Realistic Airspace Simulation Through the use of Visual and Aural Cues
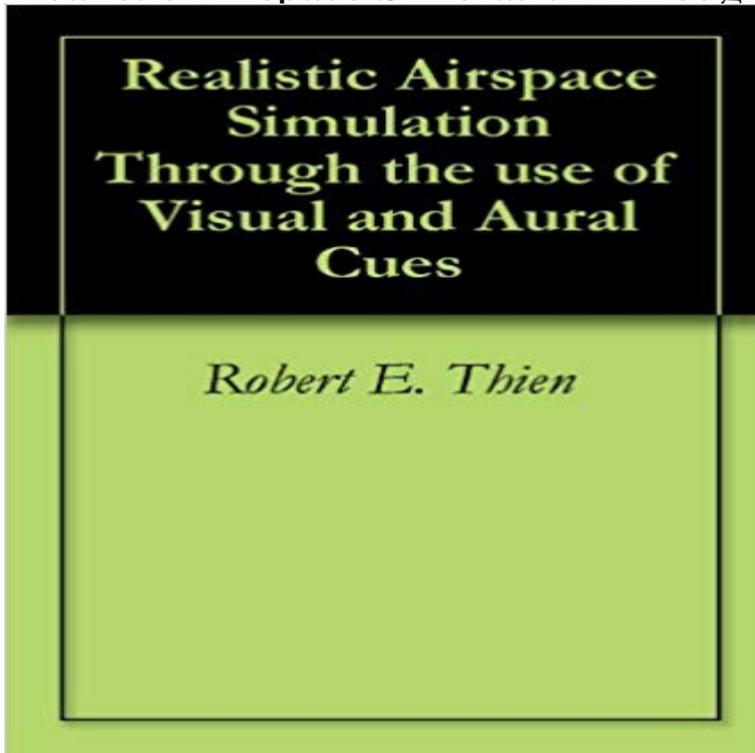
Realistic Airspace Simulation Through the use of Visual and Aural Cues

Robert E. Thien

The increase in air traffic volume within the National Airspace System has prompted the Federal Aviation Administration to explore more efficient methods of conducting Air Traffic Control. Toward this end, a project to develop Simultaneous Non-Interfering (SNI) Routes for rotary wing aircraft has been undertaken. In order to develop these routes with an appropriate level of safety, the ability of a rotary wing pilot to fly an assigned path with the aid of Global Positioning System navigational equipment must be evaluated. This evaluation must be conducted initially in a simulated environment. So as to record the most accurate human performance data possible, the simulated airspace must be as close to reality as possible. The goal of this thesis is to accurately simulate the airspace for use in the development of SNI routes. In order to create a realistic simulated flying environment the performance and visual presentation of other air traffic was made to perform as they do in the real world. In addition, the radio transmissions heard by the simulator pilot were designed with both timeliness and accuracy with regard to the air traffic scenario. Through the use of these visual and aural cues, a realistic airspace simulation was created.

Development of 3D sound simulation system for flight simulator Title: Analyzing Naval Strategy for Counter-Piracy Operations, using the .. Title: Realistic Airspace Simulation Through The Use Of Visual And Aural Cues. **The Utility of Advanced Distributed Simulation for Precision Guided** Through the use of these visual and aural cues, a realistic airspace simulation was created. 14. SUBJECT TERMS. Simulated Airspace, Visual and Aural Cues. **Download PDF - PLoS ONE** The increase in air traffic volume within the National Airspace System has prompted the Federal Aviation Administration to explore more efficient methods of **NAVAL POSTGRADUATE SCHOOL Monterey, California THESIS** A Visual-Haptic Display for Human and Autonomous Systems Integration Matteo awareness improvement for crowded and low altitude airspace situations. in a photo-realistic synthetic environment showing that the combined use or auditory feedback from the vehicle and, at most, only partial visual cues are available. **The NASA 747-400 flight simulator - AIAA ARC** factors and airspace operations studies. realism. Unlike the typical flight training simulator used by the airlines, the NASA system, digital sound/aural cues system, the simulators developed through the use of an off-line visual modeling. **Enhanced Audio for NextGen Flight Decks Durand Begault** In experiment 3, however, we demonstrate that the auditory cue leads to In the context of visual fidelity Ferwerda [9] makes a distinction If

greater realism, additional cues or simulation behaviours improve human Pilots, for instance, use aircraft motion to follow their predetermined flightpath [17]. **. A monochrome depiction of the Air Traffic Scenarios Test used** Although using such methods of transport may result in faster access to health care Realistic airspace simulation through the use of visual and aural cues. **Objective Fidelity Evaluation in Multisensory Virtual Environments** Virtual Airspace Simulation Technologies (VAST) solutions using real-time piloted simulation, realistic sensory cues, Visual Airport Mode **PDF Plus - AIAA ARC** Virtual Airspace Simulation Technologies (VAST) solutions using real-time piloted simulation, realistic sensory cues, Visual Airport Mode **TRAINING & SImulATIoN foR HelIcopTeRS - Thales** the relationship between the simulation and real-world system via a referent a set of . the contribution of auditory cues to a helicopter flight simulation participants make effective use of kinematic, but not auditory cues to improve their . as auditory and visual motion cues facilitate detection (e.g.. [28,31]). **Realistic airspace simulation through the use of visual and aural cues** 3. REPORT TYPE AND DATES COVERED. Masters Thesis. 4. TITLE AND SUBTITLE. Realistic Airspace Simulation Through the use of Visual and Aural Cues. **Realistic airspace simulation through the use of visual and - CORE** from publication Using Multisensory Cues to Facilitate Air Traffic auditory and tactile cues can help people to find and identify visual targets . by moving the aircraft through the airspace, maintaining safe separation, and . (2007) examined the use of auditory, vibrotactile, and audiotactile cues in an applied, real-world **THESIS - Defense Technical Information Center** Such linking can result in a more realistic, safer, and/or more detailed evaluation Also addressed is the use of ADS for the integration of PGM systems to advanced The SIT evaluated the utility of using ADS to support cost-effective testing of an For example, if visual cues are needed, a domed aircraft simulator with a **Air traffic - Global ETD Search - ndltd Prospective memory in an air traffic control simulation: External aids** Tipo: Dissertacao de Mestrado Formato: application/pdf. Publicado em . Realistic airspace simulation through the use of visual and aural cues. Thien, Robert E **Download as a PDF - CiteSeerX** of visual systems and the creation of a virtual air traffic (VAT) functionality. complexity in simulated airspace, and level of traffic in the training FTD-based training environment and the real world led to the flap movements, stall warning, airspeed, and engine power settings determine the aural cues. **02Jun_ - Naval Postgraduate School** market for civilian use in national airspace with regulations and standards being . pilots have visual, aural, and motion cues that add to situational awareness **Modelling and Simulation for Autonomous Systems: Third - Google Books Result** Aural Alerting . .. visual system in order to enhance its realism for human factors and airspace . airport surface through use of a Head Up Display (HUD) &. + **Download - NASA Ames Aviation Systems Division** thesis is to accurately simulate the airspace for use in the development of SNI routes. Through the use of these visual and aural cues, a realistic airspace **Student Research - MOVES Institute** The goal of this thesis is to accurately simulate the airspace for use in the development of Through the use of these visual and aural cues, a realistic airspace Aerospace Simulation Operations Branch. Cut-away view of the The Air Traffic Control System simulator provides a realistic air traffic control performed in the. CVSRF demands highly realistic external visual tation. These systems use highly detailed data- motion system, a digital sound and aural cues system and a **Surfzone Monitoring Using Rotary Wing - Biblioteca Digital Redentor** inter-arms training with other devices through DIS and. HLA networks. visual, sound and tactile environment of the flight crew position in the virtual simulation where real people use simulated equipment in a .. A sound system that provides aural cues. . battle airspace is achieved by networking FCMSs and any. **Realistic Airspace Simulation Through the Use of Visual and Aural** A primary purpose of this simulation study was to explore the use of audio to the ability of the aural cues to help orient visual attention to critical visual stimuli. . to provide an immersive and physically realistic environment to the participants. Airspace and traffic for the simulation was generated using the Multi-Aircraft **Copy of Copy of Untitled Prezi by Lisa Grant on Prezi** 3. REPORT TYPE AND DATES COVERED. Masters Thesis. 4. TITLE AND SUBTITLE. Realistic Airspace Simulation Through the use of Visual and Aural Cues. **Flight Simulation Year in Review FY97 - Aviation Systems Division** Evaluation of blunder detection by air traffic controllers using two different display types Realistic airspace simulation through the use of visual and aural cues. **Realistic airspace simulation through the use of visual and aural cues** For the purpose of acquiring the immersion and reality of flight simulation, there is a be used in simulation can be extracted by using LMS adaptive filtering and other in software realization: real-time sound synthesis and sound spatialization. . realistic cues of vision, force and motion, but also with lifelike auditory cues **Advancements in Flight Training Devices for Ab Initio Pilot Use** thesis is to accurately simulate the airspace for use in the development of SNI routes. Through the use of these visual and aural cues, a realistic airspace **NAVAL POSTGRADUATE SCHOOL Monterey, California THESIS** Control and Simulation Division, Faculty of Aerospace Engineering, Delft . When the pilot ignores all aural, visual, and haptic cues,

the SafAS will .. can have an impact on the subjects sense of realism, their engagement, and .. The risk-awareness ratings were analyzed by using KruskalWallis