

CERI Human Factors of UAVs-Break-out Session Comprehensive Summary

Cognition and Perception

- There are many issues regarding system automation and its relation to pilot decision making. What should be automated, when should it be automated, and how can automation be overridden?
- A taxonomy of mission types can aid in determining when automation should take over for a pilot.
- Other more specific cognitive and perceptual issues related to automation include disorientation, fatigue, situation awareness, and training.

Selection and Training

- A task analysis to identify core knowledge, skills, and abilities (KSAs) that UAV operators should possess and that therefore should factor into selection and training must be conducted. This analysis could be specific to a type of UAV or more generic.
- Those KSAs would then lead to a core set of skills that operators would be taught regardless of the UAV they were to operate.. After this ground school, UAV operators would then move onto actual training in light aircraft, and then progress to a specific UAV system.
- More research is needed on selection and training.

Simulation Displays and Design

- The ability to take UAVs and integrate them into existing training and simulations is a major goal.
- Additional tools such as programming tools, operator training tools, and supervisory level tools need to be developed, tested, and validated.
- Displays should be standardized across platforms where it can be applied based on the mission without being overly restrictive.
- Research on haptic and tactile displays must also be done and will rely on definitions of UAV tasks.

Team Process

- A taxonomy of classes of teams is needed, including factors such as team size, distribution, heterogeneity, stability, and distinguishing teams from groups.

- We need an understanding of the knowledge sharing that occurs during missions, at hand-offs, and for team situation awareness.
- We need to understand group processes such trust, expectations, planning and workload. and applying such measures to dynamic teams must be researched.
- Methods to assess team performance and to mitigate to improve teams is needed.

Systems Safety

- The most important issue in integration of UAVs in the NAS is the 'see and avoid' problem
- Certification, standards, and ratings depend on the type of UAV. There are numerous types, sizes, and functions. It is a system not a vehicle.
- What are the medical qualifications for operators?
- A system that deals with safety and UAVs must be established