CCOE Online Seminar Series

Unveiling the Power of Serious Gaming

Meeting Minutes

Format: Online seminar

Moderators:

- **Lieutenant Colonel Ralf Baur**, CCOE
- **Ms. Eleonora de Martin**, CCOE

Featured experts:

- **Mr. Thomas Noel**, U.S. Marine Corps Warfighting Laboratory, Wargaming Division
- **Ms. Julia Miller**, U.S. Marine Corps Warfighting Laboratory, Wargaming Division
- **Prof. Dr. Markus Bresinsky**, University of Applied Science Regensburg (Ostbayerische Technische Hochschule Regensburg, short 'OTH Regensburg'), Department of International Politics and Social Sciences
- **Mr. Diederik Stolk**, CCOE, subject matter expert Wargaming

Audience: Open to public; practitioners, experts, academics and advanced students

Date and time: 04th of December 2024, 14.30 – 17.00 (UTC+1)

Online Seminar of the NATO Civil-Military Cooperation (CIMIC) Centre of Excellence

In this online seminar, we explored the potential of serious gaming in military and civilian contexts, emphasizing its role in enhancing in training and education, analysis and concept development. The session featured insights into the modelling and simulation efforts at the NATO Civil-Military Cooperation Centre of Excellence (CCOE). Experts from the U.S. Marine Corps Warfighting Laboratory and the OTH Regensburg also shared their methodologies and applications, as well as some best practices and academic insights. The CCOE also presented its initiatives to develop an internal wargaming capability and to establish a CIMIC wargaming community across NATO.

Key discussions revolved around terminology, the analytical insights derived from serious gaming as well as the motivational aspects crucial to effective game design. Practical examples and innovative approaches showcased how serious games can bridge theoretical knowledge with practical application, enhancing individual and collective competencies or contributing to organisational development. This seminar underscored the value of serious gaming as a strategic tool to prepare for complex challenges in both military and civilian contexts.

Discussion about terminology

After the expert presentations, a significant discussion emerged on the topic of terminology. The experts shared their perspectives on the terms used within their organizations and reflected on the implications and connotations of these terms in various contexts. This discussion highlighted how terminology shapes understanding, framing, and application. The experts' perspectives are summarized as follows:

- **Mr. Thomas Noel** and **Ms. Julia Miller**:
  - *Wargaming* can serve as a broad term that encompasses both military and non-military scenarios, which others may refer to as *serious gaming*.
  - The term *wargaming* should not be limited to military contexts only.
  - Collaborators in Mr. Noel's network have applied the term *wargaming* in non-military contexts, such as simulations on civil unrest.
- **Prof. Dr. Markus Bresinsky**:
  - The term *wargaming* often carries military-centric associations which can lead to wrong perceptions.
  - For this reason, Prof. Bresinsky prefers the term *crisis gaming*, as it avoids these perceptions and provides greater versatility for addressing non-military scenarios.
- **Mr. Diederik Stolk**:
  - *Serious gaming* broadly encompasses all gaming activities with a serious purpose.
  - *Wargaming* specifically refers to the simulation of military activities within a game setting.
  - *Modelling and simulation* refers to the use of models to create simulations, for the purpose of generating data.

These explanations of the experts' different stances on terminology are intended to provide the proper context for the following summaries of their presentations. The webinar in general, however, focused on serious gaming as gaming with a serious purpose in the context of Civil-Military Cooperation.

Shared links and documents:

Throughout discussion after the expert presentations, participants shared valuable links to enrich the discourse and provide additional resources:

- **Mr. Matias Krempel** offered to provide his prototype of an English version of the serious game 'Neustart' (Restart). For access, you can reach out to him at MtKrempel@praefecti.eu.
- **Mr. Matias Krempel** also highlighted the DISARM framework, a tool designed to describe and understand disinformation incidents, and shared the corresponding link: https://github.com/DISARMFoundation/DISARMframeworks/
- **Mr. Thomas Noel** shared a link to the commercial game 'Root', used by collaborators in his network. This game models asymmetric warfare with multiple factors: https://ledergames.com/products/root-a-game-of-woodland-might-and-right?srsltid=AfmBOorOEa42LesCDEN4cRIxAgQncLPic2_RDR3UhFLllU06yDsZC77Y

Presentation of Mr. Thomas Noel and Ms. Julia Miller

Analytic Wargaming

About the U.S. Marine Corps Warfighting Laboratory:

- The Marine Corps Warfighting Laboratory (MCWL) operates under the Deputy Commandant for Combat Development and Integration at the Marine Corps headquarters.
- The desired end state of the MCWL is to: "Develop threat-informed, future-focused, analytically supported force design and development endorsements relevant to the stand-in force concept, global contingency operations, and crisis response operations in order to establish enduring positional advantage."
- The MCWL consists of five divisions:
    - Headquarters
    - Science and technology division
    - Experimental division
    - Futures division
    - **Wargaming division (WGD)**
- The desired end state of the WGD is to: "Identify wargame results for further exploration through modelling and simulation, live-force experimentation, doctrine and policy review, science and technology examination, and studies."

Role of wargaming at MCWL:

- To **test and refine** future doctrines and operational concepts, often projecting 5, 10 or up to 20 years ahead.
- To **gather analytical insights** that influence budgetary processes and force structure.
- To **identify material solutions**, such as ships, missiles, and systems, to support emerging concepts
- To **educate future military and defence leaders**, though education is a secondary focus for the Warfighting Laboratory.
- The primary emphasis of MCWL's wargaming efforts is analytical, aiming to derive data and insights to shape future strategies rather than focus on player outcomes or educational goals.

Wargames at MCWL:

- Types of wargames:
    - **Analytical wargames**: Focused on gathering data and insights from the wargaming process to refine doctrines and operational concepts, drawing expertise from subject matter experts (SMEs).
    - **Educational wargames**: Aim to enhance decision-making skills of participants, often in academic settings.
- The primary emphasis of MCWL's wargaming efforts is analytical, aiming to **derive data underpinning the decision-making processes** of participating experts, rather than evaluating the success or failure of a wargame.
- Analytical wargames conducted by MCWL are structured around problem statements, objectives, and research questions. These research questions always guide the game development – a **well-crafted research question is essential**, as even the best game design cannot produce meaningful outcomes without it.

- A single wargame may be insufficient to fully develop a future operating concept; a series of games and further experimentation might be needed to refine, validate, or discard concepts based on research outcomes and foundational questions.

The 7-Phase Wargame Lifecycle:

- The development process typically takes 6–9 months for larger games involving 80–200 participants but can be scaled down to shorter tabletop exercises with 10–50 participants.
- The WGD operates with a structured team led by a government-appointed Game Director, supported by a diverse team of analysts, designers, developers and subject matter experts (SMEs) to ensure that the game fits the purpose of the research question or problem statement.
- The wargaming lifecycle developed by the Marine Corps Warfighting Laboratory includes seven phases**:**
    1. **Define**: Receiving the game topic and defining objectives, problem statement, and initiate preliminary research.
    2. **Scope**: Announce the game, determine its type as well as the conceptual approach and scope. Identify limiting factors and assumptions, and develop an initial scenario tailored to objectives and research questions.
    3. **Design**: Determine assessment criteria and develop the game's format, including visualization and adjudication techniques. External feedback ensures the design aligns with research goals.
    4. **Develop**: Finalize scenario and design and analysis plan. Verify the design meets objectives. Conduct play tests with SMEs.
    5. **Rehearse**: Conduct more play tests, validate logistics, prepare administrative details and train internal staff to ensure readiness.
    6. **Execute**: Run the wargame, beginning with levelling briefs and training players, followed by game execution to answer research questions.
    7. **Analyse**: Post-game analysis includes quick-look reports, after-action reviews, and a detailed final report published within 90 days.

Conclusion:

- MCWL conducts mostly analytical wargames to generate insights for force design, doctrine, and operational concepts, focusing on data rather than player outcomes.
- Research questions are of central importance for the development and implementation of wargames at MCWL in order to produce meaningful outcomes.
- All MCWL wargames resolve around a seven-phase lifecycle to ensure objectives are met, insights are generated, and outcomes inform further concept and doctrine development.

Presentation of Prof. Dr. Markus Bresinsky

Crisis Gaming at OTH Regensburg

About Crisis Gaming at OTH Regensburg:

- Crisis gaming initiatives at OTH Regensburg aim to provide students with hands-on, real-world scenario-based training in crisis management.
- OTH offers two formats:
    - GLOBE exercise
    - Disaster and crisis management in civil defence

GLOBE exercise:

- The GLOBE exercise serves as OTH's low-barrier entry point into the world of network security and a comprehensive approach.
- There are two versions of the GLOBE exercise which are conducted once per year:
    - **GLOBE field exercise** (command and staff post exercise):
        - Setting:
            - Based on real world scenarios (Afghanistan 2013-2020, Repatriation 2020-2021, Mali 2021-2023, Sudan 2024)
            - Reflects United Nations structures (usually UN OCHA)
            - Realistic and practice-oriented implementation with a two-layered command and control structure including a hybrid component.
        - Purpose:
            - Enhances students' crisis management skills
            - Prepares students for possible future work in this context
            - Serves as foundation for the participation in bigger and more sophisticated exercises (e.g. NATO exercises with a CIMIC component)
        - Rules:
            - Free adjudication procedures with a "white cell" and a "response cell"
    - **GLOBE Tabletop**:
        - Setting:
            - Tabletop exercise
            - Scenario and script-driven, mirroring the GLOBE field exercise
            - Utilises on a real-world map
        - Purpose:
            - Provides pre-exercise learning opportunities to give participants an introduction and overview of the scenario, challenges and issues prior to the GLOBE field exercise
        - Rules:
            - Free adjudication procedures with a "white cell" and a "response cell"

Disaster and crisis management in civil defence:

- Exercise for real-world actors in the field of crisis management and disaster response which is conducted twice a year.
- Setting:
    - Scenario and script-driven, concentrating on domestic crises such as natural disasters or man-made catastrophes
    - Utilises a real world-map
- Purpose:
    - Enhances participants' disaster response and management skills
    - Facilitates conceptual analysis and risk assessment in civil defence operations
    - Fosters enhanced communication and coordination among stakeholders
- Rules:
    - Free adjudication procedures with a "red team"

Critical analytical thinking (CAT) and gaming:

- CAT is the basis for good analytical and intelligence products.
- Characteristic features of CAT consist of metacognitive elements, domain-specific expertise and knowledge about e.g. evidence collection, evaluation, etc.
- CAT is the result of:
    - **Disposition**: Inherent character traits like truth-seeking, self-confidence, open-mindedness, and critical thinking ability.
    - **Motivation**: Driven by expectations of success, the perceived value of the task, and the interest or relevance of the activity.
- Crisis gaming is recognized as a motivational supportive.
- While disposition is largely innate, motivation can be shaped through game design, though this remains a significant challenge according to research.
- Observations reveal that traditional game design methodologies often fail to adequately address motivational factors.
- Key question: **How to enable motivation in order to enhance critical analytical thinking?**
    - Motivation is not only increased by triggering emotions (e.g. by making a wargame more realistic and increasing the pressure on participants; "train as you fight").
    - The framework **EPAMOS** (Empirische Analyse motivierender Spielelemente / empirical analysis of motivating game elements) developed by researchers at the Technical University of Nürnberg provides a toolbox to analyse and enhance **motivating game design elements**.
    - Their research shows that motivation is triggered by:
        - Autonomy
        - Competence level
        - Relatedness of the participants
        - Meaning
    - Their research identifies **over 90 motivational game design elements** and offers over **50 misfits**, meaning elements that demotivate people.
- OTH Regensburg applied the EPAMOS framework to pinpoint misfits in their crisis games. Using game design elements, they created new "game molecules" and connected them into complex networks, which were analysed to uncover key "focal points of motivation":
    - Autonomy: Ability to decide over and make use of own resources
    - Relatedness: Need to share resources

- Competence: Achievement of a joint objective

Conclusion:

- Motivational aspects play a pivotal role in enabling CAT, which is essential for producing high-quality analytical outcomes.
- Crisis games are motivationally supportive but to effectively address motivational factors, they have to be specifically designed – EPAMOS provides relevant and actionable methods in this regard.

Presentation of Mr. Diederik Stolk

Serious gaming at the CIMIC Centre of Excellence (CCOE)

Advantages of serious gaming:

- **Enhanced Learning and Retention**: Serious gaming allows participants to explore real-world scenarios in safe, controlled, and low-cost environments, fostering experiential learning and improving knowledge retention.
- **Real-World Application**: Participants engage in realistic, tangible experiences, which bridge the gap between theoretical knowledge and practical application.
- **Skill Development**: It supports the acquisition of new skills and the practice of collaboration, coordination, and decision-making in complex scenarios.
- **Versatility**: Serious gaming caters to educational, training, and conceptual development purposes, enabling flexible learning across strategic, operational, and tactical decision-making levels.

Serious gaming activities at the CCOE:

- At the CCOE, serious gaming is utilized in educational settings to train CIMIC personnel. The CCOE leverages gaming to showcase the complexity of the operating environment, offering lasting, practical experiences that enhance learning and skill development.
- Within the Concepts, Interoperability and Capabilities (CIC) branch, a **wargaming capability** is being developed in order to test new concepts and innovations and to use wargames more for the purpose of analysis.
- Every course at the CCOE has its own serious game:
    - **ANALYSIA**: Focuses on sensemaking and complexity of operational environments, with participants building and analysing the civil factors of the operating environment collaboratively.
    - **Baltic Challenge**: Simulates multi-stakeholder interactions in a real-world-inspired environment (Daugavpils, Latvia) to develop negotiation and liaison skills and explore topics such as Host Nation Support.
    - **Wise Aegis**: Teaches resilience and collaboration under simulated shocks, with a focus on civil preparedness and military operations to practice dominant thinking models within the CIMIC space.

- **Development of New Concepts**: Current efforts include a wargame exploring multi-domain operations (MDO) and CIMIC integration, aligning civil and military dimensions throughout various domains.

Development of serious gaming at the CCOE:

- The development of serious games at the CCOE revolves around three key branches:
    - **Lessons Learned and Analysis (LL&A)**: Synthesises insights from past experiences to address identified challenges and develop innovative ideas, concepts or strategies that guide game development.
    - **Concepts, Interoperability and Capabilities (CIC)**: Provides expertise and refines the ideas and concepts generated by LL&A, preparing them for implementation.
    - **Training and Education (T&E)**: Implements and validates wargames in educational settings to address identified challenges effectively.
- Efforts are underway to establish a **CIMIC wargaming community** across NATO, leveraging collective expertise to enhance the representation of civil environments in military contexts.

Conclusion:

- Within the CIMIC community, concept development and experimentation through serious games is uncommon even though it is extremely useful for this purpose which is why the CCOE wants to develop this capability.
- Simulations, serious games and wargames are excellent tools for CIMIC education and training.
- The CCOE is developing and rolling out new serious games regularly.
- The CCOE is trying to establish a CIMIC wargaming community across NATO – everybody is invited to join.