ANNEX C

EURODEFENSE

EDTA Federation of European Defence Technology Associations

Clustering the EDTIB

The reform of juste-retour, compensation and Industrial participation

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The Ukraine War has seriously added relevance to questions about effective ways re-shaping the defence industry. This is especially true in the EU where the traditional focus on national industry through economic offset and industrial participation has led to scattered development and costly production lines.
Current policies of European Member States require compensation or industrial participation for the Defence industry when purchasing capabilities abroad. These are beneficial for the national industry of the Member States in the short and medium term, but complex and a cost driver for industry. In the long term this is not the best economic way forward for the European Union as a whole. National security is still used as main reason for these policies, but interdependence in the EU has risen to a level that strategic autonomy of a single Member State is impossible. Even when export boosts the Member State industry, a certain level of dependence on (sub)systems from other Member States cannot be avoided. Therefore the EU policy is aimed at achieving strategic autonomy of the European Union. Eurodefense recommends the European Commission as well as governments and industries of all Member States to cooperate to reach this goal.

This document broadly outlines a potential future to improve the effectiveness of the Defence industry market from an economic, political and military perspective. To reach this goal it is important to change the current market distorting practice of compulsory offset or industrial participation into a more open market. The implementation of the European Defence Industry Strategy (EDIS) and European Defence Industry Plan (EDIP) are an excellent opportunity to reach this goal.

For this purpose, a new structure is necessary to recognise European companies and allow them to participate within Europe and for exports on an equitable basis. This could be achieved by concentrating Defence capability development in a limited number of clusters[1] in Europe. Each 'cluster' dedicated to a specific defence technology area consisting of European established enterprises and institutes reinforcing each other. A limited number of clusters per technology area, strategically spread across the continent. This structure limits the abundance of different systems in Europe, supports harmonisation of requirements and technical standards and supports international cooperation. However, political budget planning and procurement procedures needs to be aligned as well to fully profit of these improvements. For this reason, we recommend to develop an EDTIB Act for this new cluster structure.
Similarly, we recommend to strategically spread production throughout Europe in order to allow continued manufacturing in times of crisis and war. This concept of clusters is flexible to allow easy scale-up and scale down production whenever required. This will also smooth out price fluctuations.

This new concept of technology clusters consisting research, development and production facilities, strategically spread across the European continent, could be a new and modern policy for European defence industry. A policy that recognises the needs of Member States and companies, and is beneficial for all of us. In peace and war. This should lead to a more stable and prosperous defence-industry and a better long term focus of Member States and the Commission on clearly defined areas of defence-technology and production.

[1] The term *cluster* is used in this document to indicate a group of organisations that have some form of cohesion. Other terms used in society are hub, campus, valley, region, hotspot, centre, ecosystem, delta, etc.

Introduction

After the second world war, in 1948, European nations purchased large quantities of US combat systems using Marshall Plan funds.
Officially these funds were made available: *To promote world peace and the general welfare, national interest, and foreign policy of the United States through economic, financial, and other measures…..*

By 1952, when the Marshall Plan funding ended and nations started to purchase combat systems using their own budget, they desired benefit for their own economy as well. The *compensation or offset* requirement was born. Compensation for combat system purchases in a foreign nation began in the form of contributions to the general economy. Purchases of tons of flower bulbs from the Netherlands are a well-known example, in particular in Washington DC. Gradually, European nations started to increase their demands. The principle of *Juste retour* was born.

1. Historic evolvement of offset requirements

Step by step offset was demanded in the form of contracts in technological products, high tech products and later defence related technological products. Compensation was required to be up to the same value as combat systems purchased in the US and other foreign countries. The US government did not allow compensation in all cases, but procedural detours turned out to be possible. Over time rules were refined and multipliers or reduction factors introduced based on level of technology, involvement of development items, etc. To overcome the limitations of hard to find compensation within one purchase the method sometimes was broadened to *global balancing*. This made it possible to compensate within a certain timeframe or within multiple contracts for a major project. In particular OCCAR promotes this system.
Where national governments strongly believed in the benefits of *juste retour* to stimulate their own industry, others referred to the principle as protectionism: an obsession[2] or a monster[3] undermining the free market.

The most recent evolution of offset since 2000 was *Industrial Participation*, a form of compensation within one procurement programme. Partial development or production of the purchased product has to be performed by a company within the procuring nation. The F-35 aircraft procurement is an important example of this method.

2. Downsides of current policies

Industrial participation as most used current offset policy also has its drawbacks. On the short and medium term this policy is definitely beneficial for the economy of the procuring nation. It also leads to technology- and production transfer from companies in other nations to the procuring nation. This allows local companies to grow and compete in similar technologies as available abroad.

[2] Report by the European Parliament Policy Department for Budgetary Affairs (Feb 2020): https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/648763/IPOL_ATA(2020)648763_EN.pdf

[3] Report by the Vienna Institute for International Economic studies (May 2008): https://wiiw.ac.at/facing-the-monster-juste-retour-on-the-net-financial-position-of-member-states-vis-a-vis-the-eu-budget-and-a-proposal-for-reform-p-456.html

Is that beneficial within the European Union, or does it hinder quality and competition by selecting contractors based on location rather than best in class or best value.

From a technology development perspective, technology transfer to purchasing Member States to further develop these technologies causes dilution of excellence, as concentration would be much more effective to excel and compete on a global level. Furthermore, this type of technology transfer has its limitations. Developing companies and governments will never share their core innovations with a potential (future) competitor. For this reason, license limitations are often imposed by the original manufacturer or government. This means that spin-off developments cannot be exploited technologically and/or financially.
On the longer term it also causes divergence in development and consequently leads to the abundance of different systems we currently have in Europe. From a production perspective, technology transfer to enable local production counteracts the much desired economy of scale and causes considerable extra costs. Additional production facilities need to be built locally and actual production of similar equipment is scattered over several factories.
While some level of production dispersion is useful from a strategic perspective, the scattering caused by *industrial cooperation* generally does not meet strategic needs.

Multinational contracting is required by the European Commission when making use of PESCO or EDF. A minimum of three companies in three nations must participate. The goal is that these requirements improve cross border cooperation. Unfortunately in case of EDF, the European Commission cannot demand continued cooperation beyond their contract, although an increased funding rate is offered to EDF-projects developed in the context of the Permanent Structured Cooperation (PESCO). This causes technological activities and contracts between companies to be designed in a manner that cooperation can be abandoned upon finalisation of the work contracted by the European Commission. Other methods are needed, that fit better in the economy.

Conclusion is that the juste-retour policies of Member States easily lead to further scattering and dilution of defence technology development. It also reduces opportunities to gain technology excellence. This is not beneficial for the European Defence Technological and Industrial Base (EDTIB).

3. Broader Economy and Defence

In most other areas of the market the 'juste-retour' type of compensation requirement is unknown or abandoned long ago. Where it still exists efforts are ongoing[4] to abandon this policy.
In most sectors of the economy open market competition with some initial support of regional government has led to regional concentration of complementing industries and suppliers. Often around a major OEM or a university. Examples of these *clusters* are well known from the European automotive sector, pharmacy and many others. Clusters consisting of European established enterprises and institutes reinforcing each other.
Regional clusters benefit from easier cooperation, transportation, logistics, personnel exchange and other advantages of short distances. Not all of these can be replaced by IT and fast logistics. As economically best practice, where high tech education, research, OEMs and SMEs thrive, this model is also promoted by the European Commission when new technologies emerge, like in the energy transition.

[4] Efforts are ongoing by the European Commission and the European Parliament for other sectors in the economy. See: https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/648186/IPOL_BRI(2020)648186_EN.pdf.

However, the defence systems market is not an open market and behaves differently from other markets. Governments are the only eligible client for defence industry and politicians do not like tax money for Defence to flow out of their nation. Nevertheless, these Member States do like flow-in of foreign nations' export money to purchase defence capabilities, often backed by their governments and (partly) State owned OEMs. This creates a hard to solve unlevel playing field within the European Union.
However, politicians should recognise that the military only wants to have the best materiel fast to execute their constitutionally task effectively as required by the same politicians.

In recent years the European Council and European Commission try to improve the economic efficiency of the EDTIB. The EU is not bound by cross border financial limitations and national industry. This led to several programmes to stimulate involvement of SMEs and cross border cooperation of companies. An example is the European Defence Fund (EDF), which is structured similarly to the more general Horizon Europe programme. Several instruments like the Strategic Compass have tried to set new standards. However, until today, these programs have limited results in achieving a more efficient EDTIB. Would it be possible to find new ways that are more successful? For inspiration the paper *Unlocking European Defence – In Search of the Long Overdue Paradigm Shift*[5] could be helpful.

Apart from political and economic issues, two more issues are relevant for the Defence sector that are not important to other sectors of the economy.
(1) Production of combat systems and consumables (munition and spare parts) cannot be concentrated one or just a few locations. During tension and war, it would be easy for an enemy to eliminate all production. It is important that continued defence production is possible in several locations.

(2) During prolonged peacetime technology development and production has to continue on a lesser scale. But if necessary it must be scaled up rapidly. The armed forces should not end up with a lack of systems and supplies when they are needed. Building production sites takes too long to bridge the gap between demand and delivery in times of tension and war.
How could this be achieved most effectively?

4. Potential way forward for governments and Defence industry

Find ways to improve *industrial participation* based on industry strength instead of on compulsory contract share between companies. Global balancing as used by OCCAR is a step ahead, but more advanced methods are needed. Methods that are better aligned with the objective to have military equipment fast, affordable and effective.

Like in other branches, the efficiency of the Defence industry would improve when a *cluster* structure would grow for our industry. Not for the defence industry as a whole, but for technologies related to existing and new major companies in a sub-sector. Examples are naval shipbuilders, missile manufacturers, but also simulators and CBRN related companies.

In automotive, pharmacy and aerospace, SMEs clustered around a OEM have proven to be the most suitable and stable structure. Startups and SMEs are attracted by the needs of the OEM and feed the

[5] Arnout Molenaar, IAI paper 21, 01 Jan 2021, https://www.iai.it/sites/default/files/iaip2101.pdf.

major company with technology and business. In case of the EDTIB these clusters need not to be regional per se. A cluster could encompass several nations.

Still, we recommend to spread defence related research, development and production activities over the European continent. A smart policy is necessary to define an economically and military effective spread of clusters over our continent. All Member States should participate.

The European Commission and Member States could stimulate these clusters instead of the current programmes.

In the next paragraph a potential stable end state of the EDTIB is described. This end-state could be reached in parallel and with support of the European Defence Investment Plan (EDIP). The route from today to this end state is described in the paragraph following the desired end state.

5. Desired stable end-state for the EDTIB

Defence requires a fast responding industrial base maintaining a high technology level and production capacity in multiple technology areas. Spread over Europe for economic and military reasons. Economic, political and military requirements are paramount to reach this necessary end-state. For this reason Europe needs a variety of clusters for research, development and production of Defence systems.

A. From an economic perspective, an end state for the EDTIB should consist of capability development clusters (industry-clusters of complementary technology) benefiting from regional or international advantages. Think of naval shipbuilding, aircraft and automotive, but also guns, missiles, ammunitions, CBRN, etc. However, it is important to stimulate reasonable competition in science, technology and business. As end-state, several (3-5) clusters located in Europe for a particular technology area would be effective. Several, because a military strategic autonomous Europe needs back-up capacity as well. We recommend to spread these clusters geographically over our continent.
   As example: 5 naval shipbuilding clusters, 3 aircraft technology clusters, 5 land vehicle clusters, etc. Similar sets of clusters for ammunition, small arms, guided missiles, CBRN, space, cyber, Electronic Warfare, Artificial Intelligence. etc. More than enough to meet Member State wishes to accommodate one or more of these clusters. Within this concept industry specialism, industry diversity and industry competition could thrive more effectively compared to the current national influence and interests.

B. From a political perspective, national influence in combat system manufacturing and a fair use of taxpayers money are the most important factors. However, politicians also are obliged to protect their nations' citizens by providing the armed forces with the best possible equipment for a reasonable price.
   Nowadays, most European nations understand they are unable to unilaterally develop and manufacture systems in all warfare domains. They cannot be strategically independent and have to rely on partner nations and companies throughout the western hemisphere.
   To warrant a fair and efficient use of taxpayers money, we recommend to clusters distribution to match with defence expenditures in Member States. This is in fact the final step in *juste retour*, beyond *global balancing*[6] as promoted by OCCAR. This final step provides a long term fair

[6] As promoted by OCCAR. See: https://www.occar.int/policies-methods

and competence based distribution when each EU nation spends at least 2% GDP on Defence and at least 20% of their budget on investments.
This distribution of clusters would also be useful when common (central European Commission or EDA) procurement would become the norm.

C. From a military perspective, it is important to spread strategically technology development and manufacturing throughout the continent. This would reduce the risk of interruption of production in times of war and tension. Economic rules are relevant, but effectiveness is crucial to defend democracy and nations' citizens.
As technology and systems development is an intensive process a few clusters or centres of excellence suffice as demanded by economic and political requirements.
For production of consumables and second line maintenance more sites are necessary to avoid logistic issues in war time. The best option would be to pursue relatively generic manufacturing facilities that can produce and service as many different technologies, products and brands as possible. Preferrable under licence to quickly ramp up production or to easily swap production sites. In times of peace the various facilities can support production and maintenance contracts and also manufacture dual use products. To ensure continued availability in times of tension and war, we recommend that Member States or the Commission be authorised to lead and control activities.

D. From a logistics perspective, the number of technology development clusters should be small to combine knowledge and to reduce diversity. The present divergence after all, leads to the current plethora of differences in systems that are often not interoperable. Having fewer clusters and variety of solutions will also stimulate harmonization of requirements and technical standards. However*, to fully profit of these improvements, political control of budgets and procurement procedures needs to be aligned too*.

6. Route to a stable end-state

In the European free market economy it is not possible nor desirable to order companies to be established or closed. Open competition and stimulation by tax- and subsidies are the norm. Introducing this norm into the defence industry will be a step ahead towards a more free market for the sector.

The following steps could lead towards the end state of military technology and production oriented clusters and a solid number of production and maintenance facilities. Each step needs to be thoroughly considered, developed and detailed.

A. Technology development cluster identification and stimulation
As mentioned 3 to 5 development clusters for each technology area would be reasonable from scientific, technological and economic perspective. As mentioned before: ships, aircraft, vehicles, ammunition, small arms, guided missiles, CBRN, space, cyber, Electronic Warfare, Artificial Intelligence, etc. This could lead to quite a number of clusters throughout the EU.
It is important to carefully select and stimulate clusters. We recommend to base selection on existing excellence and geographical cohesion. Stimulation of cluster formation and continuation could be done through the EDIP, EDF and other EU instruments, as well as national contributions and targeted tax benefits. Stimulation of companies in clusters would replace the current general EU and national instruments for businesses to cooperate throughout the Union.

The following steps by the European Commission could seed and fertilise cluster formation:

1. Identify a taxonomy of related technology areas relevant for capability development and production. Think of ships, aircraft, vehicles, ammunition, small arms, guided missiles, CBRN, space, cyber, etc.
2. Support existing regional industry clusters matching one or more technology areas. There is no reason to break up existing thriving clusters. However, it is important to have relevant universities, R&D organisations, investors for start-ups and SMEs, development and production facilities involved in each cluster.
3. Identify lacking clusters, unbalanced level of capabilities and unbalanced distribution over the continent. If necessary select logical locations for new clusters based on technological capabilities, matching national defence expenditures and other factors.
4. Support new industry clusters to fill in lacking capabilities, reduce costs, improve effectiveness.
5. Stimulate R&T and capability development in these clusters rather than the current rule of the European Commission requiring a minimum of 3 companies in 3 nations. This could be done by targeted subsidies (like EDF, EDIDP, EDIP, etc.).
6. The VAT incentives of the EDIP are beneficial for governments. To stimulate companies to adapt to the proposed cluster structure targeted tax benefits relevant for businesses could be introduced. For example a profit deductible for Defence related R&D and product development.
7. Introduce a ban on offset[7], compensation, juste retour, compulsory industrial participation and other market influencing mechanisms once stimulation for a particular cluster comes into effect.
8. Insist, also on nations not involved in a certain cluster, to accept, operate and maintain a level playing field policy and allow this cluster structure to not focus on a national DTIB philosophy. After all, the mechanism described in para 5 should be a two way street.
9. Establish this cluster structure for Defence technology development in an EDTIB Act. Only an Act would constitute a sufficiently solid foundation for a new level playing field.

B. Manufacturing clusters identification and stimulation

As mentioned, from a military perspective it is important to have multiple manufacturing and maintenance sites available. This allows to quickly ramp up production when needed and enable second line maintenance in several areas of the European continent. In peacetime these facilities can focus on manufacture and repair civil or dual use products. This will be easy to arrange in some cases (e.g. shipbuilding, communication equipment), but complex for other technologies (e.g. ammunitions and missiles). This concept allowing flexible scale-up and scale down production when needed will also smooth out price fluctuations.
Involving private investors could allow establishing manufacturing and maintenance facilities with less government involvement and also in less developed economies.

The European Commission could seed and fertilise a robust EDTIB for defence production and maintenance industry in the EU by implementing the following steps:

[7] Similar efforts are ongoing by the European Commission for other sectors in the economy. See: https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/648186/IPOL_BRI(2020)648186_EN.pdf.

1. Identify existing manufacturing and maintenance facilities throughout the EU. These do not need to be able to perform advanced R&D, innovation and product development. Some of the facilities that have been built within industrial participation programmes could be expanded to broader manufacturing and maintenance sites.
2. Determine lacking manufacturing and maintenance facilities in quantity and distribution over the EU nations. If necessary select logical locations for new facilities in strategically chosen locations throughout the EU.
3. Identify new possibilities for licensed production of affordable, effective military equipment based on development in above mentioned clusters.
4. When much more budget would be available in the EDIP in the next multi-annual financial framework (2028-2035), this could be used for procurement from designated developers or licensed production clusters.
5. Stimulate these facilities to enable production of similar dual use products and options to quickly ramp-up military production when required.
6. Introduce and enforce standardised quality control for all production and maintenance facilities.
7. Develop an instrument that realistically enables private investors to invest in these facilities.
8. Introduce a ban on offset, compensation, juste retour, compulsory industrial participation and other market influencing mechanisms except for these facilities.
9. Maintain the availability of these facilities in times of prolonged peace by allowing production of civil or dual use products, but retain (and require) the option to quickly shift to military production.
10. Establish this spread structure for Defence capabilities production and maintenance in an EDTIB Act. Only an Act would constitute a sufficiently solid foundation for a new level playing field.

7. Role of the European Commission

We recommend the European Commission (DEFIS) to take leadership in determining the routes in the previous two paragraphs and filling in the blanks. Of course it is important to consult national governments and industry in this process.
Establishing one or more expert groups fits in the EC procedures and could be very useful to reach a meaningful result.

8. Role of the Member States

Nations could contribute and support in all steps of identification, determination, stimulation as indicated. Also Member States could express and exploit their national interest in technology clusters and manufacturing facilities in their nation.
When much more budget would be available in the EDIP in the next multi-annual financial framework (2028-2035), this could be used for procurement from designated developers or licensed production companies.
Within their national interest and use of national and EU instruments, Member States could support development of technology clusters and manufacturing sites. First and foremost however, all Member States have to fully abide to the EDTIB Act(s) on Defence research &development and on Defence capabilities production and maintenance.

9. Role of industry

The proposed new and modern European Defence industry policy will enable industry to identify new business opportunities, both in technology development, production and maintenance. In clusters, it will be possible to work more effective and efficient, and gradually move towards a new reality. In this proposal, only work in clusters will be stimulated by the European Commission and nations. Not to protect national industry, but to create an advanced and competitive Defence industry for the European Union. Also industry has to abide the EDTIB Act on Defence technology development and to the EDTIB Act on Defence capabilities production and maintenance

10. Role of investors

We recommend the European Commission and Member States to stimulate and support private investors to invest in manufacturing sites and also in product development in the clusters. This is important because the Defence market will still not be completely free and open. Not even when this new model is introduced.
For example, requirements to maintain a certain production volume will have an effect on profitability. Similarly, location limitations and limitations of investments and technology transfer to European Union or NATO nations will be factored in by investors.
To identify opportunities and risks we recommend the European Commission to establish an expert group comprising specialists from the government, defence industry and the financial sector.

This recommendation is prepared by a working group of the Royal Netherlands Society of Engineers (KIVI) and endorsed by the Federation of European Defence Technology Associations (EDTA) and Eurodefense. For more information contact info@fedta.eu