

TABLE TOP ASSESSMENT GAMES – A METHOD FOR ANALYSING FUTURE CAPABILITIES –

Lieutenant Colonel (N), Senior Instructor Alexandru-Lucian CUCINSCHI, PhD

“Carol I” National Defence University, Bucharest

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The article explores the role and application of table top assessment games in the process of developing and refining concepts and, consequently, capabilities, highlighting the benefits of conducting these activities in complex environments. Assessment games are structured sessions of discussions and role-playing used to simulate hypothetical scenarios, thereby enhancing decision-making capabilities and strategies through risk reduction, improved communication, and the promotion of creative problem-solving. In the military context, these exercises are essential for developing the capabilities required by new concepts, such as multi-domain operations. Their development requires not only the adaptation and implementation of new technologies but also complex coordination among various relevant actors, including the defence industry. The methodology detailed in the article analyses the differences and specific uses of some types of assessment games, such as the Concept Development Assessment Game/CDAG, highlighting the process of experimentation and concept evaluation. This exploration aims to emphasize the importance and applicability of these games in anticipating challenges and generating efficient solutions that contribute to better organizational preparedness and resilience.

Keywords: strategy; military capabilities; table top assessment game; technology; scenario;

INTRODUCTION

Table top assessment games (TTAG), also known as table top exercises (TTX), are an innovative and practical approach used in various fields to simulate real-world scenarios and evaluate strategies and decision-making processes. These exercises are frequently used in the Armed Forces, emergency management, corporate strategy development, and even education, serving as a versatile tool for training and analysis.

Table top assessment games are structured, discussion-based sessions, designed to assess and improve the effectiveness of strategies and responses in hypothetical situations. Participants engage in role-playing, making decisions based on the scenario presented and discussing the potential outcomes and consequences of their actions. These exercises are especially useful in complex environments where understanding the interaction of multiple factors is crucial for success.

I must mention from the outset that this subject has aroused my interest due to the possibility of applying an imaginative evaluation game to the new concept that is under development and implementation, including by the Romanian Armed Forces – the *multi-domain operation*, thus aiming to draw conclusions that lead to a coherent vision of defence in both national and allied contexts.

This aspect is particularly important because the end goal of implementing a concept is to produce capabilities that can effectively apply it. Thus, identifying how a concept will be adapted and implemented will subsequently involve developing new capabilities, a process that requires sustained financial effort and may lead to delays at the national level, as it largely depends on what the defence industry can produce.

The ideal in the field would be accelerated capability development while reducing costs (Transformer, 2011), but these aspects depend on the nature and technological level of the defence industry. In optimal conditions, a developed defence industry could meet 80% of requirements in a relatively short time (e.g., 2 years) or 100% over a longer period (e.g., 10 years) (Ib.), indicating the timeline for concept implementation.

I have mentioned these elements, which can be considered research limitations, to remain grounded in reality and avoid creating the false impression

that the research tools described in this article will be implemented and utilized according to their general description and the fixed (indicative) timeline for execution.

Furthermore, the fact that the defence industry is an important element in the concept implementation process obliges us to limit our analysis to an ideal case, which cannot always be put into practice. However, it can offer us a guide to best practices and a basis for further analysis applied in real conditions, which depend on how the defence industry will develop as well as on possible arms and military technology acquisition programmes from countries with a higher level of technologization.

Therefore, my intention in this article is to describe the types of assessment games used at the NATO level, both as an Alliance and in member and partner states, to underscore the importance of the experimentation process in capability development. Once the experimentation process is described, I will elaborate on the Concept Development Assessment Game (CDAG) to serve potential future applications in different situations. I mention that I have applied this tool in the case of the multi-domain operation concept, obtaining elements that could complement future developments of the concept and implications for capability development, especially for the Naval Forces.

The research methodology has involved literature review aimed at identifying and synthesizing existing research on imaginative assessment games and their use in capability development, as well as comparative analysis in relation to the effectiveness of various types of games (CDAG¹, DTAG², CAPAG³) in the capability development process.

THE ROLE OF THE TABLE TOP ASSESSMENT GAMES IN THE EXPERIMENTATION PROCESS

One of the main goals of table top assessment games is to enhance decision-making skills and prepare participants for real-world challenges. By engaging with realistic scenarios, these games allow individuals and teams to explore the implications of their decisions in a risk-free environment. It helps identify weaknesses or gaps in planning, refine quick thinking, and improve adaptability.

¹ Concept Development Assessment Game.

² Disruptive Technology Assessment Game.

³ Capability Assessment Game.

The benefits of table top assessment games include:

- Risk reduction: By practicing reactions to different scenarios, organizations can identify and mitigate potential risks before they occur.
- Improved communication: They promote open communication among team members and between different departments, encouraging collaboration.
- Creative problem solving: Players are often challenged to think unconventionally and explore innovative solutions, enhancing their problem-solving skills.
- Performance evaluation: These exercises provide a platform for assessing team performance and individual contributions, highlighting strengths and areas needing improvement.
- Preparedness and readiness: They prepare teams for unforeseen events, improving readiness and ensuring smoother operations during real crises.

Table top assessment games have a wide range of applications. In the military, they are used to simulate combat scenarios and evaluate tactical decisions. Emergency management organizations use them to prepare for natural disasters, pandemics, or other crises, ensuring effective coordination and response. In business, these exercises assist in developing strategies for managing market changes or cyber threats.

I believe they can be considered useful tools for improving strategic thinking, preparedness, and collaboration. As the complexity of the security environment increases, these exercises offer a practical method for anticipating challenges and creating effective responses. By simulating real-world scenarios in a controlled environment, these types of games enable participants to learn, adapt, and optimize their strategies, ultimately leading to more resilient and responsive organizations.

Although there are numerous approaches to experiments conducted in the defence field, considering our country's NATO membership, I will present the Alliance's perspective on table top assessment games (TTAG): CAPAG, DTAG, and CDAG.

Thus, since table top assessment games aim to assess future capabilities by creating interaction between concept developers, field experts, defence industry representatives, planners, and military personnel who will implement the agreed concepts (Collins, Hasberg, 2018-2021, pp. 236-237), I consider that conducting such games, even under participant-limited conditions, can represent a starting point for understanding the transformations expected to occur in the military system.

Moreover, by conducting such cost-free experiments, the risk of investing large sums of money in capabilities before they are presented to those who will have to manage them is reduced (Collins, Hasberg, p. 237) (the military).

The TTAG in the capability development process, a process that is very complex both nationally and, notably, within NATO, involves difficult problems and sometimes leads to solutions that are hard to understand, positioned between brainstorming and simulation (Ib.).

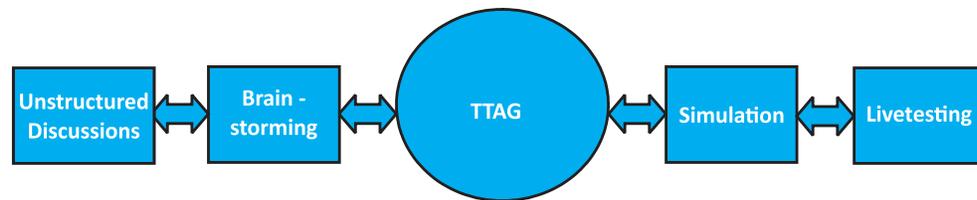


Figure 1: TTAG place in the experimentation process (Ib.)

From the presented information, we observe the necessity of addressing sufficient issues before inputting data into a system, data upon which simulations might be based. That is why I consider the conduct of such games necessary, as they compel participants to ask sufficient questions to identify needs regarding both capability development (CAPAG) and the use of technology in its early stages of development (DTAG), as well as concepts under development (CDAG).

It should be noted that in NATO’s reference document (ACT, Concept Development and Experimentation, 2021), CAPAG is not presented as a method of experimentation and analysis.

It seems, as stated by the author of the CDAG and DTAG manuals, that these types of imaginative games have naturally emerged as a result of lessons identified in the field of concept development and experimentation over the past 10 years (Collins, Hasberg, p. 238).

In addition to the previously mentioned points, the fact that:

- TTAG has been applied in various fields – from space deterrence to operational logistics;
- The results obtained from the games have led to the improvement of certain concepts (validity testing);
- The NATO process for concept development and implementation (CD-E) is suitable for using TTAG (Ib., p. 237),

has prompted me to study these experimental methods in depth and apply them to the multi-domain operation concept.

To understand the timeline, the purpose of each imaginative game, the extent to which they are suited to the capability development process, and the input factors necessary for their execution, I consider the figure presented in the study by Sue Collins and Marcel-Paul Hasberg to be relevant (figure 2).

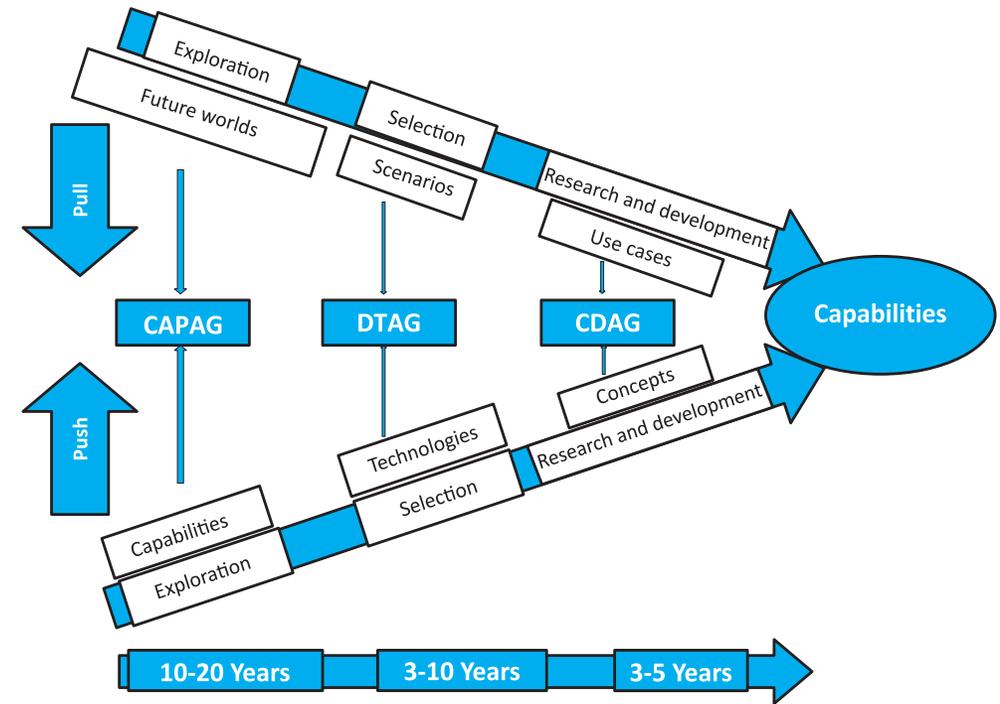


Figure 2: The three types of assessment games within the Capability Development Process (Collins, Hasberg, p. 239)

To understand the referenced figure, a few clarifications from the cited study are necessary:

- The arrows labelled “extract” and “contribute” represent different influences on military planning. “Extract” refers to aspects over which the military have very little influence, such as the future operating environment and scenarios in which they will have to operate. “Contribute” refers to factors over which the military have influence and requires a strategic decision, such as which capabilities are needed in the future, what technologies need to be developed, and what concepts need to be developed (these are the input factors).

- The figure also presents the indicative timeline for conducting each type of game: CAPAG for long-term planning, to explore future capabilities; DTAG for selecting technologies of interest for development; CDAG for researching, testing, and validating a concept.
- It is not necessary for the three types of games to be conducted sequentially; certain stages can be skipped, or they can be carried out within a different timeframe than that presented in the figure (Collins, Hasberg, pp. 238-239).

Having clarified the role and place of each assessment game, I will now detail the Concept Development Assessment Game (CDAG) to clearly understand what it entails, in which variants it has been conducted so far, and to potentially serve as a useful tool for those interested in its application.

CONCEPT DEVELOPMENT ASSESSMENT GAME – APPLICATION, DESCRIPTION, RULES

The Concept Development Assessment Game (CDAG) was developed in 2009 by the Allied Command Transformation in collaboration with the Netherlands Defence Research Organization, aiming to create a structured framework that combines the intellectual freedom of brainstorming with analytical rigour and control to obtain relevant results that contribute to the development, refinement, and evaluation of concepts (Feckler, 2011, p. 2).

To describe the purpose, applicability, and methodology of CDAG, I have corroborated information regarding the conduct of the imaginative game from sources that directly reference it (ACT, Concept Development Assessment Game Handbook, V4.1, 2014; Collins, Hasberg, 2018-2021) with the NATO Manual (ACT, Concept Development and Experimentation, 2021), which generally describes concept experimentation and development.

Thus, CDAG is a qualitative method of experimentation applied to test and develop conceptual documents, focusing on intellectual challenges and discussions regarding the document under analysis (ACT, Concept Development and Experimentation, 2021).

It should also be mentioned that the cited document indicates three elements that combined would constitute CDAG: brainstorming, simulation, and the red team (a team designed to challenge the blue team that tests a subject), which somewhat contradicts the place of TTAG in the experimentation process, presented earlier in *figure 1*.

Nonetheless, the game primarily focuses on challenging discussions related to the proposed document or subject by allocating tasks and approaching the subject from different perspectives (Collins, Hasberg, p. 243).

A simplistic⁴ presentation of the game's methodology is as follows:

- The document/subject/concept is simplified by extracting relevant elements or selecting certain parts to be described in concept cards.
- The technology that might enable the application of the concept can be described in technology cards to avoid using specialized systems or simulations.
- The game is conducted in rounds, each round being independent, which provides flexibility (usually six rounds conducted over three days – the duration and number are flexible).
- Each round includes an initial briefing, a team planning session, and discussions according to the tasks set (in which all teams participate).
- The operational context is ensured through scenarios, specific tactical situations called vignettes⁵, and role-playing games, which should present a low level of detail to be understood in a short time (ACT, Concept Development and Experimentation, ib.; Collins, Hasberg).

I believe that this information is well synthesized in a presentation conducted by one of the game's co-authors (Netherlands Defence Research Organization) (*figure 3*).

In addition to the aforementioned points, a questionnaire can be used both at the end of each round and at the end of the game – questionnaires that aim to evaluate not only the team's outcome and the conceptual document but also the broader domain encompassing the subject (ACT, Concept Development Assessment Game Handbook, V4.1, 2014).

I believe it is important to also mention the reasons why this type of game is used:

- It is useful for complex, hard-to-quantify issues that cannot be addressed through mathematical solutions (solutions are not obvious to participants or concept developers);
- It has an open format that facilitates the creation of a community of experts;
- It reduces the risk of incorrect concept implementation;

⁴ For details, see Allied Command Transformation, *Concept Development Assessment Game Handbook*, V4.1, 2014.

⁵ Specific situations created within the scenario to test the participants' mode of action.

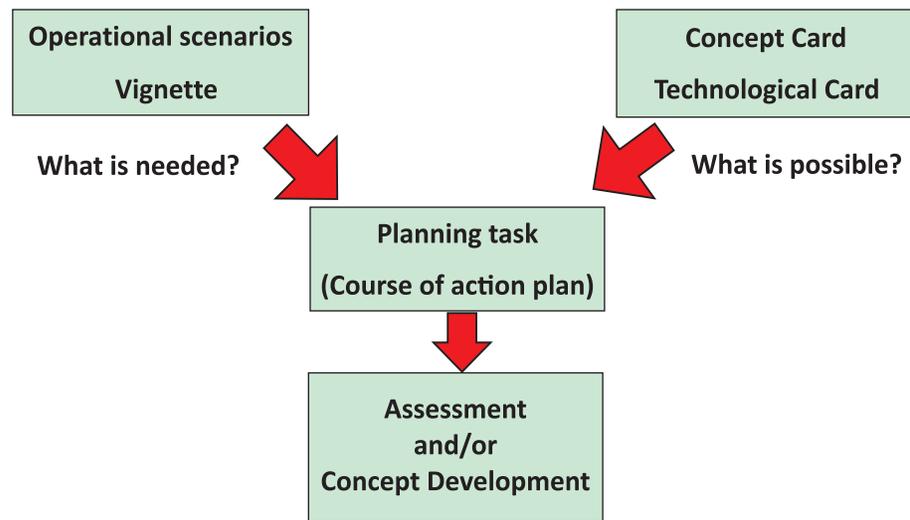


Figure 3: CDAG General Setup (Elst)

- It is a flexible tool – adjustments can be made during the game;
- It can be used as a learning method on the addressed topic (ACT, Concept Development Assessment Game Handbook, ib.).

Participants in the game are the concept developers and/or future users of the concept/document that will present the concept:

- Typically, three teams of six to eight participants will assume roles according to the proposed scenario;
- Analysts who collect data based on discussions, both in team work and plenary sessions (questionnaires can also be issued to fulfil this purpose);
- Specialists who can advise players;
- A moderator to facilitate plenary discussions and ensure that the game's rules are followed (Ib., p. 1).

To have an overview of what a game round entails (briefing, teamwork, questionnaire, and feedback), I believe a succinct description of the constituent elements is necessary.

- *The briefing* involves the following activities:
 - Presenting the scenario to create the operational context;
 - Presenting the vignette for each round;
 - Team tasks;
 - Team roles (Ib., pp. 6-17).

- *Teamwork* involves the following main activities:
 - Teams fulfil tasks using concept and technology cards;
 - Analysts observe discussions, ask questions, ensure concept cards are used, and record discussions and team results;
 - Consideration of questions from the *questionnaire* to be answered at the end of the round;
 - Guidance can be sought from the moderator and concept presenters (Ib., p. 17).

Plenary discussion and questionnaire completion have the following objectives:

- Data collection;
- Presentation of task results;
- Questions from members of the other team;
- Questions from concept presenters, the moderator, and analysts;
- Questions focus on evaluating the team's product, concept evaluation, and integrating the subject into a broader subject (Ib., pp. 17-18).

Feedback is essential for concept presenters to ensure that participants agree with elements identified during the round and to correct any errors (Ib., p. 19).

Through the presented information, I have tried to provide an overview of what the concept development imaginative game entails, which, as mentioned in the introduction, I consider can serve future research.

I believe it should also be noted that the CDAG manual recommends that if game developers lack experience in organizing such events, previous models or best practices in conducting such games are recommended.

Thus, considering that I have participated in such events but have not been in the position to organize such a game, I have studied how they have been applied to date.

For example, one such game, addressing a smaller-scale issue yet relevant in the maritime field, is the one presented by Jenni Gotzi and Karl Skoog in the study "*An Adapted Version of the Concept Development Assessment Game – Experiences from the Swedish-Finnish Naval Task Group Discussions*" (Gotzi, Skoog, 2015).

CONCLUSIONS

Table top assessment games prove to be essential tools in the capability development process, allowing for the testing and refinement of strategies in a controlled and risk-free environment.

These exercises significantly contribute to enhancing decision-making skills by exposing participants to complex and diverse scenarios, thus improving their ability to adapt and react in real situations.

Successful implementation of assessment games requires collaboration among experts from various fields, such as concept developers and defence specialists, ensuring an integrated approach to capability development.

These games play a crucial role in identifying training deficiencies and promoting organizational learning, helping align strategies and processes with the dynamic requirements of the security environment.

Although table top assessment games offer multiple benefits, their conduct is not without challenges, such as the need to adapt the games to the specific requirements and constraints of each organization or scenario.

From the military context to higher education and corporate strategies, assessment games demonstrate versatility, being used to stimulate creative thinking and innovative problem-solving across various domains.

However, it should be noted that success in implementing new concepts is closely linked to the development and capacity of the defence industry, whose involvement is crucial for achieving viable and effective capabilities.

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