PREPARATORY ACTION ON DEFENCE RESEARCH

Session Soldier Systems

INFODAY AND BROKERAGE EVENT
27 JUNE 2017

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PREPARATORY ACTION ON DEFENCE RESEARCH

Call Text presentation RA topic Force Protection and Soldier Systems

Research in Technology and products in the context of Force protection and Soldier Systems
Specific Challenge
Force protection and advanced soldier systems beyond current programmes

Interoperability
- Vehicle, infrastructure and soldier systems open standards
- Enable:
  - Effectiveness
  - Adaptability to mission profile
  - Maintaining state of the art
  - Reducing life cycle, logistic and human resource footprint

Safety of military personnel
- Individual ballistic protection still essential
- Main challenges:
  - Weight reduction
  - Inflexibility to better fit differences in anatomy
  - Protection against kinetic threats only
  - Current technology based on fibre technology and hard plate technology
  - New solutions e.g. shear thickening fluid known but not yet fully implemented

Survivability
- Strong civilian development of technologies in visual appearance however not suitable for military applications
- Increase of sophistication in advanced sensors systems
- No solutions available for longer (invisible) wavelength
- Need for research in adaptive materials, structure and components in short wave infra red, thermal infrared and radar
Sub-topic (a)

Force protection and advanced soldier systems beyond current programmes

Scope: Generic open system architecture

- Ready for standardization
- Comprehensive coverage: group, squad, multinational, vehicle, etc.
- Architectural domains: Electronics; Voice and data communication; Software; Human interfaces devices; Effectors
- Technical validation
- Build on resent results from EDA and NATO
Sub-topic (b)

Force protection and advanced soldier systems beyond current programmes

Scope: Tailor-made blast, ballistic and CBRN protection of military personnel

- Light weight ballistic and blasting protection with 20% reduction
- Effective dissipation of energy and body protected zones
- Explore integrate CBRN detection and/or protection
- Flexibility and modularity
- Advancement in manufacturing
Sub-topic (c)

Force protection and advanced soldier systems beyond current programmes

Scope: Adaptive camouflage

- Active and passive camouflage methods rapidly reconfigure or change to surrounding
- Active against variety of present and future threats from advanced sensors systems and observation means
The proposals

Force protection and advanced soldier systems beyond current programmes

• The implementation of these topics are intended to:
  - Focus on TRL 2 to 3 for topic (a)
  - Focus on TRL 2 to 4/5 for topics (b) and (c).

• 2017 Budget - 6.78 M€

• Proposal could cover one of the following subtopics:
  - Generic open system architecture – EU contribution 1 - 1.5 M€
  - Tailor-made blast, ballistic and CBRN protection – EU contribution 2 - 3 M€
  - Adaptive camouflage – EU contribution 2 - 3 M€

Deadline for proposals
21 September 2017
Expected Impact

Force protection and advanced soldier systems beyond current programmes

- Convincing demonstration of EU-wide research cooperation in defence research
- Promotion of the integration of interoperability standards
- Enhancement of the effectiveness of military personnel
- Reduction in life cycle costs
The information contained in these slides on EDA projects/studies is provided for informative purposes only, and is not a prerequisite (precondition) for application for the call of proposals. The only legally binding documents are those published in the Research and Innovation Participant Portal.
Aim: Identify possibilities offered by innovative technologies for soldier systems:
- Observation
- Energy
- Human factors
- Survivability

Timeframe: Jan. 2013 – 1st Q 2017

Status: running

Expected project results: Demonstration of state of the art technological solution in all CEDS FSP domains

Military benefits:
- Update of the Common Staff Requirements (CSR) for CEDS
CEDS FSP projects

**OBSERVATION**
- OBSERV
- Precision Targeting

**ENERGY**
- SPER-PACK
- Energy Harvesting

**HUMAN FACTOR**
- MUMSIS

**SURVIVABILITY**
- ACCLITEXSYS
- LiVEST
- iHELMMAT
- ACAMS
Standard Architecture for Soldier Systems

Operational view

Technical view

System view
Information on EDA projects / studies

CBRN activities
**MAIN OBJECTIVE**
Development of a CBRN suit integrated system able to detect and quantify the concentration of warfare agents.

**MILITARY BENEFITS**
- Quantification of warfare agent concentrations.
- Determination of security level for military.
- Prevention of warfare agent saturation in the CBRN.
- Remote monitoring from the military base of the exposure to warfare agents and environmental conditions.
- “Self-cleaning” CBRN suit by photo-degradation of warfare agents.
SWITCHPROTECT: Low Burden Individual Protective Equipment with Adaptive Protection

**MAIN OBJECTIVE**
Development of a CBRN suit that can be switched from a permeable low burden mode to an impermeable CBRN protective mode on demand

**MILITARY BENEFITS**
- Combines advantages of permeable and impermeable CBRN protection
- Low physiological burden
- High air permeability
- Stand-by CBRN protection for whole-day wearing
- Quick response to CBRN / TIC threat
- 2 minutes switching time from permeable to impermeable
- Low energy consumption / portable energy supply