

Collaborative Decision Making Process for Complex Defense, Security and Stability Challenges

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ABSTRACT

How to intervene in crises and conflicts? How to cope with complex challenges in the field of defense, security and stability? Questions like these are difficult to answer due to amongst others the involvement of multiple stakeholders that contribute to these complex challenges and need to cooperate and align their efforts. In recent civil-military missions in Iraq and Afghanistan the answer was a comprehensive approach. But how can multiple stakeholders cooperate in unity of effort to plan and execute activities in a complex and changing crisis or conflict environment?

To cope in unity of effort with a complex and changing crisis or conflict environment TNO developed the Collaborative Decision Making (CDM) process, a flexible process to support multiple stakeholders on all levels. The CDM process found its origin in the development of the Uruzgan Campaign Plan, an integrated long term plan for the province of Uruzgan during the civil-military ISAF mission in Uruzgan in 2009. After the use of a preliminary version of CDM in Uruzgan, the process was improved at TNO and has now been applied several times.

Now, five years later, it is time to reconsider the CDM process. To what extent does CDM contribute to unity of effort in the planning and execution of activities? To what extent is CDM suitable for complex, multi-party challenges? What are important prerequisites for applying CDM? How could CDM be improved? To answer these four questions three different applications of CDM were analyzed. Lessons identified and best practices of three different CDM cases were collected and formed the base for improvements of the CDM process. Based on the lessons identified and best practices it can be concluded that CDM is a useful process for creating unity of effort in complex, multi-party challenges in the field of defense, security and stability, but only when the CDM process is tailor made and essential prerequisites are met.

1.0 INTRODUCTION

How to intervene in crises and conflicts? How to cope with complex challenges in the field of defense, security and stability? Questions like these are difficult to answer, especially in a changing and complex environment with multiple stakeholders. Due to the diversity of the stakeholders and their differences in interests, objectives, political and/or strategic agendas, processes and cultures, it is a challenge to cooperate and to align efforts effectively in a comprehensive approach. A comprehensive approach concerns the cooperation of different organizations in the understanding, structuring and solving of a common problem or challenge. In civil-military missions the comprehensive approach often pertains to the cooperation of civilian and military organizations: the ministries of Defence, Foreign Affairs and Development, Security and Justice, coalition partners, International Organizations, Governmental

Organizations, (local) Non-Governmental Organizations, local government and local security forces.¹ A relevant question in a comprehensive approach is: how can multiple stakeholders cooperate in unity of effort to plan and execute activities in a complex and changing crisis or conflict environment?

Traditional military planning processes do not seem adequate for these complex multiparty environments, because they are often end-state driven and do not sufficiently take the continuously changing environment and the multiple stakeholder objectives into account. Also, the traditional planning processes are 'military', and as such not suitable or acceptable for most other stakeholders. Therefore, TNO developed a **Collaborative Decision Making (CDM) process** that helps stakeholders to cope with complex, multiparty environments and to create and maintain unity of effort.

The CDM process found its origin in the development of the Uruzgan Campaign Plan during the Dutch contribution (2006-2010) to the civil-military ISAF mission in Uruzgan. The Uruzgan Campaign Plan is a comprehensive plan, developed by the civilian / military staff of the Netherlands-Australian Task Force Uruzgan (TFU).² After three years of operations and activities in Uruzgan the civilian military cooperation in the field was established. However, most activities were planned and executed as parallel instead of integrated activities. Despite useful earlier attempts an overall, integrated long-term plan that showed the coherence of the different activities and lines of operations was lacking. The commander and the civilian representative of the 6th rotation of Task Force Uruzgan wanted more coherence in their activities and they wanted to create unity of purpose and unity of effort on all levels. They believed that the development of an integrated plan, the Uruzgan Campaign Plan, could help.³

The development of the Uruzgan Campaign Plan was guided by a preliminary version of the CDM process and facilitated by operational analysts (reserve officers), deployed within the Task Force Uruzgan (TFU).⁴ All civilian and military elements in the Task Force staff and representatives of sub-units and international partners participated in the CDM process. The process contributed to unity of effort of Task Force activities throughout the province of Uruzgan. After successfully applying the preliminary CDM process in Uruzgan the process was further developed and improved by the TNO organization, where e.g. knowledge on multiparty decision making and conflict analysis was added. The improved CDM process is described in the *CDM guide* and *CDM methods* and became applicable for complex problems and challenges in other complex environments.⁵ The CDM process has been applied several times.

Now, five years later, it is time to reconsider the CDM process. To what extent does CDM contribute to unity of effort? To what extent is CDM suitable for complex, multiparty challenges? What are important prerequisites for applying CDM? How could CDM be improved? To answer these four questions lessons identified and best practices were collected of three different CDM cases: 1) CDM for the integrated police training mission in Kunduz, 2) CDM for the civil-military exercise 'Borculo 2012, and 3) CDM for the future Network Information Infrastructure (NII) of the Ministry of Defense. The observations, lessons

¹ Rietdijk, W.S. (2008). De 'comprehensive approach' in Uruzgan, schaken op vier borden tegelijk. *Militaire Spectator*, 177 (9), pag. 472-486;

Mollema, P. & Matthijssen C.J. (2009). Uruzgan: op de goede weg, civiel-militaire samenwerking in een complexe counterinsurgency operatie. *Militaire Spectator* 178 (7/8), pag. 399-413;

Soldaat, P.B. (2009). Observaties rond operaties in Afghanistan (I en II). *Militaire Spectator* 178 (5), pag. 252-178; (6), pag. 340-349.

² The Provincial Reconstruction Team was part of the Task Force Uruzgan and led by the civilian representative.

³ Bommel, Maj (R), Drs. I. van & Eikelboom, Maj (R), Drs. A., Comprehensive Planning in Uruzgan. *Proceedings of the 15th International Command and Control Research and Technology Symposium*, Santa Monica, CA, June 22-24, 2010.

Bommel, I.E., Eikelboom, A.R. & Hoefsloot, P.G.F. (2010). 'Comprehensive and iterative planning' in Uruzgan, de ontwikkeling van het Uruzgan Campaign Plan. *Militaire Spectator*, 179 (4), 196-209.

⁴ Both authors were at that time deployed as operational analysts in Taskforce Uruzgan.

⁵ Bommel, Ingrid van; Eikelboom, Aletta & Thönissen, Floor (2012). *CDM Gids, Collaborative Decision Making in 8 stappen*. TNO, ISBN: 978-90-5986-415-3.

Bommel, Ingrid van; Eikelboom, Aletta & Thönissen, Floor (2012). *CDM werkvormen, Creatieve werkvormen voor het Collaborative Decision Making proces*. TNO, ISBN: 978-90-5986-417-7.

identified and best practices come from the collective experience of the authors who have been involved in all of the CDM implementations described. Interviews and discussions with participants from government departments are also reflected here. The observations, lessons identified and best practices form the base for suggestions for improvement of the CDM process.

In this article first the CDM process is introduced and explained. Then three CDM cases are discussed. Each case starts with a case description followed by the results of the CDM process and the lessons identified and best practices. The article concludes with suggestions for improvement of the CDM process.

1.1 What is CDM?

Collaborative Decision Making (CDM) is a process that supports multiple stakeholders with the development of a vision and long term ambition and with the translation of that vision and ambition into a specific approach and activities. Furthermore, CDM supports multiple stakeholders in building collaborative relationships. Often collaboration between multiple stakeholders is necessary to cope with complex problems and challenges. This means that stakeholders have to become willing and able to cooperate and synchronize their approach and activities to such an extent that their effort becomes mutually enforcing. CDM facilitates the collaboration between multiple stakeholders to enable them to join their efforts and to act in **unity of effort**. Effective collaboration is not always a matter of course. Often stakeholders may need to overcome differences in culture, values, interests, backgrounds, beliefs, goals and/or procedures. Therefore the CDM process is also designed to assist the stakeholders to overcome these differences through collaboration building or even teambuilding.⁶

The CDM process results in a CDM document that contains a mutual agreed vision and long term ambition and also the translation into specific approaches and activities. This CDM document (that may be called a collaborative guide, plan, mission design, ...) needs to provide an flexible base to cope with the complex challenges. Because of continuous changes in the environment, the CDM document needs to be adjusted regularly in order to keep it aligned with the challenges at hand. The CDM document owes it flexibility to the **iterative, not end-state driven approach** of the CDM process as is also the case for design processes used by the military for campaign planning.⁷ The CDM process takes the current situation as a starting point and facilitates the development of different and adaptive paths towards an acceptable long term situation. Figure 1 offers a schematic view of the iterative approach.

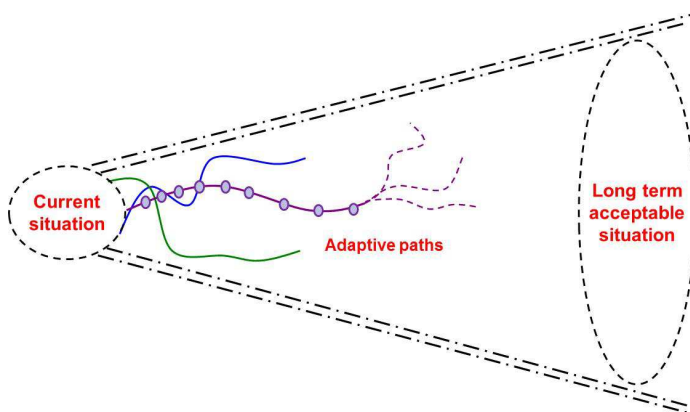


Figure 1: Schematic view of the iterative approach.

⁶ Collaboration building is focused on creating collaboration between different stakeholders without forming a team. Through collaboration building stakeholders get acquainted personally and with each other's expertise and line of work. Collaboration building will increase the chance that stakeholders will support each other in the field. Furthermore collaboration building is believed to contribute to communication, deconfliction, cooperation and integration among the stakeholders.

⁷ McCauley, D. (2011). Design and Joint Operation Planning. *Canadian Military Journal*, 12 (1) Winter 2011, p.30-40.

The underlying assumption of the need of an iterative approach is that in a complex environment in which different factors and stakeholders influence each other continuously, it is undesirable and often not possible to define a specific and definite future end-state. By applying an iterative approach the CDM process enables adjustments to the CDM document based on effect assessment⁸ and changes in the environment. As a result the CDM document is always up to date and continues to guide the multiple stakeholders in their activities that contribute to realizing the desirable or acceptable long term situation. In sum, the CDM process offers a base for continuously synchronizing and adapting the CDM document to such extent that the activities of all stakeholders continue to enforce, instead of oppose each other.

1.2 CDM process

The CDM process as implemented to date consists of eight phases which are depicted in Figure 2 and has been guided by and facilitated by TNO specialists. The process starts with the formation of a CDM team that will jointly develop the CDM document, and concludes with writing the CDM document and setting up the progress measurement (to assess the progress and the effects during the execution of the CDM document). Although a CDM team will often go back and forth among the phases of the CDM process, the core of the process is the development of the conceptual framework in Phase 4. The conceptual framework is also the backbone of the CDM document.

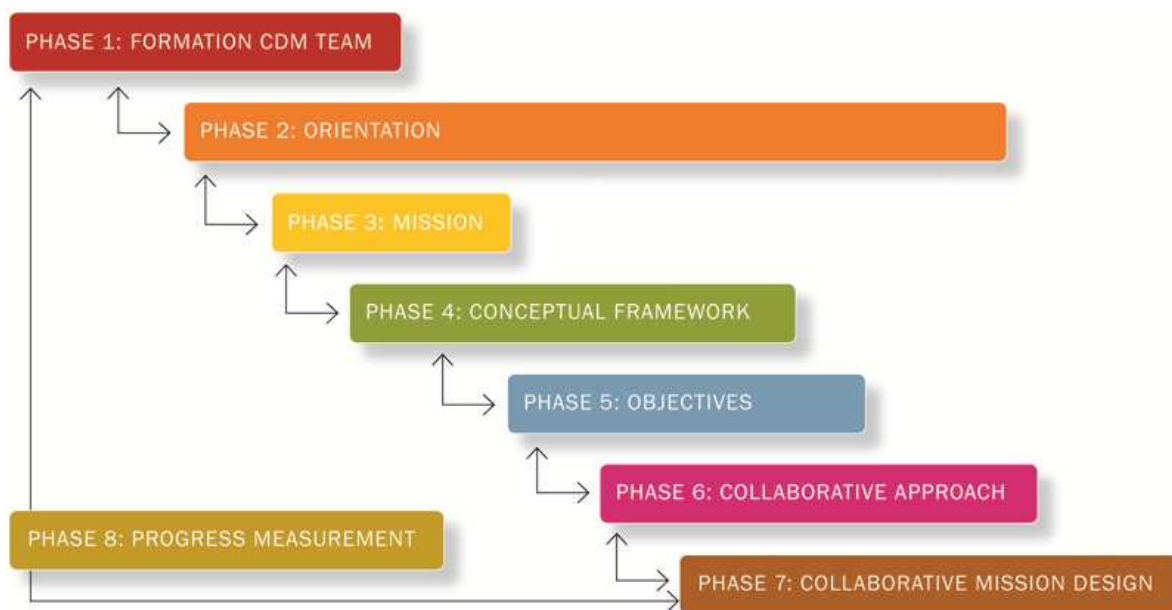


Figure 2: Collaborative Decision Making (CDM) process.

To develop the conceptual framework, the CDM team starts with the formation of the team (Phase 1). In this phase getting to know each other through information sharing, collaboration building or even teambuilding is essential. After the formation phase stakeholders represented in the CDM team are aware of their differences in culture, values, interests, backgrounds, beliefs, goals and/or procedures; they are aware of what is and what is not debatable for them during the CDM process. After the formation phase the CDM team continues with a thorough orientation (Phase 2) that continues during the entire CDM process. During the orientation phase the CDM team will conduct several analyses to create a shared situational awareness of the complex environment. Examples of (problem) analyses that can be done by the CDM team are a stakeholder (or key leader) analysis or a conflict analysis. Based on the results of the orientation phase the CDM team formulates its mission statement (Phase 3). In general terms the mission statement describes the problem or challenge at hand, the long term ambition, the approach in broad terms

⁸ Effect assessment is defined as the combination of measurement, analysis and inference of possible effects.

and the roles of the different stakeholders represented in the CDM process. The results of the orientation phase and the mission statement are the base for development of the conceptual framework (Phase 4). A conceptual framework contains all relevant factors concerning the complex problem or challenge, divided in development themes, factors to mitigate, factors to exploit and factors to influence:

- **Development themes:** factors that the CDM team wants to contribute to;
- **Factors to mitigate:** negative factors that should be mitigated to prevent a negative influence on the progress of development themes;
- **Factors to exploit:** positive factors that should be exploited to enhance the progress of development themes;
- **Factors to influence:** factors that can have a negative or positive influence and should be influenced to such extent that they have a positive influence on the progress of the development themes.

The factors in the conceptual framework form the backbone for the development of the CDM document. For all factors in the conceptual framework the CDM team will develop and formulate short-, mid- and long-term objectives (Phase 5). Because of the complexity of the problem and the environment the long- and mid-term objectives can only be formulated as situation descriptions. However the short-term objectives can be described as specific effects. To realize these objectives, the CDM team develops several approaches and activities (Phase 6). It is often a complex and time consuming puzzle to align all the developed approaches and activities. Solving this puzzle through co-creation will lead to an integral collaborative approach.

When the CDM results are finalized and agreed upon by the CDM team and/or the decision makers, the writing process begins (Phase 7). All stakeholders represented in the CDM team contribute to the writing process. During the writing process the focus of the CDM team slowly shifts to the development of a measurement plan to be able to measure and assess the progress of the mission. This measurement plan will also be included in the final version of the CDM document. Based on progress measurements (Phase 8) the CDM document can in time be adapted to changes in the environment, goals, or participating stakeholders. Through a regular update and revision (Phase 8) the CDM document will remain current and recognizable to all and possibly new involved stakeholders.

Generally, The CDM process takes two or three months and then one or two months more for the writing process of the final document. The CDM process requires a substantial time investment of the participants in the CDM team. Often there is one session (four hours) a week and sometimes even two sessions a week. Phase 2, 5 and 6 often take one or more sessions of eight hours, depending on the complexity of the subject and the collaboration within the CDM team. Because the CDM process is meant to help stakeholders with the challenges of complex, multiparty environments and to create and maintain unity of effort, the process needs to be guided by two independent facilitators with CDM experience and one independent facilitator with expertise on the subject. The facilitators do not only guide the CDM process, but also integrate the input of the CDM team in CDM products like the conceptual framework and inform the CDM team of the progress of the CDM process. The facilitators also provide the agenda for the sessions and formulate some preparatory work for the participants.

2.0 CDM CASES

Since the preliminary CDM process in Uruzgan in 2009 the improved CDM process was applied several times. In 2011 CDM facilitated three ministries (Security & Justice, Foreign Affairs en Defense) in the development of a comprehensive mission design (the name of their CDM document) for the Integrated Police training Mission in Kunduz, Afghanistan. In 2011 elements of the CDM process were also used to support the interagency working group, led by the ministry of Foreign Affairs, that convened several times

for the exercise Common Effort of 1 German Netherlands Corps (1 GNC) in Munster. Then, in 2012, the CDM process was applied for the shaping and development of the exercise of 1 CIMIC battalion and for the development of an implementation plan to translate the Network Information Infrastructure (NII) vision of the Ministry of Defense into specific programs, projects and activities. Currently CDM is being applied for the development of a vision and a plan for a new ICT system for command and control (iCommand) of the Netherlands Defense Forces. The different cases show that the CDM process is not only applicable for civil-military missions and interventions, but also for other challenges in the field of defense, security and stability. To evaluate the CDM process the following three cases are described and discussed in more detail: 1) CDM for the Integrated Police Training Mission in Kunduz, 2) CDM for the 1CIMIC battalion exercise 'Borculo 2012' and 3) CDM for Network Information Infrastructure (NII).

2.1 CDM for the Integrated Police training Mission in Kunduz

In January 2011, the Dutch government decided to conduct an Integrated Police training Mission (IPM) in Afghanistan for the 2011 to 2014 timeframe. The IPM has an integrated approach and a civilian character with civilian objectives to which the ministries of Defense, Foreign Affairs and Security & Justice contribute. The CDM process was used to support these ministries to develop a Collaborative Mission Design that provides a common ground for planning and executing the mission and ensures unity of effort and coordination.

2.1.1 Case description

The Integrated Police training Mission supports the transfer of the lead responsibility for security from ISAF⁹ to the Afghan government.¹⁰ An important precondition for this transfer is an improved functioning of the Afghan police. However, the Afghan police can only function effectively if the entire rule of law chain has sufficient capacities to e.g. process cases, make judgment, ensure enforcement and provide the necessary checks and balances. Therefore, the IPM is not only focused on training the Afghan police, but includes a rule of law program (see Figure 3). This program entails the improvement of the link between the police and the justice sector, the justice sector itself and the implementation of rule of law in society.

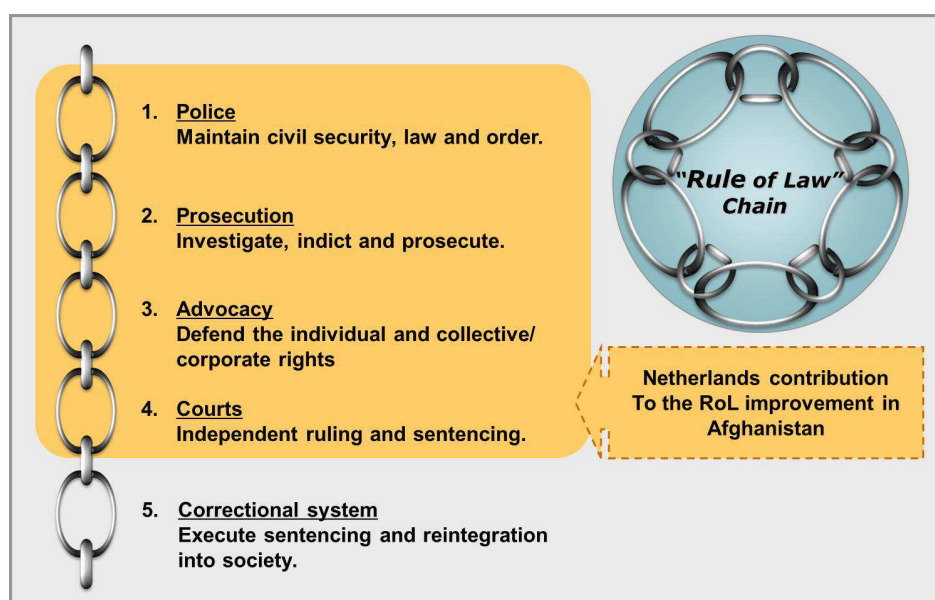


Figure 3: Rule of law chain and the elements the integrated police training mission actively contributes to.

⁹ International Security Assistance Force (ISAF)

¹⁰ This transition process was expected to be completed by the end of 2014. However, the mission was completed July 2013.

By making the deliberate choice to focus on the civilian police and to support the justice sector, the mission has a civilian and military character with civilian and military objectives. The contributions and activities of the participating ministries (ministries of Foreign Affairs, Security and Justice and Defense) to these civilian and military objectives are highly intertwined. Therefore, coordination and unity of effort between the contributing departments is key. Based on good experiences with the Uruzgan Campaign Plan, the ministries involved decided to develop a coherent guidance to the mission at the beginning of the mission and on departmental level. The CDM process, facilitated by TNO, was used to develop this common guidance. Important guidelines for the CDM process were:

- The CDM process should meet the need for coherent guidance to the mission and a translation of the political aims into specific activities in the field;
- The guidance resulting from the CDM process needed to provide long-term objectives and short-term priorities for the mission on tactical level;
- This coherent guidance is to be expressed in a CDM document, the comprehensive mission design;
- The departmental (political) level and the management team of the IPM (operational/ tactical level) needed to develop the comprehensive mission design together;
- The comprehensive mission design has to integrate the decisions made by the Dutch government, policies of the Government of the Islamic Republic of Afghanistan, ISAF, UNAMA, EUPOL and the lead nation in Kunduz province, Germany.

After completion the comprehensive mission design was issued to the executive management team in theatre. To meet the level of detail required for use of the document at that level further development and completion of the mission design was needed in theatre. Because of a continuously changing mission environment the mission design required regular updates during the mission.

2.1.2 Result

On average 15 representatives of the three contributing ministries (departmental and tactical level) participated in the CDM process. During two months they gathered every Wednesday for a CDM meeting (Phase 1 to 6). After these two months a writing team (a representative of each ministry) was formed for practical reasons and assigned to write the comprehensive mission design (Phase 7). The writing process was challenging because the document had to be accepted on the political level and needed to provide enough guidance to the executive management team in theatre. Two months later the writing process resulted in a comprehensive mission design for the Netherlands integrated police training mission in Kunduz province. This comprehensive mission design starts with a description of the political context, the aim of the document and the direction and control of the document, followed by a short description of the mission environment and the mission statement (Table 1) and the long term objectives of the IPM.

In cooperation with international partners the IPM supports GfRoA in improving the quality of the Afghan civilian police and judicial system and institutions in Afghanistan, focusing on Kunduz province. Therefore the IPM will contribute to the improvement of: **the reinforcement of the Afghan civilian police** through education, training and mentoring. The following elements support the reinforcement of the civilian police: the improvement of **the cooperation between the Afghan civil police and the judicial system**; **the quality of the Afghan judicial system** and **the awareness and acceptance of the Afghan civil police and judicial system** by the Afghan people in order to enable the transfer of security responsibility to the Afghan government in the period 2011-2014.

Table 1: The IPM mission statement.

The backbone of the comprehensive mission design is the conceptual framework, developed in Phase 4 (Figure 4 and 5). Because of the specific character of this mission visibility of the different elements of the rule of law chain (Figure 3), the police and the justice sector was required. Therefore, the CDM team

decided to divide the conceptual framework into four clusters: 1) police capability, 2) cooperation between police-justice, 3) judiciary and 4) rule of law in society. The conceptual framework consisted of 15 themes in total. For each theme an objective, guidelines and directives, and short-term priorities for the mission were developed. The four clusters are interrelated because the police can only function properly when the cooperation with the justice system is effective. A functioning justice system and the acceptance of the police and the formal justice system by the population contribute to the quality and effectiveness of the civilian police.

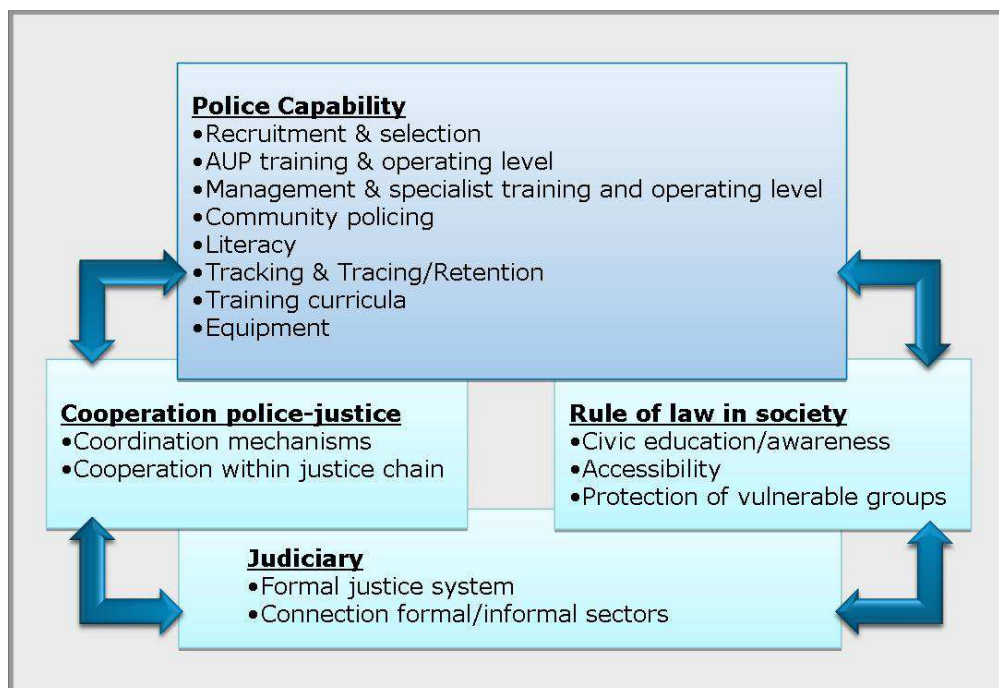


Figure 4: The IPM conceptual framework development themes.

Figure 5 shows the factors to influence (basic principles), factors to exploit (enablers) and the factors to mitigate (disablers). Due to the character of the IPM, international partners will probably do most activities related to these factors. Therefore no specific objectives were formulated for these factors.

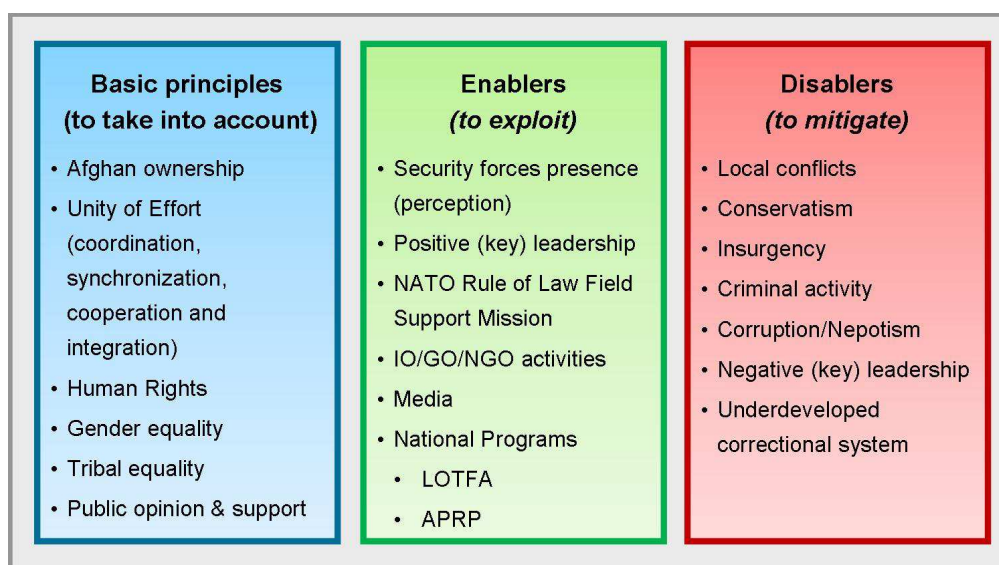


Figure 5: Basic principles, enablers and disablers for the IPM themes.

Summarizing, the comprehensive mission design provided long term objectives and guidance, and short term priorities for the mission. It offered a translation of the conceptual integrated approach into specific directives for the execution of the mission. The main purpose of the mission design was to provide a common ground for planning and executing the mission and to ensure unity of effort and coordination between all actors in the mission.

2.1.3 Lessons identified and best practices

A best practice of the CDM process for the Integrated Police training Mission in Kunduz is the cooperation between departmental and tactical level. Through participation of personnel of the tactical level in the CDM process on departmental level, it was possible to develop guidance, long-term objectives and short-term priorities that the tactical level could actually specify and implement. Integration of both levels in the CDM process enabled the development of the comprehensive mission design that was politically acceptable and at the same time supported by the tactical level.

A lesson identified, related to the above, concerns the hand-over-take-over with successors. Successors did not take part in the CDM process and therefore did not know or understand the underlying thoughts and decisions of the comprehensive mission design. Consequently they did not always experience the comprehensive mission design as a given or as a guide that could steer their activities. To maintain continuity in a mission and to prevent reinventing the wheel, it is desirable that all successors should go through a CDM process during the preparation period and during the first month of deployment. A CDM process is necessary to ensure that successors will have a similar thought process as their predecessors. Only then they will be able to understand the comprehensive mission design, the underlying thoughts and decisions. And only then they will be able to adapt the comprehensive mission design adequately to new and changing circumstances. The comprehensive mission design is a document that is never finished and always under construction, depending on circumstances in the mission environment. This iterative character of the CDM document is a best practice of CDM and a necessity in an iterative approach to complex defense, security and stability challenges.

Another lesson identified concerns the participation of representatives of the ministries. Often the work schedules of the participants cannot be freed for participation at CDM sessions due to other meetings and activities. On average 15 representatives of the three contributing ministries (departmental and tactical level) participated in the CDM process. During two months CDM meetings were conducted every Wednesday (Phase 1 to 6). The investment was experienced as a heavy burden on available working time. As a consequence participants of the CDM process sometimes sent deputies or stand-ins. Especially during the writing process this could cause a delay; some decisions needed to be reconsidered because during the CDM process the participants with decision-making authority were absent when the decisions had to be made. Helpful in the writing process was the fact that the CDM process started with a ‘go/no go’ discussion at the start of the CDM process. By discussing the agenda of the participants in the CDM process, it becomes apparent which topics are negotiable and which are not. A constructive ‘go/no go’ discussion at the start of the CDM process led to a more effective and efficient CDM process, especially in Phase 5, 6 and 7. With the agendas on the table it was easier to discuss objectives, approaches and activities, and to understand the viewpoints of other stakeholders. For this discussion to be successful there needs to be a sense of trust among all participants, therefore special attention was paid to collaboration building at the start of the CDM process.

2.2 CDM for Borculo 2012

2.2.1 Case description

Borculo is the name of a town in the Netherlands and also the name of a yearly civil-military exercise of 1 CIMIC (Civil Military Cooperation) battalion.¹¹ In 2012 it was the first time the exercise Borculo included all elements of 1 CIMIC battalion (joint military staff and six networks with reserve officers, working in the field of small business development, civil infrastructure, cultural affairs, education, humanitarian affairs, economy, employment, and civil administration), a battalion of National Reserves (Natres) and a Communication and Information Systems (CIS) battalion. To increase unity of effort between the military staff and the networks and to improve cooperation with the Natres and CIS battalion, the commander of 1 CIMIC battalion decided that the exercise Borculo 2012 should be planned and organized by representatives of the staff, the networks, and the supporting Natres and CIS battalion. Considering the differences in culture and background between the staff, the networks, and the Natres and CIS battalion, the commander believed that CDM would be a useful process to shape, develop and plan the exercise. Important directions for the CDM process were:

- It should provide 1 CIMIC battalion with a base for organizing and executing the exercise Borculo 2012, including shared objectives for the exercise;
- It should make the staff and all networks of 1 CIMIC battalion visible in the exercise by ensuring a mutual effort in cooperation with the Natres and CIS battalion.

2.2.2 Result

The CDM process resulted in a CDM document: exercise plan Borculo 2012. The exercise plan consists of mutual expectations, success and no-go factors of the participants in the CDM team (Phase 1), the lessons identified and best practices of earlier Borculo exercises, the scope of the exercise, the choice of a scenario and the location for the exercise (Phase 2), the mission statement of the Borculo exercise (Phase 3), the conceptual framework of Borculo 2012 (Phase 4), the exercise objectives (Phase 5) and exercise activities and elements (Phase 6). The exercise plan was to be used as planning document in the preparation and organization of Borculo 2012. To illustrate results of the CDM process for Borculo 2012, the mission statement and the conceptual framework are described in more detail. The mission statement of the exercise Borculo 2012 is:

The exercise Borculo 2012 is focused on drafting an advice for civil authorities and institutions to perform reconstruction activities (when capable) after a disastrous flooding in a fictitious area looking like the city of Rotterdam. To draft this advice (course of action) 1 CIMIC battalion performs assessments and analyses in cooperation with the still present civil stakeholders in order to:

- To improve the integrated performance (CIMIC staff and networks, Natres and CIS battalion) and the cooperation with strategic partners;
- To improve skills on assessment, analysis, decision making and advice;
- To maintain skills on communication and information systems;
- To maintain skills on guarding and securing objects and areas;
- To influence the media and public image of 1 CIMIC battalion, Natres and CIS battalion in a positive way.

Table 2: mission statement exercise Borculo.

The conceptual framework for Borculo 2012 consists of 10 exercise themes and several factors to exploit, mitigate and influence that should be managed in order to reach the objectives on the exercise themes. The

¹¹ Since 17 October 2013 1 CIMIC battalion is known as 1 Civil Military Interaction (CMI) Command.

CDM team chose 10 exercise themes (development themes) for the exercise Borculo 2012. The exercise themes mainly pertain to tasks of 1 CIMIC battalion and to the cooperation within and with 1 CIMIC battalion. Objectives and exercise activities were formulated for all 10 exercise themes. Several positive factors needed to be exploited during the exercise. The use of earlier experience with Borculo exercises and the use of expertise within the networks were found to be important. Also, the presence of relevant VIPs was thought to offer chances for the support of 1 CIMIC battalion. Exploiting these factors would contribute to the success of the exercise. Besides factors to exploit, also several factors to mitigate were identified. Factors that were expected to have a negative influence on the objectives of the exercise themes and needed to be mitigated, were low turn-out, turnover during the exercise, fragmentation of the exercise, etc. Mitigating these negative factors should increase the possibility of a successful exercise and the realization of exercise objectives.

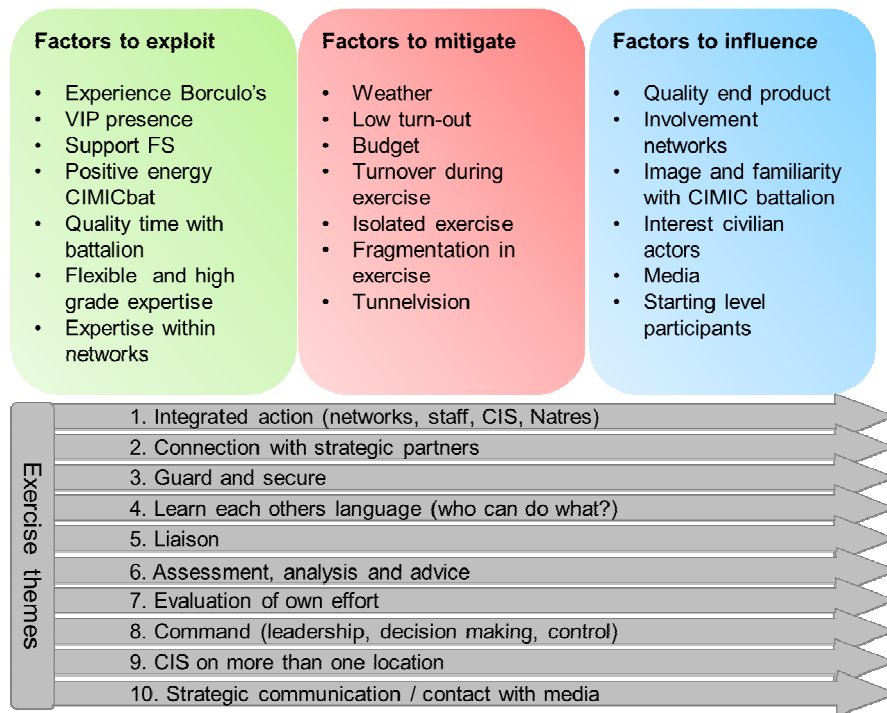


Figure 6: Conceptual framework of the exercise Borculo 2012.

The conceptual framework also contains several factors to influence that needed to be managed to such extent that they would have a positive influence on the exercise. Important factors to influence were: the experience level of participants, the image of 1 CIMIC battalion, the media and the interest of civilian actors. For all factors to exploit, mitigate and influence, activities and precautions were formulated.

2.2.3 Lessons identified and best practices

It was the first time the CDM process was used for shaping and developing an exercise. Although the CDM process was helpful and delivered the base for the exercise Borculo 2012, it seemed not essential to apply the CDM process. The cooperation between the different elements of 1 CIMIC battalion was complex because of the different stakeholders and the differences in culture and background, but the (three-days) exercise itself was not complex enough to require a sense of urgency for the CDM process. A straightforward project approach with an emphasize on teambuilding activities would have sufficed as well. However, a large civilian-military exercise of several weeks, like the exercise Common Effort, may benefit more from a CDM process in the preparation phase. A lesson identified is that CDM should only be applied to civil military exercises with a complex nature and a lot of participants with different objectives.

A second lesson identified concerns the turnaround of a CDM process. The CDM process for Borculo 2012 took four meetings of 4 to 8 hours in only two weeks in March and April 2012. If all information is available a short turnaround can be beneficial. However, often the phases of a CDM process take time. Time is necessary to be thorough and to deliver a CDM document of high standard and mutual agreement. Often a mission statement and conceptual framework are adapted several times during the CDM process. In our opinion the ideal turnaround of a CDM process is approximately 3 months with 1 or 2 sessions each week. It is possible to go through the CDM process in two weeks, but only if the challenge or problem is already well understood by the different stakeholders. In that case, the CDM process would have the character of a military exercise or an extended working conference.

2.3 CDM for Network Information Infrastructure (NII)

2.3.1 Case description

In 2012 the CDM process was used to develop a plan to translate the Network and Information Infrastructure (NII) vision of the Ministry of Defense into specific programs, projects and activities that would support the implementation of the NII vision. The NII vision offers a future image of a flexible, well administered, generic ICT infrastructure that provides information management services rapidly and cost effective, but the vision does not offer specific programs, projects and activities to realize this generic ICT infrastructure. Because several stakeholders¹² with different ideas and interests are involved in the complex NII vision, a CDM process was started to accommodate the different ideas and to develop a mutual agreed development plan that could bridge the gap between the NII vision and the NII realization. The objective of the development plan was to identify the steps to realize the NII. Several aspects were important:

- The development plan should be used to shape a NII program and to create the necessary conditions for NII;
- The development plan should provide a scope that is financially and technically feasible;
- The development plan should provide insight in the coherence of projects and activities for the short and long term;
- The development plan should provide insight in the impact on current programs and projects within the Ministry of Defence.

The final development plan needed to be submitted to directors within the Ministry of Defense that could support and facilitate decision-making related to a NII program.

2.3.2 Result

The CDM process (Phase 1 to 6) took two months. The writing process (Phase 7) took three months. The CDM process for NII resulted in a NII development plan that provides a bridge from vision to realization of NII. The development plan consists of a thorough introduction (background, objective, need for development plan and scope of NII), a description of seven NII development themes, several factors and the integral approach to realize short and long term objectives on NII development themes. Three appendices were added with short term objectives on development themes and factors to exploit, mitigate and influence, and specific approaches to realize those short term objectives. To illustrate results of the CDM process for NII, the conceptual framework is described in more detail.

Related to the NII vision are multiple interpretations and opinions. The NII development plan shows seven development themes to develop the NII in an iterative manner and in unity of effort. Most of the development themes (NII security, information integration and information sharing, NII systems and system integration, connectivity and any device) are related to aspects of the NII. Objectives and activities are developed for all these themes. The development themes 'Control of NII' and 'Management,

¹² Several parties within the Ministry of Defense were involved: Royal Netherlands Army, Navy, Air force, Marechaussee, the Military Intelligence Service, Direction Plans (to be established), Direction Operational Management (to be established), Joint Information Provision Command (to be established), Defense Materiel Organization (department C4I).

conservation and life cycle management' are of a more administrative and organizational nature. The development theme 'Control of NII' is focused on setting up a NII program for managing projects and activities related to realizing aspects of the NII. The NII program works in an iterative manner on the realization of the NII and adopts a Concept Development & Experimentation (CD&E) approach.¹³ The development theme 'Management, maintenance and life cycle management' is focused on connecting the realization and maintenance of the NII. Life cycle management should be an integral part of the innovation process.

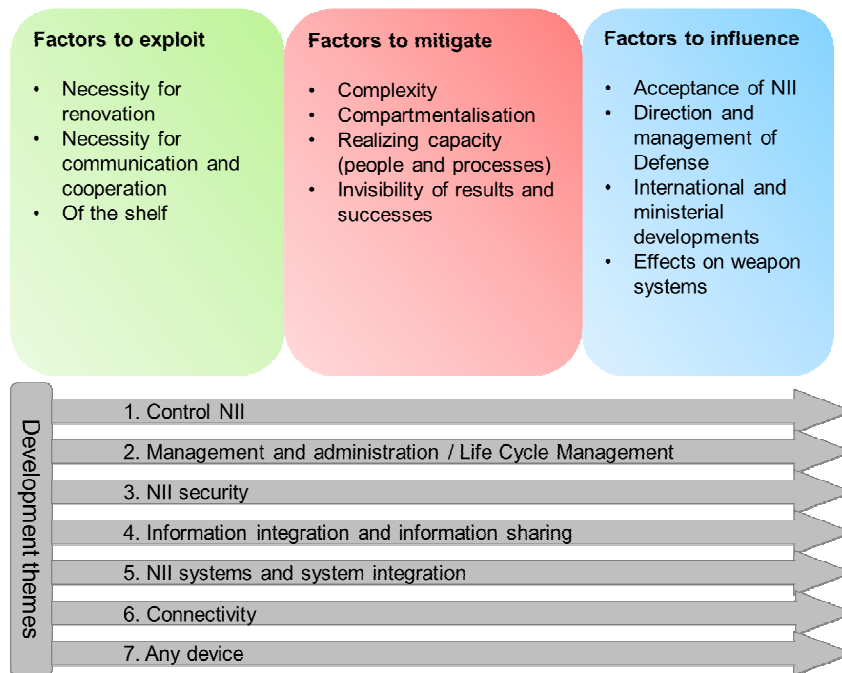


Figure 7: Conceptual framework of the Network Information Infrastructure.

Besides the seven development themes, the conceptual framework also shows factors to exploit, factors to mitigate and factors to influence. These factors have a significant influence on the realization of the NII. The advantages (factors to exploit) should be maximized and the disadvantages (factors to mitigate) need to be minimized. The development plan describes activities to achieve this.

2.3.3 Lessons identified and best practices

CDM for NII was a first attempt to apply the CDM process for purposes other than a civil-military mission, operation or exercise. The CDM process seemed suitable for translation of the NII vision into programs, projects and activities. The challenge was complex enough and multiple stakeholders within the Ministry of Defense are concerned with the NII. However, because most participants already knew each other via earlier projects, it was not necessary to pay as much attention to teambuilding as is provided in the CDM process. During the first sessions, it became apparent that the participants needed less time to get acquainted. They wanted to start with the conceptual framework quickly. Therefore, it is a lesson identified to assess the need for teambuilding at the beginning of a CDM process.

Although teambuilding was not really needed for participants in the CDM process for NII, early in the process it became apparent that a thorough stakeholder analysis was however very essential, even more so than the participants thought at the beginning of the CDM process. The CDM process for NII coincided

¹³ Wiel, W.M .van der, Hasberg, M.P. Weima, I., Huiskamp, W., Concept Maturity Levels Bringing structure to the CD&E process. *Proceedings I/ITSEC 2010: Interservice / industry training, simulation and education conference*, Orlando, Florida November 29 - December 2, 2010.

with Defense reorganization processes. A very important stakeholder, het *Joint Informatie Voorziening Commando* (JIVC)¹⁴ was founded during the CDM process. JIVC commanders were occupied with reorganization processes and did not support the CDM for NII process. Although essential, the translation of the NII vision was not one of their main priorities. Consequently, the result of the CDM process, the NII development plan was embraced by almost all elements under JIVC, but not accepted and adopted by JIVC commanders. At the beginning of and during the CDM process we should have invested more time and effort in support of the JIVC commanders. Unfortunately, the NII development plan is now only used by several elements within Defense, not as a document to create coherence between the many initiatives related to the NII vision. The lesson identified is that a CDM process can only bring unity of effort in initiatives and activities, when the higher level supports the CDM process and functions as ambassadors for the CDM results, in this case the NII development plan. Ultimately the lack of support of higher levels was the reason that the CDM process for NII failed in its objective. In short, a CDM process should not be started without support of the higher level, because without their support the CDM document will never form the base for activities.

The support of the higher level is also important to ensure presence of participants and continuity of the CDM process. Often the work agendas or schedules of participants are not only filled with CDM sessions, but also with all kinds of other projects and activities. With support of the higher level it becomes easier for participants to clear their work schedule and contribute with full attention to the CDM process. Continuity during the CDM process benefits the quality of the final CDM document. An important lesson re-identified is therefore to have conversations with all participants before the beginning of the CDM process. In these conversations the support of their superior, their agenda and their role in the CDM process is discussed.

3.0 CONCLUSION AND DISCUSSION

Five years ago the Collaborative Decision Making (CDM) process provided the answer to the question ‘how can multiple stakeholders cooperate in unity of effort to plan and execute activities in the complex and continuously changing environment of crises and conflicts?’ After the use of a preliminary version of CDM for the development of the Uruzgan Campaign Plan of Taskforce Uruzgan, the process was further developed at TNO and described in the *CDM guide* and *CDM methods*. Since 2009 the CDM process has been applied six times. In this article CDM is reconsidered by describing and discussing the lessons identified and best practices of three CDM cases: 1) CDM for the Integrated Police Training Mission in Kunduz, Afghanistan, 2) CDM for the exercise of 1 CIMIC battalion and 3) CDM for a development plan of the Network Information Infrastructure of Defense. The first case concerns a civil-military mission like the mission in Uruzgan, the second case concerns a civil-military exercise and the third case has nothing to do with the operational process, but with an information and communication technology challenge in the field of defense, security and stability. The cases have in common that they are complex in two ways: the content of the challenge and the cooperation with multiple stakeholders. The three cases were analyzed with four research questions in mind:

- To what extent does CDM contribute to unity of effort in the planning and execution of activities?
- To what extent is CDM suitable for complex, multi-party challenges?
- What are important prerequisites for applying CDM?
- How could CDM be improved?

Based on the analysis lessons identified and best practices were identified for all three cases. These lessons identified and best practices offer an answer to the four research questions.

¹⁴ Translation: Joint Information Provision Command

3.1 To what extent does CDM contribute to unity of effort?

To what extent CDM contributes to unity of effort in the planning and execution is a difficult question to answer. However, in all three cases the final CDM document was experienced by the participants in the CDM team as ‘their’ document. This means that the CDM process facilitated co-creation and that the participants of the different stakeholders became a CDM ‘team’. We believe that a best practice of the CDM process is the fact that CDM combines teambuilding or collaboration building with actually working together towards a common goal: the CDM document and the actual challenge they hope to tackle with the CDM document. By combining collaboration building with actually working on a challenge together, we believe, unity of effort is created.

Unity of effort is not only important on the tactical, but also on different levels of command. In the Kunduz case participation of personnel of the tactical level in the CDM process on departmental level was a best practice. Integration of both levels in the CDM process made it possible to develop a comprehensive mission design that was politically accepted and at the same time supported in theatre. Unfortunately successors did not use CDM in theatre to update the CDM document. This jeopardized the unity of effort created at the start of the mission. An important prerequisite for unity of effort is therefore not only the cooperation between the different levels of command, but also the cooperation with successors. Successors should go through a similar CDM process during the preparation period and during the first month of deployment to understand the comprehensive mission design, the underlying thoughts and decisions and to be able change the comprehensive mission design adequately to new circumstances. Only then continuity and unity of effort in the planning and execution of activities is possible.

3.2 To what extent is CDM suitable for complex, multi-party challenges?

Based on the lessons identified and best practices of the three CDM cases it can be concluded that CDM is a suitable process for complex, multiparty challenges in the field of defense, security and stability. CDM facilitates collaboration building or teambuilding, developing visions, objectives and approaches, and decision-making in a multiparty setting. CDM ensures that all stakeholders involved may contribute in an equal manner. For challenges that are less complex or concern fewer stakeholders, CDM is not necessary and perhaps too elaborate. For example a thorough problem analysis and an elaborate development of objectives for a relatively easy challenge like shaping the exercise of 1 CIMIC battalion is not motivating for a team. A project approach may suffice in these cases.

CDM may even have negative consequences for challenges that do not require teambuilding. In these cases the focus on getting to know each other and teambuilding may be experienced as a nuisance by participants that know each other already and want to develop a vision, objectives and approach as soon as possible. This was the case in the CDM process for the Integrated Police training Mission in Kunduz and for the CDM process for the Network Information Infrastructure. In other words, teambuilding may unwillingly distract and slow a team down from enthusiastically focusing on the content of the challenge. In short, the teambuilding aspects in the CDM process should be tailor made and meet the needs of the CDM team. In practice Phase 1 (the forming of the CDM team) will often only comprise collaboration building and information sharing (goals, agendas, interests, go/no go topics, ...) and not teambuilding.

3.3 What are important prerequisites for applying CDM?

Although CDM contributes to a large extent to unity of effort within a CDM team, unity of effort is not enough. In order to embed the result of a CDM process, written in a CDM document, support of a broader community is often essential. This broader community consists of the stakeholders, represented in the CDM team, and also of stakeholders that are working in the same field, but are not participating in the CDM process. Unity of effort of this broader community is a challenge. Often this challenge can only be tackled by ensuring two prerequisites before the start of a CDM process: 1) support of the higher level officials that function as ambassadors and who are responsible for the decision-making, and 2) involvement and support of all members of the stakeholders (in the background) that are represented in the

CDM team. Without paying attention to these prerequisites before the start of and during the CDM process, the objective of the CDM process, ‘creating and maintaining unity of effort’, is more difficult to realize in crises and conflicts and will probably fail.

Without support of the higher level and the broader community a CDM process will often not realize its objective. To get the support of the higher level it is important to distinguish between a command team and a CDM team. The command team consists of commanders, directors, chiefs of the different participants in the CDM team. The command team offers guidance and directions to the CDM team and decide over the final CDM document. Furthermore, members of the command team function as ambassadors for the CDM process and the CDM document. To get all members of the command team and the CDM team on board it is important for the facilitators to have conversations before the beginning of the CDM process about the objective of the CDM process, the turnaround of the process, the participation and commitment of CDM team members, the political agendas and so on. In these conversations with members of the command team and CDM team expectations are managed and support for the CDM process and document is created. Based on these conversations facilitators can shape a tailor made CDM process that supports the realization of the CDM objective.

3.4 How could CDM be improved?

The CDM process could be improved by integrating the lessons identified and best practices in the CDM process, but also by developing tools to support the facilitation of CDM. Currently *CDM methods* is used to support the facilitation. *CDM methods* is a book with all kinds of workshop methods (brainstorming, analysis, problem structuring and solving, etc) described for the different Phases of CDM. By using *CDM methods* it is possible to tailor the CDM process to the needs of the CDM team. However, more support of tools is desirable, especially for analysis and problem structuring and solving. TNO already developed MARVEL, a method/tool that offers analytical support in structuring and analyzing the dynamics of the problem. Furthermore, TNO is developing a tool to support distributed collaboration building across multiple location, called iCOBUS (intelligent Collaboration Building Suite).

CDM could also be improved by developing a so called CDM light process. Because the work schedules of the participants are often not only filled with CDM sessions,, the 8-10 CDM sessions are experienced as a heavy burden on available working time. A CDM light process could help to speed up the process and to decrease the turnaround. In a CDM light process there will be less time for collaboration building or teambuilding. A CDM light process will only be suitable for stakeholders that already know each other, have a lot of context knowledge and want to cooperate on a certain challenge. In other words, CDM light is suitable for a command team and CDM team that meet all the prerequisites for a CDM process.

To close, Phase 8 of the CDM process, progress measurement and assessment of the execution of the CDM document, is difficult to realize. Directly after the CDM process it is only possible to prepare a measurement and assessment plan. The actual measurement and assessment should take place later in time, but is often dismissed. Furthermore, TNO is not always involved in the measurement and assessment process. However, progress measurement is essential for working in an iterative manner and for updating the CDM document to changing circumstances in a complex environment. However, in practice it seems difficult to perform progress measurement and to adapt the CDM document accordingly. Research is needed to identify, structure and solve the problems related to progress measurement, or effect assessment, and to understand why almost none of the CDM teams have actually performed a progress measurement to update the CDM document. The Uruzgan Campaign Plan is the exception and was updated three times.

To conclude, more research is needed to develop CDM support tools, CDM light and an effective method for CDM assessment. Nevertheless, by integrating the lessons identified and best practices in the CDM process, as discussed in this article, we believe that CDM is an adequate process for complex, multi-party challenges in the field of defense, security and stability. Moreover, experience shows that the tailor made application of CDM satisfies the needs of the CDM team and contributes to unity of effort.

