

General Aviation

Requirements

Requirement ID: 682
Requirement

Status Category: Unfunded

Sponsor Organization: ACE

Sponsor POC: Frank Bick

Keywords: General Aviation Pilots (GA), Vision

Title: Establish certification requirements for the use of helmet-mounted display technology in General Aviation

Research Statement:

As new advanced technology is being transferred from military applications to general aviation environments there needs to be appropriate certifications standards developed to guide aviation system designers as well as FAA certification personnel. The research should examine existing standards and assure they are accurate for the GA environment as well identify any gaps and provide appropriate data to resolve these gaps.

Background:

Current technology now allows head-mounted displays to be used in ways that mimic head-up displays, but that are much more flexible and do not have line-of-regard or viewing-box limitations. Systems have already been deployed for military applications, and it is clear that the emergence of lower-cost options in this field are already being capitalized upon for entertainment and personal computing. Research is already being done in applications for the civil cockpit, and it will not be long before systems are being brought forward to be considered for certification to replace HUD devices. It is desirable that standards and certification requirements be in place prior to the first submissions rather than allowing the first device on the market to set the standards, avoiding the experiences already seen with the flood of multifunction displays that arrived on the scene recently. To this end this task will involve the examination of existing data on head-mounted devices with an emphasis on the behavioral/performance consequences of design variables. To the degree that data are not available for certain questions, experimentation will be employed to fill these gaps in knowledge and add to the body of data available for defining certification requirements. Certification methods using these data also need to be developed.

Output:

Regulatory Link:
none