



Cognitive Usability Engineering and Analysis Research□

Overview The wide-spread application of Information Technology to automate tasks in our everyday lives has improved our overall productivity and increased our safety. Researchers, however, have identified a circumstance in which the application of these technologies has resulted in increased operator workload that has led to reduced safety margins. This occurs when the automation induces operator error by requiring the operator to exceed the natural limits of human cognition.

More information about automation research conducted at NASA Ames can be found at: <http://automation.arc.nasa.gov>

The Cognitive Usability Engineering and Analysis Project is part of the Human Automation Interaction Element of Airspace Operations Systems Project of NASA's Airspace Systems program. In particular this research identifies the characteristics of training, procedures, and automation design that optimize the interaction between human and machine.

Two technologies have been developed through this research:

- A method for analyzing automation to identify two characteristics of automation user-interfaces that are known to cause operator overload. Demonstrated on user-interface in modern cockpit. (1)
- A web-based tutor for training complex skills that reduces time to competence and improves retention. Demonstrated training pilots to use a modern Autopilot.(2)

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http://humansystems.arc.nasa.gov/IHpersonnel/feary/SAP_projects.html

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