Tomorrow's Human Computer Interaction from Vision to Reality: Building Cognitively Aware Computational Systems

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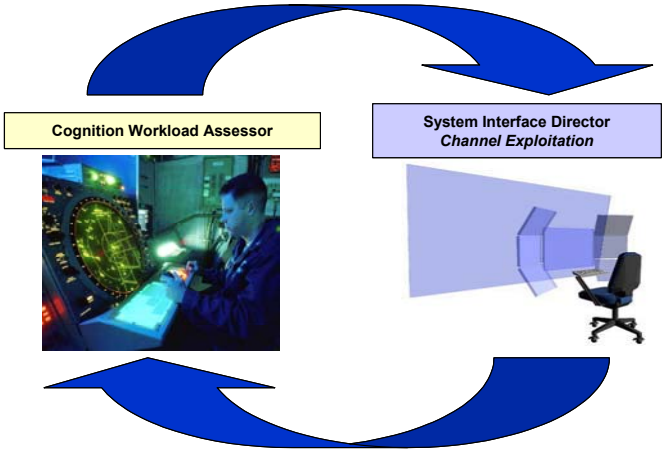
The goal of the DARPA Augmented Cognition program is to extend, by an order-of-magnitude or more, the information management capacity of the "human-computer" interaction by developing and demonstrating enhancements to human cognitive ability in diverse and stressful operational environments. Specifically, in its current phase, the program is focused on development of the technologies needed to measure and track a subject's cognitive state in real-time - these include functional near infrared imaging (fNIR) devices, as well as single site electroencephalographic (EEG) recordings. Through measurement and understanding of cognitive state in real-time, the ultimate goal of cognitively aware computational systems is within reach. Military operators are often placed in complex human-machine interactive environments that have been shown to fail when a stressful situation is encountered. The technologies under development in the Augmented Cognition program have the potential to enhance operational capability, support reduction in the numbers of persons required to perform current functions, and improve human performance in cognitively challenging environments.



InfoCockpit experiments explored ways to make it easier for people to encode, store, and retrieve information were conducted…