

NATO Modelling and Simulation Group - MSG-130 Commercial Technologies, M&S and SG for Use in NATO, with special attention to the Maritime Domain

including the *Special Session on Maritime Opportunities for Immersive Environments, M&S and Serious Games (MOIRE)*

NATO is very active in promoting innovation in M&S (Modeling and Simulation) as a strategic area for the Alliance as well as a critical element to develop the Connected Forces Initiative; along last years Simulation technologies, applications and standards evolved, so NATO MSG-130 (NATO Modeling & Simulation Group) was established to address these issues within a workshop on Commercial Technologies related Immersive Technologies, SG (Serious Games) and M&S for Use in NATO with special attention to the Maritime Domain; the MSG-130 Workshop was successfully held in La Spezia, Italy, last October 9-11 with the support of the Italian Navy by hosting it in its efficient and elegant Officer Club.

The event was organized by NATO MSG and chaired by Wayne Buck, ACT (Allied Command for Transformation) and Stuart Armstrong, QinetiQ in collaboration with Agostino Bruzzone, Simulation Team Genoa University. Over 70 workshop attendees, from 10 different Countries, participated the event and the audience included Academia, Services, Industries and Institutions; indeed several M&S users were actively involved in the workshop including several major Navies and Military Institutions (i.e. Italian Navy, Royal Navy, Royal Canadian Navy, Swedish National Defence) and Industries (i.e. Aerospace and Defense, Ship Yard Construction, ICT); therefore considering the nature of M&S and SG that could be a competitive advantage in wide spectrum of applications, it is not surprising the big success of the workshop also in term of “Dual Use” (Civil and Military) that resulted confirmed by the involvement of industrial and commercial marine operators such as Ports and Oil & Gas Companies.

From technical point of view over 20 presentations addressed innovative M&S as well as state of art of commercial tools in Immersive Environments with a sharp focus on the Marine Domain; indeed the Maritime Extended Framework (including Sea Surface, Underwater, Air, Coast and Land, Space and Cyberspace) is a strategic context where the introduction of M&S and SG enable the achievement of big improvements and support a drastic and competitive renewal of existing solutions. By the way this workshop was attended by a comprehensive representative, at International Level, of almost all commercial providers of immersive environments; in addition the National Companies and Marine Local Operators was able to get benefit of this international framework by participating actively in networking and discussions related to future projects, activities and proposals.

The Workshop included also two very interesting tours to top level laboratories in NATO CMRE and MBDA. The NATO Center for Maritime Research and Experimentation (CMRE) offered a visit to the new Modeling and Simulation Labs; presenting the Center as well as the new M&S programme as an opportunity to combine sea testing capability with interoperable virtual experimentation and simulation; in CMRE M&S Lab it dynamically demonstrated an innovative Simulator addressing Cyber Warfare in the Extended Maritime Domain developed in cooperation with Simulation Team; this model represents an example as well as an enabler for further R&D opportunities in Cyber Defence based on multidisciplinary collaboration among NATO, National MoD, Industries (i.e. IBM), Academia (i.e. Genoa and Pisa University) and Institutions (i.e. Promstudi); in addition New Serious Games for Crowdsourcing and Marine Training were presented to the audience; the CMRE Tour included also the visit to new Glider Control Room, able to supervise a large set of robots operating for weeks underwater at sea while collecting crucial data about our oceans; the tour was closed by a quick walk through on the Engineering Department where innovative autonomous systems (i.e. Unmanned Surface Vehicles and Autonomous Underwater Vehicles) and equipment (i.e. Towed Arrays, SAS, etc.) are mounted and prepared for real testing.

The MSG-130 audience was also attending the a very interesting tour to the MBDA facility in La Spezia; the visit included an overview of the MBDA M&S Division and a presentation of up-to-date simulation projects; in additions it was possible to carried out an interactive demonstration on MBDA Lab by experiencing a virtual simulation over a joint air naval scenario; during this demonstration the MSG-130 attendees get the opportunity to sail and operate a vessel in front of the Virtual Coastline of Gulf of Poets (La Spezia, Italy) over a wide spectrum of weather conditions. MBDA sponsored the two tours and offered a party buffet, while Icebreaking Dinner Buffet at Italian Navy Officer Club represented the other social event of the workshop.

So MSG-130 resulted a very positive NATO workshop providing a real opportunity for further developments; indeed the final meeting Wrap Up outlined the future crucial role of Modeling and Simulation and Serious Games for the Alliance and their potential for dual use confirmed by the fast evolution of the sector along last decade and by very successfully existing experiences; Considering the highly innovative nature of Simulation Science and the current need for their quick effective implementation of new solutions, it was reinforced the importance to operate effectively in joint co-operations with Academia, Industry and Institutions and to proceed with these kind of initiatives.



