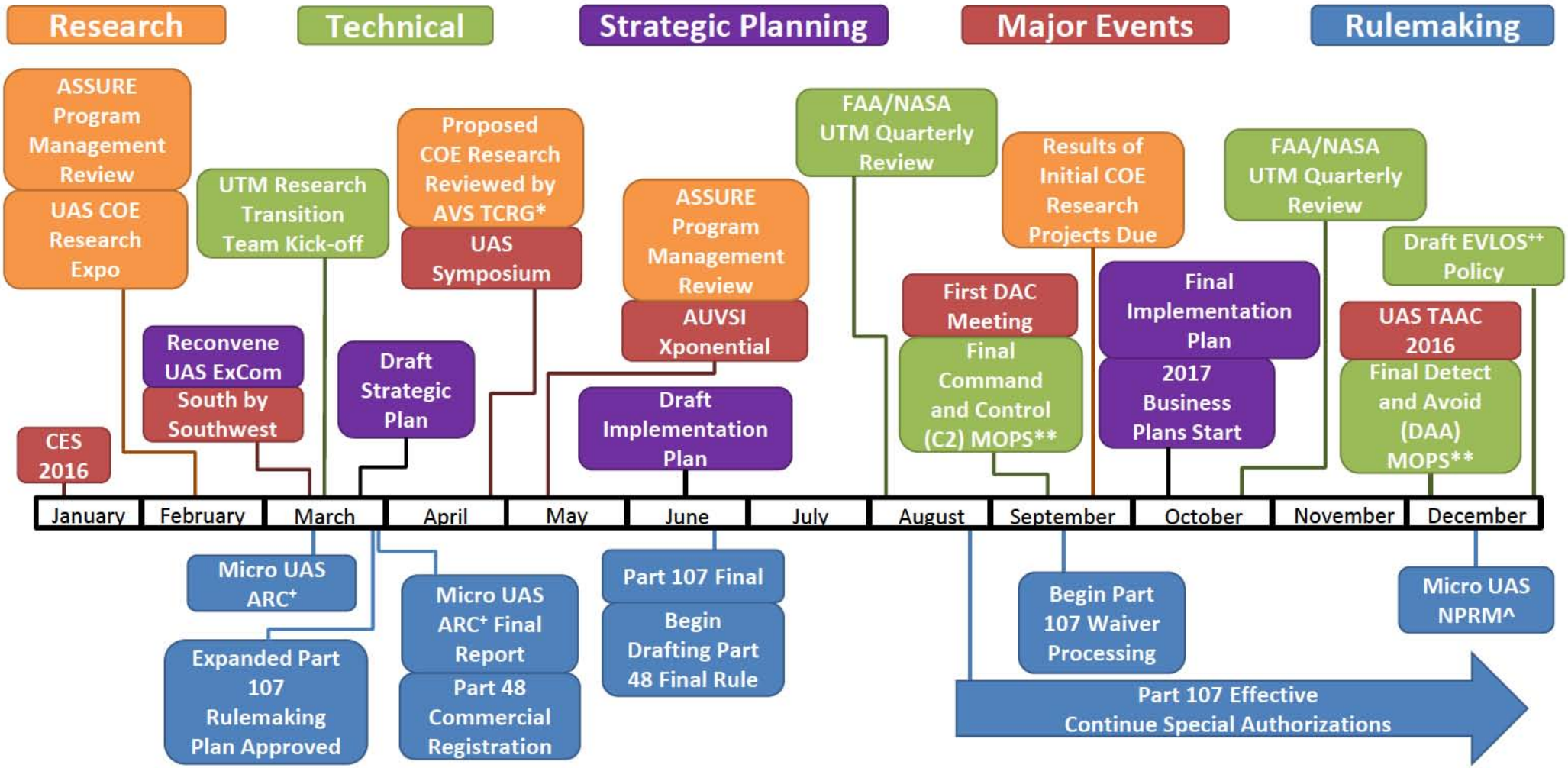

Large UAS / high energy output
Small UAS / low energy output
Full UAS Integration
Small Cargo / Passenger Operations
Non-Segregated Operations
Extended Operations
Operations over People
Part 107 Operations
Operations by Exemption
Low-risk, Isolated
Within VLOS or isolated operating area
Beyond VLOS or populated operating area


Procedural and airspace based controls
Technology and system based advancements
Altitude limitations
Airspace restrictions
Model Aircraft
Commercial UAS
Near-Term Airspace


Upper Limit Undefined
CLASS E
FL 600
18,000 MSL
CLASS A
14,500 MSL
CLASS E
CLASS B
CLASS C
CLASS D
Nontowered
Airport
CLASS G
CLASS G
CLASS G
14 CFR Part 91.155
AGL Above Ground Level
FL Flight Level
MSL Mean Sea Level


Procedural and airspace based controls
Technology and system based advancements
HALE
Altitude limitations
Scalable NAS infrastructure
Border Protection Monitoring
DAA
Airspace restrictions
Data exchange capabilities
Proximity to people
Performance standards
Agricultural
Operations Over People
Media Coverage
Small Cargo
Visual line-of-sight
Infrastructure Inspection
Nontowered Airport
Model Aircraft
Commercial UAS
HALE = High Altitude Long Endurance
Mid- to Far-Term Airspace

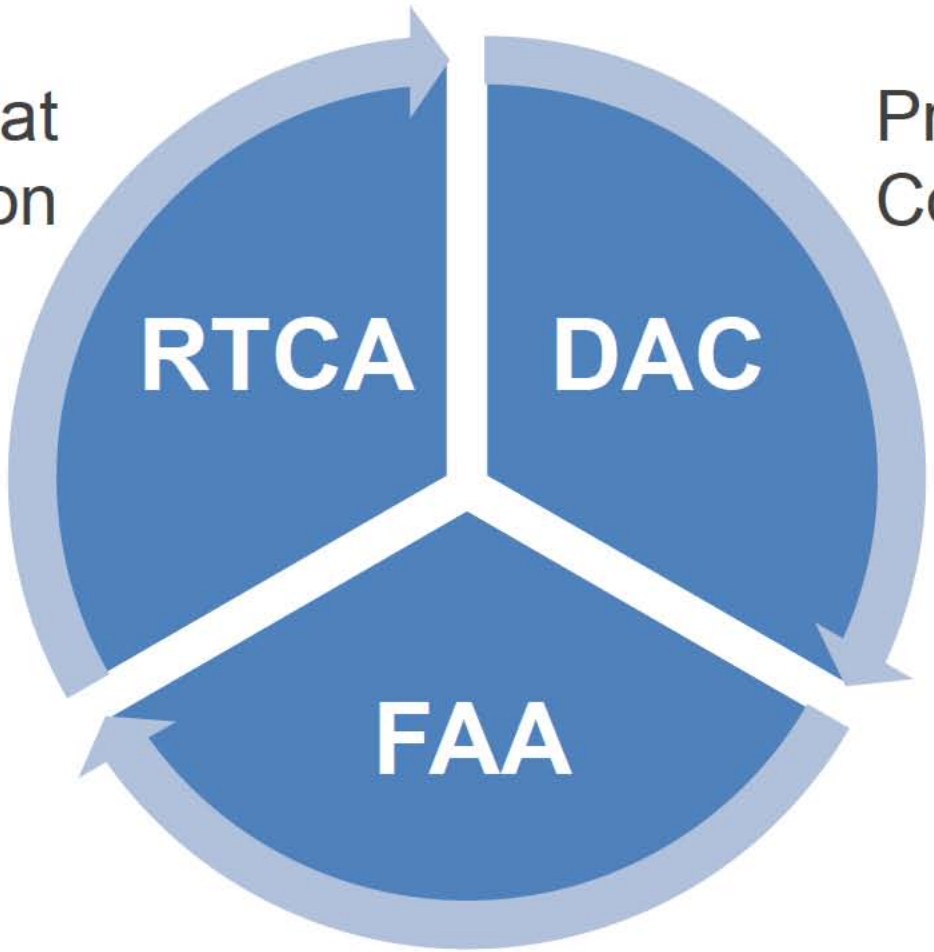

ATM
Established policies and procedures
HALE
Border Protection Monitoring
DAA
UTM
Cooperative interaction
Agricultural
Operations Over People
Media Coverage
Small Cargo
Infrastructure Inspection
Nontowered Airport
Model Aircraft
Commercial UAS
HALE = High Altitude Long Endurance
Far-Term Airspace



*Technical Community Representative Group | +Aviation Rulemaking Committee | ^Notice of Proposed Rulemaking | **Minimum Operational Performance Standards
++Extended Visual Line-of-Sight

Secretariat
Process Facilitation

Prioritization
Consensus-Building



DFO
Tasking

Webinar Invitation: UAS Ground Collision Severity Research

The Federal Aviation Administration (FAA) invites you to a webinar to review initial findings on UAS ground collision severity conducted by the FAA's UAS Center of Excellence (COE), Alliance for System Safety of UAS through Research Excellence (ASSURE). The *UAS Ground Collision Severity Evaluation Final Report,* completed by the University of Alabama in Huntsville, the University of Kansas, Mississippi State University, and Embry-Riddle Aeronautical University, is the first in a series of research results conducted by the FAA's UAS COE.

Date and time: April 28, 2017; 12:30-1:45 p.m. EDT
Speakers: Earl Lawrence, Director, FAA UAS Integration Office

Wes Ryan, Manager, Programs & Procedures (Advanced Technology), ACE-114, Small Airplane Directorate

David Arterburn, University of Alabama in Huntsville
Director, Rotorcraft Systems Engineering and Simulation Center

Please register at the following link:
https://attendee.gotowebinar.com/register/8105132809790373378. Registrants will receive a confirmation email confirming participation and providing a webinar link and phone number.

RTCA

THE GOLD STANDARD FOR AVIATION SINCE 1935

Drone Advisory Committee
Special Committee-228 Briefing

June 20, 2017

Session Briefing Link

- Please follow the link below to access the WebEx recording of the Drone Advisory Committee Briefing on SC-228 by Paul McDuffee on June 20, 2017.
  - You may be required to download a recording viewer
  - The filename is nbr2player.msi and the file is 16.7 Mb in size
  - If you have difficulty with this link, contact RTCA

SC-228 DAC Briefing-20170620 1802-1

Tuesday, June 20, 2017

2:02 pm | Eastern Daylight Time (New York, GMT-04:00)

Play recording (40 min 55 sec)

Recording password: (This recording does not require a password.)

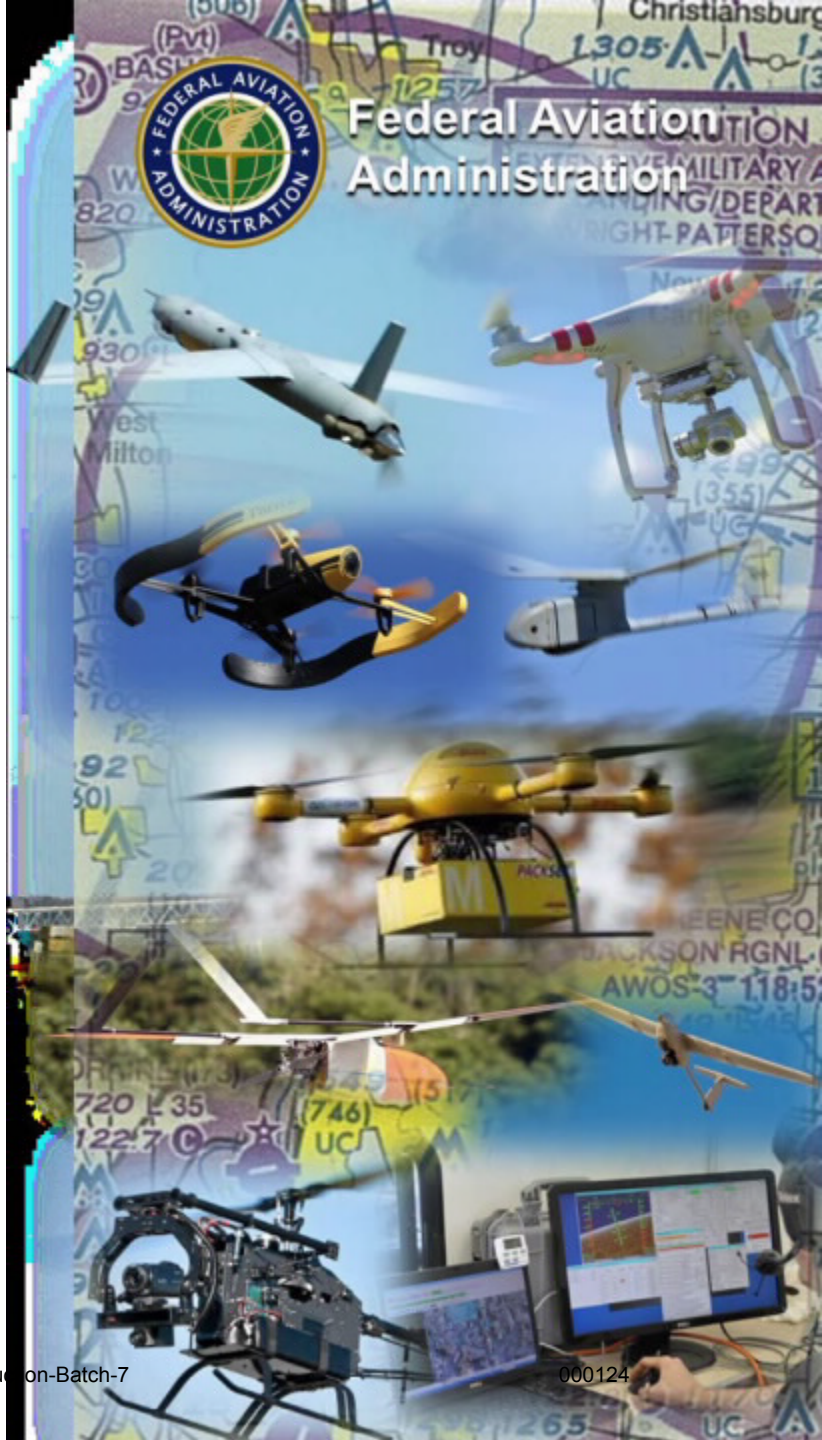
FAA Unmanned Aircraft Systems (UAS)

FAA Roles and Responsibilities Overview

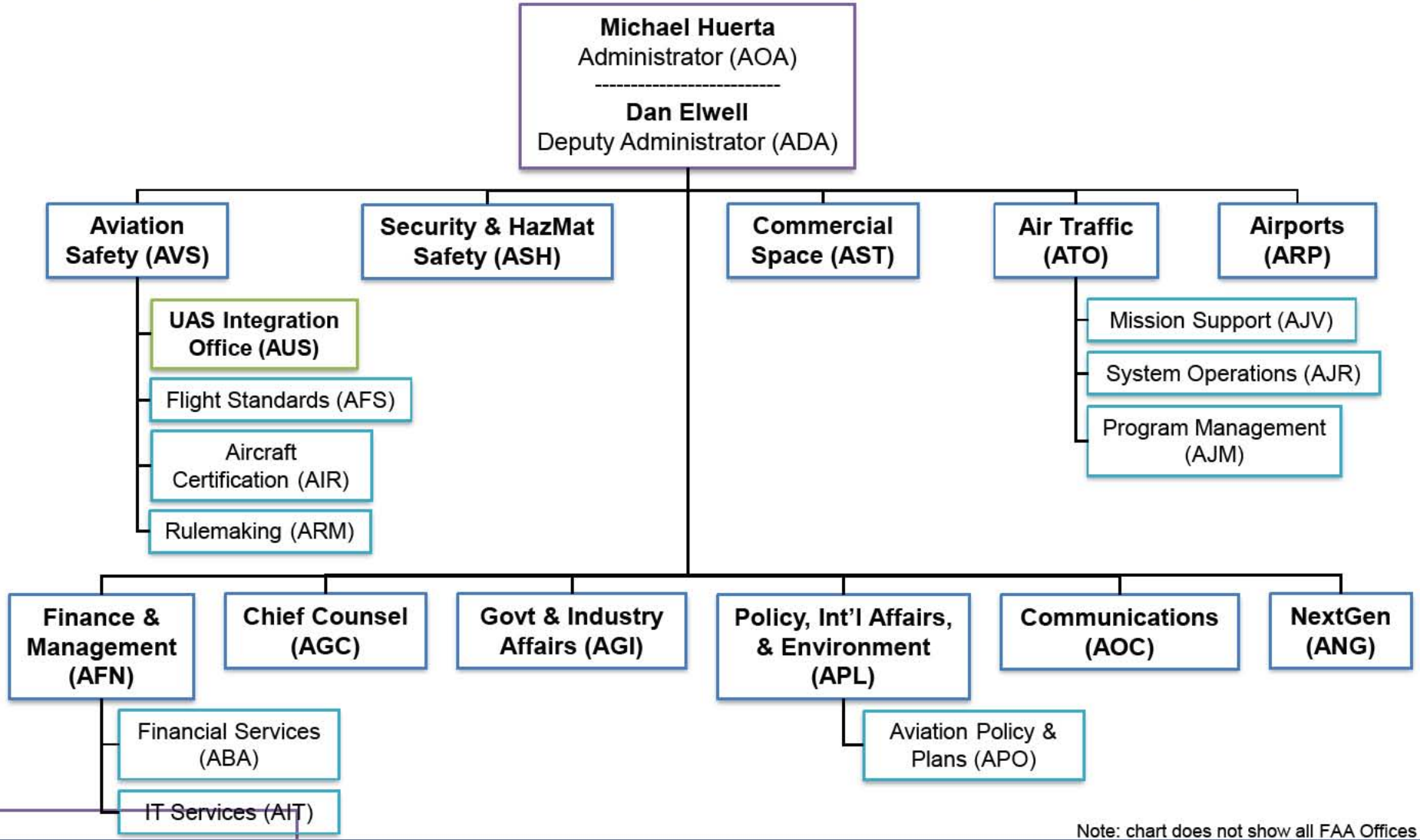
Presented to: Task Group 3

Presented by: Bill Crozier, Deputy Executive Director,
FAA UAS Integration Office

Date: September 22, 2017

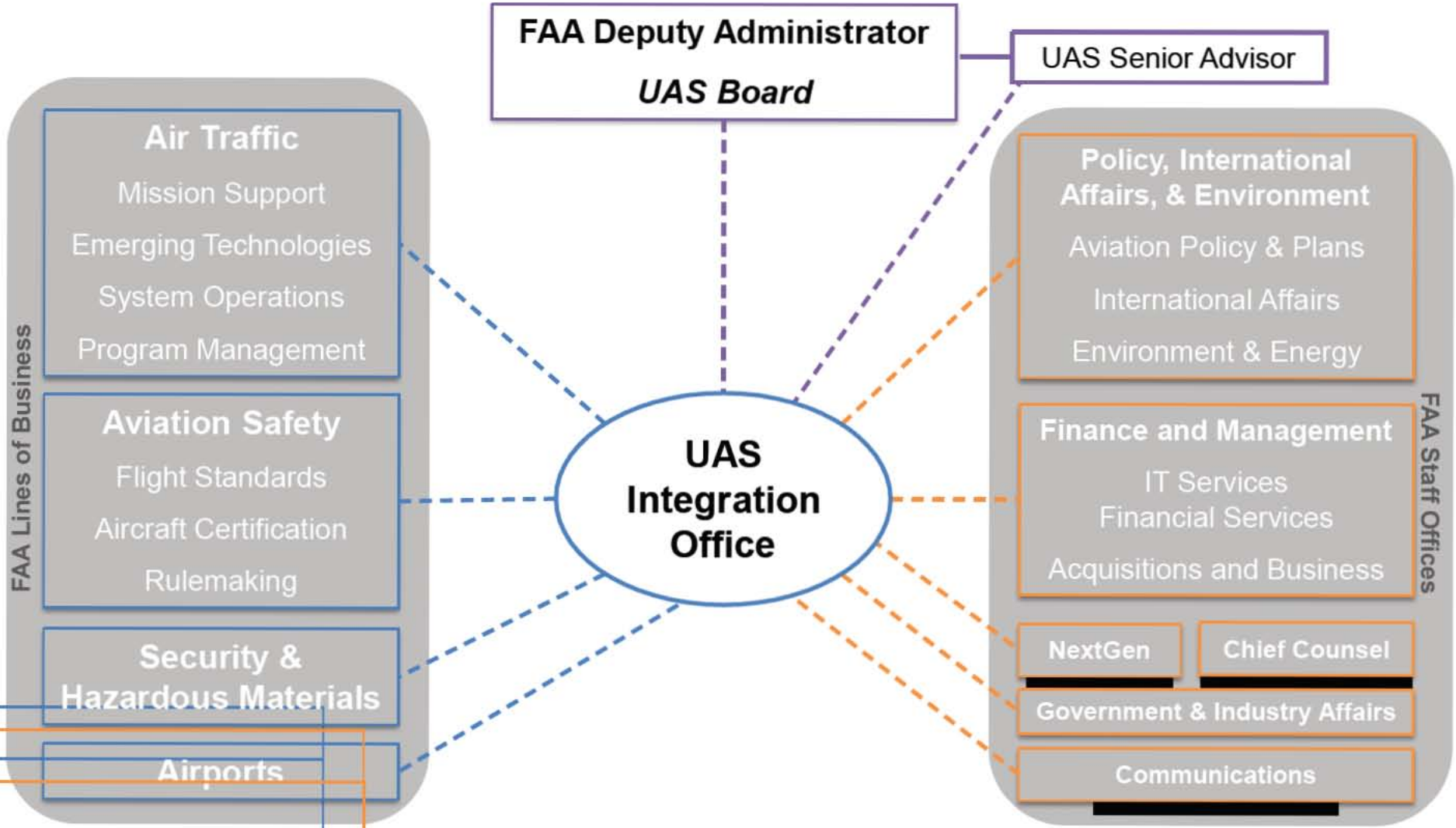


The Federal Aviation Administration

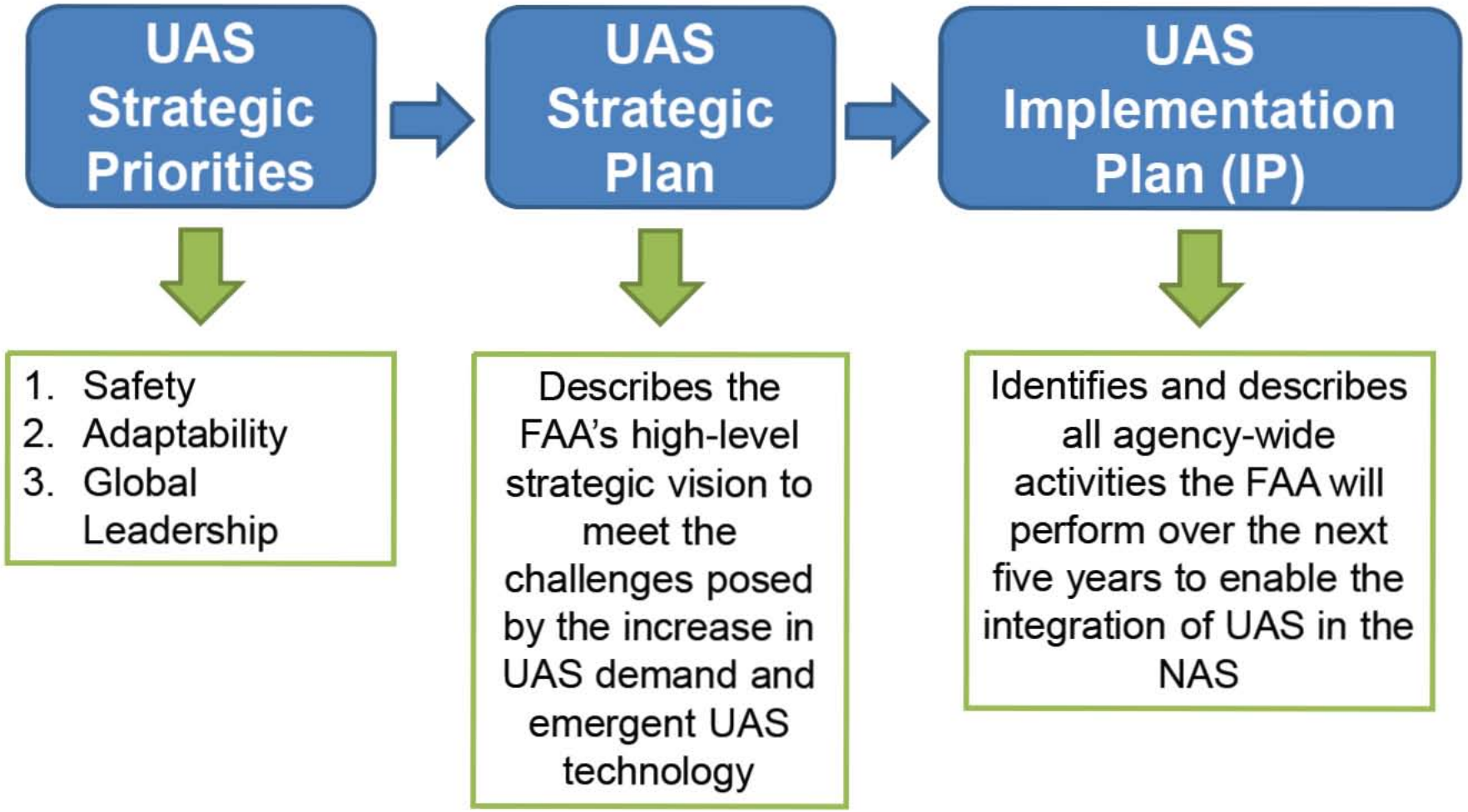


Note: chart does not show all FAA Offices

Coordinating FAA Integration Efforts



Developing an Integration Strategy



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Earl Lawrence

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Bill Crozier

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Daryl Harris

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Tricia Stacey

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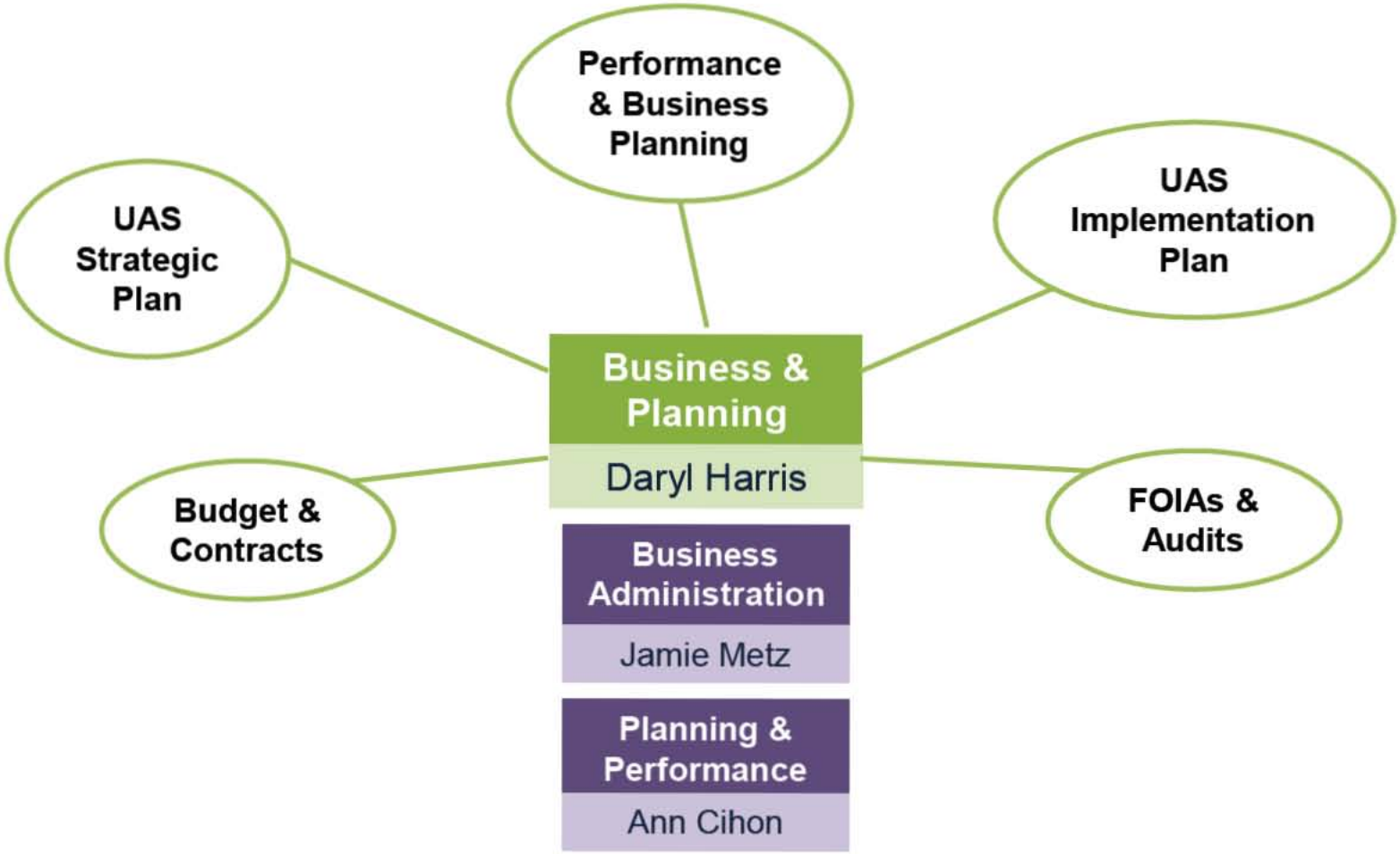

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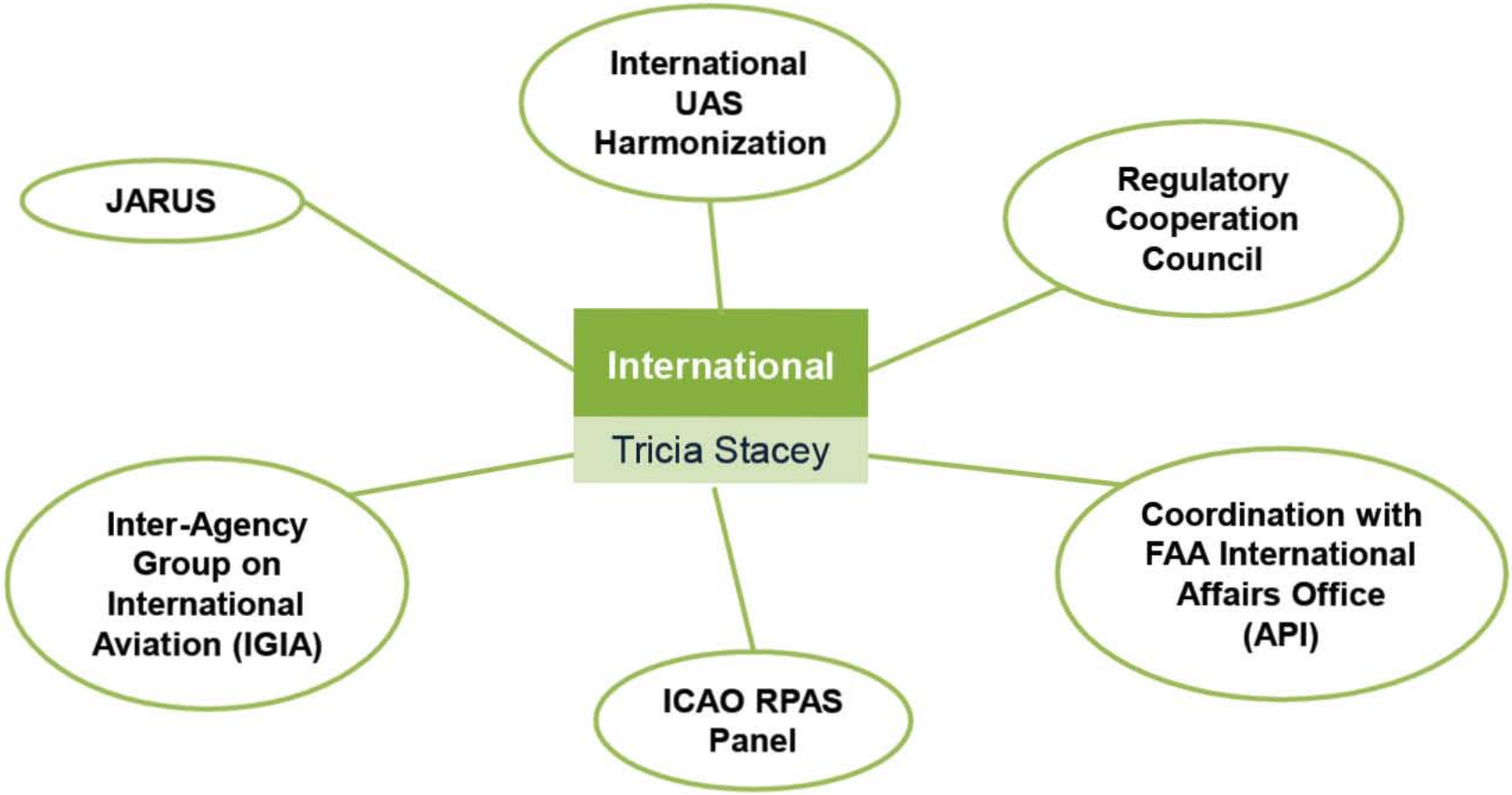

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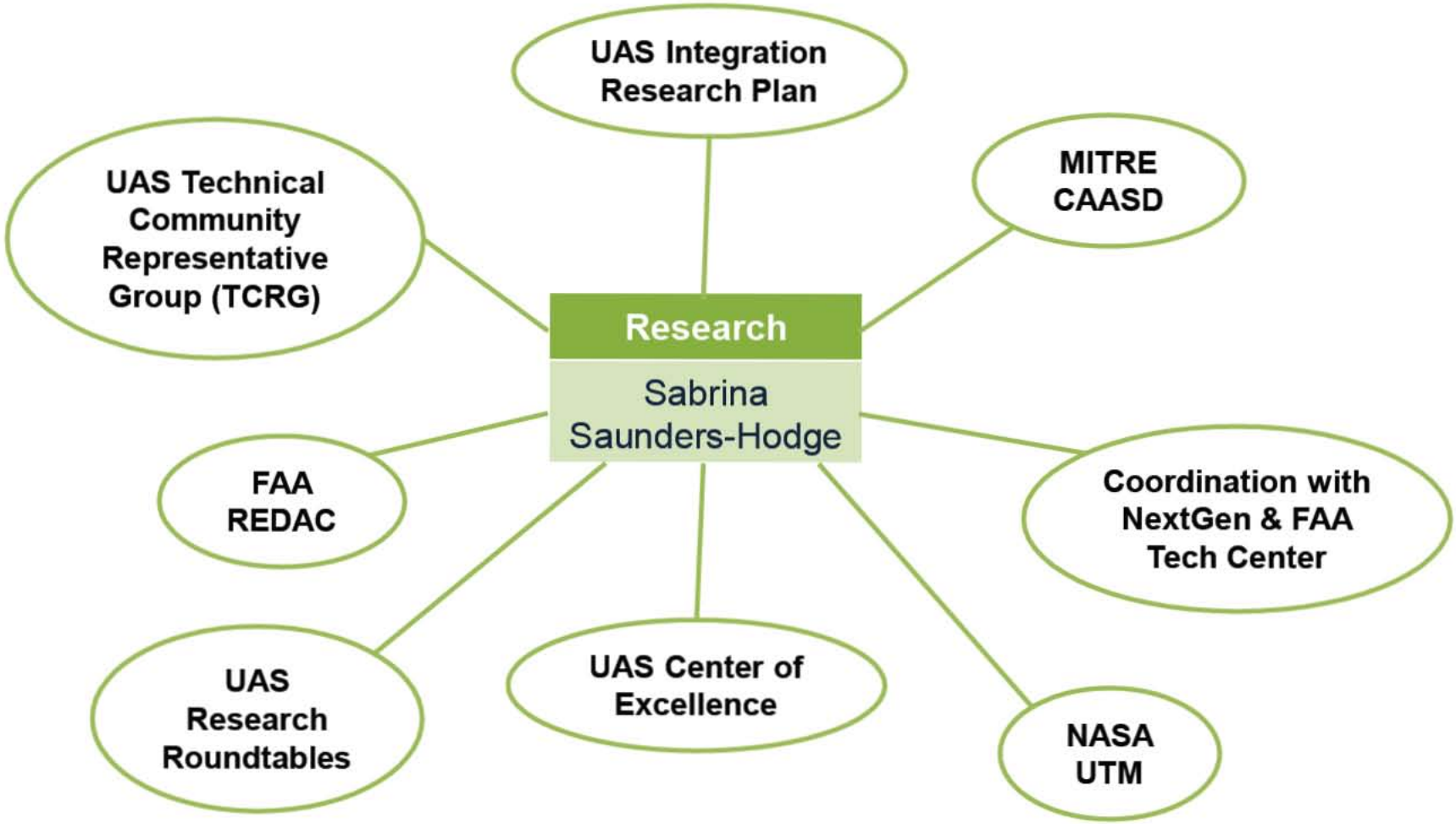

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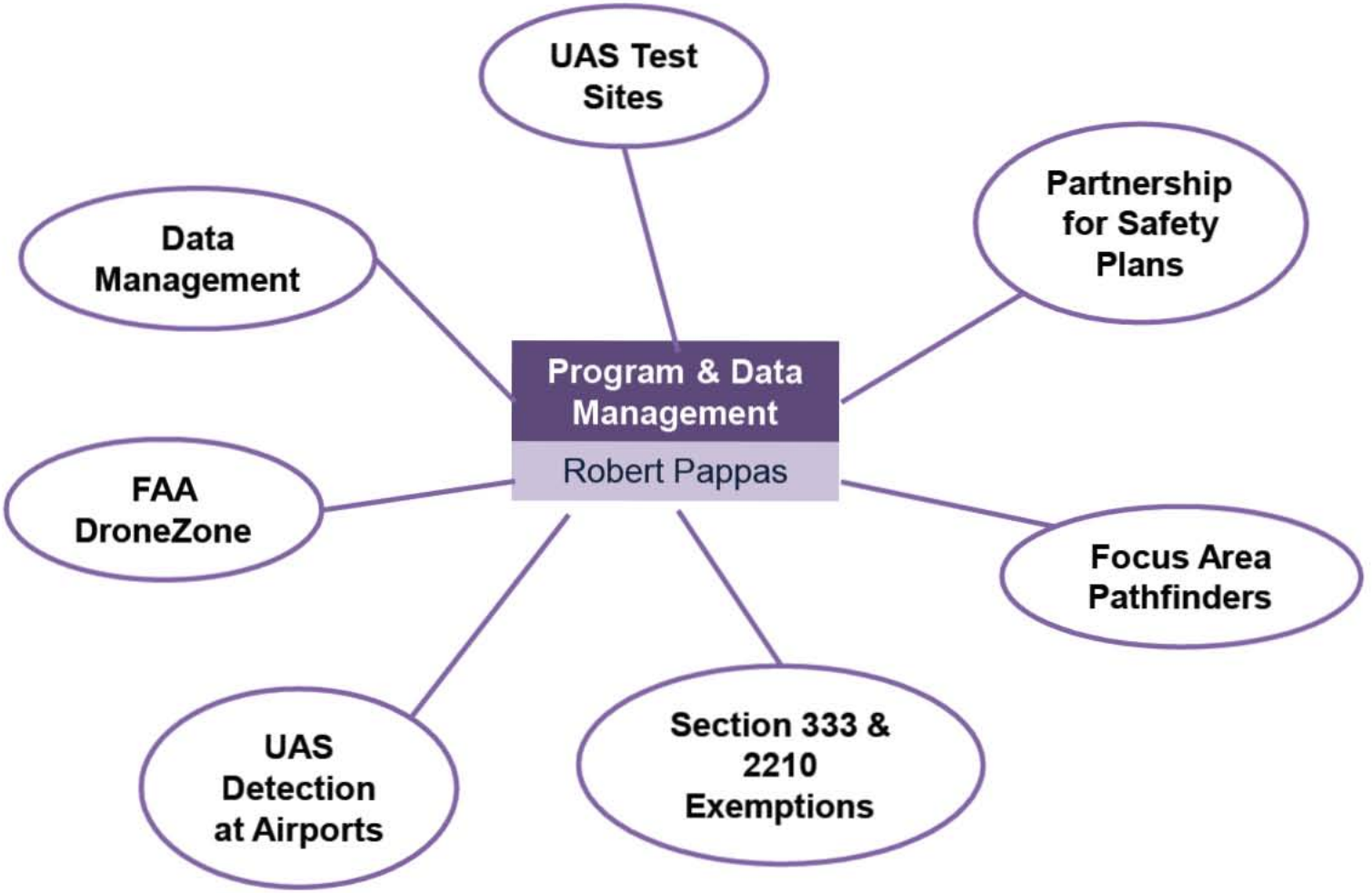

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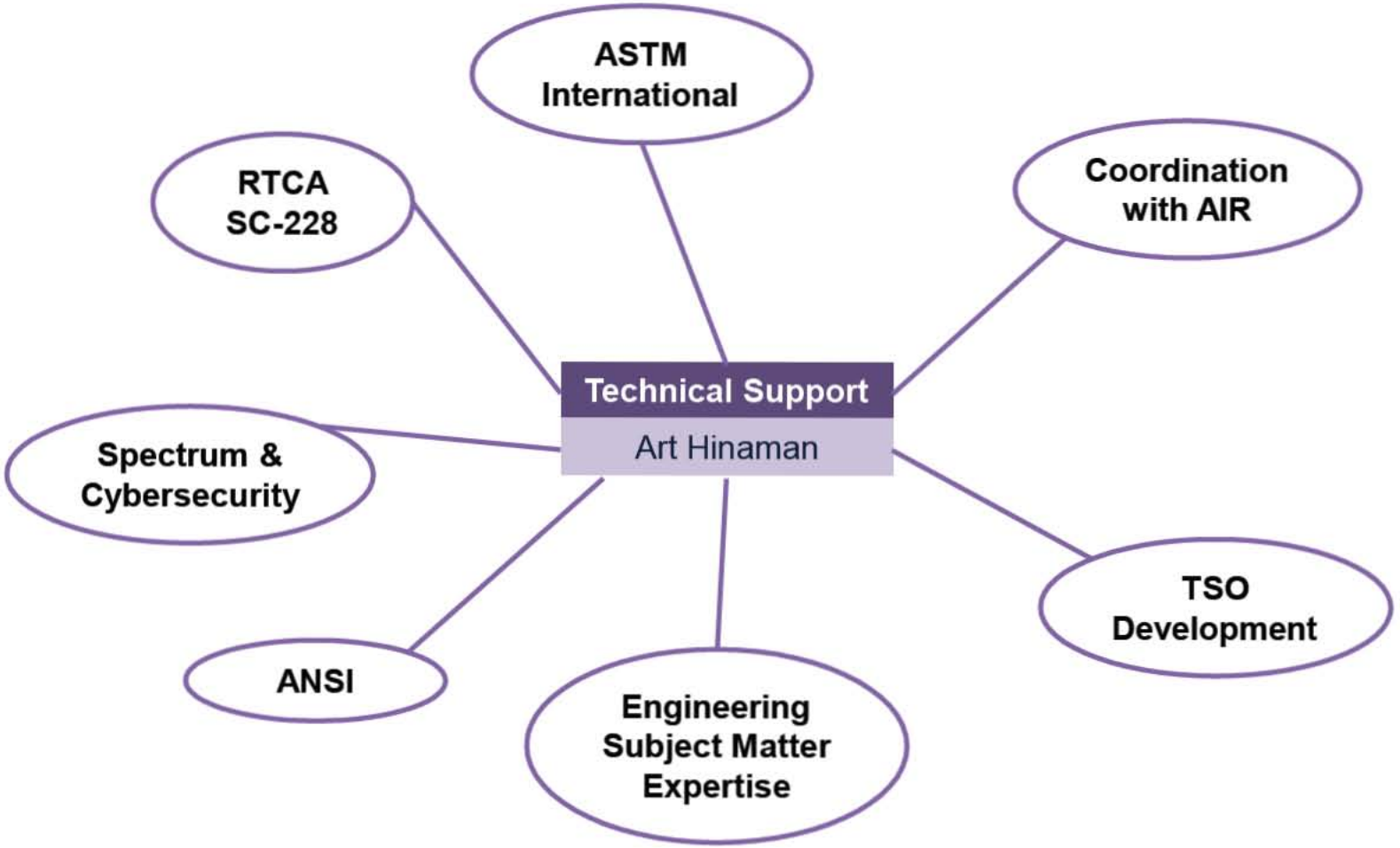

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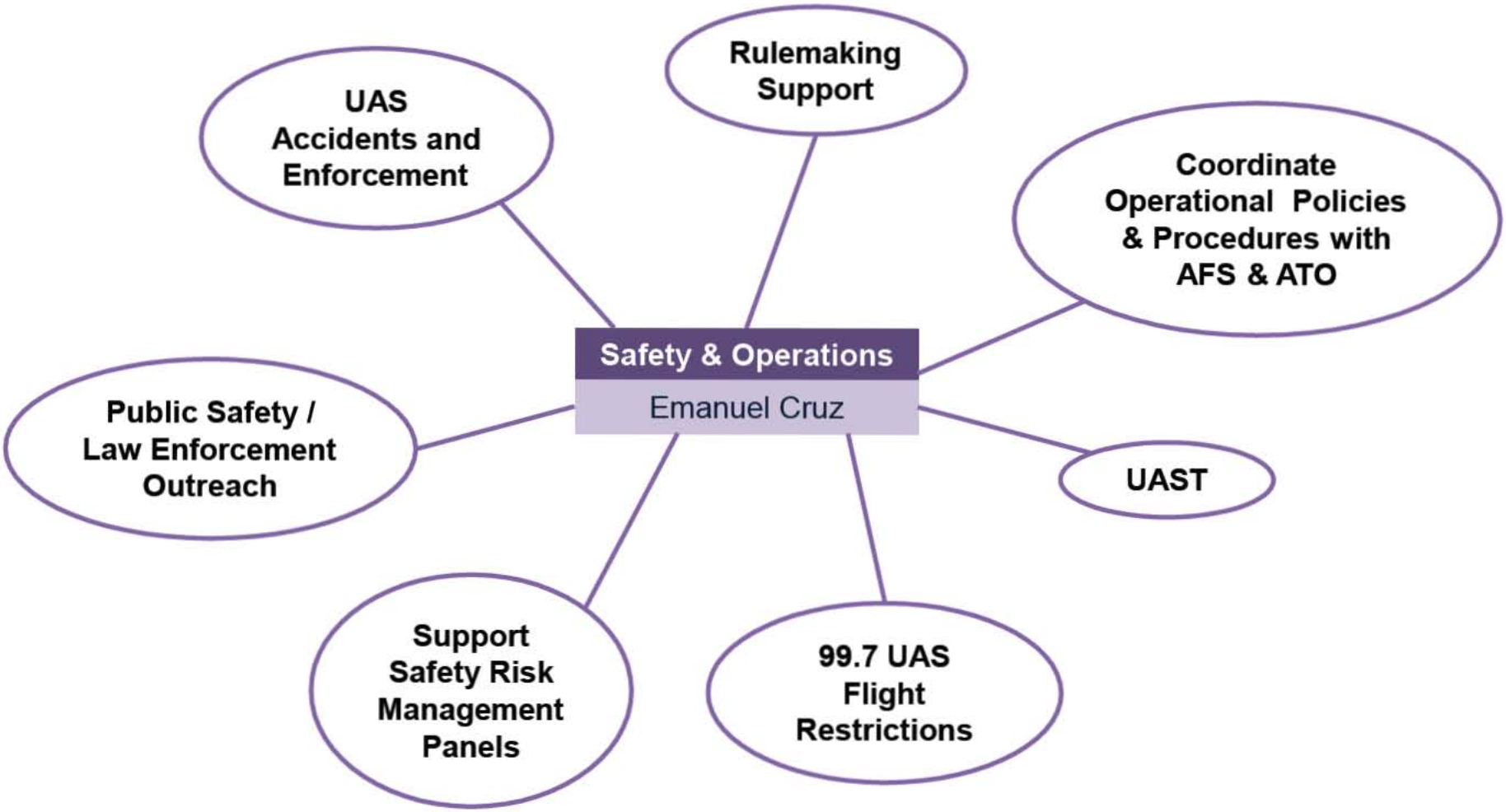

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