Towards Providing a Netherlands National COP

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INTRODUCTION

The year 2004 will see the replacement of the current Netherlands Defence Crisis Management Centre (DCBC) by the Defence Operations Centre (DOC), which – carrying more authority and responsibilities – will have to perform more comprehensive tasks than ever before. The organisation of DOC is in line with the customary J-structure utilised world-wide. DOC is to be a joint organisation, and will become the main 24/7 Netherlands operational staff for planning and management of the national contribution to international (peace) operations as well as – with some limited exceptions – the national deployment of troops.

The operational planning and management activities of DOC are referred to as the Operational Process Defence Operations Centre (OP-DOC). These involve both the Dutch cabinet and the Armed Forces and, for every individual operation, consist of the following separate phases: start, orientation, concept development, plan development, deployment and termination of operations. Situational awareness is one of the key success factors of the OP-DOC execution. In order to maintain a sufficient level of situational awareness, the DOC functionaries must timely, accurately and securely be provided with information tailored to their individual needs.

PROBLEM DESCRIPTION

This brings us to the need of a national Netherlands Common Operational Picture (NL-COP), including accessory functionality. The NL-COP is to provide a common basis for creating views on operations throughout their subsequent phases. It is not a picture in the strict sense of the word. To a large extend the COP and its views will consist of information that cannot be visualised graphically. The COP-information originates from various sources, including:

- Deployed national units supported by their operational C4I systems;

- International planning and co-ordination bodies such as NATO and UN;

- National systems such as ERP systems and HRM systems; and

- Unstructured or ill-structured documents such as faxes, e-mails, news-feeds and the world-wide web.

Due to this wide variety of sources, the interoperability and security challenges are severe. Interfaces with a number of security domains can be foreseen, including Mission Secret, NATO Secret, National Secret, National Unclassified and public.

Sections and functionaries within DOC require specific views on the NL-COP. These views may vary with respect to information content, abstraction level and/or aggregation level. Furthermore, under normal circumstances there is a more global information need then there is in case of an incident. In order to be able to give political account for an operation or an incident, historical views must be available as well. One of the challenges in maintaining and disclosing the NL-COP is the fact that a great deal of the information is contained in unstructured or at least ill-structured documents.

In addition to disclosure of information, there is a growing need for several types of supporting functionalities as well. Examples of such functionalities are 'troops-to-task' and 'tail-to-teeth' support tools. One can think of 'what-if' analysis tools and virtual reconnaissance tools as well. For management of the day-to-day operations within DOC, workflow and progress management tools can be supportive. All these tools and components extensively use the information contained in the NL-COP.

SOLUTION OUTLINE

TNO Defence Research supports the Dutch MoD in drafting a Joint (national) C4I systems architecture meeting these needs. A rudimentary, initial version of this architecture has been demonstrated and discussed during JWID 2002. A key component of the architecture is a Joint Database covering the normal day-to-day information needs. Several viewers can be used to access this information. Depending on the type of information these viewers can be alpha-numerical, (geo)graphical, audio-visual, etceteras. The Joint Database is filled by extracting and translating information (including aggregation to a more abstract level) from several existing systems, including the operational systems used by the deployed units, NATO systems and national ERP and HRM systems. The above-mentioned viewers and (if necessary) the source systems will be made available to the users via a web-portal. Additional DOC-specific functionality can be provided via this web-portal as well.

The idea is to distinguish two parts in the Joint Database. The first part contains unstructured documents. The second part contains well-structured information, structured according to a neat data model. This second part also contains meta-data of the unstructured documents contained in the first part of the database. As far as possible this meta-data is linked to the well-structured information. Thus, the structured part of the database can be used as an index in the unstructured part of it.

While accreditable multi-level security solutions are not available, the system will be (system-high) national secret. Information Exchange Gateways (IEG) will be necessary to securely control the information exchange with other domains.

The architecture of the system encourages incremental (or even evolutionary) development. Experimentation with early versions or even prototypes of the system (in JWID-context for example) is foreseen.