European Defence Agency

CapTech ESM 4 / Human Factors strand

EDA

The European Defence Agency has been created to help EU Member States develop their Defence capabilities for crisis-management operations under the Common Security and Defence Policy of the European Union.

The R&T Directorate is responsible for the Agency's goal of enhancing the effectiveness of European Defence Research & Technology by:

- Acting as a catalyst for more European R&T collaboration and pooling & sharing, focussed on improving defence capabilities; and

- Developing policies and strategies to strengthen Defence technology in Europe.

A CapTech is both:

CapTech Structure

- a *Technology Area* focused on a particular military domain and the technologies associated with it;

- a *Network of Experts* drawn from Member States, Industry, Research Institutes, Academic Institutions and Agencies (International, European and National).

In practice the main task of a CapTech group is to propose R&T activities in response to agreed Defence Capability needs, to generate projects accordingly and oversee their management (technology pull). For this purpose CapTechs arrange workshops and seminars dealing with technology questions that are most promising for military applications.

CapTech groups show possible capability impacts of new emerging technologies or innovative concepts (technology push). Also Technology Watch could be included in the CapTech activities.

There are 12 CapTechs assembled in 3 major groups to reflect the major Capability domains:

IAP	Information Acquisition and Processing	Knowledge
GEM	Guidance, Energy and Materials	Engagement
ESM	Environment, Systems and Modelling	Manoeuvre

Information Acquisition & Processing	Guidance, Energy & Materials	Environment, Systems & Modelling
IAP1 Components	GEM1 Materials & Structures	ESM1 Naval Systems & their Environment
IAP2 RF Sensor Systems & Signal Processing	GEM2 Energetics, Missiles & Munitions	ESM2 Aerial Systems & their Environment
IAP3 Optical Sensor Systems & Signal Processing	GEM3 Ground Systems & their Environment	ESM3 Systems of Systems, Space, Simulation & Experiment
IAP4 CIS & Networks	GEM4 Guidance & Control	ESM4 Human Factors & CBR Protection

Strategic aim of ESM 4

The CapTech ESM 4 includes the Human Factors related to the military. It deals with all the questions related to the performance of personnel as individuals as well as in groups. Insight in human factors are needed to meet the demands placed upon deployed forces during modern security operations with respect to for instance the higher operational tempo, the close combat associated with counter-insurgencies, the operation within the NEC environment with the risk for information overload, the use of complex weapon systems, the need for cultural sensitivity and a requirement to demonstrate an impressive mental dexterity.

The ESM 04 focus is:

- Demographic changes and social aspects
- Individual: humans in complex or difficult situations / environment
- Groups: human behavior and performance in teams
- Human performance tracking and enhancement
- Augmented & mixed reality and human modeling
- Medical aspects

The areas of application for these disciplines are mainly:

- Human factors in Operations and Training
- Humans factors in NEC
- Humans factors in Augmented Cognition, Modeling and Simulation
- Human factors in Platform Design and Use
- Human factors in Methodology

Examples of ESM 4 projects:

Finished project: SOCUMOD
Running project: FODAI
Proposed project: Impact of Demographic Change on Recruitment
and Retention in EU Armed Forces