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Trusted autonomy uses in disaster resilience

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The use of autonomy in unmanned systems is continuing to evolve as technology progresses at an expeditious rate. The development of an autonomy based solution to be used in the event of a natural or manmade disaster is essential in mitigating the loss of life and property. Trusted Autonomy is the ability to either augment or emulate the human performance to achieve a defined objective when the human is not available. Trusted autonomy is not utilizing machines to achieve a task based on pre-programming a computer within the unmanned vehicle. There are many operational scenarios within the area of disaster resilience requiring coordinated action to achieve dynamic goals in uncertain and dangerous environments. Avenues that address the human-machine collaboration and coordination problem have potential to provide the ability to decrease the time spent immediately after a disastrous event to begin the rebuilding process of a community. Research in verification and validation to the importance of understanding the inherent trustworthiness of autonomous systems is necessary to ensure confidence in safe and reliable operations. An understanding in trusted autonomy is vital in augmenting verification and validation techniques to better understand situations with uncertainty and unknowns. Addressing the human-machine collaboration problems may very well provide a significant increase to many operational scenarios.

Biography

Jeffrey Hauser (USAF) is a member of Indiana State University's Department of Aviation Technology, and serves as the Director of Unmanned Systems. He also serves as Assistant Adjutant General - Air, Indiana National Guard. In his military capacity he serves as the Indiana Joint Force Headquarters Air Component Commander. He serves as a principal advisor to The Adjutant General on all programs and operations affecting the Indiana Air National Guard ensuring both federal and state mission readiness. He holds a BS degree in Aviation Management from Indiana State University and a MS degree in Management from Indiana Wesleyan University. Brigadier General Hauser has been instrumental in the successful launch of Indiana State University's Center for Unmanned Systems and Human Capital Development and focuses efforts in research and collaborates efforts with strategic partners. He has commanded at all levels and is a Senior Pilot with more than 2000 flying hours. Having spent most of his military career in operations Jeff has vast experience working with the Federal Aviation Administration (FAA) and federal airspace issues. He has an extensive background in Domestic Response operations and is certified in numerous National Incident Management System courses and is a graduate of the Dual Status Commander course for Domestic operations in Colorado Spring, Colorado.

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