SATware: a Stream Acquisition and Transformation (SAT) middleware that facilitates flexible development of sentient spaces. A sentient space possesses capabilities to perceive and analyze situations based on data acquired from disparate sources. By providing streams of events occurring in the sentient space, it provides a much higher level of semantic abstraction compared to sensor middleware prevalent today. SATware meets the necessary requirements of Abstraction, Scalability, Extensibility, Mobility, Power-awareness, and Privacy.

SATware is implemented in the context of Responsphere—a pervasive computing, communication, and sensing infrastructure deployed at UC Irvine that serves as a unique testbed for research on situation monitoring and awareness in emergency response applications. Responsphere infrastructure stretches from the CalIT2 building and the area surrounding it to the administration building area.

This research has been supported by the National Science Foundation under award numbers 0331707, 0331690, and 0403433.