

The Use of Soft Sensors and I-Space for Improved Combat ID

David L. Hall, The Pennsylvania State University- College of Information Sciences and Technology

Stan Aungst, The Pennsylvania State University - College of Information Sciences and Technology

Combat identification (Combat ID) seeks to determine identities of friendly, neutral and enemy targets and threats in a dynamic environment. Failure of accurate combat ID leads to fratricide and undue losses of own forces when they are unable to accurately assess and understand a rapidly evolving situation. These challenges are increasing due to non-standard and urban warfare operations in which U. S. forces must operate in, around, and among native populations and non-government organizations such as relief organizations. Moreover, the increasing complexity of targets (moving from traditional weapon systems to individuals and groups of people planning and executing asymmetric warfare) further complicates identification and situational awareness. Traditional information and data fusion has addressed these challenges by integrating and fusing data from heterogeneous sources and sensors to improve situational awareness. However, recent advances in hand-held sensing and communications devices provide the opportunity to leverage the observing ability of humans (viz., using humans as “soft sensors”). This paper describes some concepts, challenges and on-going research to use a combination of traditional sensors, human “soft” sensors, and data available on the internet to improve situational awareness and combat ID.