

## A COMPARISON OF CIVILIAN AND MILITARY NETWORKED COMMAND AND CONTROL SYSTEMS

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**Abstract.** UK military command and control infrastructure is undergoing significant change due to the deployment of systems such as Bowman, introducing a network-enabled capability to support command. This paper reviews how other organisations operate in a networked environment, taking two comparators, one civilian and one military. The civilian comparator was the UK-based motoring organisation, the Royal Automobile Club (RAC), which supports its emergency rescue activities with a Customer Management System, comprising a Microsoft Access database that structures each emergency call and provides an automated response, the aim being to use resources efficiently whilst minimising response time. The military organisation was that of the French Army who have developed their digitised capability incrementally over a period of 20 years. Although there are major differences between RAC and the French military in mission and role, both have incorporated into their command structure a bespoke Information and Communication System (ICS), with resultant benefits in situational awareness, and fast and effective response. The advent of the UK Defence Information Infrastructure (DII) should provide these same benefits and more when it is fully implemented.

### INTRODUCTION

It is widely acknowledged that current UK tactical headquarters (HQ) were designed and developed to operate under the banner of the Cold War. Considerable effort has been made to keep pace with the changing operational environment; however, this has been undertaken within existing resources.

UK Doctrine has continued to develop, and currently Defence Planning Assumptions (DPA), informed by the threat and the likely scales and concurrency of deployed operations, give guidance to the nature of future deployments. These are distilled into the Joint Higher Level Operational Concept (HLOC), [1,2], which in turn has driven the Future Land Operational Concept (FLOC), based upon the four 'core concepts', [3], of Agile Forces (AF), Effects Based Operations (EBO), Directed Logistics (DL), and Network Enabled Capability (NEC) [4]. FLOC relates to a balanced force deployed on expeditionary operations in an allied, coalition, multi-national, and joint context, with a core capability for high-intensity warfighting, operating over extended lines of communication both to and within theatre.

As well as the doctrinal driver, digitisation is a significant catalyst for change as a result of the recent introduction of systems such as JOCS, Cormorant, and Bowman. The enhanced capabilities that these systems provide will form the backbone of the transition to NEC, the key enabler of the FLOC concept.

The twin themes of doctrine and digitisation thus suggest the requirement for a fundamental review and analysis of the nature of future UK field HQs at divisional level, encompassing the roles and tasks expected of HQs, focussing on its outputs and the processes by which they are achieved. This analysis can then be used to inform the nature and structure of the HQ and the staff environment within which the processes are undertaken. This was the theme of a project conducted at the UK Defence Academy, the aim being to examine the nature of future field HQs, considering their agility, structure, and staff processes, including dispersed working, information manipulation and presentation, and to recommend how these issues might be taken forward. To

assess how others approach the conduct of command and control, two organisations were considered, one civilian, the other military. The civilian comparator was the UK motoring organisation, the Royal Automobile Club (RAC); the military organisation was that of the French army. This paper summarises the findings of this comparison and relates it to the situation in the UK.

### FUNDAMENTAL NEC CONCEPTS AND TERMS

NEC is the 'key enabler' for capability development, leading to Knowledge Superiority (KS), and contributing to decision superiority and decisive effect, based upon command judgement. KS requires accurate, timely and relevant information, (that is, Information Superiority (IS)), allowing commanders to make informed decisions and the force then to act decisively by seizing the initiative. For NEC to be effective, joint and multi-national interoperability of systems must be a key user requirement. JSP 777 [4] identifies the three key components of NEC as networks, information, and people.

Information Superiority is defined as possessing a greater degree of information about the battlespace than an adversary, being able to exploit that information more rapidly, and thus preventing the adversary from obtaining or exploiting information which would give combat advantage. IS leads to Decision Superiority (DS) which has as its component parts, Information Management (IM) and Information Exploitation (IX)

IM is the systematic planned acquisition, exploitation, stewardship and disposal of information (in both digital and analogue forms) in order to provide the right information in an appropriate format and a timely fashion for decision and staff processes. Information Exploitation is the sharing and use of information to support situation awareness, planning and decision making, and the co-ordination of desired effects [5].

### FRENCH ARMY EXPERIENCE OF DIGITISATION

As opposed to the UK 'Big Bang' approach to digitisation, the French developed their capability incrementally, beginning with a communications concept review in 1982

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