

NATO Modelling and Simulation Group

MSG-175 Workshop on "Commercial Technologies and Games for Use in NATO and Nations"

**26 September 2019, at Ecole Militaire, Paris, France
(co-located with CA2X2 Forum 2019)**

Introduction

The commercial sector is developing several key technologies and applications that have the potential for cost-effective adaptation and use in modelling and simulation (M&S) applications for defence planning, training, operations and capabilities development. The exploitation of commercial technologies and appropriate use of open standards can provide efficiencies and increased benefits for defence applications. The NATO M&S community needs to identify those technologies having the greatest near-term potential and understand the trends and developments in those technologies that have potential to meet current and future defence requirements. Through demonstration, experimentation, discussion and debate, Workshop attendees will acquire knowledge and experience in the possible topic areas. Technical and application briefings and demonstrations on selected commercial technology areas will help the attendees better understand the issues so that they may aid in the development of the strategy for NATO and the Nations to exploit these technologies. It is intended that all participants will develop a shared understanding of the issues and opportunities. Meeting proceedings will be produced including recommendations for NATO and the Nations. The Workshop is open to participants from NATO and non-NATO nations.

Aim

As with previous NMSG Workshops on this topic, this workshop is intended to share national experiences, explore commercial and games technologies, understand best practices, and to identify barriers to further exploitation and ways these might be overcome. This Workshop will also contribute to articulate a technology road map for possible future NMSG Task Group (research) activities on commercial technologies and games.

Topics

The Workshop will focus on:

- Artificial Intelligence (e.g. IBM Watson, Google assistant) in Simulation Applications
- Augmented and Mixed Reality Developments (e.g. Microsoft Hololens)
- Game Architectures (e.g. VBS Gears, STE, SpatialOS) and Game Engines (e.g. Unity)

Aspects to be discussed include:

- The background and affordability of simulations and digital games;
- Specific challenges using these tools for education and training (e.g. interoperability standards), as well as strategies for overcoming these challenges in order to achieve successful learning experiences;

- The practical impact of these technologies in preparing warfighters;
- The practical impact of these technologies in educating support trades such as medical, supply, transportation, and police; and
- The future of these technologies and their impact and learning and teaching.

Agenda of MSG-175 Workshop, 26 September 2019

- 8.30h-8.40h Introduction
Chairs: Wim HUISKAMP (TNO Defence Research, NLD),
Niels KRARUP-HANSEN (DALO, DNK),
LTC Wolfhard SCHMIDT (JFTC, DEU)
- 8.40h-9.10h Keynote: Delivering Next Generation Simulation Today: Converging
Virtual, Constructive and Gaming through Cloud Technologies
Peter MORRISON (Bohemia Interactive Simulations, USA)

Session 1: Game Architectures and Game Engines

Chairman: Mr Wim HUISKAMP (TNO Defence Research, NLD)

- 9.10h-9.35h SpatialOS for Military Simulation and Training
Karl BARKER, (Improbable, USA)
- 9.35h-10.00h Scalable Dynamic Synthetic Environments using a
Next-Generation Game Architecture
Dr Ruben SMELIK (TNO Defence Research, NLD),
Robbert KRIJNEN (TNO Defence Research, NLD)
- 10.00h–10.25h Accelerate Training Digitization with Game Engines
Sebastian LOZE (Epic Games, CAN)

10.30h-11.00h Coffee and Networking Break

Session 2: Training Applications

Chairman: LTC Wolfhard SCHMIDT (JFTC, DEU)

- 11.00h–11.30h Common Synthetic Training Environment for US Army Simulation
Peter SWAN (VT MAK, USA)
- 11.30h-12.00h Commercial Gaming Technology Breaks Institutional Paradigms in
United States Military Aviation Training
Col John M. FERRELL (US Army Aviation Center of Excellence, USA)
Ms Jennifer LEWIS (SAIC, USA)
- 12.00h-12.30h Discussion on Commercial Gaming Technology
- 12.30h-14.00h Lunch and Networking Break (at Ecole Militaire Cafeteria)***

Session 3: Analysis, Design and Decision Support Applications

Chairman: Mr Niels KRARUP-HANSEN (DALO, DNK)

14.00h–14.25h Via Robusta, Woe to the Strong: and HLA MS2G for Hybrid Warfare
Prof Agostino BRUZZONE (Univ Genua, NATO M&S CoE, ITA),
Col Paolo DI BELLA (Univ Genua, NATO M&S CoE, ITA)

14.25h–14.50h Try-Buy-Adapt
Amit KAPADIA (PEO-STRI, USA),
Richard OSBORNE (The MITRE Corporation, USA)

14.50h-15.15h Military Applications for Machine Learning
Cpt Ugur UYSAL (Army Concepts and Capability Development Centre,
DEU)

15.15h Wrap-up
Conclusions and Way-ahead

15.30h-16.00h NATO CA2X2 FORUM 2019 PLENARY CLOSING SESSION