Certification Task Force

Mid-Point Presentation

Task Force Chairs
Nick Lappos, Policy & Regulations/Airspace
Mike Borfitz, Autonomy/Hardware (AAM)

15 June 2023, Harbor D

Ming Chang, Aeronautics Domain Lead

Ashira Beutler-Greene, Senior Manager of Content and Product Strategy

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AIAA Certification Task Force

Goals:

- Assess current research, industry, and policy landscape
- Articulate current certification process
- Identify gaps in knowledge, challenges for novel technology, and current legal and policy structures
- Design a path for the future

Academia	Government
Industry	OEMs

50 members

AIAA

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Task Force Structure

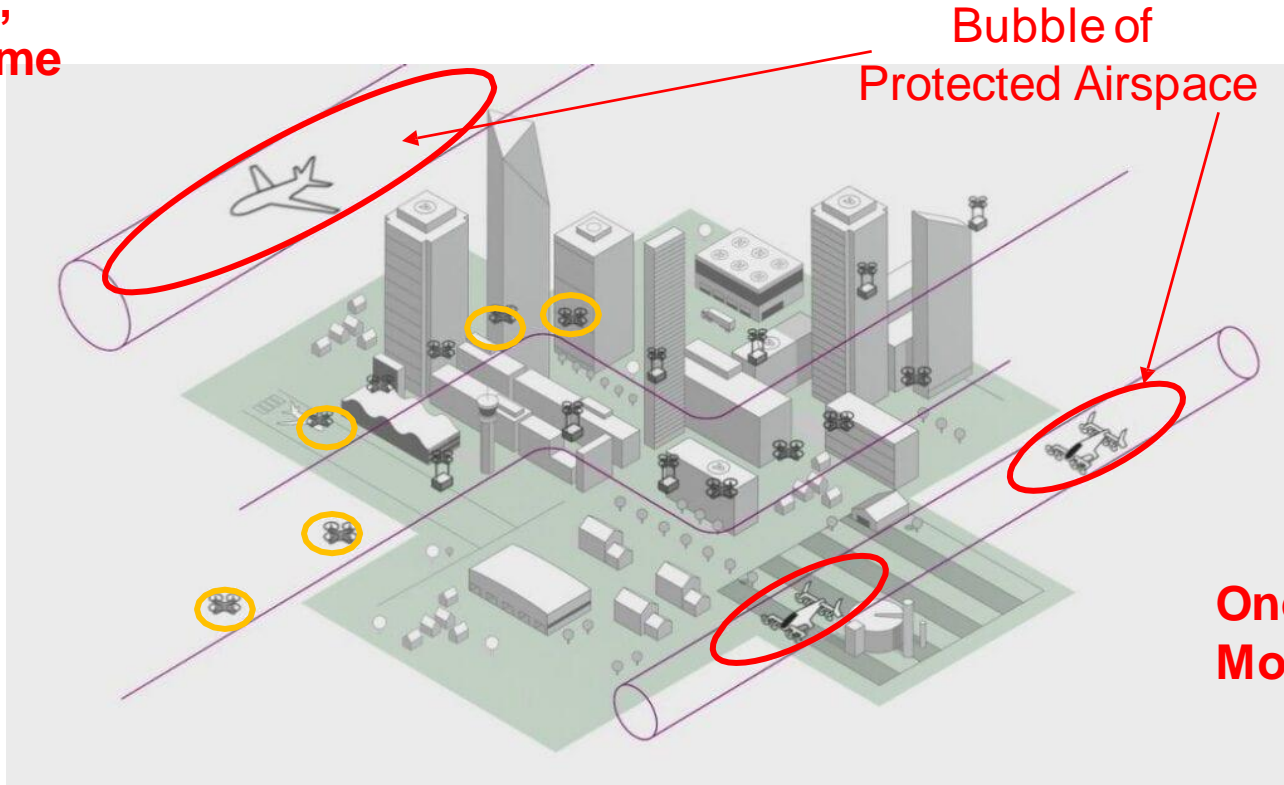## Certification of Advanced Air Vehicle Autonomy and Hardware
- ✓ Batteries, control electronics, multiple rotor configurations, flight controls
- ✓ Aspects of autonomy, artificial intelligence and machine are triggering technologies.
- ✓ The criteria used for aircraft certification needs to have a paradigm shift
- ✓ These capabilities will be an integral part of attaining flight vehicle airworthiness certification and Continued Operational Safety, the FAAs #1 priority above all others.

Preparing Policy and Regulations for a Future NAS:
- ✓ NAS with a potential 10X air vehicle population increase
- ✓ Public acceptance; safety, noise and intrusion are major governing factors.
- ✓ Airspace physical partitioning is impractical
- ✓ Today's successful ATM is obsolete, with limited bandwidth and granularity.
- ✓ Technology solutions with networked autonomous features that accepts
- ✓ Disparate air vehicles challenge standardization

Process

- ➤ AIAA Has Formed Two High Level Efforts
  - ➤ Airspace and Policy - Lappos
  - ➤ Vehicle Certification – Borfitz (Following Baker)
- ➤ Each has met virtually at least 1 x per month
- ➤ DropBox Sharing Space
  - ➤ Assess Landscape
  - ➤ Review existing policies and technologies
  - ➤ Identify Opportunities, establish Vision
  - ➤ Create Roadmap
  - ➤ Develop Strategic Plan
  - ➤ Report on that Plan
- ➤ Three Subcommittees

Task Force Overview & Operating Norms

This Task Force enjoys an ongoing dialogue, all members have a voice that represents the perspectives of the organizations they represent – no silos, no command & control. Loose but completely unified.

With that:
- Next Step: Vision Team Provides "**Top-Down**" Guidance to the three teams.
- Three leads take the "**Top-Down**" Guidance to their teams for updates by September, and feed their work "**Bottom Up**"

Completed Subcommittee Reports the morning of June 15

- **Technology Gaps and Predictions**
- **Certification Challenges for Novel Technologies**
- **Policy and Legal Challenges**

Deliverables: At the very least - Outlines for final reports by September

*Reflects the "**Bottom-Up**" Progress to date. At this Mid Point, it's working very well.*

Leadership & Subcommittees

Vision "Maintenance" - Leaders:

- Provides advice & counsel, guides efforts consistent with end goals
- Leads: Nick Lappos and Mike Borfitz

Subcommittees

Technology Gaps and Predictions:
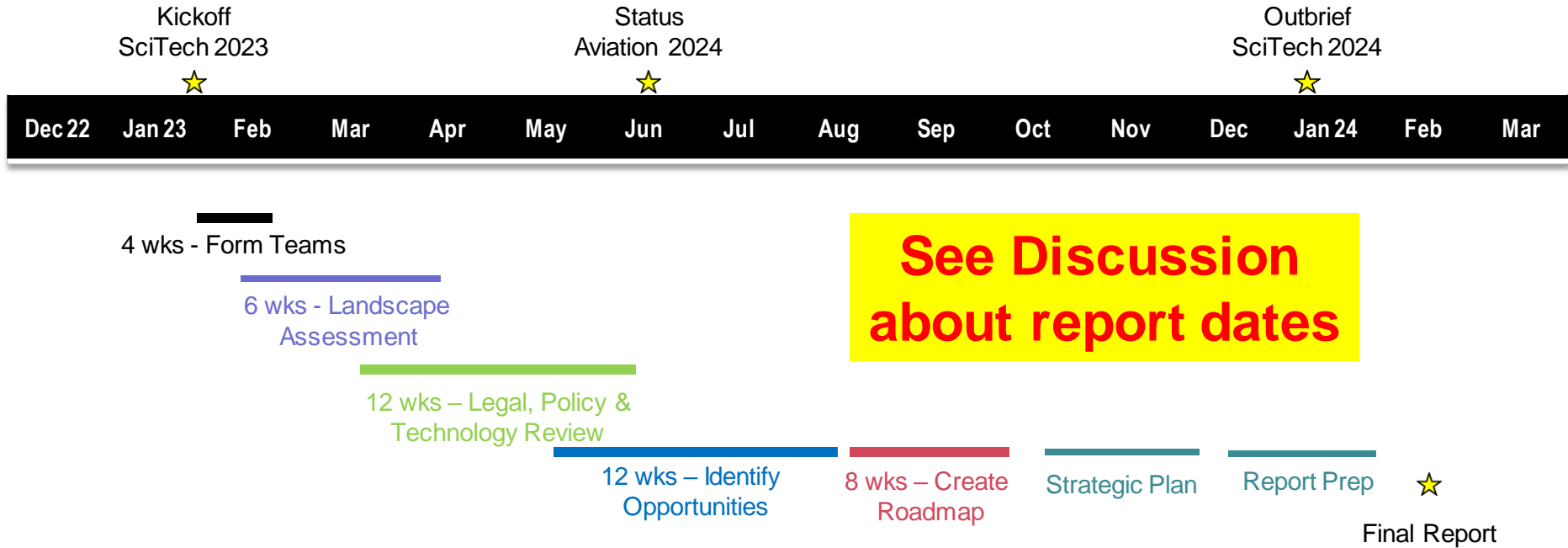
- Lead: Nick Cramer

Certification Challenges for Novel Technologies:

- Lead: Herb Schlickenmaier

Policy and Legal Challenges:

- Leads: James Grimsley and Natasha Neogi

Schedule

Kickoff
SciTech 2023 ⭐

Status
Aviation 2024 ⭐

Outbrief
SciTech 2024 ⭐

| Dec 22 | Jan 23 | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan 24 | Feb | Mar |

4 wks - Form Teams

6 wks - Landscape Assessment

12 wks – Legal, Policy & Technology Review

12 wks – Identify Opportunities

8 wks – Create Roadmap

Strategic Plan

Report Prep

⭐ Final Report

See Discussion about report dates

Monthly Team Meetings (Virtual)

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Going Forward

By January 2024 we will have collected results and recommendations from the Subcommittees. The final report will then merge all results and recommendations by March 31:

➢ What are the most difficult challenges we see?
- o Technical; batteries, software, NAS, "see and avoid" technology
- o Political; congressional support, government funding, global leadership
- o Regulatory; Type certification, NAS operations, aircrew, international
- o Public acceptance (Perceptions become reality)
- o Others?

➢ Ongoing AIAA AAM Committee Will be Useful
- o Assignment: Advise Standing Committees

Discussion – Open forum

We salute and thank:

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