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7. Author(s) Sienknecht T, Masterson P, Reston R, Ryan E, Hawley H, Sarkhel K		8. Performing Organization Report No. 4-5.B.4-2	
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16. Abstract The Federal Aviation Administration (FAA) Office of Aerospace Medicine (AAM) tasked the MITRE Corporation's Center for Advanced Aviation System Development (MITRE CAASD) to continue outreach and engagement with aviation industry stakeholders to advance aeromedical collaboration and information sharing. This continues previous research which resulted in FAA and aviation industry co-creating the Aeromedical Certification Collaborative (ACC). MITRE CAASD conducted several one-on-one workshops with ACC participants culminating in the creation of two working groups. The Study Working Group (WG) identified near-term research questions which could demonstrate the collaborative research approach of ACC, provide insights on gaps in data for aeromedical risk management, and identify potential data sources or activities requiring governance. The Framework WG defined requirements for a data sharing/governance model and shared expectations for future collaboration. The ACC participants met for a Winter Summit on January 30, 2025, in which they agreed to study Peer Support Programs (PSPs) and came to an initial consensus on the data sharing/governance model. In addition, MITRE CAASD determined that it was not yet feasible to use the Aviation Safety Information Analysis and Sharing (ASIAS) technical environment and associated public-private partnership to conduct aeromedical safety research. ACC needs are being expressed as proposed requirements for future ASIAS/US AST consideration as part of ongoing transformation efforts within ASIAS and US AST. The impact of this work is that AAM will be able to explore aeromedical safety questions requiring sensitive and proprietary information and use real-world insight into the primary drivers of and mitigations for aviation safety risk associated with pilot health to maximize public trust in aviation safety while minimizing cost and burden on pilots, airline operators, and the aviation industry.			
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Aeromedical Certification Collaboration with Industry

Progress Report

Aug 2024 – Feb 2025

Background: Industry-driven Need

Aviation leaders in industry and government seek safer skies through healthier pilots and have collaborated to improve aeromedical certification through safety risk management.

- Advances in healthcare, aviation technology, and data-driven risk management suggest that we can improve aeromedical certification while sustaining aviation safety. At the same time, several recent safety incidents and initiatives have reinforced the need to understand how the health of pilots and air traffic controllers affects performance and how to better manage aviation safety risks.
- Industry leaders have created the Aeromedical Certification Collaborative (ACC) to study how the health of pilots affects performance and how to better manage related safety risks. ACC members include airlines and trade associations, pilots and pilot unions, medical professionals, academic researchers, and the Federal Aviation Administration (FAA). In the future, the focus may expand to include air traffic controllers.
- The MITRE Corporation's Center for Advanced Aviation System Development (MITRE CAASD) is conducting a set of tasks to enable the Federal Aviation Administration (FAA) Office of Aerospace Medicine (AAM) to implement Safety Risk Management. FAA tasked MITRE CAASD to continue outreach and engagement with ACC stakeholders to advance aeromedical collaboration and information sharing. This is a follow-on to prior efforts to conduct outreach and dialogue with the FAA and industry via the ACC.

Background: Trusted Third Party Connector

MITRE serves ACC as a conflict-free connector, as requested by ACC members.

- MITRE CAASD is uniquely suited to be the trusted connector among ACC stakeholders based on our expertise as an independent, conflict-free convener of dozens of collaboratives established in the public interest and as the not-for-profit operator of the CAASD Federally Funded Research and Development Center providing deep knowledge of FAA and aviation safety.
 - A collaborative is a multi-party or multi-sector initiative to address some challenge that is too large or complex for any single entity to solve on its own.
- As a trusted third party, MITRE fairly manages participant equities and interests, protects data, and fosters a safe space for collaboration (i.e., mitigates competitive/defensive dynamics among participants).

Background: Drivers of the ACC

The shared challenge of improving aviation safety risk management drives need for collaboration.

- Prior research¹ shows that industry and government stakeholders see challenges with the current state of aeromedical certification and seek to take a fresh look.
 - Pilots seek a more timely and transparent process that supports their livelihood and health.
 - Airlines seek to maintain safety while boosting operational efficiency and flexibility.
 - Unions seek to enhance pilot retention, careers, and availability as well as future pilots.
 - FAA seeks a data-driven future for medical certification as part of a shared risk model for aviation safety.
- Achieving these outcomes requires data-driven insights on the performance-based aviation safety risk associated with a physical or mental health condition and consideration of ecosystem-wide risks and risk mitigations.
- Since no single entity has all the needed data or the ability to completely mitigate associated risks, multiple representative parties (e.g., FAA, airlines, unions) must work together to share and analyze sensitive data with appropriate safeguards.

¹ See for example: Dienst J, Sienknecht T, Graf V, Lehner B, Roessner S (2023). *Aeromedical Collaboration Outreach*. <https://doi.org/10.21949/1529621>

Contractual Scope and Outputs

FAA tasked MITRE CAASD to advance aeromedical data-driven collaboration with industry.

- Purpose

- Extend previous Aeromedical Certification Collaborative ([ACC](#)) work to co-design a future aeromedical system through information sharing and collaborative research about health and human factors-related safety risks and mitigations. This period focused on clarifying the research and sharing framework.

- Outputs

- A decision briefing for AAM-600 and AIR-20 on the feasibility of executing this research project under the ASIAS program [delivered separately].
- Progress report, in briefing format, on stakeholder engagement activities towards achievement of the consensus medical certification question, data requirements, data governance model, and data environment [this briefing].
- Draft data sharing framework/governance model [unreleased document, summarized in this briefing].

Summary: Stakeholder Engagement

MITRE continued its support of the ACC and related working groups (WGs).

- August-October 2024: Conducted multiple one-on-one workshops with ACC members to clarify ACC studies and concept of operations and to prepare for focused group meeting in November.
- November 1, 2024: ACC focused group meeting to initiate Study and Framework WGs.
- November-January 2024: Conducted multiple group workshops for the Study and Framework WGs as well as multiple one-on-one preparatory workshops, briefings, and follow-ups with ACC members as needed.
- January 30, 2025: ACC Winter Summit to discuss progress/outputs of WGs and determine next steps.
- February 2025: Continued efforts of Study and Framework WGs per actions established at summit.

Summary: Progress

The ACC achieved the goals it set for this period as summarized below.

- ACC activities were safeguarded by ground rules and mutual nondisclosure agreements (MNDAs), given the importance of privacy protections and providing a safe space for exploring sensitive and proprietary information. All members executed MNDAs by the end this period.
- The Study WG achieved consensus on the research question and defined an initial study proposal that will prove the collaborative research approach of ACC and provide insights on an aspect of aeromedical risk management that lacks data (see slide 8).
- The Framework WG defined a set of requirements for the data sharing / governance model including their consensus expectations for future collaboration (see slide 9, 10, and 11).
- Both WGs and the Summit strengthened relationships, buy-in, and trust among ACC members.

Summary: Medical Question (Study Development)

The first ACC study intends to characterize a common program for improving pilot mental health and its potential role as an aviation safety risk mitigation.

- The objective of this ACC-designed study is to characterize pilot peer support programs (PSPs) at US mainline passenger airlines and understand how PSP effectiveness as a potential risk mitigation in aviation Safety Risk Management (SRM) assessments may be assessed.
 - PSPs have been recommended as an aviation safety mitigation, but that has not been widely studied in the literature; most PSPs are records-limited and private by design to protect pilots.
- This study will also show that ACC members can work together and build the trust and capabilities needed to design and conduct voluntary, privacy-protected aviation safety research.
 - This exploratory study uses structured expert elicitation with PSP-knowledgeable volunteers; it does not collect any data about individuals participating in PSPs.
 - The study is co-designed by ACC members, approved by institutional review board, and conducted by ACC's independent, conflict-free convenor (MITRE).

Summary: Data and Environment Requirements

Future ACC studies will require robust privacy protections and prospective data collection.

- ACC members define studies through consensus – and data needs are study-specific.
- There is a lack of available data about the relationships among pilot health, human factors, and operational risk – thus, ACC emphasizes these data and data environment requirements:
 - Capability to estimate and/or collect (new and yet to be defined) relevant data.
 - Capability to collect prospective data and apply related analysis methods.
 - Capability to apply qualitative analysis and exploratory methods (initially).
 - Future capability for potentially linking sensitive data at the entity level for specific studies.
 - See also the separate decision briefing for ACC requirements related to data and the data environment, including potential future integration with the ASIAS data environment and the US AST ecosystem.
- ACC codified the importance of data governance (e.g., privacy protections, data safeguards) and other expectations for continued collaboration in the *ACC Information Sharing Framework*.

Summary: Data Governance/Sharing

ACC members used a proven workflow for collaboration* and other transportation safety charters to co-develop their *Framework*, including ACC expectations on:

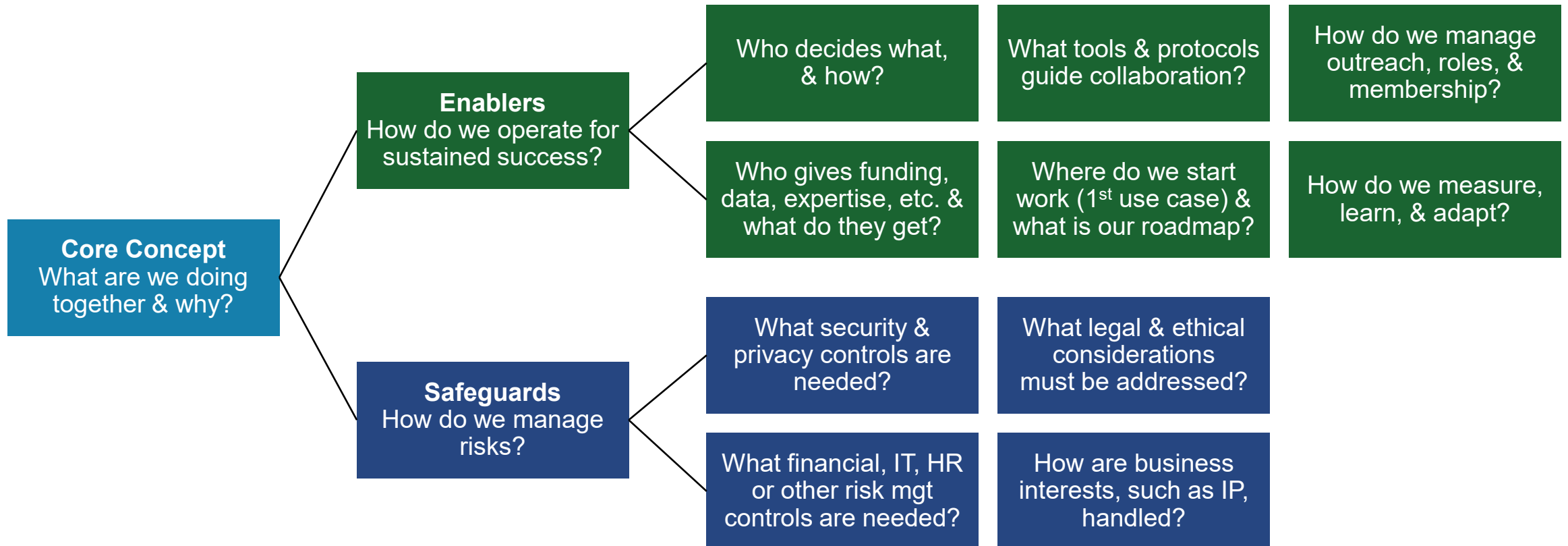
- **Vision:** “Safer skies through healthier aviation personnel.”
- **Mission:** “Drive innovation in managing health-related safety risks through systemic, evidence-based collaboration based on the foundation of Safety Management Systems (SMS).”
- **Goals:** To motivate specific ACC activities.
- **Guiding Principles:** To direct all activity.
- **Membership:** Voluntary and member-driven.
- **Roles and Responsibilities:** For clarity on duties.
- **Decision Making:** Consensus-driven.
- **Structure, Supporting Functions, and Resourcing:** Tri-chairs, members, WGs, guests.
- **Meetings (Working Cadence):** Team-determined.
- **Measuring and Adapting:** To learn and ensure value is delivered to all members and the public.
- **Data Sharing & Governance:** Security, privacy, uses, IP ownership, liability limitation, safe harbor.
- **Methodology, Tasks, and Products:** ACC-defined for each study.

Other highlights include: a strict mission (safety) focus; privacy-protected & ethical research; co-decision making and co-resourcing; and importance of the trusted third party’s mediation and role as connector.

* See MITRE Assemble™ <https://assemble.mitre.org/>

Summary: ACC Sharing Framework Process

ACC members were able to converge on setting foundational expectations for collaboration in only a couple months by first clarifying their “why” and using this to guide the design.



MITRE CAASD's Recommendations

To achieve the ACC vision and FAA outcomes, MITRE CAASD recommends that:

- FAA fund ACC to continue its momentum and mature its value per current plans and goals:
 - Finalizing and executing Study 1 (Part 121 Pilot Peer Support: Current Landscape), clarifying Study 2 (Part 121 Pilot Mental Health Safeguards), co-developing a research roadmap, exploring collaboration with ASIAs/US AST, and developing a Charter or other agreements as needed.
- FAA coordinate with ACC and US AST to explore ACC becoming or designing a Medical/Human Factors Aviation Safety Team (peer to, for example, the Commercial Aviation Safety Team).
- FAA support ACC informing ASIAs data/environment requirements and co-design a path for future ACC integration.
- MITRE CAASD continue to engage ACC members in planning, executing, and managing activities per the 2025 goals as well as adapting to emergent opportunities and ACC needs.
- Industry members of ACC continue to contribute time/expertise to ACC as well as shape expectations for and contribute data, support, etc. to collaborative research.
- Other safety initiatives requiring industry engagement draw on Public-Private Partnerships as a model for co-designing, co-developing, and co-resourcing changes to safety systems.

Acronyms / Abbreviations

Acronym	Definition
AAM	Office of Aerospace Medicine
ACC	Aeromedical Certification Collaborative
ASIAS	Aviation Safety Information Analysis and Sharing [usage in this briefing refers to the ASIAS technical environment]
CAASD	Center for Advanced Aviation System Development
FAA	Federal Aviation Administration
MITRE	The MITRE Corporation
US AST	United States Aviation Safety Team
WG	Work Group