

European Defence Cooperation in an Uncertain Security Environment

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Introduction

NATO's new Strategic Concept titled "Active Engagement, Modern Defence" adopted by Heads of State and Government in November 2010 acknowledges that, in addition to nuclear proliferation, terrorism and cyber attacks, it is crises and conflicts beyond NATO borders that can directly threaten the security of the Alliance and its member nations. "NATO will therefore engage, where possible and when necessary, to prevent crises, manage crisis, stabilize post-conflict situations and support reconstruction. Recognizing the changing character of conflict as described in, for example, recent works by R Smith (2006) and H Münkler (2002 and 2006) the requisite capabilities have also been acknowledged in a number of recent documents on national security and defence. For example, in the UK, the National Security Strategy (NSS) (MoD, 2010a) sets the context for UK defence and security in terms of the *Ends* and *Ways*, while the Strategic Defence and Security Review (SDSR) (MoD, 2010b) deals with the *Means*. Germany is in the process of updating its Defence Policy Guidelines of 2004 and restructuring its military forces to better meet the demands of the changing security environment that largely match NSS views on future conflict, some differences in national perspectives notwithstanding. The NSS characterises the nature of future conflict in the following terms:

"Around the world the character of conflict is changing. Many future wars will be 'among the people', resembling in some respects the counter-insurgency that we are

currently fighting with allies in Afghanistan. But there will also be wars between states. Critically, both types of conflict will share some common characteristics that affect our own military requirements.

In the future we should expect that securing access to and freedom of manoeuvre in conflict environments will be difficult. Battle lines will be unclear and the battlefield may contain local people and the media, as well as adversaries. We need to be prepared for the fact that our lines of communication will be vulnerable to disruption; and our actions will be subject to scrutiny in the media and courts and by society at large. The implications of this are examined in the Strategic Defence and Security Review”.

In this paper we will discuss the implications of these factors in more detail, illustrate their impact within a complex emergency (dealing with the aftermath of Hurricane Katrina) and then discuss what they might imply for Europeans in terms of greater defence cooperation to meet defence and security requirements despite budgetary constraints enacted by many a European country to help bring down the unsustainable level of public debt accumulated in the wake of the financial crisis. The model we propose to use for this enhanced cooperation is the NATO NEC C2 Maturity Model (N2C2M2) developed by NATO-RTO SAS research study group SAS-065 of which the authors were co-chairs together with Dr David Alberts of the US DoD (NATO, 2010). This model lays out a number of increasingly mature levels of Command and Control (C2) Approaches to military operations, or the management of complex civilian-military endeavours, based on the sharing of information, the delegation of certain decision rights, and an enhanced level of mutual interaction.

The Changing Nature of Conflict: Complex Endeavours

Analysing in more detail the nature of such conflicts as described by the NSS we can assume that some or all of the following descriptors will apply:

a) The number and diversity of participants - local people, the media, a range of insurgent groups and factions, a coalition of a number of friendly force components drawn from different nations - results in a correspondingly large number of ‘degrees

of freedom' that, in turn, can generate a large number of different ways in which participants could interact. This also applies in complex emergencies such as Hurricane Katrina (which we will describe in more detail later on), where there were a wide range of agencies involved in mitigating the effects of the Hurricane, including the US National Guard, US regular forces, State and local agencies, the Dept. of Homeland Security, and the Federal Emergency Management Agency (FEMA).

b). Interactions between participants are affected by the nature of the perspectives of the individual participants, the amount of shared information and other cultural factors. It is thus likely that these interactions will not be linear (thus small differences in initial conditions may lead to large changes in outcome).

c) There are multiple, interdependent chains of command across the coalition of participants on each 'side', thus control is more emergent than 'top down'.

Such complex emergencies and future conflicts, which we term 'complex endeavours', thus share many of the characteristics of a Complex Adaptive System (Moffat , 2003).

The NATO NEC C2 Maturity Model

This model defines five levels of maturity of a C2 Approach that characterize the degree of cooperation between entities participating in a complex crisis or humanitarian event such as described above, beginning, at the low end, with disjointed/conflicted approaches and advancing to de-conflicted, coordinated, collaborative, and, at the upper end, 'edge' approaches characterized by the self-synchronization of entities. As shown in Figure 1, the approaches themselves are characterized by three principal design parameters: 1) distribution of information among entities; 2) patterns of interaction among entities; 3) allocation of decision rights to the collective (of entities).

Keeping in mind that the design parameters are not independent of each other, Figure 1 illustrates where the five categories of C2 approach to complex endeavours are located in the three-dimensional space spanned by these design parameters. C2

Maturity is the ability to move around the C2 Approach Space with the level of maturity characterized by the number of approaches that an entity could successfully employ. Thus, a given level of C2 Maturity involves the ability to recognize the most appropriate C2 approach for the changed situation from those available to an entity, and if required the ability to change from the current approach to the more appropriate one. Please note that the individual approaches are more network-enabled as one moves up and to the right in the cube.

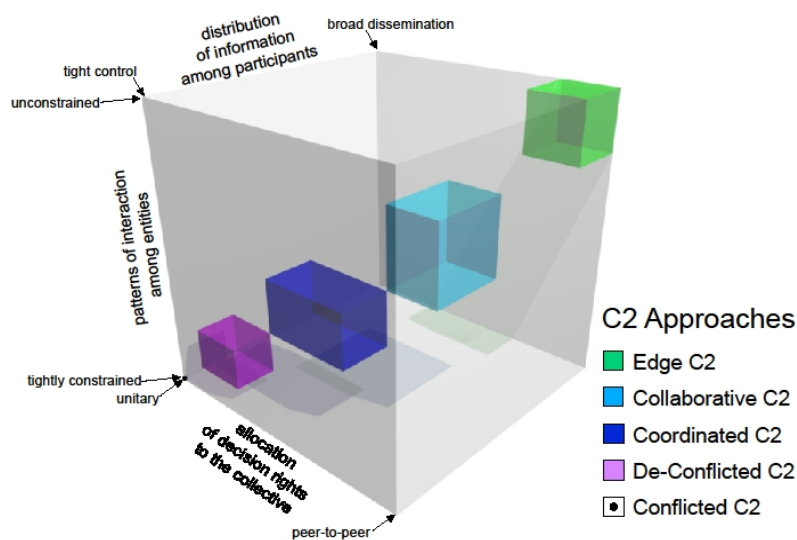


Figure 1: The N2C2M2 - C2 Approach Space (Source: NATO RTO SAS-065)

An Illustration of the NATO NEC C2 Maturity Model - Hurricane Katrina

This analysis is drawn from the set of case studies investigated by SAS-065 to validate the Maturity Model (NATO, 2010; Moffat, 2008).

Hurricane Katrina made landfall in the Southern United States, near to the city of New Orleans, on 29 August, 2005. It was a catastrophe on a par with the events of 11 September, 2001, although in this case an act of Nature rather than of intent. The US House of Representatives met on 15 September, 2005 and created a bipartisan committee to investigate the preparation for and response to Hurricane Katrina. The

Committee was charged with conducting ‘a full and complete investigation and study and to report its findings to the House regarding: the development, coordination, and execution by local, State, and Federal authorities of emergency response plans and other activities in preparation for Hurricane Katrina’. In addition, there was an independent report to the President of the USA led by the Department for Homeland Security (DHS). The case study draws from these (DHS, 2006; US, 2006), and from a report commissioned by the US Government which examines the implications for the US Army and National Guard, carried out by the RAND Corporation (Davis, 2007).

These reports identified a number of key C2 related issues, covering particularly information, planning and leadership. For example, information gaps made it difficult to store, move and access information. There were also difficulties in taking decisions due to lack of good information and lack of a coordinated information sharing process.

The Planning Process for Natural Disasters in the US

The US National Response Plan (NRP) resulting from DHS Presidential Directive No. 5 in 2004, recognizes that planning, preparing for and responding to natural and other disasters are primarily responsibilities of the States. This reflects the US constitutional perspective, and results in a *pull* response assumption, with local authorities having the lead at the start, escalating to State level and then to Federal level, if necessary and if requested. The ‘Stafford Act’ reiterates the philosophy that, in a disaster, local resources should be used first, then State and finally Federal resources. The Stafford Act also outlines the process by which State governors can request assistance from the Federal government when the event becomes one of ‘National Significance’. The US President then has to decide whether this merits designation as an ‘emergency’ (releasing limited resources to the States), a ‘Major Disaster’ (releasing much greater resource to the States) or a ‘Catastrophe’. The first two of these result in a ‘pull’ response; the States requesting and drawing down from these Federal resources as they see the event unfolding. The third category of ‘catastrophe’ was only being formulated at the time of Katrina, and had not been fully implemented. If called for by

the President, it would have resulted in a proactive 'push' of resources to the region, States and local level, irrespective of the States' requests.

Under the NRP, a comprehensive framework is set up of response to major incidents. At the Federal level, the Homeland Security Operations Centre, the FEMA National Response Centre and the Interagency Incident Management Group jointly coordinate the response across Government Departments. The Federal Coordinating Officer (FCO), a representative of the Secretary for Homeland Security, is authorized to lead a Joint Field Office (JFO). This is a temporary Federal facility established locally at the time of a disaster to coordinate the local, State and Federal response. It consists of senior representatives from all of the agencies and responders involved, and develops objectives, strategies, plans and priorities. The membership of this office is envisaged as growing and adapting over time as the incident escalates or diminishes.

The Military Response

One day after landfall of the hurricane, (30th August, 2005), Joint Task Force (JTF)-Katrina was established, reporting to the JFO. States forwarded their requests for assistance to Federal civilian officials. The requests then moved through a series of military channels. Inherent in this process was the need for time to assess the capabilities required by each request and to design an appropriate military response.

C2 Approach Immediately Post Landfall

There was initially an incorrect situational awareness and understanding at Dept of Defense (DoD) level. Civilian and military decision makers throughout the government apparently judged that the projected flow of National Guard units would be sufficient. (Only on the 30th of August did the Deputy Secretary of Defense give the Commander a 'blank check' for any DoD resources and still on August 31st Gen. Honore 'did not believe that Federal ground forces were needed'). There was also a lack of situation awareness by the Federal military forces as to what National Guard units were in the area and how they were operating. This was partly due to the fact that the C2 nets of the National Guard units and the Federal level could not exchange information. A lack of reliable and interoperable communications thus made it very difficult to coordinate initial emergency response operations.

Evolution of the C2 Approach over Time

As a consequence of not being able to share information there was little shared awareness during the initial search and rescue, evacuation and supply delivery missions. This led to multiple rescue teams operating in the same area while other areas were left uncovered. This is an example of the *Conflicted C2 Approach* of the Maturity Model. There was clearly a need to evolve quickly to a more effective C2 Approach. After a few days National Guard and active-duty units were deployed coherently into different geographic areas in order to carry out various relief and rescue missions (a *De-conflicted C2 Approach*).

By the end of the first week post-landfall a more complex and multifaceted C2 structure emerged. *Coordinated C2* arrangements had to be made among States, between civilians and military organizations at both State and Federal levels, and among multiple military organizations and staffs. At this more mature stage of C2, NORTHCOM commanded most active-duty forces through JTF-Katrina. JTF-Katrina in turn commanded the majority of its active-duty forces through separate task forces: a joint Logistic task force and one for each service (Air, Navy and Marine Corps). A Planning Group from the US 5th Army under JTF-Katrina assisted FEMA in identifying what DoD assistance was needed. It also helped the Principal Federal Officer with the task of coordinating active-duty and National Guard forces. The only possible example of an even higher level of C2 Approach was an isolated single case. This was the response of an individual pharmacist to the crisis in medical supplies in New Orleans. He had a rich understanding of the situation, and raided the flooded pharmacies in order to reposition these supplies in local downtown hotels. This illustrates some of the characteristics of the *Edge C2 Approach*.

Enhancing European Defence Cooperation

Recent history suggests that addressing large scale complex emergencies such as Hurricane Katrina, and complex endeavours like Afghanistan mentioned earlier, are an increasing burden on purely national capabilities, and coalitions tend to be the preferred way of sharing such burdens. This is especially true for European countries such as the UK, France, Germany and others who are also in the process of

constraining defence spending in order to help reduce public debt. Thus, beyond restructuring national forces and improving the efficiency of national defence spending, the question is whether and to what degree the respective national programmes are 1) efficient in the sense of maximizing synergies between them and avoiding duplications; 2) complementary to close potential capability gaps; and 3) agile enough to permit joint adaptation to meet new security challenges characterized by uncertainty and complexity. In other words, can the national defence planning approaches practiced independently by European nations today be transformed into a more cooperative multilateral approach supporting a convergent development of national military forces?

On a Convergent Approach

Such an approach would be characterized by deliberate interaction and information sharing between participating nations as described by the NATO NEC C2 Maturity Model (NATO, 2010). The ultimate result of this potential transformation might enable the collaborating nations to rapidly put together a joint *Information Age Force* (of which the NATO Response Force might be an extant prototype) capable of dealing with the resulting uncertainty and complexity implied by large scale emergencies.

In analogy to the NATO NEC C2 Maturity Model, we consider improved cooperation in defence planning and capability development among European countries as the prerequisite to a convergent development of national militaries toward more effective and efficient collective defence capabilities. In fact, the degree of convergence of multilateral defence planning corresponds to the degree of maturity of the C2 and management approaches as defined by SAS-065.

- **Conflicted C2 Approach.** This refers to disjointed operations when the entities (nations) participating in an endeavour plan and operate independently, with no interactions, no exchange of information, and disregard of the collective. This results in the possibility that their individual outcomes are in conflict with each other thus generating adverse effects which would correspond in our application to disjointed defence planning in the form of wasteful redundancies and incompatible and non-interoperable capabilities. As a consequence, effectiveness of operations is degraded and defence spending is inefficient.

- **De-Conflicted C2 Approach.** The objective here is to avoid negative cross-impacts between national defence plans. It is characterized by partitioning the problem space. In order for nations to de-conflict their intents (objectives), plans and actions, they need to be able to recognize potential conflicts and resolve them by partitioning across function, space, and time. This involves limited information sharing and limited interactions. It requires that nations accept some operational constraints and thus delegate, to the collective, those decision rights that are necessary to ensure de-confliction.¹
- **Coordinated C2 Approach.** Here the objective is to increase overall effectiveness. Coordination involves the development of a degree of common intent and an agreement to link actions in the various plans being developed by the entities. This, in turn, requires a significant amount of information sharing, and thus broader dissemination, and a richer set of interactions, both formal and informal, among entities, respectively those responsible for establishing intent and developing plans. A coordinated approach requires the delegation of decision rights to the collective that are associated with the coordination process and the implementation of agreements that result from this process.
- **Collaborative C2 Approach.** The objective is to develop significant synergies through the development of a single integrated plan shared by all entities. Their intents are subordinated to common intent. Entity plans must be supportive of the single integrated plan. Collaborating entities accept symbiotic relationships and are highly interdependent. Very frequent (almost continuous) interaction between and among entities, or individuals/organizations thereof, involving richer and more extensive information exchange is required to establish shared understanding (of the situation and its requirements) and the development of a single shared plan. Once common intent and a shared plan have been established, the collective ‘delegates’ back to the entities the right to develop supporting plans and dynamically adjust these plans collaboratively. Thus, practicing a collaborative approach requires that entities accept significant constraints on their plans and actions.
- **Edge C2 Approach.** Here the objective is to enable the entities of a collective to self-synchronize. This requires that a rich, shared understanding of the situational

¹ De-confliction was standard for operational planning during the Cold War.

dynamics across the contributing entities. This in turn requires a robustly networked collection of entities with widespread and easy access to information, extensive sharing of information, rich and continuous interactions, and the broadest possible distribution of decision rights. Edge C2 distinguishes itself from the other C2 approaches by replacing deliberate and formal coordination-collaboration mechanisms with the dynamics of emergence and self-synchronization.

The findings from the case studies performed by SAS-065 to validate the N2C2M2², such as those relating to Hurricane Katrina described earlier, indicated that, in addition to resources being ill-matched to the tasks in hand, deficiencies in operational performance observed in most of the cases were due to an immature C2 Approach. It also was shown that the degree of maturity required, or *requisite maturity*, for a satisfactory operational performance depends on the complexity and dynamics of the operational environment (Huber and Lechner, 2010). Thus, the case study results confirm that C2 is a critical enabler for operational performance and should therefore be at the centre of attention for defence planners. The results also show that the collective operational performance of entities participating in complex endeavours could be significantly enhanced if entities were by design interoperable and capable of sharing their resources in a complementary fashion. In turn, this suggests that military and non-military organizations owning the entities cooperate in planning them. However, depending on the number and variety of organizations involved cooperative planning by itself might be a more or less complex endeavour (Huber, 2011).

² The case studies included evaluation of combat reports and military exercises (101st Airborne Division, Stryker brigades, UK Wise Wargames), peace operations (IFOR, KFOR), simple disaster response (Elbe River Flood 2002, Strong Angel III, Golden Phoenix 07), complex disaster response (Kathrina, Tsunami 2004, Pakistan Earthquake 2005), and of data generated by the experimental platform ELICIT (Experimental Laboratory for Investigating Collaboration, Information-sharing, and Trust)

Principal Cooperation Mechanisms

There are two principal types of defense collaboration that have been practiced to some measure, both bilaterally and multilaterally, in the context of both NATO and EU: Pooling and Role and Task Sharing.

Pooling refers to cooperative solutions involving two or more partners who join efforts for the development and procurement of military equipment, and the organization and operation of capabilities and equipment that each of them needs to have, but cannot afford to individually develop and/or operate efficiently. A prominent example of pooling is the UK-France Defence Cooperation Treaty which is intended to improve collective defence capability through UK and French forces working more closely together, contributing to more capable and effective forces and ultimately improving the collective capability of NATO and European defence (MoD, Codex, 2010). The treaty aims to create:

- A Combined Joint Expeditionary Force (CJEF) able to carry out a range of operations either bilaterally or through NATO, the European Union (EU) or other coalition arrangements.
- A maritime task group built around the French carrier *Charles de Gaulle* with the ability to deploy a UK-French integrated carrier strike group incorporating assets from both countries, by the early 2020s.

In addition:

- The UK MoD and its French counterpart each currently devote an annual budget of 50 million Euros to shared R&D.
- The UK and France recently signed a treaty agreeing to the joint construction and operation of a new hydrodynamic facility ('EPURE') in France and a technology development centre in the UK (MoD, Codex, 2010).

These various initiatives indicate a level of linkage between the defence plans of the UK and France, implying that the relationship is moving towards a Coordinated C2 level in our categorization.

Role and Task Sharing implies relinquishing certain roles and tasks that will be taken care of by partners on a reciprocal basis. In other words, defense capabilities of the respective nations will become interdependent and, therefore, nations must be assured that in case of need they can fall back on each other's capabilities. For this

reason, there is still considerable reluctance, especially among larger European states, to enter into such role and task sharing arrangements especially related to what they consider as core capabilities. Because they can no more afford to maintain sufficient core capabilities for pooling arrangements, smaller nations might become more interested in role and task sharing especially with larger countries such as Germany providing core capabilities in exchange for specialized capabilities or monetary compensation.³ Role and Task Sharing implies a level of cooperation categorized by SAS-065 as Collaborative C2 that requires, however, that participating nations remove reservations about the availability of shared roles and tasks in case of defence challenges or UN-mandated interventions.

Both of these cooperation mechanisms offer rich opportunities for savings while improving the collective capabilities of European militaries and the efficiency of collective defense spending provided, however, that the respective opportunities are systematically exploited. To that end, it would be desirable that beyond specific agreements on defense cooperation Europeans shared a comprehensive approach guiding national defense reforms and force transformation.

Conclusions

We have discussed the changing nature of conflict and its implications for European Security in terms of the likely uncertainty and complexity of the spectrum of future security and defence challenges. In addressing these challenges, and sharing the cost of meeting these challenges, there is an opportunity for the nations of Europe to work more closely together by moving beyond coordination to richer forms of collaboration. An example of this is the bilateral agreement is now in place between the UK and France.

Enhancing the degree of cooperation between national defence planners, following the path described in the NATO NEC C2 Maturity Model could lead to more convergent development of collective military capabilities. This convergence grows

³ A current example of task sharing is Aerial Surveillance and Air Policing for the Baltic States that is provided by NATO from a pool of mainly European air defense forces.

with the degree to which nations share common intent ⁴, information, and planning processes.

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⁴ On the strategic level, sharing common intent implies that national interests of the participating countries are compatible. However, for some time to come, an assumption to that extent may be realistic only on a case by case basis and involving a small number of partners, such as the recent UK-France Treaty discussed in the text.

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