

# **Preattentive Attributes in Visualization Design: Enhancing Combat Identification**

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The process of Combat Identification (CID) demands that objects in the battlespace be quickly and accurately characterized to maximize combat effectiveness, and to protect the lives of friendly forces and non-combatants. Because stressful situations can inhibit cognitive abilities, human machine interfaces (HMIs) designed for combat use must be built to optimize the display of relevant information. Psychophysical responses of the human visual system known as preattentive processing may hold some of the keys to building systems that quickly and accurately convey battlespace information to war fighters. Background information and research is presented regarding preattentive processing and preattentive attributes, supporting its use in HMI design. Practical examples showing HMI applications of preattentive attributes are illustrated, and relevant design implications discussed.