and design shortcomings to differences in anatomy and protection approaches based only against kinetic energy threats are also important challenges. In this respect, blast protection needs to take into account the use of CBRN agents together with ammunition, explosives or IEDs and the need to detect and protect soldiers from such elements.

- A strong civilian driving force encourages research and development in order to adapt visible appearance. Materials and components exist or are being developed to change the visual appearance of a surface for e.g. display applications. These are, in general, not suited for defence applications. Present and future threats from advanced sensor systems have been analysed. Advanced materials and structures for high-resolution spectral design are developed at universities and industry without knowledge of defence specific requirements. For longer (invisible) wavelengths no such civilian demand exists. Adaptive materials, structures and components in short wave infrared, thermal infrared and radar require specific research. Such adaptive technologies must be compatible with defence specific requirements on endurance and operability.

Scope:

The topic calls for proposals to explore and demonstrate the potential of how technology can further advance and enhance soldier systems beyond current programmes, hence assessing what is the state-of-the-art in one or more of the aforementioned areas. Proposed activities could cover one of the following sub-topics:

(a) Generic open soldier systems architecture

The proposals should propose a definition of architecture ready for standardisation and comprehensively covering soldier systems within their context of operation (group, squad, multi-national, vehicles, etc.). The architecture domain to be considered shall include:

- electronics;
- voice and data communication;
- software;
- human interface devices;
- sensors;
- effectors.

The architecture shall be based on a suitable architectural framework. At the end of the project a technical validation should be performed to ensure that a proposed architecture in terms of interfaces, protocols or standards is technically feasible and to enable delivery of an open, modular and easily reconfigurable soldier system.

Results from relevant NATO (STANAG 4677, STANAG 4619, STANAG 4695, STANAG 4740) and EDA (STASS I & STASS II) activities and studies should be used as baseline for the development of generic open soldier system reference architecture.

(b) **Tailor-made blast, ballistic and CBRN protection of military personnel**

The proposals should aim at research and technology development in lightweight ballistic and blasting protection allowing reduction at least 20% of weight versus existing commercial solutions for military personnel. The technology should allow achieving optimized protection with effective dissipation of energy and body protected zones. It should enable flexibility and modularity. Proposals should also explore the use of novel materials to integrate CBRN detection and/or protection into military body armour.

Call summary

Investment in future-oriented European defence research programmes today is a crucial step to maintain freedom of action and the ability to develop the capabilities that will be required tomorrow. Yet up to now, EU funding could only be used to fund research activities with an exclusive focus to civil applications.

The Preparatory Action on Defence Research (PADR) is a first essential step, limited in time and in budget, to test the added value of the EU budget supporting defence research. It will pave the way to a substantial defence research programme within the context of the next multiannual financial framework post 2020.

The main objective of the PADR is thus to test mechanisms that can prepare, organise and deliver a variety of EU-funded cooperative defence research and technology development (R&T) activities to improve the competitiveness and innovation in the European defence industry and to stimulate cooperation amongst R&T actors in all Member States.
The focus of the PADR is on defence research rather than dual-use research; nevertheless it will be complementary with existing EU programmes such as the Specific Challenge "Secure societies – Protecting freedom and security of Europe and its citizens" under Horizon 2020 as well as R&T activities in the Member States and in the European Defence Agency (EDA).

The core of the PADR is a research programme that will be implemented through annual calls for proposals from 2017 onwards for 3 years . The calls are based on annual work programmes defined in close cooperation with Member States and adopted by the Commission. The work programme contains a detailed description of the actions (research projects) that will be funded through the award of grants to consortia after the publication of calls of proposals. While the overall responsibility for the management of the Preparatory Action lies with the Commission, EDA will implement the annual work programmes, organise the calls, evaluate the project proposals submitted and manage the research projects funded.
This document contains the 2017 PADR call texts together with budgetary information and General Annexes with relevant information for applicants and the modalities which EDA will use to evaluate the proposals.
In 2017 there will be three calls for proposals. The main focus of the first call (PADR-US-01-2017) lies on the launch of one project of substantial complexity in the area of enhanced situational awareness in a naval environment.
Within the context of research in technologies and products related to force protection and soldier systems, a second call (PADR-FPSS-01-2017) will result in funding one or more projects.
Thirdly, a call for one coordination and support action (PADR-STF-01-2017) is published to start the strategic technology foresight.
This document contains furthermore a call for tender for independent experts for the evaluation of proposals and monitoring of running projects of the Preparatory Action.