



Barbara Holder Ph.D.  
July 9, 2020

## SUBCOMMITTEE ON HUMAN FACTORS 2020 WINTER/SPRING MEETING SUMMARY

**Honeywell**  
THE POWER OF **CONNECTED**

# HF Subcommittee Winter/Spring 2020 Summary

- Cancelled meeting at NASA ARC due to Covid-19
- Remote meeting on March 10-11, 2020
- Reviewed Research Requirements
- Specific Presentations:
  - NASA UAM Research and Considerations for HF Research, Savita Verma
  - HF Research at NASA ARC, Mike Feary
  - Revised FY22 research portfolio prioritization process, Mark Orr
- Collected input on REDAC workings for Shelley Yak
- Developed 3 F&Rs, 2 Actions, 1 Observation

# Findings and Recommendations

## Finding 1: Urban/Advanced Air Mobility (AAM) Research and Definition

- The subcommittee was pleased to see AAM-related HF research is planned in FY22.
- NASA's work may be insufficient to address all the HF issues needed to prepare the FAA for efficient AAM approval and safe operation.
- FAA HF should help define future versions of the concept of operations, standards, roles of humans, roles of automated systems, pilot/operator training and qualification requirements, and cockpit simplification acceptability.
- The subcommittee believes FY22 is too late because Entry-Into-Services dates are planned for 2023-2025.

# Findings and Recommendations

## Recommendation 1: Urban/Advanced Air Mobility (AAM) Research and Definition

- Prioritize and accelerate AAM HF Research to ensure HF issues are identified and addressed during concept and use case maturation, and during design and development.
- Coordinate with NASA to identify specific HF research needs and timelines to support near-term EIS targets and NAS integration.
- Identify HF research areas not being covered by FAA or NASA, but critical to the success of AAM, because additional investment may be required to address those gaps.
- AAM HF research/definition should be considered a high priority emerging issue.

## Consequences:

- Decisions will be left to companies developing these vehicles, (such as UBER, Hyundai, etc.) which have limited expertise and lack a balanced industry-government perspective.

# Findings and Recommendations

## Finding 2: Access to FAA Research Artifacts

- FAA HF research generates many valuable artifacts, however, these are not readily identifiable or accessible to interested parties.
- Sharing research findings/artifacts with industry and research institutions help advance the FAA's research influence and contribution to the body of aviation knowledge and expertise.

## Recommendation:

- Provide a means to search and access FAA HF research artifacts in a simple and efficient manner, possibly via a centralized repository.

## Consequences:

- Reduced learning, duplication of work, limiting advancement of research

# Findings and Recommendations

## Finding 3: The proposed prioritization process

- The HF subcommittee was pleased to receive a briefing on the AVS proposed research prioritization process.
- We noted, FAA HF research generally considers perspectives of each Service/Office separately.
- The AVS proposal does not include HF research collaboration and coordination processes across BLIs in the agency to meet system objectives.

## Recommendation:

- The prioritization process should be updated to include HF needs identification and priority within a BLI but also for HF research with cross-domain impact.

## Consequences:

- Potential for inefficient funding, duplication of effort, uncoordinated research, and omission of overarching HF issues in the portfolio.

# Actions

## Action 1

- The subcommittee was pleased to learn the FAA will provide a BLI for emerging issues.
- We requested an update on the planned process for identifying and prioritizing emerging issues to be funded.

## Action 2

- The subcommittee was pleased to receive briefings on the FY22 HF research areas and concurs with the direction the FAA is taking.
- We requested a more detailed briefing on planned FY22 HF research descriptive of the research questions and plan to be executed within the identified research areas.

# Observation

## Observation

- The subcommittee was pleased to receive briefings on AVS Core and NextGen, and ATC Core and NextGen research requirements at our Winter/Spring meeting.
- We observed HF research is happening across the agency in programs that may not be called HF or fall under a HF budget line.
- The subcommittee requests the FAA share an overview of the HF research being done across the agency, even if it is not listed/categorized as such, so the HF subcommittee has a big picture view.
- Without a big picture view it is challenging to advise the FAA on HF research gaps, needs, and priorities.