

# *Theory of Enterprise Command and Control*

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## **Abstract**

The *Theory of Enterprise Command and Control*<sup>1</sup> provides both a logical and technical framework for integrating concepts and requirements for *network-centric operations* within and among departments and agencies of the U.S. Federal Government, especially the Department of Defense. Command and control (C2) refers historically to governance of activities related to tactical and operational (e.g. logistic) military force projection, while in civilian domains “decision and control” generally refers to enterprise governance of operational (e.g. supply chain) matters. In the theory presented here, we use the term *enterprise C2* (EC2) to unify both perspectives. The theory is concerned with *real-time governance* and its requirements on the development of a C2 service-oriented architecture (C2/SOA) for improving interoperability among departments and agencies of the U.S. Defense Department, the Military Services and their allied agencies (governmental and non-governmental, foreign and domestic). Improved interoperability (effectiveness), enabled through GIG-based net-centric EC2 services derives from improvements in institutional speed and agility, inter-agency collaboration for joint planning and execution, shared resource management, policy compliance, awareness and predictability of effects and economies of scale. The paper summarizes four primary net-centric elements of the theory – i) the *enterprise*, the focus of C2, ii) core *control services*, iii) associated *command services* and iv) associated scale-free *performance metrics*.

**Keywords:** Command and Control, Enterprise Systems, Real-time Systems, Network-Centric Operations, Unified Command, Federated Systems

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<sup>1</sup> This paper expands on work contained in papers presented at CCRTS 2003, 2004 and 2005 (including “Policy-based C2,” a Best Paper nominee).