



Funding EU defence cooperation

by Daniel Fiott

European Union member states have spent decades working to identify and fill military capability gaps through initiatives such as the Headline Goals and the Capability Development Plan (CDP). In the European Defence Agency (EDA), participating member states are accustomed to operating on a strictly intergovernmental and largely voluntary basis when pursuing common defence projects. Even outside of the EU, groups of European countries have engaged in bi- and multi-lateral efforts such as Benelux cooperation that are designed to integrate forces, procure capabilities and/or engage in defence research efforts. Yet multiple studies have pointed to the costs involved in cross-border defence initiatives and the record on European defence cooperation is mixed. However, through carefully targeted financial incentives the European Commission hopes that the European Defence Fund can help change the rules of the game for European defence cooperation.

Yet many questions emerge when reading the fine print of the proposed defence fund, and it is especially useful to think about how the European Commission might structure or modulate it. First, to avoid confusion perhaps it is worth considering a new acronym as EDF is already used for the European Development Fund – maybe EDIF could be used instead ('I' standing for investment). Furthermore, greater understanding of how the European Commission can ensure complementarity between its efforts on defence research (the 'research window') and joint capability development (the 'capability window') is required. In this respect, it is necessary to think about *when* and *where*

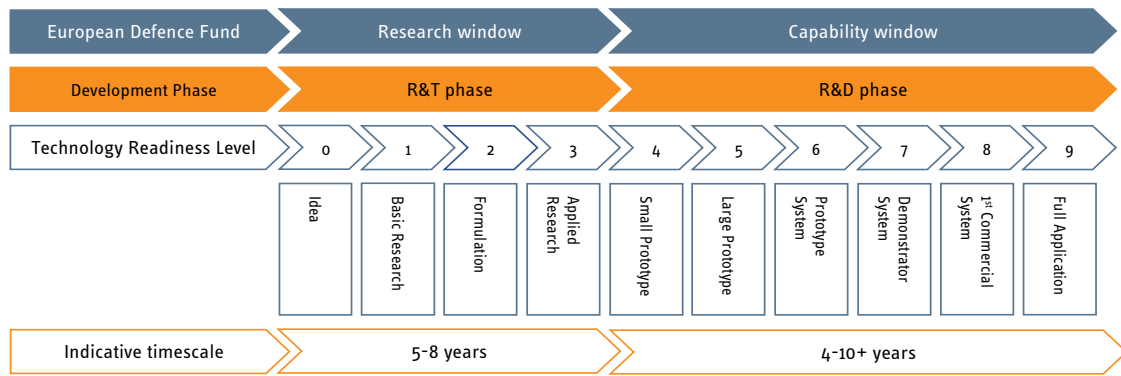
the proposed financial incentives put forth by the Commission in the EDIF (i.e. use of the EU budget) could be most effectively targeted.

Technology transition

Following the publication of the European Defence Action Plan (EDAP) by the Commission on 30 November 2016, one of the emerging policy challenges is how to ensure complementarity between the 'research window' and the 'capability window' of the EIDF. More specifically, the EDIF foresees the Commission financially supporting European defence cooperation in both the Research and Technology (R&T) and Research and Development (R&D) phases. In the EDAP the Commission indicates that the R&T phase would span basic to applied research (or 0-3 on the Technology Readiness Level (TRL) scale), whereas R&D would stretch from prototyping and demonstration to full application (or 4-9 on the TRL scale). R&D usually follows R&T when applied research has been conducted or when the first prototypes have been developed.

Through a desire to create a seamless line between R&T and R&D, the Commission wants to improve cost effectiveness and to introduce technology standardisation at the earliest possible stages of capability development. There is merit to this thinking but pulling technologies through the life-cycle of capability development is notoriously challenging. Projects fail to move from R&T to R&D (i.e. from research/prototyping to full development) because of the high risk and

The European defence fund in context



Source: EUISS

costs associated with prototyping and testing, a lack of end-user commitment at the beginning of projects, disagreement over military end-user requirements and/or no viable commercialisation plan. Worse still, in many cases billions of euros are invested in R&T programmes but then abandoned before they can give birth to enhanced defence capabilities – such investments may support the research community but not necessarily the end-user. Successful defence development programmes are those that move beyond the prototyping and demonstration phase, but those that do not are said to have fallen into the ‘valley of death’.

Surviving the ‘valley of death’

The transition from the R&T to the R&D phase raises the crucial issue of when and where to financially support defence technology and/or capability programmes. A failure to transition from R&T to R&D is commonly referred to as the ‘valley of death’. Yet the question of when and where to support technology transition along the TRL scale is a question of debate. Some would suggest that financial support is most needed in the later stages of the TRL scale, especially in bringing technologies through the demonstration and early commercialisation stages (TRLs 7-8). As far as the defence fund is concerned, this would extend financial support for defence research from applied research right up to the demonstration phase (from TRL 3 to TRL 7). The ‘capability window’ could then feature during the final stages of the TRL scale (TRL 8-9). By extending the R&T phase right up to technology demonstrators, the hope is that the defence fund could concentrate on defence-specific research projects and not simply replicate existing civil research.

The alternative view would call for financial support at an earlier stage of the TRL scale – where TRL 3 meets TRL 4 and beyond. To pull technologies through to final application, this view would emphasise financial and administrative support for prototyping and testing. For example, one of the challenges facing small and medium-sized enterprises (SMEs) is that they find

it difficult to test technologies because they lack the required testing and evaluation centres (i.e. wind tunnels and laboratory space) to develop prototypes and demonstrators. Providing financial support at the early stages of technology development programmes may run the risk of losing the defence-specific objectives of the EDIF, but it does potentially offer an opportunity to harmonise end-user requirements at the earliest possible stages before costs start to escalate. The evidence shows that cost inflation in defence capability programmes occur when military/technical requirements are introduced at a later stage of development (TRLs 7-9). Harmonising requirements at an early stage can reduce risk and pay dividends further down the road in the form of military interoperability and commercialisation.

Towards phase-specific funding?

Regardless where the line between the R&T and R&D phases is drawn, there is still a need to think about the financial modalities of the EU’s support. The ‘research window’ will be supported under the multi-annual financial framework (MFF), but it is unclear what role the estimated €5 billion per year ‘reference amount’ could play. Neither is it clear how the European Fund for Strategic Investment (EFSI) could support joint capability development. Perhaps it could be possible to use instruments such as the EFSI to support earlier TRL steps in such a way that restrictions on European Investment Bank funds for the defence sector can be retained. For example, EFSI might be drawn on to support prototyping or testing – after all, many test centres in Europe perform dual-use research. To then pull the technology through to the final stages of the TRL scale, the ‘reference amount’ could be utilised to support demonstrators, provide for a capital base for unforeseen costs and serve as an end-user guarantee. This may be just one among many routes that can be taken through the ‘valley of death’.

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