Working together with multiple organizations is challenging. Knowledge about each other’s expertise or experience, for example, is often not communicated systematically because it takes time to do so. As a result, coordination and cooperation between these organizations develops only gradually or remains limited, often leading to confusion and misunderstanding. The goal of this paper is to describe the development of a tool to improve coordination within civil military cooperation or comprehensive approach. We developed the tool in different iterations. First we investigated what knowledge about the other organizations is essential to improve coordination. Based on literature review and interviews with domain experts we selected six topics (e.g. interests, expertise and resources). Second we investigated what is the best way to learn this knowledge about each other in a short time. This resulted in a paper-based tool, Profiler. Profiler was applied and evaluated during an exercise of the 1 Civil Military Interaction Command. Six composed groups participated in a Profiler session at the beginning of the exercise. All participants filled out a questionnaire before and after the exercise. The results show that in these groups knowledge about each other improved and that people rated their coordination activities between the different networks as more effective than the non-Profiler groups. Third, we describe how we developed Profiler into a more general (digital) tool. This way, knowledge about different parties can be build dispersed. Profiler is part of iCOBUS (intelligent collaboration building suite) a web-based toolbox to improve collaboration.

1 The reservists of this command are divided over several so-called networks (for instance network ‘Economy’) with different expertise.
Introduction

We need a comprehensive approach, a reinforced interaction between our military efforts and our endeavors with regard to civil reconstruction (Anders Rasmussen in his first statement as NATO Secretary General, De Coning & Friis, 2011). Collaboration between a variety of partners, such as governmental departments, international organizations, non-governmental organizations, first responders, members of the private sector and members of local communities is internationally regarded as the standard approach for current and future crisis response operations. The term most often used to refer to this approach is the Comprehensive Approach (Thönissen, van den Homberg, Pieneman, van den Berg, & Rietjens, 2014: p. 5). This approach requires effective coordination between the actors involved.

Although a comprehensive approach is vital in crisis situations, achieving synergy between operations of the different actors is challenging. The division of labor is complex, and, as a result of unfamiliarity with each other and differences in background (e.g. expertise and goals), actors coordinate ineffectively and inefficiently. This is often further complicated because of the dynamic environment and because team members often work in geographical dispersed virtual teams. In this setting it is challenging to involve, inform and represent each other and to coordinate activities. The actors involved often lack a shared history of working together and do not know each other’s expertise (i.e. team knowledge) or how to integrate their tasks (i.e. integrated understanding). Such common ground is needed for efficient and effective coordination, especially when teams are of different organizations and disciplines (e.g., military organizations and civil contractors). Getting to know each other takes time, a resource that is often not available in time of crisis. As a result, coordination and cooperation develops only gradually and remains limited for the duration of the collaboration, often leading to confusion and misunderstanding. A solution is needed to support actors to quickly and effectively share knowledge about each other and about tasks interdependencies in phases prior to and in the early stages of collaborative efforts.

To help crisis teams to develop common ground prior to collaborative efforts, we developed ‘Profiler’: a tool that supports building knowledge about each other in a way that improves coordination.

The following questions were key drivers in the development of Profiler:

1. What knowledge do actors need about each other to coordinate efficiently and effectively?
2. How can this knowledge be exchanged in ad hoc multi-organizational teams?
3. Does Profiler improve ‘team knowledge’ and ‘integrated understanding’ and does it improve coordination within and between teams when needed?
4. How can Profiler be realized into a more general (digital) tool so as to support coordination in dynamic dispersed and virtual teams? With general we mean applicable for more use cases, not necessarily being civil-military interaction.

Based on theory about transactive memory, coordination, multi-team systems and integrated understanding design recommendations are formulated for the Profiler tool.

Design recommendations

Transactive memory is a mechanism used to explain how individuals in teams rely upon each other for encoding, storing, and retrieving information about different substantive domains (Ren & Argote, 2011). According to Wegner, Giuliano and Hertel (1985) transactive memory consists of two elements: knowledge in the memory of team members and the coordination and communication processes between team members. Team members rely on one another to be responsible for specific expertise such that collectively they possess all of the expertise and information that is needed (Lewis, 2003). Faraj and Sproull (2000) found that knowledge about who has what expertise and assigning tasks commensurate with this expertise, predicts the effectiveness and efficiency of teams. The recognition of and access to available expertise is useful for coordination: allocating tasks, finding information, giving and taking advice and involving each other in activities (Moreland, 1999; Faraj & Sproull, 2000). Access to this knowledge is especially important in environments in which tasks and team members change dynamically (Ren, Carley, & Argote, 2006). According to Brandon and Hollingshead (2004) team members need to have knowledge about task-expertise-person combinations of others (TEP) in their memory. When coordination is required between teams from multiple organizations, not only knowledge about the tasks and expertise of team members is needed, but also knowledge about the tasks and expertise of other teams.

Profiler should provide access to knowledge about the tasks and expertise of team members and other teams and should support building this knowledge in the memory of team members, especially in dynamic environments.

Any group of actors faced with accomplishing a complex task, must resolve two issues: how to divide this complex task, and how to coordinate the efforts. Coordination is the activity of managing interdependencies between tasks performed by different actors (Malone & Crowston, 1994). Effective coordination requires an integrated understanding according to Parker & Axtell (2011): team members need to understand how their tasks relate to the tasks of others. Integrated
understanding improves perspective taking: adopting the viewpoint of those that depend on you and those you depend on (Parker & Axtell, 2011). Integrated understanding requires awareness of interdependencies. In multiteam systems theory three kinds of interdependencies are distinguished: outcome, process and input interdependencies (DeChurch & Mathieu, 2009). Input interdependence refers to the extent to which inputs must be shared to achieve goals (e.g. like people, expertise, resources or information). Process interdependence refers to the extent to which interaction and integration between tasks is required. Outcome interdependence refers to the extent to which the benefits and costs that are received by actors, depend on successful performance of others. When there are no dependencies between the tasks of team members or teams, or when none are perceived, there is no task-oriented reason to coordinate and communicate (Zhang, Hempel, Han & Tjosvold, 2007).

Profiler should provide awareness of and knowledge about input, process and output interdependencies.

Multiple studies have shown that team members that train together improve their communication processes and knowledge of each other (Liang, Moreland, & Argote, 1995; Moreland, Argote, & Krishnan, 1998). By having shared learning experiences team member can share their perspective on tasks (what should be done, in what situation) and team knowledge (who performs what, based on what). This can for instance be used assign tasks to team members (e.g. what should be done by whom).

Profiler should support team members to share experiences.

Knowledge stored in the memory of team members is important for situation-specific retrieval and efficient coordination we also know that the powers of the unaided human mind are limited. Memory load can be extensive when working with multiple team members and teams. Since encoding, storing and retrieval is not perfectly reliable in humans, especially in environments in which tasks and team members change dynamically, external memory aids are used. Traditionally paper and pencil is used for information carriers (so called profiles). But as team members increasingly rely on digital devices to collaborate, knowledge (e.g. about tasks, expertise, people, resources, information or interests) can be accessed in digital form (e.g. photo, data, documents, voice, video, websites).
Profiler should support team members to encode and store knowledge on external profiles that can be retrieved, updated and adjusted digitally.

Development of Profiler

Based on the literature review, we were able to define a set of design recommendations for the method of Profiler and a list of topics that team members should know about each other to work together efficiently and effectively. To test the value in practice we organized two workshops with subject matter experts on collaboration building and conducted interviews with potential users. In the workshops, we identified topics that are important to know of each other when working together. “What do you have to know from each other before starting to work together” was our guiding question during these sessions and the result was a mindmap with some 15 general topics (i.e. ‘background’, ‘capabilities’, ‘dependencies’ etc.). These topics were tested with our potential user, the military actor, in interviews. The goal of these interviews was to use their experience and let them determine -for a specific case drawn from their experience- what topics team members should know about each other. We gave the interviewees a set of cards with different topics from the mindmap which they had to prioritize for their case.

Based on the results of the workshops and the outcomes of the interview, we ultimately selected the six most important topics. These topics were selected because they are necessary in the beginning of every collaboration and can contribute to a more effective and efficient coordination by contributing to being able to find, inform and involve each other. During the workshop we found that, depending on the context of collaboration (e.g. time pressure, duration of collaboration, domain) different topics are important to know about each other. There is a difference between a project team that will work together for a year, and a crisis management team that will come together for a short period under high time pressure. Another important result was that a distinction between organizational level and individual level must be added to Profiler.

During the workshops we also established that simply exchanging information does not automatically mean that people internalize, or remember, the information. With a team of subject matter experts we decided to add a game-element to the intervention. This way, the team members actively use the information that was shared to solve dilemmas.

Based on the design recommendations, the workshops and interviews we first developed a paper-based version of Profiler. The paper-based version of Profiler is comprised of three different sets of
The first set of cards consists of scenario descriptions. In our standard Profiler set we use two scenarios; high water and a natural fire. The second set is the cards with the topics:

- **Responsibility & authority** (i.e. “my organization acts when…”)
- **Interests** (i.e. “my personal interest in this scenario is…”)
- **Identification** (i.e. “you can best reach me by….”)
- **Tasks** (i.e. “the tasks and roles of my organization in this scenario are…”)
- **Resources** (i.e. “my organization has the following means available”)
- **Knowledge & Skills** (i.e. “I have the following skills, expertise and experience that is relevant for the scenario”)

The cards are answered by the participants both at the individual and organizational level. Together they form the profile. The last set of cards is the dilemmas the team members must together solve. The intervention lasts about 120 minutes. See table 1 for a description of Profiler.

<table>
<thead>
<tr>
<th>Profiler Step-by-step</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1: Explanation goal Profiler and set-up session.</strong></td>
</tr>
<tr>
<td>Goal of Profiler is to get to know each other and each other’s expertise in a short time-frame.</td>
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<tr>
<td><strong>Step 2 Selection of topics.</strong></td>
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<tr>
<td>During this step, team members discuss what topics they want to learn about each other. The have to reach consensus and select three topics.</td>
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<tr>
<td><strong>Step 3 Filling out the profiles.</strong></td>
</tr>
<tr>
<td>Team members will fill out their profile for the selected topics. Some guidelines:</td>
</tr>
<tr>
<td>• Use only relevant information; information has to be specific for the context of collaboration</td>
</tr>
<tr>
<td>• Make sure that somebody who does not know you, is able to understand your card.</td>
</tr>
<tr>
<td><strong>Step 4 Short exchange and explanation of the information.</strong></td>
</tr>
<tr>
<td>The team members shortly exchange and explain the information they have written down on their information carrier; both their personal card and the organization card.</td>
</tr>
<tr>
<td><strong>Step 5 Intervention.</strong></td>
</tr>
<tr>
<td>For each dilemma (corresponding to the selected topics) the group must decide what organization should be involved to tackle the problem. After establishing this, the group must decide which people from that organization within their team are most suitable. All dilemmas are discussed by the group. If the discussion does not lead to anything or does not contribute to the intervention, the trainer can put it to a halt.</td>
</tr>
<tr>
<td><strong>Step 6 Prioritization.</strong></td>
</tr>
<tr>
<td>Step 6 is an optional step that can be in- or excluded. This step is to challenge the participants and to stimulate discussion. During this short discussion, the group must decide what dilemma deserves their first attention, second, etc., etc.</td>
</tr>
<tr>
<td><strong>Step 7 Reflection.</strong></td>
</tr>
<tr>
<td>Team members will reflect about step 5. They can use different questions that we have described (e.g. ‘what did you learn about the other organizations and team members’, ‘how is this of use for your work’).</td>
</tr>
<tr>
<td><strong>Step 8 Formulate work agreements.</strong></td>
</tr>
<tr>
<td>The group formulates work agreements according which they will work in the future. The information from the carriers and the discussion and reflection can be leading.</td>
</tr>
</tbody>
</table>

Table 1 Description of Profiler
Model of Profiler value chain

A model is developed predicting the value of Profiler for coordination based on the described theories and design recommendations. The general idea is that Profiler improves knowledge about team members and other teams concerning the attributes previously described (i.e. improves team knowledge) and Profiler improves knowledge about how tasks relate to each other (i.e. improves integrated understanding). Profiler does so when team knowledge and integrated understanding is initially insufficient. This subsequently improved ‘team knowledge’ and ‘integrated understanding’ in turn increases coordination within and between teams, when interdependencies are perceived within and between these teams. Coordination is not increased when no interdependencies are perceived. The model describing the profiler value chain is graphically represented below.

From this model the following hypotheses are derived:

Hypothesis 1: Profiler increases team knowledge and integrated understanding in newly formed ad-hoc multi-organizational teams.

Hypothesis 2: team members with more team knowledge and integrated understanding coordinate more within and between teams, when they perceive to be interdependent.

Evaluation of Profiler

To proof the practical relevance of Profiler we evaluated Profiler during a military exercise in October 2012. This exercise Borculo\(^2\) takes place once every year and its main training topic is civil-military cooperation. Over the years, Borculo has evolved into a 2,5 day scenario-based exercise of which the overall theme differs per year. The unit training in this exercise is the so-

\(^2\) Borculo refers to the little town in the North of the Netherlands where the first of the series of this exercises took place. Other venues of the exercise have been –amongst others- Rotterdam, Amsterdam and Utrecht. The name Borculo is maintained, referring to the place of origin.
called 1CIMIC battalion\(^3\) (1CIMICbat), a unit composed of mainly reservists. All these reservists are employed part-time by the Netherlands Armed Forces because of their specific (civil) expertise. Expertise that the Netherlands Armed Forces do not have, or have too little of available. Within 1CIMICbat, the so-called functional specialists are part of one of the six networks: Humanitarian Affairs (HA); Civil Administration (CA); Civil Infrastructure (CI); Integrated Development Entrepreneurial Activities (IDEA); Economy & Employment (EE) and Cultural Affairs & Education (CA&E)\(^4\), depending on the reservist’s background.

**Method**

**Participants**

About 150 participants joined the overall exercise. Of these 150 participants about 120 were functional specialists from one of the networks as described above, the others were part of the exercise staff or the permanent staff of the battalion. The functional specialist participated in teams of about six members. Most team members did not know each other beforehand and the teams were randomly composed by the permanent military staff of 1CIMICbat. Experience within the teams differs: some reservists have more experience (exercise experience but also mission experience) than others; experience that is reflected in the military ranks; varying from first lieutenants to lieutenants-colonels.

**Task**

The exercise was focused on drawing up an advice for the reconstruction of, and by, civil authorities of the city of Rotterdam after a devastating flooding. Teams of about six members were composed of reservists of the different networks. All these teams contributed to an assessment in order to inform their commander on the current situation in the scenario-reality. To collect this information, the teams visited different role-players (e.g. representative from the community, or the water board) that provided them with vital information for their assessment.

**Procedure**

During the first day of the exercise we applied Profiler. Before the start and at the end of the day, we asked all participants in the exercise to fill out the questionnaire. Six teams participated in the Profiler-session. These teams were assigned by the exercise staff. At the start of the first exercise-day, instead of visiting one of the role-players, these teams joined our session. We introduced

\(^3\) In 2013 1CIMICbatallion ceased to exist and was turned into 1CMico (1 Civil-Military Interaction Command). Because this case was tested when 1CIMICbat was still functional, we will describe the old situation, fully aware of the new situation.

\(^4\) In the current set-up these 6 networks have been replaced for new networks, based on the PMESI-factors – Political – Military – Economic – Social - Infrastructure
Profiler, its goals and its working to these functional specialists. After that, they followed the steps of Profiler, as described in table 1. The total session lasted 120 minutes.

Measurements

Respondents

59 participants (49%) filled out the questionnaire before the start and at the end of the day. Of these respondents 23 participated in the Profiler session (39%), the other 36 respondents (61%) were the control group.

Team knowledge & integrated understanding

We used four items from Parker and Axtell’s (2001) integrated understanding scale to measure this construct. Specifically, we asked participants to rate the degree to which they understood various aspects of their work on a 7-point scale (1 = completely disagree ~ 7 = completely agree). Items had the stem of “I understand how my work contributes to the decision-making of the commanding officer” and “I understand how my work affects the work of other groups in the collaboration.” We supplemented these items using six items of the ‘expertise location scale’ from Faraj & Sproull (2000) to measure team knowledge. We asked participants to indicate to what extent they agreed with statements such as “I know which person I should approach for specialist knowledge and know-how”, using again a 7-point scale (1 = completely disagree ~ 7 = completely agree). We administered these items before and after the first day of the exercise. We then calculated participants’ initial (pre-exercise) ‘team knowledge and integrated understanding’ and subsequent (post-exercise) ‘team knowledge and integrated understanding’. The combined 10-item scale reliably captured members’ initial (Cronbach’s alpha = .90) and subsequent levels of ‘team knowledge and integrated understanding’ (Cronbach’s alpha = .87).

Perceived task interdependence

We adapted four items from van der Vegt, van de Vliert, and Oosterhof’s (2003) task interdependence measure to capture this construct. The items were adapted so that they captured both participants’ task dependence on colleagues within and outside their team. Specifically, we used items such as: “In order to complete my work, I had to exchange information and advice with colleagues within my team” and “I had to work closely with other teams to do my work properly” (1 = “completely disagree” to 7 = “completely agree”). Cronbach’s alpha was .71. We administered these items at the end of the first day of the exercise.
Coordination

We captured participants’ coordination with 11 items from Ancona and Caldwell’s (1992) boundary-spanning scale. Items were adapted so that they captured coordination within teams (i.e., between the respondent and his or her team members), as well as coordination between teams (i.e., between the respondent and members from other teams). Respondents were, for example, asked to report how often they “coordinated work with team members,” “resolved problems with team members,” “collected information/ideas from members of other teams,” “procured information and resources from other teams,” and “scanned their external environment for information and expertise” on a 5-point scale (1 = Never ~ 5 = Very frequently). We administrated these items at the end of the first day of the exercise. Cronbach’s alpha was .72.

Feedback of participants

At the end of the session we had a short discussion with the participants to provide us with feedback about Profiler.

Results

Hypothesis 1 predicted that initial ‘team knowledge and integrated understanding’ moderates the relationship between participation in profiler sessions and subsequent ‘team knowledge and integrated understanding’. We conducted a hierarchical multiple regression to test for this relationship. In the first step we regressed subsequent ‘team knowledge and integrated understanding’ on participation in profiler sessions and initial ‘team knowledge and integrated understanding’. Next, we included the multiplicative term “participation in profiler × initial ‘team knowledge and integrated understanding’” in the regression equation. The multiplicative term reached significance ($B = -.65$, $SE = .23$, $p < .01$), thereby indicating that participants’ initial ‘team knowledge and integrated understanding’ moderates the relationship between participation in profiler sessions and subsequent integrated understanding. Additional simple slope analyses indicate that participation in profiler is positively related to subsequent ‘team knowledge and integrated understanding’ when initial ‘team knowledge and integrated understanding’ is lower (simple slope at $-1SD$: $B = .52$, $SE = .31$, $p < .10$; see Aiken & West, 1991), but negatively when initial ‘team knowledge and integrated understanding’ is higher (simple slope at $+1SD$: $B = .78$, $SE = .35$, $p < .05$). Hence, our results supported Hypothesis 1.

Hypothesis 2 posited that perceived interdependence moderated the relationship between participants’ subsequent integrated ‘team knowledge and integrated understanding’ and coordination. As expected, we find a significant interaction coefficient for subsequent ‘team
knowledge and integrated understanding' \times \text{perceived interdependence} (B = .17, SE = .07, p < .05). Simple slope analyses indicate that subsequent ‘team knowledge and integrated understanding’ positively related to coordination when perceived interdependence was higher (simple slope at +1SD: B = .32, SE = .11, p < .01), but not when interdependence was lower (simple slope at −1SD: B = −.01, SE = .09, n.s.). Hence, we find support for our second hypothesis.

The participants were enthusiastic about the way Profiler works: getting to know each other in a more dynamic way than a standard introduction round. Also they remarked that it helps them to know where to find certain expertise. Furthermore, it gave them a broader perspective and more integrated view about the different networks. Some people mentioned that the case we used could be improved.

Conclusions

The results show that Profiler contributes to building knowledge about each other. However, Profiler is most useful to apply when participants do not know each other. If team members already know each other and already know how tasks are related, than Profiler has no added value. Also, if participants perceive interdependence as high, there is a relation between subsequent ‘team knowledge and integrated understanding’ and coordination. This means, that when they perceive the interdependency as high, they coordinate more; their coordination is more effective. We did not find this relation when perceived interdependence is low. A possible explanation is that when perceived interdependency is high, people are more motivated to use their knowledge to coordinate.

The results of our pilot showed that not only coordination within teams improved but also between teams. Even though participants only performed the profiler session with their own team, during this session they also built knowledge about the networks at a more general level. This can be explained because during the session they shared their individual profiles and their network profiles. This way, they knew better when to inform, involve or coordinate with other networks as well.

We applied profiler in only one context, civil-military cooperation, with a specific group of participants. The generalization of these results to other situations is therefore limited. To show the added value of profiler in different contexts, profiler should be developed into a more general tool and applied in a different context.

A disadvantage of the paper-based version of profiler is that team members have to fill out the profilers during the session. This takes up a lot of time. When profiler would be available as a digital
tool, profiles could be filled out dislocated. Also, when using a digital tool, team members will be able to view each other’s profile before they meet.

Concluding, it can be stated that Profiler seemed useful after the first application. However based on feedback and identified disadvantages we wanted to develop it further into a more general tool, applicable to other domains as well.

**Development of Profiler into a general (digital) tool**

To be able to develop profiler into a more general tool we applied Profiler in a session with only civil participants and a totally different context; a consortium of different organizations that were going to work together as a bid team on a joined research proposal. Because time was limited, it was important that the team knew at the start of the writing process which organizations were at the table, who brings what specific input to the writing process, and when to involve and/or inform each other. We developed a set of questions specific for this context. No scenario was needed because Profiler was used in a real case here and not in an exercise. Examples of the questions we used: ‘How are these profiles of use for the work that you will be performing? For the writing process? For the content of the proposal? And eventually for the project itself?’. By applying Profiler in a totally different domain, we found that this was easily possible. Based on the context, the dilemmas in the intervention must be adapted, but furthermore no adaptations are needed. The topics of the profiles were useful in this context as well.

After using Profiler, participants noted that they had a clearer view of the expertise and experience of each other and their organizations. To their own account, their writing process was greatly helped by this. Also they wanted to keep the profiles, to use these during the writing process. This was important feedback for us. Instead of only internalizing the information, people wanted to be able to consult the written profile during the writing process when searching for a specific expertise. This is in accordance with the last design recommendation described in the introduction: ‘Profiler should support team members to encode and store knowledge on external information carriers that can be retrieved, updated and adjusted digitally’.

During our research we have spoken with several civil servants working for different ministries in the Netherlands and one remark that we heard often was that “sometimes I wonder why I was part of this meeting”. Often, people are sent to team meetings with other organizations, not knowing what their own organization’s goal is or worse, not knowing why they are asked to
attend the meeting. In these circumstances, the Profiler digital tool can help. Because the tool is filled out by all team members before the first meeting, they are forced to discuss the topics within their organization. By discussing the topics, you can force the higher echelon to think better about the reason why your organization is participating. It saves time during the meeting to make a digital acquaintance with your team members before the actual meeting. It also facilitates changes in the composition of the team; when one team member rotates to a new function and is replaced by a new team member, he or she can start by learning all about the other organizations and team members by using the Profiler digital tool. Moreover, in accordance with the wish of the bid team members, the digital version of Profiler enables team members to access the information on the profiles whenever needed.

The idea behind the digital version of Profiler does not deviate from the regular, paper-based, version. After filling out the digital profiles, team members will still have to meet face-to-face. This in order to stimulate personal interaction (after all, working together requires interaction) and to consolidate the knowledge. However, because the profiles are already available digitally, the meeting can be shorter than we described in this article. It can—for instance—take place at the start of the first meeting and used as an introduction round. We have added some extra functionalities to the digital version, see figure 1 for a screenshot of the digital profiler tool.

**Functionalities of the digital tool**

Fill out & view each other’s profile (individual and organizational profile): each profile consists of 6 topics that can be filled out and viewed.

Overview of profile: each profile contains a quick overview of the profile; a summary of one’s skills and expertise etc. in five words.

Mix & match: here you see people that are of interest to you based on similarities and differences. It broadens people’s perspective.

Browse Profile: here you can search for different profiles, by selecting a topic or search for a specific keyword.

Compose team: for the face-to-face meeting, select the profiles of your team members.

**Further research**

The paper-based version of profiler has shown to be of added value in different contexts. We expect that the current version of the general digital tool of Profiler will be of added value as well and will also meet the last design recommendation ‘Profiler should support team members to
encode and store knowledge on external profiles that can be retrieved, updated and adjusted digitally'. Also the digital tool has additional value over the paper-based version. An important added value is that it is possible to meet your team members before the actual meeting. It also facilitates changes in the composition of the team, because of rotations. However, the digital version still has to be evaluated.

Profiler is part of iCOBUS, an ‘intelligent Collaboration Building Suite’ – an integrated concept of tools for developing effective collaboration. A web-based platform of iCOBUS and its tools for use in operational settings will come available at end of 2015. At the end of 2015 an evaluation will take place of iCOBUS and its tools.

**Acknowledgements**

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*Figure 1 Screenshot Profiler (digital tool)*
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