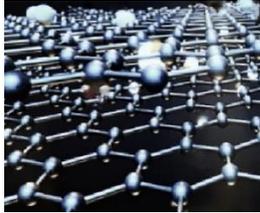# Technology in Action No.2

### NATO uses graphene technologies and applications for Defence

Graphene, a monolayer of carbon atoms tightly bound in a hexagonal honeycomb lattice, has unique mechanical chemical and optical properties. NATO STO is evaluating the potential impact of graphene in the military field and how it could be implemented for land, sea and air platforms and for ballistic protection.

NATO studies Physical Employment Standards

NATO STO completed their final report concerning Physical Employment Standards. It is particularly important because it serves the needs of the whole force today, as more nations open military roles to women. It is a guide for issues such as return to duty after pregnancy or serious illness or injury and it defines an indicator of musculoskeletal injury risk.

Electromagnetic Environment Situational Awareness for NATO
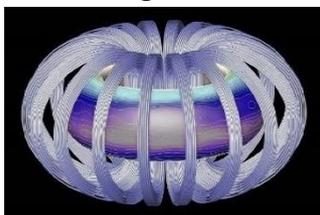
The Radio Environmental Map is a sort of database containing various types of static and dynamic radio environment information. It can be used to produce a multilayer geographical map to enhance Electromagnetic environment awareness on the Battlefield. NATO STO is studying the added value and possible military applications of it and how to share with the countries involved.

NATO measures Military Outputs

The fast changing international environment , advances in technology and the diverse international expectations require performance measurement systems and Key Performance Indicators to support operational decision making and consequently, to assess and evaluate progress in achieving the organization goals. NATO STO aims to create a common performance measurement framework to reflect the strategy of individual Nations and that, at the same time, addresses the needs of NATO.

NATO assesses methods for camouflage in Operational Context

To make an important contribution to survivability, it is crucial to assess the performance of camouflage systems in military practice. The evaluation of camouflaged targets in a tactical operational setting is very complex and difficult.

NATO STO is investigating new assessment methods using application of wargaming, simulation tools, and field trials.

NATO assesses and models the Performance of Digital Night Vision Image Fusion

The performance gains using image fusion of different night vision technologies is strongly dependent on the composition of the scenery and on the military tasks. Thus, it is very difficult to generalize it.

NATO STO is trying to assess it, to investigate existing digital image fusion technologies, image quality metrics, data collections and to compare metric prediction versus human performance.

NATO updates the Modeling and Simulation Master Plan

The NATO Modelling and Simulation Master Plan (NMSMP), contains the Modelling and Simulation vision, requirements, objectives and responsibilities for the Alliance and assigns roles to different NATO bodies. Includes a Strategic Plan and an Implementation Plan.

NATO STO is updating the NMSMP to provide short- to medium-term guidance to NATO and nations.

NATO Announces The European Robotics League Emergency Robots 2020

The competition will be held at CMRE in La Spezia, Italy from 18 to 24 July 2020 and will include land and marine robots performing realistic tasks in an emergency environment.

Some of the tasks that will be tested are: underwater pipes and structure inspection; object recognition ; underwater mannequin detection; localization of a mannequin and rubble removal in the land area; extinguishing a fire; and adaptive mission planning.