Abstract

For highly complex missions, it is not realistic to expect to “get it right” from the outset. The initial conditions are much less important than the ability to improve performance over time. This is the aim of adaptive campaigning. We present a methodology that is a first step towards achieving this aim, based on the notion of an explicit, shared, Causal and Influence Network (C&IN). Firstly, we describe the feedback loops between the force and its environment, which provides the basis for adaptation. Decisions are made at multiple levels within the force; these impact on the real world; the response of the adversary and other actors is observed; the C&IN is updated, which shapes future decisions. Secondly, we analyse the flow of information between the environment and the C&IN. This reveals the need for targeted probing actions that generate small information-rich signals, in contrast to a sensor grid that would collect large amounts of information-poor data. Thirdly, we outline the features and composition of the C&IN and discuss how it may be evolved, represented and used. In particular, we discuss the requirements that flow from this for supporting tools for capture, evolution, analysis, sharing and visualisation of the C&IN. Fourthly, we reflect on the assumptions and limitations of our approach. In conclusion, we highlight how this novel approach to adaptive campaigning can capture lessons learned across rotations, increase adaptability at all scales, levels and classes, and thereby significantly improve the chances for successful outcomes.