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SUBCOMMITTEE ON HUMAN FACTORS 2019 WINTER/SPRING MEETING SUMMARY

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HF Subcommittee Winter/Spring Meeting Objectives

- Review the proposed 2021 R&D portfolio developed from strategic guidance at the Fall meeting
- Provide findings and recommendations on the proposed portfolio
- Review and update list of Human Factors emerging issues to assist in identifying research gaps
- Consider deep dives into significant areas
- Identify subcommittee membership expertise gaps

HF Subcommittee Winter/Spring 2019 Summary

Hosted by The Boeing Company, Commercial Aviation Services, Seal Beach, California.

- Received a deep dive briefing from Tom Prevot, Director of Engineering, Airspace Systems, UBER Elevate
- Toured the Boeing Operations Center and Virtual Reality Lab
- Discussed subcommittee membership expansion to fill expertise gaps
- Reviewed the Landscape Drivers and used the HF emerging issues list to provide guidance on the drivers to the FAA
- Received briefings on the FY2021 proposed research portfolio
- Developed two F&Rs and two new Actions

Finding and Recommendations

2021 Human Factors Research Portfolio

Finding 1:

- The Human Factors sub-committee reviewed the 2021 HF Portfolio Research Requirements considering the emerging issues list that was created at the Winter/Spring 2018 meeting.
- These HF emerging issues represent the sub-committee consensus of important issues that need to be addressed and require research.
- The sub-committee was pleased to see that many of the HF emerging issues on our list were covered in the research requirements. While there were some gaps, these were not deemed to be significant (at this time) except for those involving Trajectory Based Operations and Cyber Security.

Finding and Recommendations:

2021 Human Factors Research Portfolio

Recommendation 1:

- The FAA should continue to use the emerging issues list to drive HF research requirements and also ask the sub-committee for additional guidance or specificity on the emerging issues where it would help understand the human factors issues to be addressed.

Consequences:

- Addressing the emerging issues list will proactively reduce safety risks in the aviation system. Conversely, not addressing the emerging issues list will result in adding safety risks into the system, especially as new features and operations are added to the system.

Finding and Recommendations:

Trajectory Based Operations

Finding 2:

- The HF subcommittee was pleased with the proposed research for the FY2021 Enterprise ATC Human Factors development program, noting direct relevance to potential operational challenges for NextGen and TBO.
- The subcommittee noted the scope of the proposed research was large and the proposed budget appeared insufficient to cover the proposed work, and there are not yet Agency commitments for execution of the portfolio.
- The subcommittee believes the research proposal is on track to address the needs but the funding will need to be provided to ensure the needs are met.

Finding and Recommendations 2: Trajectory Based Operations

Recommendation:

- The FAA should ensure the proposed FY2021 Enterprise ATC Human Factors research plan is in fact funded as planned and identify any gaps not covered under the current plan so they may be proposed in subsequent years.

Consequences:

- The proposed research will proactively enable early identification of Human Factors opportunities and assessments needed to minimize program costs, enhance safety, and minimize operational risks. By not addressing these issues, cost and risk may increase.

Action 1

- The FAA should be commended for its efforts to provide strategic research guidance through development of landscapes and drivers. The subcommittee recognizes the importance of providing this guidance in a manner that enables prioritization of research activities based on critical aviation needs and FAA's unique ability to address those needs. While the subcommittee appreciates FAA's efforts to incorporate industry feedback, it is currently unclear how FAA plans to consolidate a growing list of drivers into succinct guidance to inform research planning. FAA should provide an update on this approach at the Summer/Fall 2019 meeting.

Action 2

- Previously, the Human Factors Subcommittee made findings and recommendations about the need to develop guidance for flight deck information management practices, challenges/threats, procedures, and training. The Subcommittee was pleased to learn that research requirements were proposed for future work that would address this growing need. The Subcommittee views this as a research priority, and would like an update at the next meeting to review status and progress of the proposed work. (Ref. Aug 2018, F&R 2b)