



EU-CIVCAP

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Developing EU CIVilian CAPabilities for a sustainable peace

Dual use technologies and civilian capabilities: Beyond pooling and sharing

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Abstract	This policy paper investigates how to increase the pooling and sharing (P&S) of civilian and military capabilities in light of recent EU developments. It sets out the P&S concept and process, and its application to civilian capabilities. Building on the findings of previous deliverables, the paper looks at potential areas for P&S: the sharing of training facilities, the pooling of experts and recruitment procedures; satellite systems; and remotely piloted aircraft systems. These are discussed in connection with EU developments such as the EU’s Global Strategy for Foreign and Security Policy. In particular, the paper considers the civilian compact (Common Security and Defence Policy), Permanent Structured Cooperation and the European Defence Fund as possible frameworks for P&S initiatives.
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LIST OF ABBREVIATIONS

CSDP	Common Security and Defence Policy
EATC	European Air Transport Command
EDA	European Defence Agency
EEAS	European External Action Service
ENTRI	Europe's New Training Initiative
EU SatCen	European Union Satellite Centre
EUCAP	European Union Capacity Building Mission
EUFOR	European Union Force
EULEX	European Union Rule of Law Mission
GOVSATCOM	Governmental Satellite Communications
HR/VP	High Representative/Vice President
JHA	justice and home affairs
P&S	pooling and sharing
PESCO	Permanent Structured Cooperation
RPAS	Remotely Piloted Aircraft Systems
SATCOM	satellite communications

EXECUTIVE SUMMARY

The concept of pooling and sharing (P&S) capabilities and the process for doing so was launched in 2010 in Ghent, Belgium, during an informal meeting of defence ministers of EU Member States, as a way to reduce the burden of defence expenditures in the aftermath of the global financial crisis. It followed years of ad hoc bilateral and multilateral collaboration limited to certain capability areas and, more often than not, to the willingness of sovereign states. P&S initiatives sought to pool Member State capabilities within a European framework so that they could be jointly used in operations, and their logistics, maintenance and upgrade activities could be shared. Among the projects drafted at the time, the European Air Transport Command (EATC) can be considered a key example of P&S among Member States on air transport capabilities. The EATC offers a cost-effective solution for the deployment of personnel and equipment in operational theatres located outside Europe.

Notwithstanding the aforementioned initiatives, the concept of P&S has not seen a wider practical application because of its vagueness and multidimensionality, as well as a lack of agreement among Member States on a priority list of capabilities. As a result, P&S initiatives have lost momentum at the EU level, an outcome also partly caused by recent developments within the EU. Following the adoption of the EU Global Strategy in 2016, the debate and policy-making have in fact moved beyond this concept towards varying approaches and differentiated integration under the Common Security and Defence Policy (CSDP), in both its military and civilian dimensions. By 2017, P&S had been superseded by two initiatives: in the military sphere, by the launch of Permanent Structured Cooperation (PESCO) and the European Defence Fund, with the new Capability Development Plan; and in the civilian dimension, by the prospective launch of a Civilian CSDP Compact in 2018, immediately following the adoption of the Civilian Capability Development Plan. Yet, the key objectives, and thus essence, of P&S remain in these more recent initiatives. Therefore, this policy paper considers the potential and limitations of current initiatives from the perspective of P&S.

The policy paper first introduces the P&S concept and process with respect to civilian and military capabilities. It focuses on conflict prevention and peacebuilding missions, briefly looking at relevant past developments and initiatives. In section 2 the paper builds on the findings of Deliverable 2.1, "Procedures, Personnel and Technologies for Conflict Prevention and Peacebuilding: An Assessment of EU Member States' Capabilities", and Deliverable 2.4, "Dual-Use Technologies". It looks at opportunities for P&S in several areas: the sharing of training facilities, the pooling of experts and recruitment procedures; satellite systems usable for both Earth Observation and Satellite Communication purposes; and remotely piloted aircraft systems (RPAS). Section 3 links the findings of the previous section with current EU developments, including implementation of the EU Global Strategy. In particular, the paper considers the Civilian CSDP Compact on the civilian side, and efforts undertaken through PESCO and the European Defence Fund on the military side, as possible frameworks for P&S initiatives in the foreseeable future. Finally, section 4 outlines key recommendations for policy-makers and stakeholders aiming at revitalising the discussion of P&S within the European framework.

Key policy recommendations

1. **Incentivise *ex ante* information sharing.** The reluctance of EU Member States to undertake cooperative programmes for capability development should be overcome through preliminary agreements on joint plans for investment and the allocation of resources. In this way, the fragmentation of efforts could be diminished and, as a consequence, P&S initiatives could increase their success rate.
2. **Further develop the Copernicus structure.** Appropriate data sharing and dissemination policies are required to develop Copernicus in order to contribute to the accomplishment of CSDP objectives. Along these lines, initiatives to further pool and share Earth Observation data at the European level, such as Eurographics and the Copernicus In-Situ Component, are welcome. In addition, public authorities and private actors may exploit P&S opportunities in this framework to foster the secure acquisition of Copernicus Sentinel platforms and to promote innovation.
3. **Relaunch the satellite communications sector.** Drawing upon the example of the Governmental Satellite Communications project, the use of communication services during peacetime and crisis needs to be enhanced through efforts mutually conducted by Member States. To this end, suitable platforms are required to enable a satisfactory exchange of military and civilian satellite communications.
4. **Avoid a duplication of effort.** Developments within the EU and other European multilateral frameworks should be continually monitored and coordinated in order to avoid a duplication of efforts in relation to programmes already started. For instance, P&S opportunities related to the Eurodrone initiative could be multiplied if it becomes a PESCO project with the potential involvement of other countries, supported by the European Defence Fund.
5. **Create a European pool of RPAS.** A pool of RPAS assets belonging to Member States should be managed by EU agencies according to the tasks to be fulfilled. For example, this pool could be at the disposal of the European Border and Coast Guard Agency (Frontex) for missions of border control and maritime surveillance. Following this logic, the European fleet of RPAS could also be made available for CSDP missions when deemed necessary and possible. At the same time, surplus capabilities in a country should be put at the disposal of other Member States to foster common operational use, as well as the development of synergies among different platforms.
6. **Establish mandatory pre-deployment training.** Mandatory pre-deployment training could represent a milestone for P&S, based on well-defined core capabilities and operational principles aimed at effective deployment. Training on the use of dual-use technologies and to ensure interoperability should likewise be considered. Similarly, standardisation in the recruitment mechanism is needed in terms of both formal qualifications and soft skills and to ensure effective handover processes in CSDP missions.

7. **Foster harmonisation of European training.** The EU should move from Europe's New Training Initiative for Civilian Crisis Management to a more formalised and harmonised European training system, for instance, coordinated by the European Security and Defence College. This shift could facilitate P&S in the areas of training, the pooling of experts and recruitment procedures.
8. **Standardise recruitment systems and rosters of personnel.** The current recruitment mechanisms and procedures feature a lack of standardisation that leads to inconsistent competencies on the ground and to limitations in P&S possibilities. Standardisation in recruitment mechanisms, following well-established advanced models from Member States such as Germany or Sweden, is needed in terms of both formal qualifications and soft skills. Pragmatic harmonisation and standardisation of existing rosters – or, ideally, the creation of a common roster or a virtual pool for recruitment at the EU level – would provide incentives for P&S in the force-generation process of CSDP missions.
9. **Harness the Civilian CSDP Compact.** The Civilian CSDP Compact represents a key opportunity to ensure the P&S of personnel, expertise and information across policy areas and actors at the EU level (the CSDP, Common Foreign and Security Policy, and justice and home affairs), as well as by Member States and in the field. Measures such as the country situational awareness platform and specialised teams are important to ensure a more responsive, flexible and timely civilian CSDP. Yet sufficient political, financial and operational incentives – ranging from the EU-level coordination of line ministries responsible for recruitment in capitals, to the identification of new funding schemes for training and deployment of civilian personnel, to the further improvement of recruitment and procurement mechanisms – must be provided in the framework of the Compact to overcome existing operational challenges.

1. INTRODUCTION: EVOLUTION OF THE POOLING & SHARING CONCEPT AND PROCESS

Pooling and sharing (P&S) is a multifaceted concept that refers to the idea of conducting coordinated capability development, aimed at avoiding cost duplication and enabling specialisation at the multilateral level within the EU. For P&S initiatives to be effective, concerted efforts in the phases of development, production and procurement require an *ex ante* harmonisation of research and development activities and investment plans, with a focus on requirements, standards and procedures. Overarching collaboration among countries throughout the whole process allows them to achieve higher potential returns in terms of complementarity and interoperability (Biscop and Coelmont, 2011; EDA, 2013; Mölling and Wissenschaft, 2012).

One of the main ideas behind it, besides avoiding a duplication of effort and therefore costs, is to produce a margin to be reinvested in addressing strategic shortfalls and in creating new capabilities (Biscop and Coelmont, 2011). Recent studies (Capasso, 2013; Overhage, 2012) have pointed out the potentially positive impact of effective P&S initiatives. However, although McKinsey (2017) argues that just eliminating procurement redundancies would already save up to 30% of annual defence expenditures, these calculations present a number of weaknesses due to the inconsistency of data about defence procurement across Europe.

At the EU level, P&S initiatives can be grouped into different categories according to the mechanisms and strategies adopted. Joint plans leading to the development/procurement of platforms and the establishment of multinational units, as well as sectorial specialisation in certain capabilities to be assembled in the final output, are all linked to the umbrella term of P&S (Marrone and Nones, 2013). A kind of *de facto* P&S mechanism has been in place for decades among European countries, through bilateral and/or multilateral agreements, the sharing of operational tasks and provision of complementary capabilities in the field of defence. Yet, these cooperative initiatives have always applied a **bottom-up** and project-by-project approach. As a consequence, their scope has remained limited to contingent opportunities, without a broader commitment to create or reinforce synergies and scale effects (Biscop and Coelmont, 2011).

A **top-down** shift in defence cooperation occurred in 2010, when European defence ministers in Ghent reached an agreement on a new cost-effective approach to cooperation on capability development under the Common Security and Defence Policy (CSDP) in order to reduce the burden of defence expenditures as a reaction to the global financial crisis (EDA, 2013). Thanks to the German–Swedish “Food for Thought Paper” on intensifying military cooperation and the so-called Ghent framework, Member States formally agreed on the goal to pool and share resources, and to align budgetary cuts and potential investment by sharing information regarding their national military capabilities (Ashton, 2010).

On that occasion, defence ministers agreed to create an inventory of projects suitable for implementing P&S solutions. Among these, the European Air Transport Command (EATC) is still regarded as a virtuous example to build upon (Marrone et al., 2018). The EATC, in fact, provides cost-effective solutions for the transport of equipment and personnel towards operational theatres

far away from the EU, thus supporting both civilian and military CSDP missions. Building on this initiative, it may accelerate cooperative efforts for a common operational use of aircraft. This could be advanced, for instance, by proposing a reciprocal guarantee of those platforms destined for the EATC Eindhoven hub, given that certificates of compatibility are still issued at the national level.

After 2010, P&S became a keyword for CSDP, as shown by the decision of the European Defence Agency (EDA) in November 2012 to pragmatically resort to a non-binding P&S Code of Conduct, agreeing on a set of guidelines to enable interoperability and cost effectiveness (EDA, 2012c). The emphasis was on “cooperation in research and technology”, including regulation, standards and certification. To accomplish these objectives, EDA Member States² identified the following means: the “expansion of national programmes” to other countries, the joint exploitation of existing capabilities and concerted protection from cuts interfering with P&S projects (EDA, 2012b). An element of novelty was the mechanism for implementation assessment introduced by the Code of Conduct (EDA, 2012b), consisting of an annual state of play based on inputs delivered by the Member States and the EU Military Committee. Two years later, P&S was still part of the CSDP political agenda, as demonstrated by the content of the “Policy Framework for Systematic and Long-Term Defence Cooperation” (Council of the European Union, 2014), stressing once again the need to move forward in the direction set with the launch of the P&S framework in 2010.

The vagueness of the P&S concept, reflected in the lack of a commonly agreed definition at the EU level, has the advantage of being projectable at different levels of ambition (Möckli, 2012). At the same time, this vagueness constitutes one of its weaknesses because it hampers the implementation of P&S initiatives, as well as assessments of results, failures and progress. Above all, in spite of the initial expectations, the implementation of P&S has been hindered by the lack of political will and commitment, as reflected in the EDA state of play report of 2015 (Mölling et al., 2015). In particular, the reluctance of EU countries to share information on defence capabilities and plans, along with their preference to retain national decision-making power over the use of their own resources, de facto constituted a halt to further progress on P&S at the EU level (Marrone and Nones, 2013; Mölling et al., 2015). Neither the prolonged economic crisis nor the subsequent budgetary constraints or cuts forced the national governments to pool resources with other European countries. When defence budgets in Europe began to rise slowly but steadily from 2014 onwards (Marrone et al., 2016a; 2016b), the new injection of resources into the defence field did not significantly alter the allocation of investments given that fragmentation at the national level persisted. In other words, the P&S concept did not turn into a European reality in times of budgetary austerity or in times of slightly larger defence expenditures. Such experience should add a note of caution when looking at more recent EU initiatives related to CSDP, in both the military and the civilian sectors. This is particularly the case for the development of joint capabilities by those Member States joining formats of differentiated integration aimed at a collaborative approach.

² EDA members include all EU Member States except Denmark. Moreover, the EDA has signed cooperation agreements with Norway and Serbia.

Since 2016, the debate about civilian and military capabilities for CSDP has made a leap forward with the EU Global Strategy for Foreign and Security Policy, presented by the High Representative/Vice President (HR/VP) Federica Mogherini (EEAS, 2016). On that basis, the defence sector has seen the activation of the Lisbon Treaty provisions regarding the Permanent Structured Cooperation (PESCO) by 25 Member States, as well as a new debate on a Civilian CSDP Compact in the area of civilian crisis management. In particular, PESCO is supported by two new developments: the new version of the Capability Development Plan recently agreed by EU Member States (Fiott, 2018) and the Collaborative DataBase (CODABA), including information and analysis of national plans in the defence sector. Similarly, the launch of a Civilian CSDP Compact has been preceded by the adoption of a Civilian Capability Development Plan in 2018. In this context, cooperation among Member States and EU institutions seems to be moving forward towards an integrated, modular and scalar approach to CSDP civilian and military capabilities, with the concept of “differentiated integration” (Pirozzi, 2017) brought onto the agenda.

The launch of PESCO and the preliminary talks on a Civilian Compact, coupled with the concept of ‘differentiated integration’, are likely to make formally obsolete the notion of P&S, which is indeed disappearing from EU documents and the relevant literature. Still, the aims of the new EU initiatives are substantially similar to those pursued with the P&S approach: to increase cooperation, to obtain better value for money in terms of capability developments and to move towards integrating the civilian and military capabilities of EU Member States. Since the goals remain similar to those of P&S, the implementation challenges to be addressed by these new initiatives are likely to remain mostly the same: the unwillingness of national governments to renounce full operational control over their respective capabilities; the non-sharing of information about procurement plans; the scepticism on formats that include too many Member States, which imply high transaction costs and a low level of ambition partly caused by divergences among countries’ strategic cultures and strategic interests; the insufficient financial incentives to carry out collaborative projects; and the modest levels in terms of the effectiveness/efficiency of the initiatives promoted.

That being stated, the next section deals with the practical applications of P&S, by underlining the advantages stemming from these initiatives in both the civilian and the military domains, particularly as regards the sharing of training facilities, the pooling of experts and recruitment procedures, as well as satellite systems and remotely piloted aircraft systems (RPAS).

2. P&S OPPORTUNITIES FOR CIVILIAN CAPABILITIES AND DUAL-USE TECHNOLOGIES

Although the P&S terminology is generally used with reference to the defence domain (Faleg and Giovannini, 2012), the relevance of this approach for the development of civilian capabilities should not be underestimated. In particular, the EDA has indicated the potential of P&S opportunities for those capabilities that may be exploited for both civilian and military tasks, including conflict prevention and peacebuilding operations (EDA, 2011) – hereafter ‘dual-use technologies’.

Among these, as already outlined by the former HR/VP Catherine Ashton at the European Council’s meeting in October 2013, platforms such as RPAS and satellite systems represent key areas for the implementation of P&S activities, having civilian and military applications (Drent et al., 2013). P&S can also be usefully applied to the professionalisation of personnel and force-generation processes for civilian CSDP, namely through the sharing of training facilities, the pooling of experts and recruitment procedures.

Building on the findings of Deliverable 2.1, “Procedures, Personnel and Technologies for Conflict Prevention and Peacebuilding: An Assessment of EU Member States’ Capabilities”, and Deliverable 2.4, “Dual-Use Technologies”, this section aims at highlighting opportunities to implement P&S in the above-mentioned sectors, with a view to deriving lessons learned and recommendations for current capability-development initiatives in both the military and civilian fields.

2.1 THE SHARING OF TRAINING FACILITIES, THE POOLING OF EXPERTS AND RECRUITMENT PROCEDURES

P&S could be applied to the areas of training, the pooling of experts and recruitment procedures. Training and recruitment are key resources for EU conflict prevention and peacebuilding. The EU has achieved significant improvements in these areas, especially related to CSDP missions, but gaps and critical issues remain to be addressed in the CSDP realm and in other frameworks (De Zan et al., 2016). In practice, training and recruitment are still fragmented and poorly standardised, while pooling has mainly taken place only in the case of experts. As a consequence, P&S is applied primarily at the operational level, and especially in the military domain (Toussaint, 2017).

An incentive to invest more in P&S in the area of training is that, unlike pooling at the operational level, training is considered by Member States to carry low political risk (IECEU, 2017a). At the same time, training cannot be considered a secondary issue: having well-trained personnel is clearly crucial to enhancing the full effectiveness of EU civilian capabilities and to fulfilling the objective of intervening in specific areas (De Zan et al., 2016). Another incentive for the P&S of training procedures is the fact that Member States are responsible for providing training to their own civilian personnel. However, recent research that looked at training initiatives conducted for 15 CSDP crisis-management missions revealed just two positive cases (the European Union Force (EUFOR) in the Central African Republic and the European Union Rule of Law Mission (EULEX) in Kosovo) for P&S at the level of crisis-management operations (Toussaint, 2017). Among these two cases, EULEX in

Kosovo is the only one with specific positive examples of sharing and pooling (the transfer of staff, mission support, standard operating procedures and sharing/joint use of resources) (IECEU, 2017a).

Some initiatives and facilities to support P&S for training are already in place and are mainly promoted by the European Security and Defence College and by Europe's New Training Initiative for Civilian Crisis Management (ENTRi). The European Union Police Services Training programme and the European Police College (CEPOL) could also be considered in this framework, referring specifically to training for police personnel. The European Security and Defence College, working with key guidelines such as the EU Training Policy for CSDP (Council of the European Union, 2017), could be a pivotal hub to coordinate the various initiatives and increase P&S.

From a P&S perspective, a point to highlight is that ENTRi courses are not designed to replace any existing courses that governments or institutions sending personnel organise in order to prepare individuals for possible deployment in crisis-management operations. Instead, ENTRi was created to foster the harmonisation of European and international approaches to capacity building, with a view to encouraging synergies between European and international institutions. ENTRi also cooperates closely with the three associate partners: the Organization for Security and Co-operation in Europe, the United Nations Department of Peacekeeping Operations and the European Security and Defence College. This synergic work could potentially represent a valuable model for P&S within and beyond the EU context.

In this framework, filling the training–recruitment gap should be a priority for the coming years to improve the effectiveness of civilian personnel, but currently the linking of training and recruitment is still a work in progress (De Zan et al., 2016). Without this link, civilian personnel may receive excellent training, but recruiters may not sufficiently take it into account, which is the case in some Member States. Mandatory pre-deployment training, fundamental for effective deployment on the ground, could also represent a milestone for P&S, based on well-defined core capabilities and operational principles aimed at efficient deployment.

While recruitment remains a key area for P&S, short rotation cycles are significant impediments, especially in combination with poor handover practices and lack of information sharing. In addition, standardisation in the recruitment of specific professional profiles – especially in terms of soft skills – remains challenging (IECEU, 2017b). Interestingly, EULEX demonstrates some good practices on recruitment, because the mission adopted standard operational procedures on recruitment that are outlined in a single document (IECEU, 2017b). This approach could facilitate P&S procedures and be considered for other missions.

It is worth noting that the personnel of a mission can be *seconded* or *contracted* (both internationally and locally) and that this has an impact on P&S. Secondment entails individuals being nominated by their respective Member States with the final decision on recruitment falling to the EU. In this case, the contributing state bears all personnel-related costs. By contrast, international contracted staff are recruited by each mission through an employment contract. The recruitment mechanism of seconded civilian personnel is therefore decentralised and conducted through Member States, but only some of them have developed rosters or similar mechanisms to select the

relevant experts within the requested timeframe. In addition, the rosters at Member State level are still disparate and the road to P&S through harmonisation and standardisation of existing rosters – or even to the creation of a common roster at the EU level – seems practicable, but long. Overall, if the number of international contracted staff is higher, there could be more room for sharing and pooling. P&S related to international contracted staff could also be facilitated by an EU virtual pool. This ‘talent pool’ of potential candidates (for instance, with predefined experience and mandatory training on their CVs) could constitute a reserve of qualified candidates when a position needs to be filled.

Finally, handover procedures represent an important factor related to P&S mainly in terms of the pooling of experts and recruitment, also due to the short rotations of CSDP missions and operations. Handover and takeover, however, could be part of the standard training, especially for senior and standalone positions. Thorough handover capabilities and valuable pre-deployment training could form solid pillars for CSDP missions. Handover processes and training are crucial not only for P&S, but also for the development of EU standards and practices, especially where there is national divergence (IECEU, 2017b).

2.2 SATELLITE SYSTEMS: EARTH OBSERVATION AND SATELLITE COMMUNICATION (SATCOM)

Satellite systems performing Earth Observation functions may be used for various purposes, including conflict prevention and peacebuilding (De Zan et al., 2016; Berglund and Bruckert, 2017). Although Earth Observation techniques were developed during the cold war essentially for military purposes, their application to the civilian domain has gained prominence in recent times. This is demonstrated by the commercial use of satellite technologies envisaged by the Dual-Use Regulation (No. 428/2009) for controls on dual-use items.³ Satellites generally have dual-use implications, except when the funding for capabilities comes from purely military sources (Bosc, 2015).

Satellite systems have been used in crisis-management operations for the purposes of conflict prevention throughout the last ten years. The EU has relied on downstream services ensured by civilian providers (both public and commercial ones), as well as on military-owned infrastructure (Barbieri et al., 2018). Cooperation among EU institutions, Member States and other bodies involved in research and innovation at the international level has been fostered by the EU Satellite Centre (EU SatCen). According to Paradiso (2013), the EU SatCen can be seen as the “joining link between commercial and EU civilian space programmes for Earth Observation, on one side, and EDA and other security and military users on the other”. The Centre has provided support to CSDP missions and operations through geospatial intelligence and related systems, for instance to the recent EU Monitoring Mission in Georgia.

³ See Council Regulation (EC) No. 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items, OJ L 134, 29.5.2009.

Moving on to analysis of P&S in the field of satellite systems at the EU level, while the Copernicus Programme was originally envisaged with a purely civilian orientation, it is possible to envisage its use in CSDP operations, and being suited to fulfilling military ends (Barbieri et al., 2018). Among the different services offered in the Earth Observation domain, those regarding security applications are deemed particularly relevant because of their contribution to supporting external action, as well as to maritime and border surveillance (Copernicus, 2017). Therefore, the commercial and public satellites of Copernicus may serve the purposes of CSDP operations, similar to how they are employed to furnish critical infrastructure analysis and a crisis situation picture (Barbieri et al., 2018). The imagery provided by Copernicus would support decision-making by providing unique geospatial intelligence and assisting the deployment of crisis-management operations in third countries whenever the level of threat requires intervention (Barbieri et al., 2018).

Nevertheless, for Copernicus to exploit P&S opportunities in peacebuilding and conflict prevention activities, an enhancement of its structure would be recommended. While a big leap forward would be required to improve the joint allocation of state-owned resources, appropriate data sharing and dissemination policies are required to develop Copernicus in order to contribute to the accomplishment of CSDP objectives. Along these lines, initiatives to further pool and share Earth Observation data at the European level are welcome, like Eurographics and the Copernicus In-Situ Component (GeoInformatics, 2017; Miglarese, 2018). In addition, public authorities and private actors alike may exploit P&S opportunities in this framework to foster secure acquisition of Copernicus Sentinel platforms and to promote innovation.

Besides Copernicus, another relevant example of European cooperation in this field is the Multinational Space-based Imaging System for Surveillance, Reconnaissance and Observation (MUSIS) programme. MUSIS is led by France and Italy and involves Belgium, Germany, Greece, Spain, Poland and Sweden. Although open to strong cooperation among participating countries, the programme relies on platforms developed nationally. Moreover, it does not foresee common operational exploitation of systems because synergies are limited to bilateral agreements with the two leading countries (France, Ministry of Armed Forces, 2016). The same logic underlies the development of the Helios 2 programme, to which Belgium, France, Germany, Greece, Italy and Spain are contributing through national capabilities (Marrone et al., 2018). In this case, P&S is pursued up to a level compatible with a certain degree of operational sovereignty by participating countries, thus limiting further development of these initiatives from a P&S perspective. Another notable case in this domain is the bi-national Optical and Radar Federated Earth Observation (ORFEO) programme. France and Italy have respectively decided to specialise in particular areas – France in optical sensors and Italy in Search and Rescue – to gain advantages from pooling efforts in a complimentary way (European Space Agency, 2017). Finally, national assets may be open to use by another European country via bilateral agreements, as occurs with the second generation of the Italian Cosmo-SkyMed system, at Poland's disposal after the signature of an agreement between the two countries in 2014 (Marrone et al., 2018).

Cooperation on Satellite Communications (SATCOM) was endorsed as one of the four main priorities for European collaboration at a 2013 European Council meeting (European Council, 2013a). It has

also been set out by the EDA as one of the eleven priority areas requiring development of P&S (Capasso, 2013). In the wake of bequests of the operations ATALANTA and EUFOR Chad–Central African Republic, the European Satellite Communications Procurement Cell programme was instituted. This programme has allowed France, Italy, Poland, Romania and the UK to “pool the procurement of commercial SATCOM capacity in order to reduce costs, promote ease of access and improve efficiency to deliver a better connectivity to armed forces” and between headquarters and operational theatres (EDA, 2012a). While specifically envisaged to address military goals, its use could be extended to civilian objectives, as well as to other actors like the EU SatCen (EDA, 2012a). In 2014, when Belgium, Finland and Luxembourg joined the initiative (EDA, 2014b), the project was renamed the ‘EU Satellite Communications Market’. It is remarkable that the services delivered by this new initiative have been used by five CSDP civilian missions, including the EU Capacity Building Missions in Niger (EUCAP Sahel Niger), Mali (EUCAP Sahel Mali) and Somalia (EUCAP Somalia), as well as by four CSDP military operations (EDA, 2018). In the latter category, requirements for providing SATCOM services were satisfied through the EU Satellite Communications Market for the first time during the European Union Training Mission in Somalia (EDA, 2015).

The relaunch of P&S in the field of satellite systems is heavily dependent upon the results of the Governmental Satellite Communications (GOVSATCOM) project, whose incumbent demonstration phase will allow the programme to be fully operational in 2020 (Pultarova, 2017). GOVSATCOM, sponsored by the European Space Agency, the European Commission and the EDA (Baumann, 2018), has been designed to allow participant Member States to pool and share national capabilities in order to enable communication services to be used in peacetime and crisis, as well as in conflict prevention and peacebuilding activities (European Space Agency, 2017). Therefore, GOVSATCOM embodies a real opportunity for and measurement of P&S ambitions in the domain of satellite systems.

Beyond these examples, P&S opportunities are present, albeit limited, for dual-use multinational programmes like Athena–Fidus (Access on theatres for European nations allied forces–French Italian dual use satellite) and the European Data Relay System, whose objective is to furnish governments with suitable platforms for the exchange of military and civilian communications (Pultarova, 2017). Progress in terms of P&S is also foreseeable in the Sicral 2/Syracuse initiative for the development of military satellite communications, in light of the expertise of the Thales Group, the main industrial partner of the programme, in both civilian and military missions (Thales Group, 2015).

2.3 REMOTELY PILOTED AIRCRAFT SYSTEMS

Although RPAS procured by European armed forces are designed for the fulfilment of military objectives, they can contribute to detecting data and distributing information, thus broadening their use to both conflict prevention and peacebuilding operations (De Zan et al., 2016). At the European Council meeting of 15 October 2013, the then HR/VP Catherine Ashton highlighted that RPAS “offer a broad spectrum of capabilities that can contribute to various aspects of EU-led military and civilian operations”, thus paving the way for their use in civilian missions (European Council, 2017).

Following this meeting, the European Union Military Committee formulated the “Concept for the contribution of remotely piloted aircraft systems to EU-led military operations”, which addressed dual-use opportunities such as Search and Rescue, cargo and logistic replenishment, meteorology and navigation situational awareness, to be exploited by RPAS with regard to such operations (Barbieri et al., 2018).

Thanks to their persistence, disposability and flexibility (Sartori et al., 2016), RPAS have frequently been employed in crisis-management operations, although operational deployment in civilian CSDP missions has not taken place yet. The use of RPAS had been considered a possible approach only for the European Union Monitoring Mission in Georgia in 2008. However, the sensitive political situation eventually prevented the actual deployment of RPAS in the absence of an *ex ante* agreement between the EU and Georgia. At present, military RPAS operate outside the European airspace and generally are not subject to civilian regulations, except for integrated operations with general air traffic where compliance is required (Barbieri et al., 2018).

P&S opportunities for this capability area are rather limited in the EU context because of two main obstacles. The first is the wide variety of platforms nationally owned, and the second, linked to the previous one, is Member States’ reliance on platforms developed outside Europe. Accordingly, European companies so far have not been able to compete with US or Israeli suppliers in the development of RPAS (Davis et al., 2014). For this reason, EU countries still rely on different foreign platforms. For instance, the US has signed contracts for the delivery of MQ-9 Reapers to France, Predators to Italy and Protectors to the UK, while Germany is using Heron-1 systems manufactured by Israel Aerospace Industries (Marrone et al., 2018).

Against this backdrop, at the multinational level, the Eurodrone programme, involving France, Germany, Italy and Spain, is gaining prominence in this capability area because it aims at developing a European RPAS able to undertake missions at medium altitude and with long endurance. The programme is transitioning from a definition study to the development of prototypes, with a view to procurement in the mid-2020s. Before the operational availability of this dual-use platform, there is room for P&S initiatives, especially after the assignment of the two-year definition study to a consortium constituted by the companies Airbus Defence and Space, Dassault Aviation and Leonardo (EDA, 2016). Still, for cooperation to be effective in this framework, the ambition to reach full strategic autonomy in both political and industrial terms and it needs to be coupled with economic benefits. The latter would mainly result from economies of scale, foreseeable through contributing to common resources belonging to the four participating countries and others potentially interested in joining the programme. For this reason, concrete results will strictly depend on the outcome of negotiations that the four countries are currently conducting about the division of labour (Della Maggesa, 2018b).

It is important to bear in mind that the recent developments within the EU framework need to be continually monitored to avoid a duplication of efforts in relation to programmes already started. For instance, P&S opportunities related to the Eurodrone initiative could be multiplied if it becomes a PESCO project, with the potential involvement of other countries. It would also significantly benefit from the support of the European Defence Fund (Himrich, 2017). Conversely, the ambitions

of the programme would be drastically reduced in the unlikely event of an alternative PESCO project on RPAS being launched, since participating Member States would be forced to decide where to allocate resources, capabilities and time. In other words, the very same logic of P&S relies on the presence of only one European cooperative programme to develop RPAS capabilities for the full range of CSDP missions and operations.

At the operational level, although RPAS have never been exploited during CSDP civilian missions (Barbieri et al., 2018), opportunities for P&S may be investigated in the future. These military platforms are, in fact, endowed with the capacity to be interoperable with civilian ones, particularly with reference to police and security forces, as well as border control and law enforcement agencies. To this end, programmes agreed through the European Defence Fund may be complemented by training activities conducted by the European External Action Service (EEAS) with the goal of enhancing the interoperability of dual-use platforms (Barbieri et al., 2018).

Another idea would be the creation of a European pool of RPAS through assets and resources belonging to Member States, to be managed by EU agencies according to the tasks to be fulfilled. One such agency could be the European Border and Coast Guard Agency (Frontex), for missions of border control and maritime surveillance. Following this logic, the European fleet of RPAS could also be available for CSDP missions when it is deemed necessary and possible (Drent et al., 2014). This would call for training programmes aimed at preparing personnel to work with dual-use technologies, particularly regarding civilian–military cooperation, as a best practice to implement. The work of the Italian centre of excellence for RPAS located at the Amendola Air Force Base, which trains Italian armed forces, security officials and personnel from the civil protection departments, is a notable example of concerted efforts between military and civilian forces to which the EU may refer when devising its training policy (Barbieri et al., 2018).

3. FRAMING P&S WITHIN CURRENT EU DEVELOPMENTS (THE CIVILIAN CSDP COMPACT, PESCO AND EUROPEAN DEFENCE FUND)

Building on the EU Global Strategy for Foreign and Security Policy put forward in June 2016 (European Commission, 2016), the HR/VP Federica Mogherini presented in November 2016 an Implementation Plan focusing on Security and Defence. In particular, the HR/VP asked the EU Member States “to agree to review the structures and capabilities for the planning and conduct of CSDP Missions” (Council of the European Union, 2016: 5). On this basis, in November 2017 the Council invited her to “present the next steps in the development of civilian capabilities so that a civilian CSDP Compact can be agreed by 2018” (Council of the European Union, 2017: 9). Drawing on a Concept Paper on Strengthening Civilian CSDP presented in April 2018 (Council of the European Union, 2018), a new Civilian Capability Development Plan has been adopted in September 2018 and Member States will be invited to commit resources based on the capability gaps identified.

The Civilian CSDP Compact is aimed at reforming civilian CSDP in line with the dramatic transformation of the strategic environment over the past years, the evolution of crisis-management priorities such as police, rule of law and civilian administration, the upgrade in the connections between the military and the civilian dimensions, and the intensification of challenges at the internal–external nexus. The capability needs assessment that will accompany such conceptual work is a highly relevant opportunity to consider P&S options.

One of the main windows of opportunity is offered by the need to promote a more coherent use of EU policies and instruments to tackle challenges at the nexus between internal and external security. The main areas of application for P&S would be maritime security, irregular migration and its security-related challenges, countering terrorism and radicalisation, border management and countering organised crime. In particular, the sharing and pooling of personnel, expertise and information could be implemented among actors of the Common Foreign and Security Policy, including the CSDP, and in the EU policy framework of justice and home affairs (JHA). This could also include other EU actors, be it at the EU level, in Member States or in the field (i.e. the current arrangements between the EU Border Assistance Mission in Libya, Frontex and Europol). One of the actions included in the Civilian Capability Development Plan is the creation of a country situational awareness platform to be set up in all theatres where civilian CSDP missions are active. This platform, coordinated by the head of the EU Delegation, would bring together Member States on the ground, EU actors and JHA agencies. Situational awareness, information-sharing and joint programming could be part of its set-up, thus facilitating early warning.

The pooling of experts to be employed in EU missions – as well as the necessary logistics to equip them and ensure rapid deployment to the mission area – are key factors in the development of responsive, flexible and timely civilian CSDP. The EEAS and the Commission are in the process of implementing crucial measures, such as the core responsiveness capacity, consisting of an enhanced Mission Support Platform as well as resources placed in existing missions, to be complemented through rapidly deployable assets and planning from Member States (Council of the European

Union, 2017: 10). In addition, as of June 2018, a dedicated warehouse (Warehouse II) will improve the logistical support to the ten existing civilian CSDP missions and other operational actions as foreseen by Article 28 of the Treaty on European Union and EU special representatives⁴ (EEAS, 2018a).

Where agreed, the core responsiveness capacity should be accompanied by specialised teams and multinational formations, such as the European Gendarmerie Force (Council of the European Union, 2017: 10). The idea to set up specialised teams for CSDP missions, composed of pre-identified and trained civilian experts, is not new. The creation of civilian response teams was included in the 2008 Civilian Headline Goal, but their employment has been limited. In the new Civilian Compact, they could be focused on tasks related to the internal–external security nexus and be employed in modular and scalable missions. Nevertheless, the challenges that impeded the full operationalisation of crisis response teams are likely to remain the same. These challenges need to be addressed in the Compact, namely the difficulty of making multinational, ready-made packages compatible with the force-generation and implementation processes of civilian CSDP and ensuring adequate financial resources. Finally, similar to PESCO, the Civilian Compact will envisage regular reporting on commitments, which will enable the drawing of lessons and sharing of best practices that are useful for other initiatives in the P&S field.

With regard to PESCO, it does represent an institutional pathway for increasing defence cooperation and integration among EU Member States (Marrone, 2017). It is rooted in the Lisbon Treaty legal framework, and envisages a significant role for the HR/VP, for example, in terms of chairing and monitoring respect for the agreed commitments, as well as for the EDA to act as the PESCO Secretariat (EEAS, 2018c). At the same time, the initiative sees national governments in the driving seat since they are responsible for proposing projects for capability development (Novaky, 2018). These projects are meant to pool and share capabilities among those participating Member States willing and able to do so on an ad hoc basis.

In 2017, the first round of 17 projects was endorsed for PESCO. They see a varying degree of participation, as well as a modest commitment of resources. These projects cover very different aspects such as cybersecurity, the mobility of military equipment across Europe, the education and training of armed forces, as well as the development of niche military capabilities such as radio and armoured vehicles (European Council, 2018). More importantly for the purposes of this paper, they do not deal with satellite systems nor with RPAS, and generally speaking do not involve dual-use technologies. However, the variety of projects and flexibility shown by the mechanism pave the way for a broader use of PESCO in order to support CSDP, and possibly also conflict prevention and peacebuilding (Wolfstädter and Kreilinger, 2017). For example, since one of the projects already deals with certain aspects of military education, it could be developed into a project for common

⁴ With a three-year budget of over €52 million, the warehouse will acquire, store, maintain and make available new and used items of equipment and assets. These include over 600 soft-skin vehicles, up to 1,600 laptop computers, transport services equivalent to over 800 shipping containers and many other essential assets, such as medical or personal protective equipment, as well as provision of support services.

training of personnel using dual-use technologies like RPAS with a view to improving civil–military cooperation, also drawing from the aforementioned Amendola model.

Moreover, one of the PESCO pros is its regular iteration. Each year Member States are tasked with providing new projects, thus presenting a yearly window of opportunity to exploit this pathway for new cooperative initiatives among Member States (EEAS, 2018b). Another advantage is the regular reporting on ongoing projects, such that lessons and best practices useful for other initiatives can be shared.

In relation to the European Defence Fund, the budgetary allocation for the 2018–20 period sees €580 million for research and development activities in the defence field (Marrone, 2017). In this context, some projects have already been awarded while others are going to be financed in the coming months. Among the former, the project OCEAN 2020 aims at a better integration of naval units, aircraft and RPAS in the maritime domain (Della Maggesa, 2018a). This project has the potential to develop dual-use technologies such as RPAS, and could be exploited for greater civil–military cooperation.

Generally speaking, projects submitted for financing by the European Defence Fund could be beneficial for developing tools for CSDP, conflict prevention and peacebuilding, provided a greater awareness of synergies and complementarities is spread across various actors, stakeholders and end-users. This is particularly true looking towards the middle to long term. If the proposal currently agreed by the European Commission, European Parliament and European Council is implemented, the budgetary line in the next Multiannual Financial Framework will see €13 billion allocated to research and development of technologies in the defence field (European Commission, 2018: 76), which may well have a dual-use character.

4. CONCLUSIONS AND POLICY RECOMMENDATIONS

In sum, opportunities for P&S in the domains of training and recruitment, satellite systems and RPAS, although not exploited so far and lagging behind expectations, are still present and may be pursued in the foreseeable future.

Concrete possibilities for P&S of dual-use capabilities may arise in operational theatres like the Republic of Mali nowadays, where civilian and military missions are simultaneously deployed (Poli, 2018). Still, for synergies to be fruitful and efficient, two crucial issues need to be considered. On the one hand, putting in common assets for joint utilisation may imply less political autonomy and sovereignty of a country over its own resources, as well as more stringent commitments not to abandon multilateral cooperation when crises arise. In the hypothetical scenario in which assets belonging to one country are temporarily unavailable for common activities, the overall performance of P&S initiatives would be undermined. The situation could even be made worse if the bone of contention relates to a key capability, putting at risk cooperative efforts (Marrone and Nones, 2013). On the other hand, for P&S opportunities to be seized at the EU level during operations and missions – as in the European Union Military Operation in the Central African Republic – joint training activities among Member States need to be prioritised (IECEU, 2017a). To this end, surplus capabilities in a country should be put at the disposal of other Member States to foster common operational use, as well as the development of synergies among different platforms (Drent et al., 2013).

In this context, the following policy recommendations are aimed at extending the logic of P&S in light of recent and relevant EU initiatives like the Civilian CSDP Compact, European Defence Fund and PESCO.

1. **Incentivise *ex ante* information sharing.** The reluctance of EU Member States to undertake cooperative programmes for capability development should be overcome through preliminary agreements on joint plans for investment and the allocation of resources. In this way, the fragmentation of efforts could be diminished and, as a consequence, P&S initiatives could increase their success rate.
2. **Further develop the Copernicus structure.** Appropriate data sharing and dissemination policies are required to develop Copernicus in order to contribute to the accomplishment of CSDP objectives. Along these lines, initiatives to further pool and share Earth Observation data at the European level are welcome, like Eurographics and the Copernicus In-Situ Component. In addition, public authorities and private actors may exploit P&S opportunities in this framework to foster the secure acquisition of Copernicus Sentinel platforms and to promote innovation.
3. **Relaunch the satellite communications sector.** Drawing upon the example of the GOVSATCOM project, the use of communication services during peacetime and crisis needs to be enhanced through efforts mutually conducted by Member States. To this end, suitable platforms are required to enable a satisfactory exchange of military and civilian communications.

4. **Avoid a duplication of effort.** Developments within the EU and other European multilateral frameworks should be continually monitored and coordinated in order to avoid a duplication of efforts in relation to programmes already started. For instance, P&S opportunities related to the Eurodrone initiative could be multiplied if it becomes a PESCO project with the potential involvement of other countries, and supported by the European Defence Fund.
5. **Create a European pool of RPAS.** A pool of RPAS assets belonging to Member States should be managed by EU agencies according to the tasks to be fulfilled. For example, this pool could be at the disposal of Frontex for missions of border control and maritime surveillance. Following this logic, the European fleet of RPAS could also be made available for CSDP missions when deemed necessary and possible. At the same time, surplus capabilities in a country should be put at the disposal of other Member States to foster common operational use, as well as the development of synergies among different platforms.
6. **Establish mandatory pre-deployment training.** Mandatory pre-deployment training could represent a milestone for P&S, based on well-defined core capabilities and operational principles aimed at effective deployment. Training on the use of dual-use technologies and to ensure interoperability should likewise be considered. Similarly, standardisation in the recruitment mechanism is needed in terms of both formal qualifications and soft skills and to ensure effective handover processes in CSDP missions.
7. **Foster harmonisation of European training.** The EU should move from ENTRI to a more formalised and harmonised European training system, for instance, coordinated by the European Security and Defence College. This shift could facilitate P&S in the areas of training, the pooling of experts and recruitment procedures.
8. **Standardise recruitment systems and rosters of personnel.** The current recruitment mechanisms and procedures feature a lack of standardisation that leads to inconsistent competencies on the ground and to limitations in P&S possibilities. Standardisation in recruitment mechanisms, following well-established advanced models from Member States such as Germany or Sweden, is needed in terms of both formal qualifications and soft skills. Pragmatic harmonisation and standardisation of existing rosters – or, ideally, the creation of a common roster or a virtual pool for recruitment at the EU level – would provide incentives for P&S in the force-generation process of CSDP missions.
9. **Harness the Civilian CSDP Compact.** The Civilian CSDP Compact represents a key opportunity to ensure the P&S of personnel, expertise and information across policy areas and actors at the EU level (the CSDP, Common Foreign and Security Policy, and JHA) as well as by the Member States and in the field. Measures such as the country situational awareness platform and specialised teams are important to ensure a more responsive, flexible and timely civilian CSDP. Yet sufficient political, financial and operational incentives – ranging from the EU-level coordination of line ministries responsible for recruitment in capitals, to the identification of new funding schemes for training and deployment of civilian personnel, to the further improvement of recruitment and procurement mechanisms – must be provided in the framework of the Compact to overcome existing operational challenges.

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