**Situation Awareness and Context Awareness**

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Situation awareness (SA) is defined as: “the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future” (Endsley, 1995). Historically, SA has its roots in the work of Sun Tzu in the 5th century BC, and the term “situation awareness” was introduced in World War I.

Context awareness (CA) is less precisely defined than SA. CA refers, in information and communication technologies, to a capability to take into account the situation of entities (Dey, 2001). Contextual awareness is another term related to CA that is limited to spatial awareness, although the terms “context awareness” and “contextual awareness” are used synonymously (Chen, 2000). Historically, CA is much more recent than SA, having been introduced in 1994 for ubiquitous computing (Schilit, 1994) and having been defined (albeit vaguely) in 2001.

One cannot definitively assert that SA and CA are the same because while SA is very well defined (and even standardized), CA is not well defined. However, it seems clear that SA and CA describe the same notion. Both are based on the notion of situation which has rigorous mathematical and ontological definitions.

Situation theory provides the mathematical foundations of situation semantics, and was developed by Jon Barwise and Keith Devlin in the 1980s. With some colleagues I developed the ontology for situation theory (Baclawski et al, 2002). One can download the latest version at (Baclawski et al, 2006).

The notion of context is not the same as the notion of situation. In the CA community, context is defined as “any information that can be used to characterize the situation of an entity” (Dey 2001). Unfortunately, the Dey definition of context is much too vague to be useful (as it only defines what context is used for, not what it is), and in any case the Dey definition makes it clear that situation is the fundamental notion for CA. In other words, CA is awareness of the situation, not awareness of the context that is used to characterize the situation. Accordingly, the term “context awareness” is a misnomer since it is not awareness of context but rather awareness of situation. For the definitive treatment of the notion of context, see (Baclawski et al, 2018).

Nevertheless, there is a distinction between SA and CA in the way they are used in practice. SA is mostly about SA of people, including teams of people and teams of people and machines, although it does include SA of machines by themselves. On the other hand, CA is only used for machines, especially mobile devices. Originally CA was only concerned with location awareness of mobile devices. In any case, one can conclude that, in practice, CA is a subset of SA.

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