

Technical Report Documentation Page

1. Report No. DOT/FAA/AM-23/29	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Aeromedical Collaboration Outreach		5. Report Date September 2023 (Updated December 2023)	
		6. Performing Organization Code	
7. Author(s) Dienst J, Sienknecht T, Graf V, Lehner B, Roessner S		8. Performing Organization Report No. 4-5.B.2-2	
9. Performing Organization Name and Address The MITRE Corporation 7515 Colshire Dr. McLean, VA 22101		10. Work Unit No. (TRAIS)	
		11. Contract or Grant No.	
12. Sponsoring Agency Name and Address Office of Aerospace Medicine Federal Aviation Administration 800 Independence Ave., S.W. Washington, DC 20591		13. Type of Report and Period Covered Technical Presentation	
		14. Sponsoring Agency Code	
15. Supplementary Notes Authors' ORCIDs are respectively: 0000-0002-2829-3939, 0009-0002-4774-9150, 0009-0004-8723-4279, 0009-0007-1969-4929, 0000-0001-7072-335X Presentation DOI: https://doi.org/10.21949/1529621			
16. Abstract The FAA Office of Aerospace Medicine (AAM) tasked MITRE's Center for Advanced Aviation System Development to conduct outreach and dialogue with the FAA and industry about an Aeromedical Partnership focusing on enabling sharing of pilot and operational data for analyses that can inform collaborative discussions on technological and policy changes as they relate to recognition and mitigation of pilot medical-related human factor hazards. In particular, the research focused on identifying potential stakeholders, their interests and potential contributions, as well as governance principles. MITRE gathered observations from sources including: internal MITRE subject matter experts; sponsor contacts at the FAA; FAA/AAM; commercial and general aviation pilots; mainline, regional, cargo, and other airlines; pilots' unions; Aviation Medical Examiners (AME) and others involved in pilot health issues; and union and trade associations. MITRE researchers also applied tools and methods from the PPP Toolkit that encourage prospective partners to be active in exploring common challenges and co-designing the solution. This approach yielded essential insights into stakeholders' motivators and concerns that inform the potential for collaboration with industry (including data sharing), notably the need for a compelling benefit that outweighs the costs and risks. The impact of this work is that FAA can: (1) initiate informed and productive collaboration with industry to take a fresh look at aeromedical certifications and the role of pilot health in aviation safety, which can then (2) enhance the collection and proper use of sensitive data providing real- world insight into the primary drivers of and mitigations for aviation safety risk associated with pilot health, which (3) allows FAA to better calibrate related safety risk management activities (e.g., regulations, mitigations, enforcement) to maximize public trust in aviation safety and minimize cost and burden on pilots and other parties.			
17. Key Word Safety Management Systems (SMS), Aeromedical Certification, Aviation Safety Risk Management, Collaboration, Stakeholder Outreach, Collaborative Risk Management		18. Distribution Statement Document is available to the public through the National Transportation Library: https://ntl.bts.gov/ntl	
19. Security Classification (of this report) Unclassified	20. Security Classification (of this page) Unclassified	21. No. of Pages 69	

Aeromedical Collaboration Outreach

Consolidated Deliverable

September 2023

Deliverable Navigation

1 Stakeholder Map & Analysis for PPP

- Stakeholder Mapping Process
- Refined segmentation of stakeholder types
- Potential Groups: Associations as a conduit for outreach

This is what aeromedical collaboration stakeholders care about and how to navigate the stakeholders

2 Governing Documents for Aeromedical PPP

- Initial Ground Rules
- Partnership Principles
- Data Safeguards: Traffic Light Protocol

This includes draft materials for use with stakeholders to begin to coalesce around a collaborative

3 Collaborative Agreements

- Considerations for PPP Agreements
- Key Issues for PPP Agreements

This content is for stakeholders to use in co-designing documented aeromedical certification partnership agreements

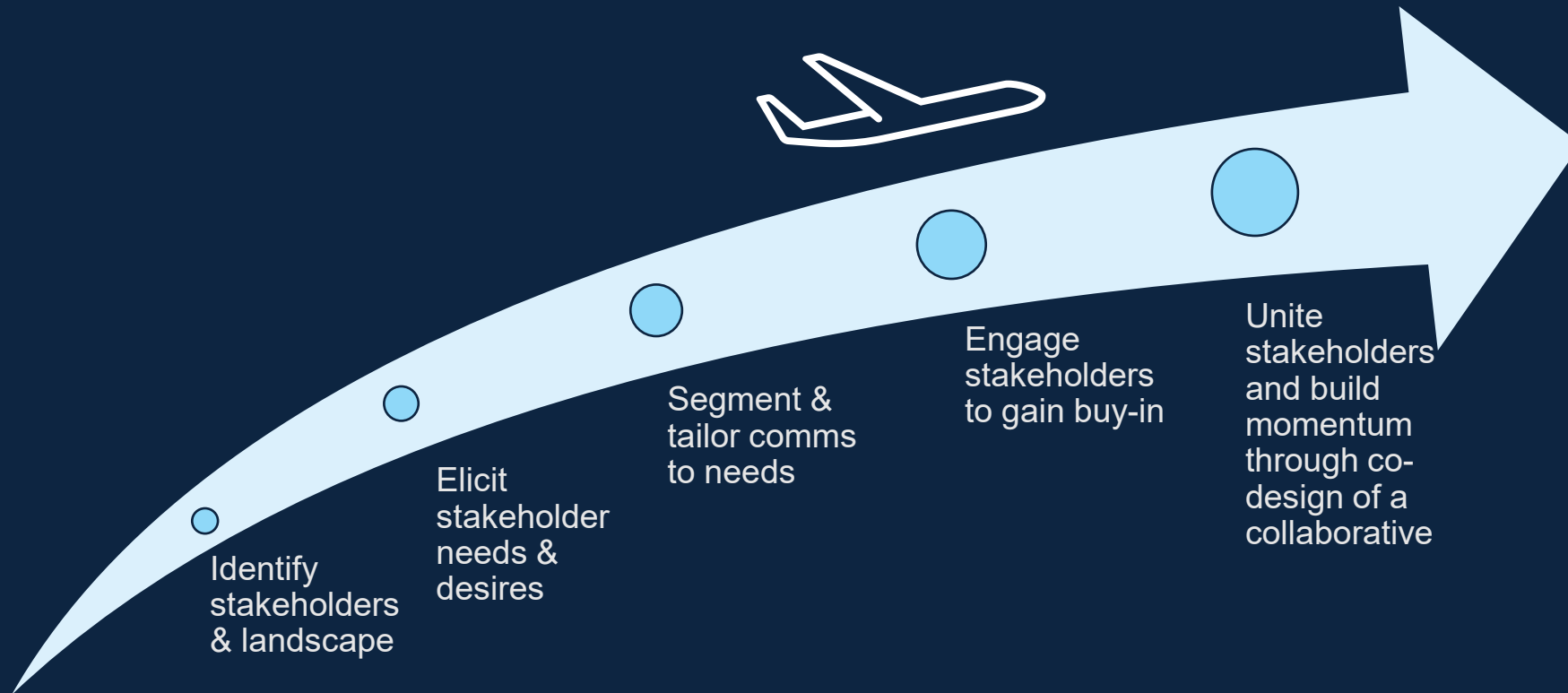
4 Recommendations and Next Steps

- Implications of Stakeholder Input
- Roadmap for Establishment of Aeromedical PPP

This content is recommendations specific to the way forward

Executive Summary: Approach

Gaining altitude through stakeholder engagement that tailors PPP outreach to needs



Executive Summary

- MITRE's stakeholder analysis identified five major PPP stakeholder segments (pilots, unions, airlines, AMEs, government) with specific needs, concerns, and openness to taking a fresh look at aeromedical certifications and aviation safety risk management given the current state challenge
- Collaboration (e.g., a data-centric PPP) is expected to address this challenge
- Existing associations provide a vehicle for PPP outreach via their established mechanisms for galvanizing association members and collaborating
- Holistic messaging is needed across these segments and should be tailored
- To begin to coalesce as a unified group with aligned interests (e.g., PPP), in phase 2, MITRE will socialize the governing documents and co-develop a formalized agreement with the stakeholders

Executive Summary: Recommendations

- Continue to seek and involve stakeholders in shaping an aeromedical certification PPP
- Ensure that stakeholder needs like timeliness and transparency are tenets of the PPP
- Deliver near-term relief on current system pains to generate goodwill for industry collaboration
- Use proposed PPP governing principles and approach for agreements to formalize and solidify mutual goals for collaboration
- Sustain focus on what's reasonably attainable with stakeholders in Phase 2 roadmap:
 - Preparing for and holding co-design discussions and workshops
 - Clarifying core partnership concept
 - Co-designing agreements
 - Selecting tractable prototype

Stakeholder Map: Initial Capture of Ecosystem Views

For more information, please see Attachment A: Stakeholders & Their Interests

Demographics



18 worked as Pilots



20 worked at Airlines



14 worked at Mainline Airlines



4 worked at Cargo Airlines



11 worked on Health Issues

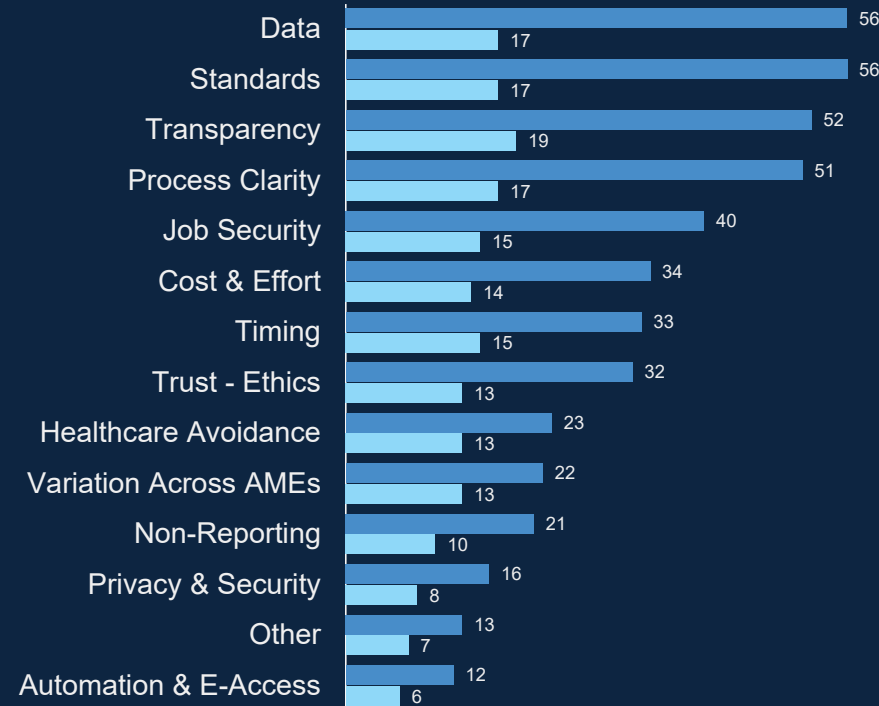


6 worked at Regional Airlines

Aeromedical Themes

Frequency of Themes Mentioned in Interviews

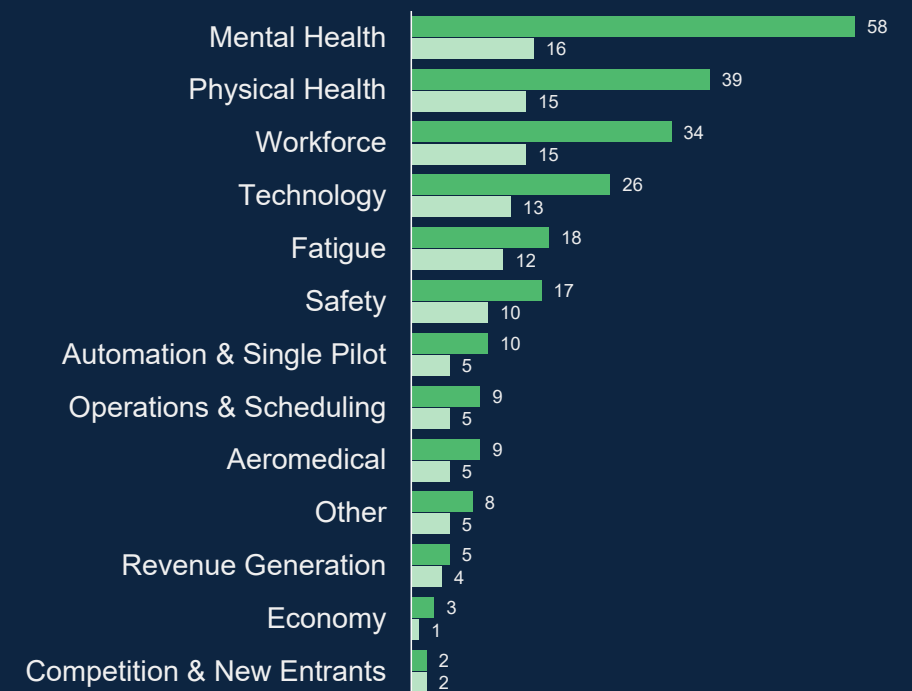
■ Total Number of Mentions ■ Number of Interviews with 1 or More Mentions



Individual Interests

Frequency of Interests Mentioned in Interviews

■ Total Number of Mentions ■ Number of Interviews with 1 or More Mentions



Stakeholder Map: Primary Segments



- MITRE's clarification of the stakeholder landscape identified 5 major segments
- Each segment has specific needs and concerns relative to aeromedical certifications and aviation safety risk management
- Prior partnership efforts point to the value of working with related associations as way of engaging constituencies

Stakeholder Map: Needs and Concerns by Segment



Pilots

- Care about their health and proactively managing it
- Concerned with delays and uncertainty in aeromedical certification affecting livelihood
- Own their medical history, which they share with providers, FAA, etc.
- Open to improved aeromedical certification approaches provided they are known to make things better



Unions

- Care about member pilots' livelihood, working conditions, careers, training, pay/benefits
- Concerned with delays and uncertainty in aeromedical certification affecting livelihood
- Concerned about unintended adverse effects on pilots
- Advocate for issues of importance to union and its membership



Airlines

- Care about business performance, safety, workforce, efficiency
- Concerned with delays and uncertainty in aeromedical certification affecting workforce and business
- Open to technology, data etc. that advances aviation safety
- Advocate for issues of importance to airline and its interests



AMES

- Care about providing optimal examination, business/income viability
- Concerned with paperwork burden and pay differential*
- Concerned that standards are meaningful to the outcome
- Open to using electronic medical records

* Reimbursement levels typically set by market / insurers

** Healthcare providers and payers may be involved in this medically-oriented segment in the future

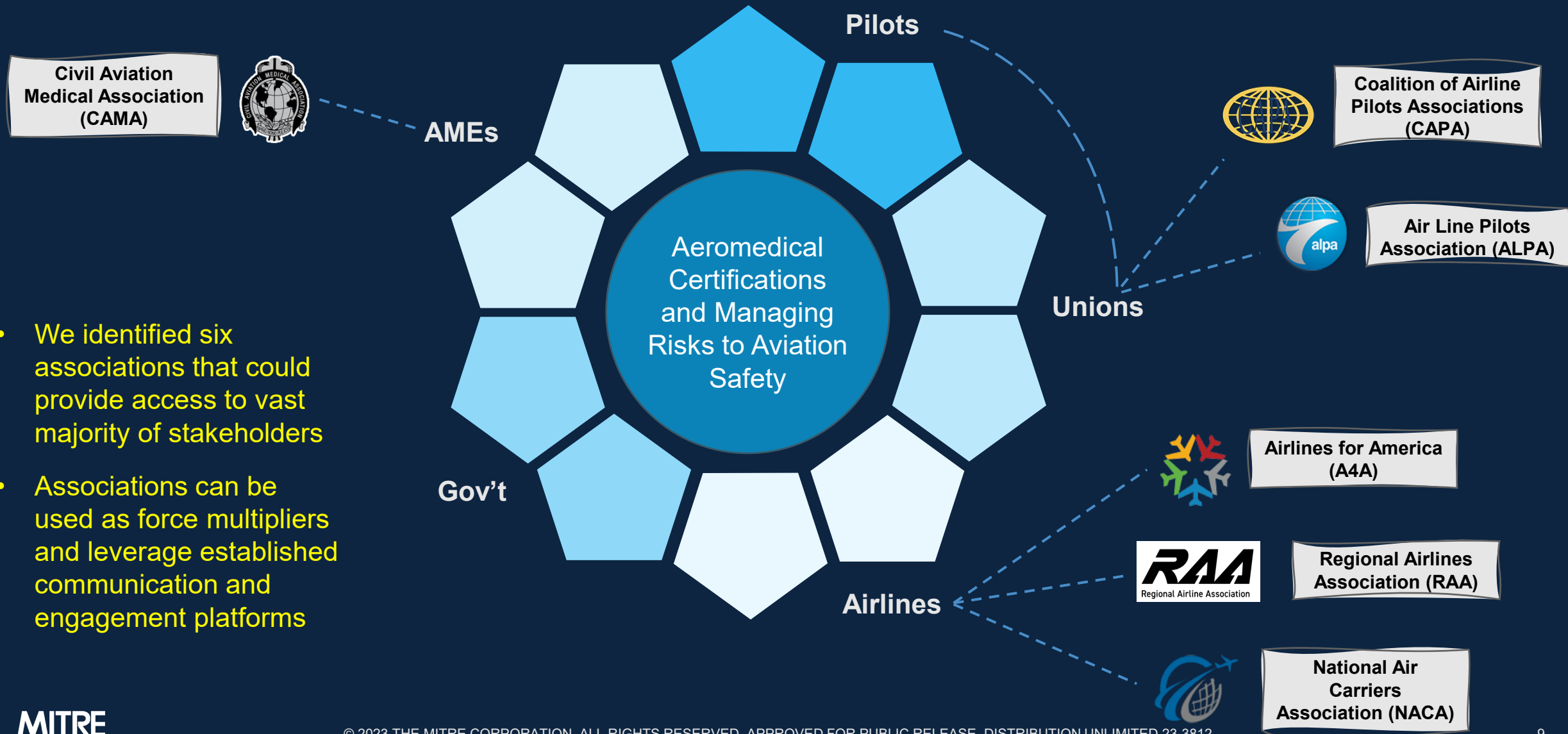


Government

- Care about aviation safety, public and congressional perception, regulatory and organizational performance
- Concerned with overconservative risk management and lack of data to improve same
- Open to data sharing that advances aviation safety

* Includes FAA as well as potentially NTSB, NASA, and other agencies

Stakeholder Map: Associations as a Conduit for Outreach



- We identified six associations that could provide access to vast majority of stakeholders
- Associations can be used as force multipliers and leverage established communication and engagement platforms

Stakeholder Map: Associations Detail



Air Line Pilots Association (ALPA)

Represents: 74,000 pilots at 42 US and Canadian airlines

US Carriers Represented: JetBlue, Alaska Airlines, Delta Air Lines and its subsidiaries, Mesa Air Group (DHL), American Airlines and its subsidiaries, Spirit Airlines, FedEx Express, United Airlines and its subsidiaries, Frontier Airlines, Hawaiian Airline



Coalition of Airline Pilots Associations (CAPA)

Represents: 35,000 professional passenger and all-cargo airline pilots

Members: Allied Pilots Association (American Airlines), Independent Pilots Association (UPS Airlines), NextJet Association of Shared Aircraft Pilots, Teamsters L2750 (Atlas Air), Teamsters L1224 (Horizon Air, ABX Air, Omni Air, Silver Airways), Teamsters L357 (Republic Airlines)



Airlines for America (A4A)

Members: Alaska Airlines, American Airlines, Atlas Air Worldwide, Delta, FedEx Express, Hawaiian Airlines, JetBlue, Southwest, United, UPS



National Air Carriers Association (NACA)

Members: Amerijet, Allegiant Air, Atlas Air, Avelo Air, Breeze Airways, Everts Air Cargo, Frontier Airlines, GlobalX, iAero Airways, Kalitta Air, Lynden Air Cargo, Miami Air International, National Airlines, Northern Air Cargo, Omni Air International, Spirit Airlines, Sun Country Airlines, USA Jet Airlines, Western Global Airlines, and World Atlantic Airlines, along with 10 associate members



Regional Airline Association

Regional Airlines Association (RAA)

Members: Air Wisconsin Airlines, CommuteAir, Empire Airlines, Endeavor Air, Envoy Air, GoJet Airlines, Horizon Air, Hyannis Air Service, Jazz Aviation, Mesa Airlines, New England Airlines, Piedmont Airlines, PSA Airlines, Ravn Alaska, Republic Airways Holdings, SkyWest Airlines, Silver Airways



Civil Aviation Medical Association (CAMA)

Corporate Members: Aerospace Medical Association, Aircraft Owners & Pilots Association, AirDocs Aeromedical Support Services, Air Line Pilots Association, Allied Pilots Association, Aviation Medicine Advisory Service, BetterNight Solutions, Harvey Watt & Company, The Ison Law Firm, MedAire, Pilot Medical Solutions, Somnomed, Wingman Med

**This set of associations was identified for initial priority outreach based upon the individual and collective interests identified and connection to a diverse set of stakeholders for future collaborative design/development. Additional organizations for future rounds may include: AOPA, AsMA, Flight Safety Foundation, ICAO, IATA, Insurance Companies such as Harvey Watt, NATCA, Medical Data Stakeholders, and Policy/Research Organizations.*

Stakeholder Map: Summary of Engagement



Air Line Pilots Association (ALPA)

- June 16: Met with ALPA Committee Chairs to initially introduce effort
- August 30: Met to re-engage on PPP idea and proof-of-concept opportunities



Coalition of Airline Pilots Associations (CAPA)

- April 14: Held initial meeting with leadership
- May 9: Met to focus on stakeholder needs
- August 18: Met to re-engage on PPP idea and proof-of-concept opportunities



Airlines for America (A4A)

- April – August: Held multiple conversations with leadership
- October 18: Plan to meet in DC to focus on introducing the effort and engaging on the PPP idea



National Air Carriers Association (NACA)

- July/August: Conducted initial outreach with leadership



Regional Airlines Association (RAA)

- July/August: Conducted initial outreach with leadership; noted some crossover with A4A



Civil Aviation Medical Association (CAMA)

- August 10: Met with CAMA leadership to introduce effort
- September 8: Followed up about invitation to present at CAMA meeting
- October 6: Plan to meet in Omaha to gather input from AMEs to inform a proof-of-concept

Stakeholder Map: Tailored Communication

Address for each partner their question of what's in it for me



For Pilots:

- Focus on overall improvement to pilot health and wellness
- Increase job security and reduce anxiety related to certification
- Data driven standards will increase perceived fairness of triggered medical disqualification
- Identification of potential areas for increasing clarity and efficiency
- Fair standards increase safety

For Airlines:

- Improve messaging for occupation recruitment by clarity on medical certification standards
- Increase retention of pilots in the career field by creating more flexibility on standards
- Reduce unnecessary attrition due to more flexible standards when appropriate risk is determined to be safe

For AMEs:

- Provide AMEs with increased clarity of process for evolving standards
- Increase communication and engagement with FAA regarding medical standards

Stakeholder Map: Tailored Messaging for Pilots

Increasing concerns about aeromedical certification over time



Prospective Pilots

- Will this be a career field that suits me given aeromedical certification risk tolerance?
- Do I have potentially concerning or disqualifying medical conditions?
- Is it worth the investment in education and training?



Early-career Pilot

- What is the medical certification process?
- What does the process cost and how long does it take?
- Less concerns about health risk



Mid-career Pilots

- Will this impact my take home pay?
- How will I support my family?
- How will I maintain my health?



Advanced-career Pilots

- What does it mean for retirement?
- How will my age impact my career?

Summary of Considerations for Aeromedical PPP

- MITRE proposes a set of principles for the Aeromedical PPP based on proven practices from exploring and standing up dozens of other partnerships (see e.g., [PPP Toolkit](#)), as well as initial input from selected stakeholders
- These are a starting point for conversation and refinement with the partners
- Norms for working together foster honest dialogue and realistic solutions
 - **Ground rules** – create a safe space for collaboration in meetings
 - **Guiding principles** – help orient the partnership and guide its decisions
 - **Traffic Light Protocol** – clarifies who can share what, when

Proposed Partnership Principles



Purpose-focused – Data and results will be used solely to advance our shared mission; not for unethical advantage, collusion, or adversarial purposes.



Voluntary – While incentivized to participate by individual, mutual, and/or public benefits, Participants may choose to end participation at any time.



Equal – All Participants are peers with equal voices/votes and respect others' input. Decisions are made by consensus.



Protected – Sensitive data (proprietary/PII/PHI) will be safeguarded per Participant's expectations; no Participant will be able to access any other Participant's raw data.

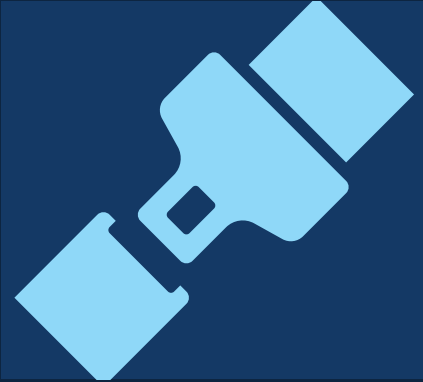


Transparent – Governance and operational expectations will be documented and approved by Participants. All aspects will be open and proactively communicated.



Collaborative – All Participants will work together in good faith to achieve the goals, strive for consensus, and make meaningful contributions, which may vary by study or project.

Proposed Ground Rules for Initial Meetings



Safety focus

Collaborate only to advance public trust and aviation safety



Good faith

Engage actively, openly, equitably, and professionally



Non-attribution

Don't name sources of or publicly release info from this forum



Ethical behavior

Participate with integrity, following applicable laws, e.g., non-collusion

Proposed Data Safeguards: Traffic Light Protocol

TLP clarifies when partners and the trusted third party (TTP) are allowed to share sensitive data

TLP Color	Definition	How May It Be Shared?	Examples	Release Statement
<p>TLP:RED</p> <p>Not for disclosure, restricted to specific named Partners.</p>	<p>Sensitive information that is available only to TTP, or to a single Partner or a subset of Partners participating in a special study.</p>	<p>Recipients may only share TLP:RED information with the parties explicitly named (and their affiliates) and specified in the release statement; no other sharing permitted.</p>	<ul style="list-style-type: none"> • All sensitive info that data-providing partners share with TTP (only viewable by TTP and that partner) • Partner-specific Results and special cases of Results with limited participation 	<p>TLP:RED</p> <p>Do Not Release – For <ENTITY> Use Only</p>
<p>TLP:AMBER</p> <p>Limited disclosure, restricted to all PPP Partners.</p>	<p>Sensitive information that is available only to all PPP Partners.</p>	<p>Recipients may only share TLP:AMBER information with individuals in their own organization (and their affiliates) who have a need to know.</p>	<ul style="list-style-type: none"> • Aggregate, anonymized results of a study in which all Partners are participating • All-Hands and Working Group notes and working documents on Partner Workspace 	<p>TLP:AMBER For Release to PPP Partners</p>
<p>TLP:GREEN</p> <p>Limited disclosure, restricted to the PPP community.</p>	<p>Information that is useful to those within the PPP stakeholder community including potential Partners, associations, and collaborators.</p>	<p>Recipients may only share TLP:GREEN information with organizations within the traffic safety community, but not via publicly accessible channels.</p> <p>Requires approval of PPP Governance Board.</p>	<ul style="list-style-type: none"> • PPP overview flyer • Presentations to trade associations, conferences, and other venues with a related focus 	<p>TLP:GREEN For Limited Release to <PPP Focus> Community</p>
<p>TLP:WHITE</p> <p>Disclosure is not limited.</p>	<p>Information approved by the PPP Governance Board for public release. These documents are in the public domain without restriction.</p>	<p>Recipients may distribute TLP:WHITE information without restriction, subject to standard copyright rules.</p> <p>Requires approval of PPP Governance Board.</p>	<ul style="list-style-type: none"> • PPP public webpage • Press releases • Major papers and conference presentation(s) with broad audience 	<p>Approved for Public Release, Distribution Unlimited</p>

Collaborative Agreements: Summary

Developing PPP agreements is a collaborative process among the parties and is driven by *what the parties hope to accomplish and who's doing what.*

- Partnerships see success when they:
 - Clarify who does what first – **form should follow function**
 - Use the **right agreement at the right time** (e.g., nonbinding letter of intent, non-disclosure agreement, memorandum of understanding, charter, participation/data-sharing agreement)
 - Enlist business champions to **find the right lawyer** and engage them at the right time
 - Don't expect to copy & paste – always **design the agreement** for the partnership
 - Encourage **legal to build relationships with their counterparts**, outcomes are better
 - Plan for the **significant time** required to shape agreements that partners can support

Source: Based on guidance for co-designing agreements from multiple partnerships (see PPP Toolkit)

Collaborative Agreements: Key Issues

Partners may address these topics across multiple agreements



PPP purpose, governance, and concept of operations including partner roles, responsibilities, expected contributions and outputs/outcomes



How information is shared, by whom, when – and related expectations for safeguards (privacy, security, permitted uses)



Invention, ownership, and use of intellectual property/brands, as well as publicity



Exposure, liability, responses to legal demands for disclosure/Freedom of Information Act (FOIA)









Measuring outputs and outcomes, learning, and adapting



Conflicts of interest, antitrust, unfair competitive advantage, safe harbor, and any other topics specific to the partnership

Collaborative Agreements: Implications for PPP

Initial sense of how the key issues may bear out for aeromedical certification PPP

-  Facilitated process of one-on-one discussions and group workshops with partners will shape the purpose and ConOps
-  Mediated sharing of performance, safety, and health info – use trusted third party (TTP) and commercially reasonable methods to safeguard sensitive data
-  Partners own prior inventions and support publication of sanitized findings
-  TTP commits to lawfully resist compelled disclosure, not subject to FOIA; data providers retain data ownership
-  Partners co-design key measures and commit to providing feedback
-  TTP is non-profit free from commercial conflicts of interest; parties agree to specific uses, no adversarial use, ethical behavior; extend 14 CFR Part 193 safe harbor

Collaborative Agreements: Gov't Legal Considerations

Success requires innovative legal discussions that draw on precedent and manage risk

- Agency's statutory authority
- PII/PHI handling expectations (e.g., Privacy Act, Computer Matching and Privacy Protection Act, HIPAA, HITECH)
- State privacy laws
- Freedom of Information Act (FOIA)
- Ownership of Intellectual Property
- Paperwork Reduction Act (PRA)
- Federal Acquisition Regulations (FAR)
- Conflicts of interest

**Lawyer-to-lawyer
conversations with
government counsel
accelerate PPP
convergence on an
agreement that is
satisfactory to all**

See: Administrative Conference of the United States (December 2018). *Guide to Legal Issues Involved in Public-Private Partnerships at the Federal Level*.

Recommendations: Implications of Stakeholder Input

Stakeholders voiced...

Concerns about the clarity, timeliness, and fairness of standards and the overall certification process, and associated impacts on pilots and their livelihood



Potential collaboration solutions should...

Focus on supporting pilot wellness (proactive health)

Provide clear, streamlined aeromedical certification process and rules

Strengthen pilot job security regarding health and aeromedical certification

Explore alternative ways of managing risk with data

Provide pain relief now to drive aeromedical certification collaboration

Address concerns about privacy and security

Support voluntary data sharing and analysis

Incentivize data providers & data-driven approaches

Make new approaches attractive to drive adoption

Interest in a longer-term fresh look; relieving current state pains soon will drive parties' willingness to collaborate



Vision for future collaboration on aeromedical certification as “a performance-based discussion” that “could be data-driven”



Recommendations: Include Stakeholders in Design

Concerns

- Processing Delays
- Transparency
- Trust
- Innovation



Opportunities

- Timeliness
- Education and communication
- Examination criteria
- Partnership



Assumptions have been developed based on stakeholder interviews and meetings with key stakeholder groups to form a notional understanding of the collective concerns and opportunities shared.

Recommendations: What We Found

How might we improve collaboration on pilot health?

Value Proposition Area	PPP Should Address Stakeholders' Input
Understand the impact of technology changes on the industry	<ul style="list-style-type: none">• Wearables were frequently mentioned as the most relevant technology for tracking pilot health• Existing vehicles exist for collaboration related to fatigue and safety management systems
Design or suggest policy changes	<ul style="list-style-type: none">• There was strong engagement on the topic of expedited processes and timeliness of obtaining (re)certification• Pilots voiced challenges surrounding cost and time involved working with AMEs
Developing and coming to agreement on setting standards	<ul style="list-style-type: none">• Significant discussion and recognition from stakeholders about how to evolve standards on health conditions such as cardiovascular issues and mental health
Provide forum for data sharing	<ul style="list-style-type: none">• While there was some interest in using data for the purpose of evolving standards, there were also privacy concerns• Stakeholders were curious about what FAA does with exiting data as part of certification application process
Exchanging ideas to share best practices	<ul style="list-style-type: none">• Opportunities may exist for sharing on the topic of pilot-to-pilot programs



Recommendations: Address Stakeholder Needs

- Many stakeholders voiced interest in improving aeromedical certification **timeliness** and **overall process** – highlight current FAA actions to improve this as a part of stakeholder outreach
- Leverage the opportunity the PPP provides to address stakeholders' topics (where applicable) to garner participation
- To further coalesce stakeholders, build on proposed governing documents in next series of discussions and workshops

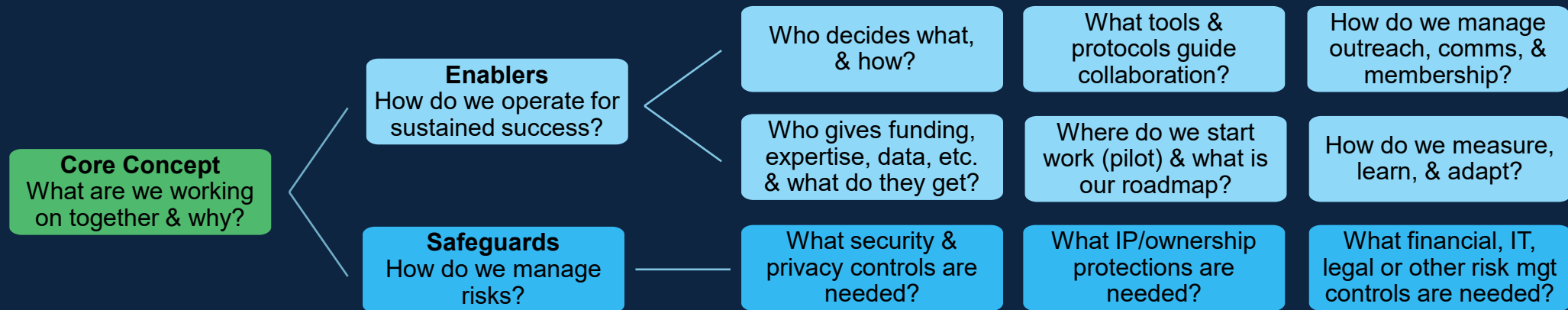
Recommendations: Proposed Outcomes by Phase

Government and industry partners experience...

Phase 1: Aeromedical Public Private Partnership	Phase 2: Feasibility Assessment of Aeromedical Collaborative Environment	Phase 3: Building the Aeromedical Collaborative Environment
<p><i>Identify potential stakeholders, their interests and contributions; facilitate conversations with potential stakeholders; identify PPP governance principles.</i></p> <ul style="list-style-type: none"> Partners see FAA interest in hearing from many who are affected by or care about aeromedical certification and safety risk management Partners provide needs, concerns, to inform solution space Partners realize their voice was heard from MITRE sharing insights back, FAA near-term improvements Partners express interest in further dialog and potential collaboration 	<p><i>Define and shape with potential partners a collaborative concept that is valuable and viable; clarify expectations and commitments.</i></p> <ul style="list-style-type: none"> Partners see bridge between interest from early movers (and other key parties) and active co-design of the collaborative solution Partners engage in collaborative co-design (e.g., codify concept, enablers, and safeguards; define and plan for IOC and 19.4C activities) Partners develop and buy into realistic expectations of solution, gives/gets, and needed agreement(s) 	<p><i>Prototype collaborative tools/methods and practice co-resourcing and co-decision making; adapt solution based on value and learnings.</i></p> <ul style="list-style-type: none"> Partners guide and contribute toward building initial collaboration environment Partners begin to pilot work together under agreed-upon collaborative governance and operating model Partners realize tangible value specific to each entity's business or mission from participation Partners advocate for greater collaborative investment and impact

Recommendations: Co-design Workshops in Phase 2

- Collaboratively define the big issues – what’s most important, most urgent
- Help partners understand, analyze, and shape a feasible collaborative solution providing organizational, mutual, and public benefit
- Iterate together, building trust while building a cohesive concept



Recommendations: Clarify Core Concept in Phase 2

Questions to prepare for working with partners and legal on co-developing PPP agreements

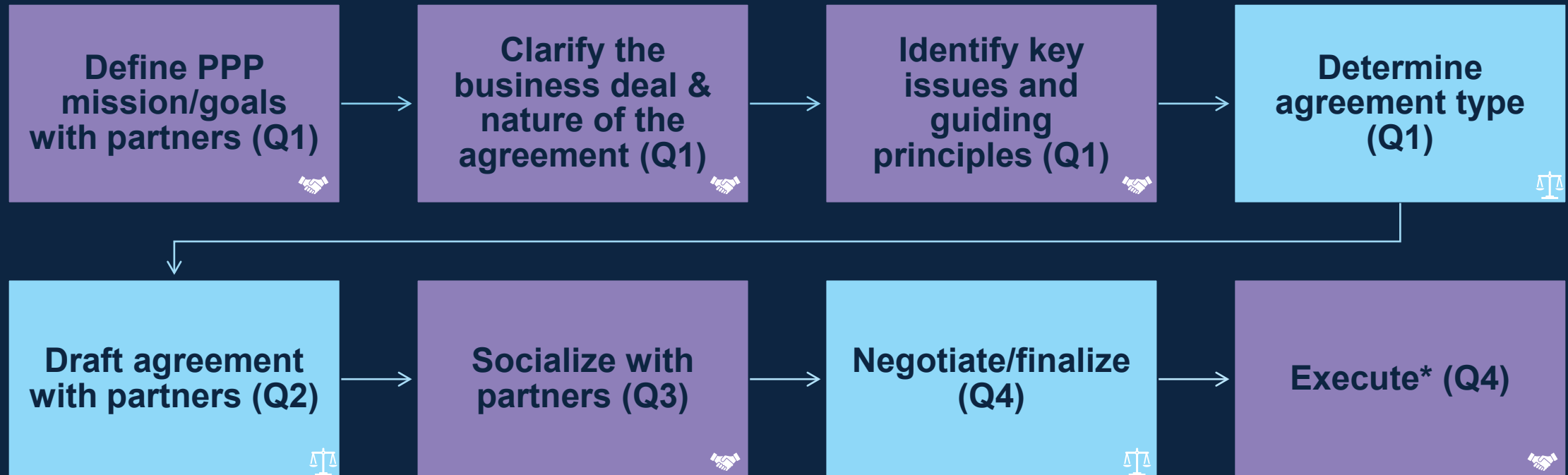
- What is the ultimate business aim or goal? What does success look like?
- What does each party give and what do they get? What's the “business deal”?
- What are the tough issues? Have they been pushed aside in the interest of reaching an agreement? For example:
 - Who's doing what?
 - Who owns the IP?
 - Who's paying for what?
 - What data is being transferred and utilized?
 - What is each party's liability? Are we extending that to affiliates?

Recommendations: Criteria for Prototype in Phase 2

- Explore interest in teaming directly with a small group of forward-leaning parties to explore and shape a data sharing proof-of-concept
 - **Collaborative Value:** Show that collaboration and bounded/safeguarded data sharing is possible among stakeholders of aeromedical risk and aviation safety
 - **Safety Value:** Show that it is possible to better measure the risk associated with TBD medical condition given greater insight into prevalence, performance, mitigations, etc.
 - **Viability:** Favor ideas that feasibly show value: lower risk, lower complexity, lower cost, likely successful (may already have been studied some)
- Engage noted stakeholders on how we might approach this and what possible health conditions / areas of study they suggest

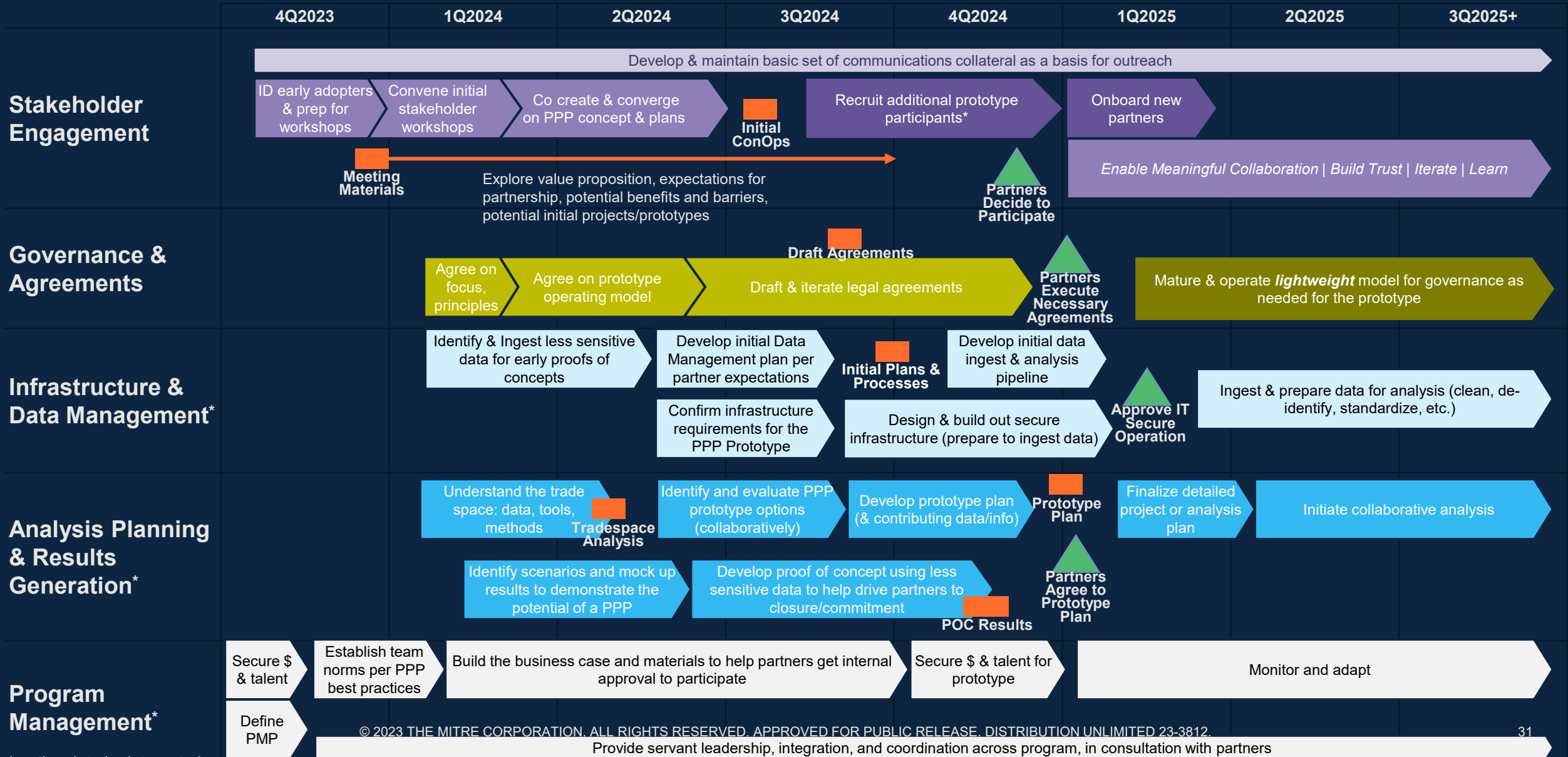
Recommendations: Shape Agreements in Phase 2

Use facilitated process driven by partner engagement and iteration



* Evolve over time as needed with partners

Recommendations: Proposed Roadmap for PPP



* notional; to be integrated

Recommendations: Consider Timing Drivers in Planning

Assessment of Aeromedical PPP using P3TK Rubric

Criterion with Relevant Indicator(s) Underlined	Current Assessment
A PPP will be established faster if a burning platform exists with significant top-down (C-Suite) energy, passion, and support, because the effort will be prioritized, and partner time and expertise more easily provided. It will be slower if <u>a strong case must be developed to secure buy-in and resourcing.</u>	Slower (parties open but this is not necessarily top priority)
A PPP will be established faster when the <u>problem can be made bite-sized</u> with a small subset of partners within the stakeholder ecosystem, starting with a coalition of the willing. It will be slower if the initial prototype requires the meaningful collaboration of a large set of stakeholders, some of which may be initially resistant, or a more complex solution.	Faster (a small and tangible initial use case should be possible)
A PPP will be established faster if the community of stakeholders already has good working relationships and some trust exists among them and with MITRE. It will be slower if <u>distrust must be overcome</u> (e.g., industry working with their regulator, competitors who have never collaborated before).	Slower (significant distrust among parties plus defensive dynamic with regulator)
A PPP will be established faster if a <u>well-respected and passionate federal government champion</u> is highly engaged in catalyzing and launching the PPP in collaboration. It will be slower if <u>gov't is not seen as a capable, co-equal partner by industry</u> (e.g., because gov't provides suboptimal resources or has unilateral expectations for timing/scope).	Neutral (strong USG champion but industry doesn't see themselves as co-equal)
A data-sharing PPP will be established faster if the data or information to be shared is lower-sensitivity (at least to start with), and when legally-binding data sharing agreements are not required. It will be slower if <u>proprietary data is considered high-risk for partners to share.</u>	Slower (protected health information and sensitive proprietary data)

Attachment A: Stakeholders & Their Interests

Update: Insights from Listening Tour Interviews
Conducted March-April 2023

May 25, 2023

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- Overview of Stakeholder Engagement
- Summary of Findings
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 - Overall Aviation Interests
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Update Purpose

- Provide insights from MITRE interviewing interested parties during March and April 2023 about the current state of the medical certification system and the potential for changes (concerns, ideas, etc.)
 - To foster honest input, MITRE agreed to keep interviewees' identities confidential and to share only non-attributed feedback and quotes
- Note: This briefing is part of a broader exploration of developing a formal partnership focused on a fresh look at managing medical risk
 - This is a first step in gauging stakeholders' interests and willingness to participate
 - Additional outreach with these and other parties is expected – **this input will help build future state that incorporates parties' ideas, needs, etc.**
 - Findings are subject to change as participants share new and updated perspectives

Why Are We Doing This?

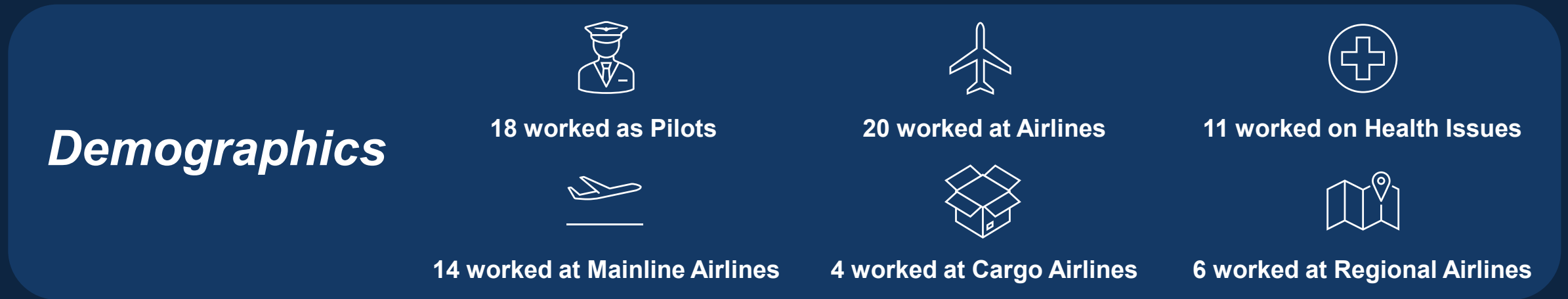
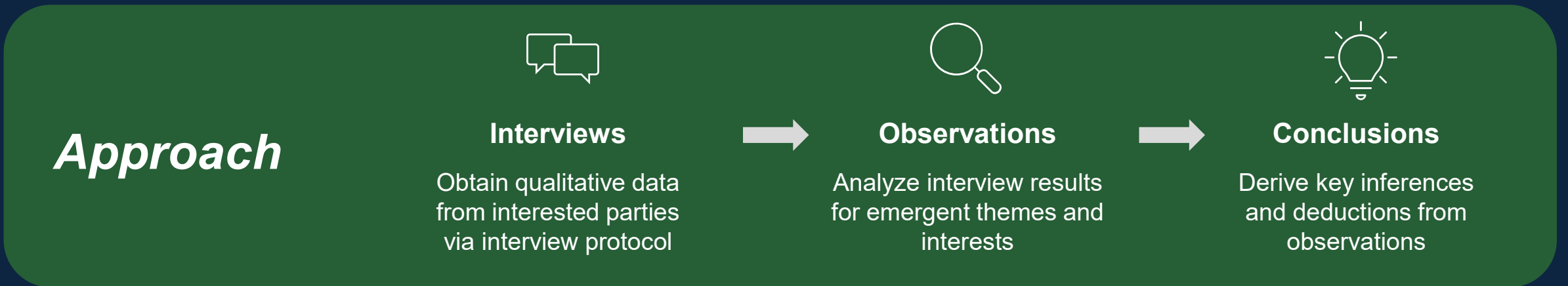
- Hypothesis: Parties outside the FAA are integral to the future of collaborative aviation safety risk management
- Problems:
 - P1: parties lack incentives for contributing (e.g., time, ideas, data) to future state
 - P2: parties lack environment that fosters sharing
 - P3: parties lack assurance risks of participation are acceptable
- Solutions:
 - S1: seek parties' views and begin to build trust and shared understanding (current task)
 - S2: align incentives and begin to collaborate with selected parties in safe space
 - S3: co-design collaborative model that provides benefit at acceptable cost/risk

Background and Scope



Overview of Stakeholder Engagement

Relied on a three phased methodology to obtain data through interviews with 25 stakeholders; grouped data into themes



Summary of Findings

- Initial insights from listening to **25** parties with interests in aeromedical certification will be further refined in subsequent work
- Participants shared a need for both current state improvements and desire for a better future state
 - Many expressed concerns about the clarity, timeliness, and fairness of standards and the overall certification process, and associated impacts on pilots and their livelihood
 - Interest in a longer-term fresh look; relieving current state pains soon will drive parties' willingness to collaborate
 - The future of aeromedical certifications “should be a performance-based discussion” and “could be data-driven”
- MITRE will draw on these insights to inform further outreach with parties and shape the partnership concept

Highlighted themes from interviews

- Many concerns about what is expected to gain (or regain) an aeromedical certification: Data, Standards, Transparency, and Process Clarity
- Additional concerns regarding known or unintended effects, such as: Job Security, Cost & Effort, Timing, and Trust
- Other concerns and consequences of aeromedical certification challenges included Healthcare Avoidance, Variation Across AMEs, Non-Reporting, Privacy & Security

Detailed Findings

Note: To honor the interviewees' expectation for confidentiality regarding MITRE sharing listening tour findings, MITRE does not attribute input or quotes to specific individuals

Stakeholder Analysis Findings

Detailed findings are covered in three sections



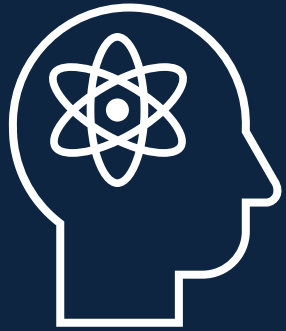
1) **Current Aeromedical Themes**: *How stakeholders view challenges and opportunities regarding the medical certification system*



2) **Overall Aviation Interests**: *Which topics are of interest to stakeholders in the broad context of the aviation industry*



3) **Possible Partnership Value**: *How future collaboration may be of value to stakeholders*



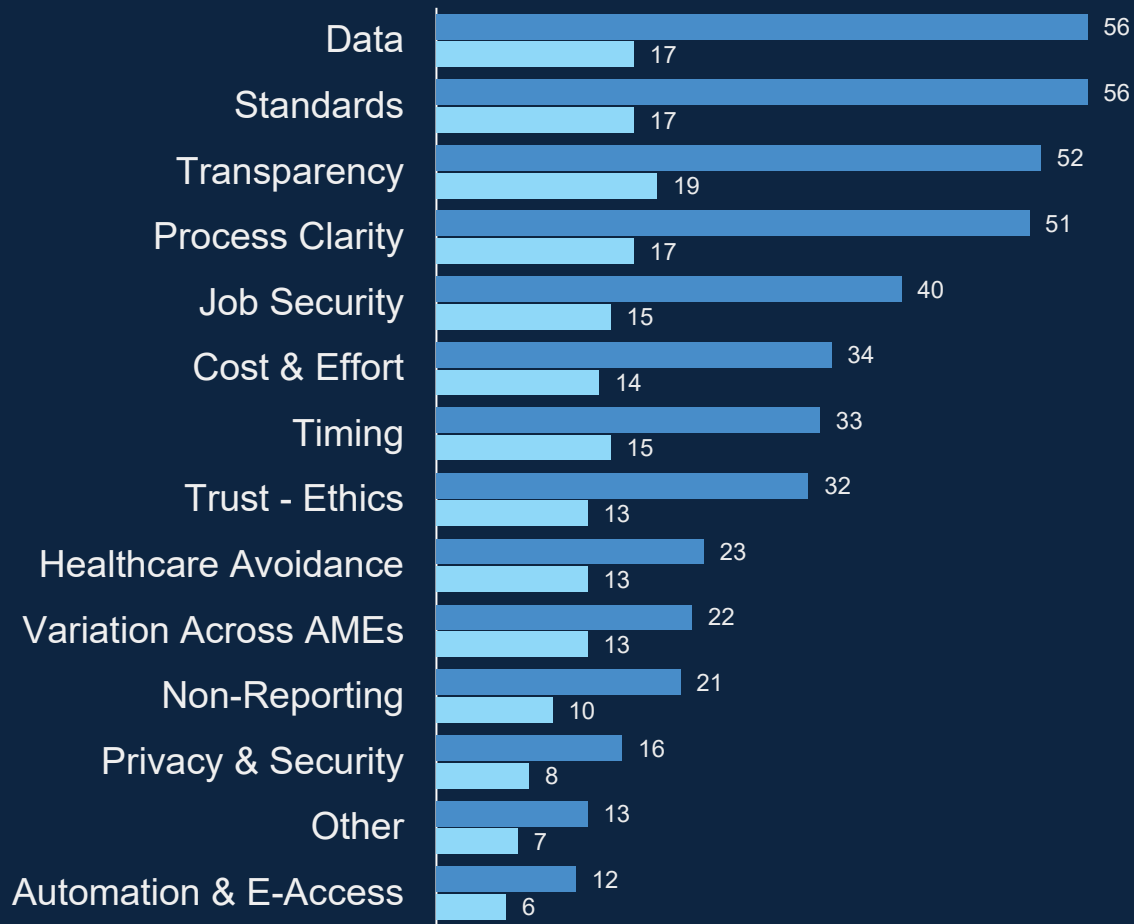
Section One: Current Aeromedical Themes

How stakeholders view challenges and opportunities regarding the medical certification system

Current Aeromedical Themes

Frequency of Themes Mentioned in Interviews

■ Total Number of Mentions ■ Number of Interviews with 1 or More Mentions



Most common concerns about the clarity and fairness of **what is expected and when** to successfully get an aeromedical certification

Additional concerns regarding known and **unintended negative effects** on job security, participant burden, and trust

Other concerns and consequences of aeromedical certification challenges

Data

- Unsure what data is currently collected and how best to use that to advance health and safety
 - Interest around the things that are most likely to cause a disqualification since that's where pilots want to focus their preventative care
- Much of the industry is accustomed to using data to make decisions
 - Desire to see changes in policy for aeromedical have the same data-driven basis
- Interest in collecting data, but unsure what data is most important
 - What actually affects performance

“We know [med certs] are purposely conservative. To what extent can data inform where we are overly conservative? fuse the FOQA data and see if there's any risk factors to the flight [from medical conditions].”

“It could be a data-driven approach to solve this.”

“We want to be proactive. We can give a heads up to flight crews to think about looking into proactive care.”

Standards

- Standards overwhelmingly seen as outdated and too restrictive, yet there was some apprehension of change
- Lack of understanding about how standards were set or changed based on job needs
- Need to balance safety with how stringent the standards are based on an understanding of what may result in incapacitation, possibly by better using data about performance (vs age, condition, medication)
- Changes in culture, technology, and health could impact what the standards are and how they change over time
- Requested review of cardiac, mental health, ADHD, depression, and disqualifying conditions / medications

“The standards... are overly conservative, outdated, and somewhat arbitrary.”

“Who sits in on these decisions? I hope there’s at least 8 doctors from the medical community”

“I think in today's world [standards] could be data-driven”

“They are giving us the exact same physical as 50 years ago.”

“There’s such a disconnect between specialized doctors and the FAA administrators.”

Transparency

- Transparency of the certification process – what to expect when – is a significant concern
- More transparency can drive higher trust and confidence
- Sentiment that the FAA should provide demographic data around certain types of disqualifying events for pilots – how often, who's affected
- Requests for transparency also related to the specific data used for FAA decisions

“Process needs to be transparent – historically haven't done that well.”

“Needs to be some education about this for pilots.”

“Need more transparency about getting certificate back – good behavior or do this in a parole setting.”

“The nightmare stories about the special issuance and it takes months with no feedback. There's no transparency of the process.”

Process Clarity

- Process is viewed as too administrative and compliance focused (vs supportive)
- Lack awareness of all the required steps in the process
 - Age plays an important factor in how pilots experience the process due to increasing requirements
 - Process is viewed as final with no clear pathways or timing to get back certification once lost
- There is support for improving the current process to make it more efficient
- Unclear roles: pilots, physicians, AMEs, Regional Flight Surgeons, Airlines, etc. all play varying roles in the certification and return-to-work processes

“We need education on the process.”

“There needs to be an examination of forms in general and what should be asked.”

“Improving that process of getting people that are fit to fly again... is the highest priority on air medical.”

“We miss the people we needed to catch because we’re using somewhat antiquated processes and purely administrative process.”

“It’s very hard to get [med cert] back.”

Job Security

- Being grounded due to a health issue or lengthy re-certification process threatens pilots' income and livelihood
- Loss of pay is major concern with more seasoned pilots, secondary to similar employment opportunities (i.e., not finding equal paying jobs)

“Health is a black cloud that hangs over [pilots].”

“A health problem can completely take away loss of pay and their livelihood.”

“Losing my certificate is at the top of my list. I worry I might develop a condition and that weighs on my mind all the time.”

Cost & Effort

- Cost of medical examinations is a burden on pilots
 - Many tests not covered by insurance e.g., annual EKGs
 - Some have self-grounded due to costs of tests
- Time and effort burdens
 - Paperwork alone for reporting issues takes time
 - The time it takes to get evaluations scheduled and done
 - Certain areas of the country have a high concentration of pilots in non-metropolitan areas; some pilots must travel to find an AME and endure the cost of hotels and travel
 - Some people (and businesses) require pulling strings to get it through the process in reasonable time

“I can’t explain to my wife spending \$80K [annually for a special appeal].”

“That EKG cost comes out of pocket.”

“Every pilot has two doctors; one to do their checkup and they have an AME who you only go to get certified.”

“We have not kept pace with paying doctors.”

“Access is the biggest issue.”

Timing

- Widespread frustration with the process taking too long thus reducing livelihood and career mobility
- Without a sense of what's required when, the whole process drags out without clear sense of when it will end and how long each part takes
- Don't see that FAA has a requirement or incentive to process in a reasonable timeframe
- Opportunity to be holistic and set clear turnaround expectations (e.g., done in 3 months) that better coordinate the interactions in timely manner

“You just wait and wait and wait.”

“Things don't move fast enough. People wait for special issuances and they retire because people won't or can't make a decision, or it gets lost on someone's desk.”

“18 months is average, in most cases longer.... 3 months to a year and no way to make income.”

“...it can go back and forth for 6 months. There's a reason [org] has a whole division dedicated to this.”

Trust & Ethics

- Aeromedical-related processes are a sensitive issue and a big concern across all parties
- Generally, pilots relayed concerns with trusting the FAA on aeromedical decisions
- Pilots express want to provide truthful input but have concerns with fully trusting the FAA to work with them
- Seeking a commitment from FAA to better partner with and support them
- Acknowledgement that lack of trust and understanding of certification processes can drive unethical behavior

“I’ve had the mentality since the beginning that the FAA medical examiner is the enemy. Do the minimum, say the minimum.”

“If I ask an honest question of the FAA they will hunt me down and deny my medical.”

“To make a partnership work, the FAA would have to meet us [halfway].”

“Pilots aren’t going to give extra information without some commitment from the FAA.”

Healthcare Avoidance

- Common perception that some are avoiding healthcare unless necessary
- General acknowledgement that avoiding healthcare is a safety risk
- Desire to allow certain types of care that is not always reported (e.g., counseling for stress, marriage, etc.)
- Seek more flexible and reasonable health-centered approach, reducing the perceived need to avoid care

“We don’t address and put our health first. Pilots put their health second because of the worry of losing their medical [certification].”

“[Pilots] should be able to get treatment for mental health and it should not show up and disqualify you.”

“The AME really should be the primary care physician.”

Variation across AMEs

- AMEs viewed as applying wide discretion in how they conduct the tests and techniques used
 - Some AMEs seen as more lenient, and some are strictly applying guidelines or not helping pilots
- Pilots want AMEs that will be able to help support them with the complexities of the process and the administrative requirements
 - AME “shopping” was described as important to pilots to feel supported in the process
- Some pilots felt that AME process was more focused on FAA administrative issues than pilot health
- Some airline return-to-work programs are addressing issues not identified by AMEs

“There’s a lot of discretion on the individual examiner and their expertise”

“There are AMEs looking to crush you and others are pro-pilot looking to help you.”

“There’s a lot of room for interpretation. There’s a spectrum of AMEs that will interpretate things differently.”

“We found things that were disqualifying that some AME just let him back on.”

Non-Reporting

- Perception that the current process incentivizes non-reporting of serious medical conditions
- Acknowledgement that many aircrew members do not openly report medical conditions
- Many separate their primary care providers from the AME because it's too risky to share with the AME

“Well, you want to take my only passion and livelihood away from me for something like high blood pressure? Well, I'm going to do everything I can to hide it.”

“Most pilots avoid telling their medical examiner what they need to tell them.”

“... a study where 60% of pilots are avoiding health care out of fear of losing their license.”

Privacy & Security

- General sentiment that sensitive medical information might not be handled appropriately (i.e., FAA unable to protect privacy)
- Lack trust that FAA fully protects personal health data
- Belief that ongoing monitoring will not be deemed acceptable due to privacy concerns
- Acknowledgement that ASIAS model may have benefits related to protecting sensitive data that could be applied to aeromedical processes

“Most pilots would not be willing to trust the company to share our own personal data.”

“Make it secure. Because the first time that data gets out... you’ll never get data again.”

“I don’t need anybody else watching me day to day.”

“My AME is not a fan of medical records online. Too much risk of where the info is going.”

Automation & E-Access

- Online access to forms and information is an improvement over traditional mail
 - More of the process should take place electronically
- Automation could connect primary care to aeromedical care
- There is concern around incomplete / erroneous manual entry on the forms
 - Previous medical history could auto-populate so that only new information needs to be entered

“There’s an opportunity with electronic health records ... Your AME is not in line with your Primary care [physician]. They don’t know anything unless you provide it and it’s not automated and you need to by hand list the appointments and you can get hit with perjury if you don’t list one.”

“Having some kind of interactive portal for the pilot and AME to supply and receive information.”

Other Quotes

“[Risk management is] better now. But risk management’ was a dirty word 10 years ago.”

“How can I allow some risk to exist, and say that’s OK?”

“FAA should put out information on what will keep me flying. Don’t do X but do Y. Give me examples and preventatives of how to have a long healthy career.”

“What needs to change? Easier medical feedback to pilots (i.e., telehealth). They could call in and not [automatically] lose their medical. More preventative. More medical access. I voluntarily disclose and I get counseled without it immediately disqualifying me.”

“Leadership changes so frequently that a lot of these programs that take two years to put in place.... [in that time] the champion has gone off to a different position. There’s a lot of organizational barriers to implementing change. Especially if it’s a completely different type of way of considering things.”

“Some of the fatigue studies use stress level indicators and diabetes monitoring [devices]. I think those types of devices should be easily certifiable by the FAA.”



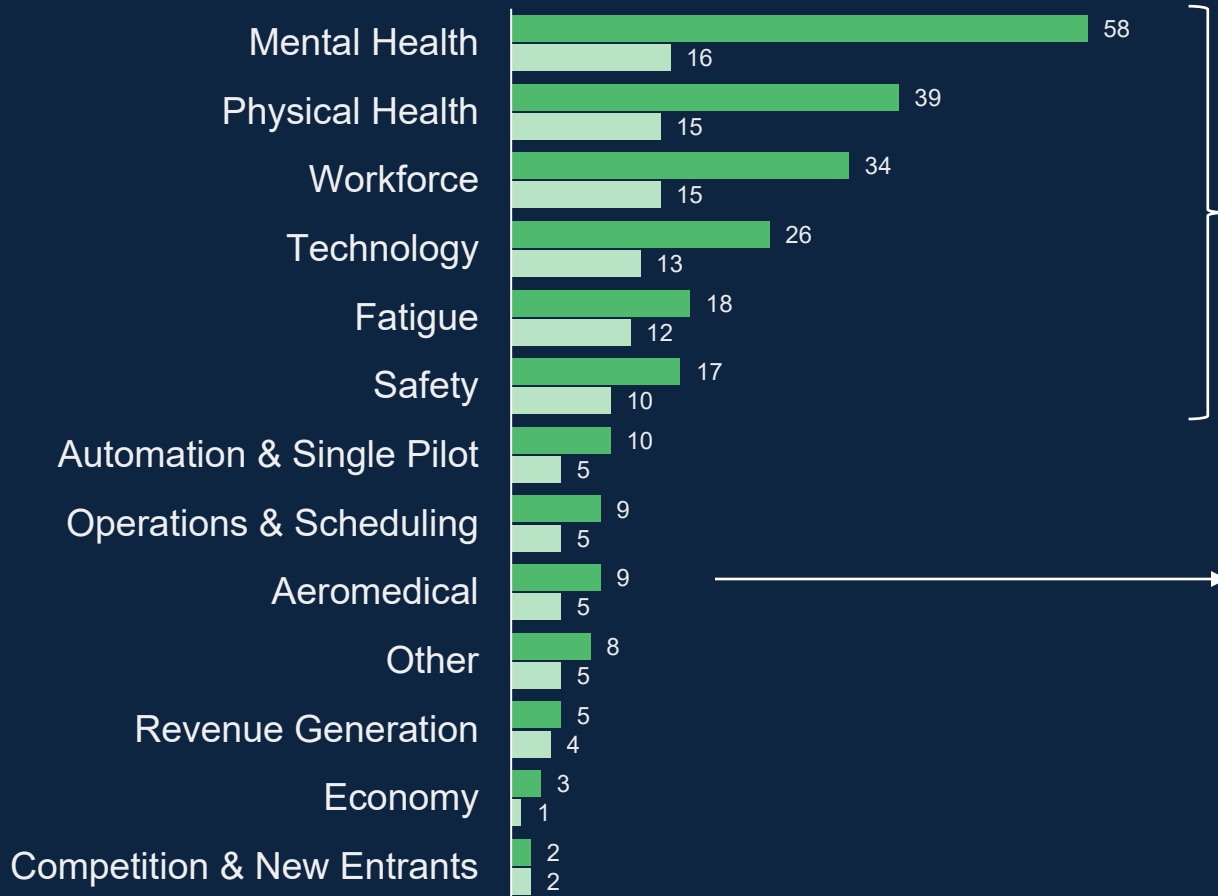
Section Two: Overall Aviation Interests

Which topics are of interest to stakeholders in the broad context of the aviation industry

Overall Aviation Interests from Stakeholders

Frequency of Interests Mentioned in Interviews

■ Total Number of Mentions ■ Number of Interviews with 1 or More Mentions



These were top of mind for many participants: how to manage mental health without penalty, how to focus on preventative care, how to sustain and grow the workforce

Many aspects above depend on medical fitness to fly, yet aeromedical may compete for mindshare compared with other interests

Overall Stakeholder Interests

- Connections between workforce, safety, and certification
 - Get or keep pilots flying
 - Enable more to be active pilots, to have a more robust workforce
- Technology changes certification needs
 - Medicine has advanced faster than aeromedical standards
 - Aircraft are safer than before (e.g., envelope protected aircraft)
- Fatigue is a current challenge for operators and may provide a model for aeromedical partnerships
 - Using data to define policy and regulate
 - Technology already used to monitor health related to fatigue on a voluntary basis

“So, the goal was never to get them back to work... because the goal is getting them back to good health. And then once they get back to good health... you can get them back to work.”



Section Three: Possible Partnership Value

How future collaboration may be of value to stakeholders

Initial Input on Possible Partnership Value

- Typically, exploring the possible value of a collaborative follows listening to interested/affected parties about their interests, needs, and concerns
 - Some interviews captured early indicators of possible interest in the typical ways collaboratives can deliver value
- **There is potential value in partnerships that share information and/or shape standards & policy**
 - “It could be a data-driven approach to solve this.”
 - Task 19.4B will be exploring these potential ways of providing mutual and public value and involve partners in co-designing a potential collaborative

“Developing a collaborative model between the FAA and the aviation industry is a worthy endeavor.”

“I think we’d be willing to share things like the duration of incapacitations, the causes, and how long it took to come back.”

“I want to make sure that the data is driving the certification... but also, if you do have the new technology that allows you to continue flying.”

Conclusion

Discussion and Next Steps

- MITRE recommends incorporating learnings from the listening tour into AAM program (task 19.4A and other tasks) by
 - building the bridge of trust by replaying and responding to identified themes
 - refining engagement strategy and conduct targeted outreach to address gaps/needs
 - developing proposed partnership design principles (to be finalized in 19.4B)

Appendices

Appendix A: Interview Guide*

Confidential protocol – responses will not be attributed to individuals

Introduction

1. Would you please share some about your background and current role?
2. How have you been involved in pilot health and safety issues?
3. How are you / how is your organization involved in or a stakeholder of aeromedical certifications?

Current State

4. Are there certain topics related to pilot health and safety that are of particular interest to you?
5. What are the top opportunities and concerns you / your organization has about aviation?

Aeromedical Certification Topics

6. What do you see as the biggest challenges or pains around aeromedical certifications?
7. What do you see as the biggest needs or wants around aeromedical certifications?
8. What is most important to change about aeromedical certifications?
9. Based on your current priorities, where does improving aeromedical certifications fall?

Potential Value Proposition Typology Questions

10. What is working well and what might you change regarding how you / your organization uses or develops technologies affecting pilot health?
11. What is working well and what might you change regarding how you / your organization uses or shares data and information about pilot health?
12. What is working well and what might you change regarding how you / your organization uses or shapes standards or policies on pilot health?

Summary Thoughts

13. What is working well and what would you change about how you / your organization is involved with pilot aeromedical certifications?

Stakeholder Identification Questions

14. Who else should we speak with about this – for example, other colleagues or organizations that are involved in or may touch upon some aspect of pilot health?
(for Assn/Union, explore who right folks are in org)
15. Is there anything you'd like to share that we haven't asked about?

* This guide was tailored for stakeholders

Acronyms / Abbreviations

A4A	Airlines for America
ALPA	Air Line Pilots Association
AME	Aviation Medical Examiner
CAMA	Civil Aviation Medical Association
CAPA	Coalition of Airline Pilots Associations
CFR	Code of Federal Regulations
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulations
FOIA	Freedom of Information Act
HIPAA	Health Insurance Portability and Accountability Act
ICAO	International Civil Aviation Organization
IOC	Initial Operational Capability
NACA	National Air Carriers Association
NATCA	National Air Traffic Controllers Association
PHI	Protected Health Information
PII	Personal Identifiable Information
PPP	Public-Private Partnership
PRA	Paperwork Reduction Act
RAA	Regional Airlines Association
TLP	Traffic light protocol
TTP	Trusted third party

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Sponsor: Federal Aviation Administration

Department No.: P234

Project No.: 100976.10.102.1016

Outcome No.: 4

PBWP Reference: 4-5.B.2-2



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