

FUTURE BATTLE COMMAND AND CONTROL SYSTEM

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Overview and Relevance to the Army Science Conference

This paper gives a conceptual view of the Future Battle Command and Control System, and defines principles for what the system aims to achieve and how. It lies in the category solicited of IT/C4ISR, but also includes the application of Biomedical and other Sensor devices. The Paper is born of the authors' military experience in command and control, "digitization" and the development of FBCB2. It hopes to inform the Combat and Materiel Developers of the Battle Command and Control System for the Objective Force, which is vital to realizing the required characteristics of the Objective Force – Responsive, Deployable, Agile, Versatile, Lethal, Survivable and Sustainable. Although the Paper does not deal with specific technologies, by providing concepts for the Future Battle Command and Control System it provides context for the application of technologies to meet the demands of the warfighter, and so is considered relevant to the 23rd Army Science Conference.

ABSTRACT

Aim of the FUTURE Battle Command and Control System

The aim of the Future Battle Command and Control System is to enable Command on the Move and Control in Near Real Time by Unobtrusive Monitoring of SA Telemetry Data, that is then processed by the Tactical Knowledge Management Engine to infer and publish the right information to all users in the system, dependent on their role within the Task Force, and scenario.

Principles Defined

Principle 1. The Future Battle Command and Control System is an integrated system of systems that meets the needs of commanders and staff at every level, for all BFAs, and across the Services.

Describes the nature of levels of command and control, and the information necessary to enable commanders and staff to fulfill their roles. Explains the interaction and dependencies between levels of command and between Battlefield Functional Areas (BFAs), concluding in the requirement for an integrated system of systems. This principle provides the framework for the Future Battle Command and Control System.

Principle 2. The Future Battle Command and Control System must provide commanders at all levels and across all BFAs functionality to simultaneously plan, fight and reconstitute the Task Force to achieve Battle Command on the Move to meet the higher commander's intent.

Principle 3. The Future Battle Command and Control System must provide commanders and staff at all levels and across all BFAs functionality to achieve Battle Control in Near Real Time to maximize freedoms and minimize constraints in support of commanders' plans.

Principles 2 and 3 define what the Future Battle Command and Control System aims to achieve – Battle Command on the Move and Battle Control in Near Real Time.

Describes Battle Command and the requirement of the system to make Commanders aware of their situations to enable them to continuously plan, fight and reconstitute – not as chronological phased events, but rather simultaneously.

Describes Battle Control and its relationship to Battle Command. Explains the importance of timely and relevant information and how it is interpreted and used by different BFA staff at all levels of command to support Battle Command on the Move.

Principle 4. *The Future Battle Command and Control System must provide commanders and staff at all levels and across all BFAs Situational Awareness (SA) Telemetry by Unobtrusive Monitoring from which information is inferred, which when combined with C2 information provides true Situational Awareness and enables Battle Command on the Move and Battle Control in Near Real Time.*

Principle 5. *The Future Battle Command and Control System must provide functionality that requires zero or minimal interaction with the user for the input and output of SA Telemetry and C2 information, and that is attuned to his equipment and scenario.*

Principle 6. *The Future Battle Command and Control System must act as a Tactical Knowledge Management Engine that infers generic information from SA Telemetry for other system users, and uses all available information to infer specific information for the local user who subscribes dependent on his role, level of command and scenario.*

Principles 4, 5 and 6 define how the Future Battle Command and Control System provides the information required to enable Battle Command on the Move and Battle Control in Near Real Time.

Describes SA and how it is gained from the interpretation of all available information to enable command and control decisions to be made. Describes how generic SA Telemetry through Unobtrusive Monitoring can be used to infer information specific to BFAs and different levels of command.

Describes how appropriate input and output (or presentation) of SA Telemetry and C2 information is a vital component of achieving SA.

Describes the levels of interaction between the user, the computer and the system of systems, and then how the Future Battle Command and Control System must fulfill the information requirements of all users dependent on their role, level of command and scenario by acting as a Tactical Knowledge Management Engine.

Conclusions

The Future Combat System programs now provide an opportunity to design and build a system that fully implements all of the principles described, and so realize the quantum leap in operational capability and effectiveness possible from the evolution of digital communications, computers, digital sensor and surveillance technologies.