

12TH ICCRTS

“Adapting C2 to the 21st Century”

Why is C4I Software Hard to Develop?

[Track 1: C2 Concepts, Theory, and Policy](#)

(Backup: [Track 8: C2 Technologies and Systems](#))

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SOA technologies promise to revolutionize the design, development, and deployment of C4I software, heralding a revolution in advanced and flexible warfighting capabilities.....but it's not going to happen, at least not for the next 10-15 years. Legacy C4I software (e.g., the GCCS family of systems) will continue to prosper and evolve during this period, with the most visible evolution consisting of point-to-point web services bolted onto legacy functionality....but don't confuse this progress with the promise of SOA.

SOA technologies have been available for about 5 years now – a time frame that exceeds the threshold of patience for the next version of GCCS – yet you can't even find a viable SOA-based C4I prototype. So what's the problem? The problem is that the truly hard problems of C4I are not being addressed, including the business rules specific to C4I. By way of analogy, why is it hard to write software for stock market investors that selects winners and avoids losers?

Developing C4I software is significantly more difficult than stock market software, because the business rules are much more complex. This complexity is the starting point for this white paper.....so get use to the presence and prevalence of legacy C4I software.