

CONSIDERATIONS REGARDING THE EXPORT OF MILITARY EQUIPMENT DEVELOPED IN COOPERATION

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The problems and the possible schemes of organization between industries and the relations of this organization with European Union member states for optimization of the export of military equipment developed in cooperation generate wide discussions. As a consequence, this article highlights some of these debates and export advantages to ensure the economic viability of the cooperation programs.

Key words: *military equipment, cooperation, development, export.*

1. INTRODUCTION

The dimensions of the European defense market and the cost of the materials force countries, as well as the industries to agree to an improved cooperation in the European framework. Opposite to the US partners, which held a vast internal market and associated economies of scale, the economic viability of the biggest European programs of armaments is conditioned by their exportation perspective, in an environment of defense budgetary constraints. This problematic is integrating the specificity of armaments export, which needs a dispositive of rigorous control in order to confront the risk of proliferation and the change in the final usage of the materials delivered.

Taking into consideration this need for the European industrial cooperation, it is possible to propose a concentration of the programs between the cooperative states and their industries, with the goal to identify and solve the potential difficulties, without affecting the potential for export.

2. COOPERATION DESIGN

International armaments cooperation is the *“cooperative research, development, testing, and evaluation of defense technologies, systems, or equipment; joint production and*

follow-on support of defense articles or equipment; and procurement of foreign technology, equipment, systems or logistics support” (Handbook, p.13).

The export capacity is an important variable that is considered during the program development. Thus, formal rules and arrangements should be implemented to not hamper the further improvements of the cooperative programs.

Starting from 2003, many debates were focused on the need of a European policy addressing the fragmentation of armaments cooperation and to establish a single framework for this. As admiral Giampaolo di Paola highlighted *“Europe could not have an effective defence technological and industrial base without all efficient and open internal market”* (Business, 2003).

2.1. Cooperation between states and their industries

In order to promote an upstream consultation between the states and their industries, from the design stage of each type of program, the main points of cooperation shall consider the following:

- the size of the program, including the evaluation of the export production;
- the target countries, by pooling the information held by the public sector and industry on the renewal of fleets and the future needs of countries where the program could be exportable.

The participating states to the relevant programs shall convene in advance on the export policy and may adopt authorization procedures to quickly address the specific simple cases. These programs would benefit from being covered by this type of preagreement and from such common rules of export authorization, like is used by France, United Kingdom, Germany, Italy, Spain and Sweden, that already formalized such an accord under the procedure of the Letter of Intent (LoI). Signed by the participant states to the program, such a procedure is opening a veto right for each of the member states.

But agreements on procedures and destinations will not be enough to guarantee the export potential of a program, because the use of components subject to the export rules of third countries may significantly affect it. As a result, all the cooperating European industries should have a supply program, so that the participating countries can control their exports. The practical difficulty of implementing this provision, which presupposes a thorough knowledge of subcontracting networks, must not be underestimated.

2.2. Technical and operational assistance improvement

The export potential of a specific cooperative program depends also on the economic conditions which can be proposed to a customer. Inside a market in which the defense means and services are depending on the budgetary plan, the global cost of possession of goods or the defense capabilities constitutes a strong argument for sale. The export of programs developed in cooperation must be based on an efficient and reactive after-sales service, in coherence with the improvement of the authorization procedures referred to above. Also third-party customers must be guaranteed an overall cost of ownership that is sufficiently attractive not to undermine its competitiveness.

The procurement of new defense systems or defense services could be facilitated by a narrow cooperation with the buying nations, in the area of formation, as of operational organization. In this framework, *the feedback*

of the user armies is an indispensable complement to the contribution of the industries. More forms of organization may be planned, as example: a division specialized in a specific industry or a joint-venture of the organization's members, supported by a partnership between the companies and the state. The set up structure will allow an equitable distribution of the operational expenses on the stakeholders.

2.3. Methods of financing associated with exporting programs

The existence of the US procedure known as "*foreign military sales (FMS)*" and the facilities allowed to the client-states play a main role to improve the competitiveness of the US offers. The effectiveness of this mechanism is counterbalanced by its cost, poorly known and therefore poorly distributed among the actors. Through the Organization for Economic Cooperation and Development (OECD), European countries could raise the question of derogations from the generally accepted rules of export, which include the FMS.

The financial support of the exports is a major stake for the European cooperative programs. The envisaged organization should be able, depending on the specific program, to propose several financial terms to customer states.

Cash sales may include manufacturing warranties. The sales receiving export credits could be the subject of prior agreements with insurers to guarantee competitive rates.

Drawing on current project financing techniques in the commercial sector, the European cooperating states could encourage their industries and partners to put together attractive offers, in the form of leasing or public-private partnerships. The cooperative states could also propose the provision of their surplus operational capacities in favorable conditions. The usage of these capacities by the third parties would maintain a margin of capacity in the event of a crisis, while reducing its cost of ownership.

The export potential of the cooperative programs depends also on the economic advantages that are bringing the sales to the

client country. In the meantime, offset agreements should be considered in advance of cooperative programs, instead of being considered on a case-by-case basis, at the discretion of selling opportunities on the market.

This upstream reflexion should allow offset proposals to the client states that create solidarity between their defense industries, a method used to unfold the US F-16 program on the European market. The bulk of potential client states not necessary interested in the industrial offset in the defense area, may benefit of proposals developed to determine actions that would more generally favor their economic development.

3. EXTENDED ANALYSIS

The exports became a vital condition for the viability of the European defense programs. The length of the series manufactured for the internal markets of the cooperative countries are not enough to ensure the sustainability of the European Defence Technological and Industrial (EDTIB), and this trend has increased since the mid-1970s. The US is an offensive actor in the export area, cumulating their traditional advantage of the national orders, without negotiating common measures with groups of European states, with the gain of important export contracts, like that of the F-35 fighter.

The cooperation is the single compulsory solution to allow the EU to remedy the short length of the national series. Even this addition of European national orders is hardly viable without an export perspective.

This double observation has prompted the European Commission to develop cooperative defense programs under the Permanent Structured Cooperation (PESCO) initiative and European Defense Fund (EDF) mechanism.

Starting 2017, when the PESCO was established, a number of 47 defence cooperative programs [6] have been approved. The programs are intending to develop the European defense systems, independently from the ones developed in cooperation with the US within NATO framework.

3.1. Balance of cooperation

The programs in cooperation are a traditional method in the defense industry and represent an important percent of the European industry turnover.

The export of these programs constitutes a mean of extending the manufacturing series and realizing additional economies of scale. Although the development and production costs of cooperation are broken down across the participating countries, the cooperative programs limit the unit cost of the apparatus since they remain higher than those of a national program. The export opportunities were rarely highlighted during the elaboration of cooperative armaments programs.

The challenge was against the expectations of the countries concerned and their orders. It has not prevented certain successes (missiles in particular), which are more due to market conditions than to a deliberate policy.

The integration of the export approach is resulting from the national orders base, which is affecting in the meantime, the programs of cooperation. The non-respect of the number of command devices calls into question the economic equilibrium of the program, with a risk of opportunistic behavior of the partners (the reduction of the orders of one country is determining the others to diminish their orders too). The export makes it possible to mitigate this risk, contributing to the preservation of industrial profitability and the cost objectives of states.

Table **no. 1** describes some European programs in cooperation, developed before the new PESCO mechanism come into force. As an example, the program for the manufacture in cooperation of the fighter-bomber aircraft IAR-93 was based on the agreement regarding the establishment of Romanian-Yugoslav Joint Commission for collaboration and cooperation in the field of military technology, signed on 30 September 1969.

The first official act of the YUROM program was the agreement signed by the governments of the two states regarding "*joint design, execution, testing of prototypes and serial manufacturing of the fighter aircraft*". The Romanian authorities wanted to make 200 pcs. IAR-93 B, as follows: 35 pre-series

fighters (1977-1980), 165 series fighters (1980-1987) and 470 engines, manufactured from 1978 to 1986 (385 engines „Rolls-Royce Viper Mk 632-41” type, with post-combustion). In July 1977, the first IAR-93 was officially presented. (Opris: 2016)

Table 1. European programs in cooperation

	Name	Initial date	Type	Member states
Outdated	Puma	1965	Medium Transport Helicopter	FR/UK
	Gazelle	1967	Attack and Transport Helicopter	FR/UK
	IAR 93B	1969	Light attack fighter	ROU/YUG
Current program	ATL	1966	Maritime patrol aircraft	FR/GE/IT/BE/SP
	Eurofighter	1985	Fighter	UK/GE/IT/SP
	A400M	1994	Transport airplane	FR/GE/UK/SP/BE/LUX/TUR
	Galileo	2003	Navigation satellites	EU

Source: Author

Another cooperative program of A400M was commissioned in 2003 to give Europe an independent airlift capacity to support military or humanitarian missions, rather than relying on the Lockheed Martin C-130 or the now out-of-production Boeing C-17.

A 3.5-billion-euro bailout from Belgium, Britain, France, Germany, Luxembourg, Spain and Turkey rescued the A400M programme from cancellation in 2010 after delays and cost overruns. (Martin: 2019)

The analysis of cooperation programs reveals some lines of force:

- Cooperation, originally, was limited to two, even three countries, basically for reasons of industrial competency and „culture”. In time, cooperation has expanded to several countries.
- Cooperation was generally found in well-identified and relatively limited areas: aircraft,

helicopters and missiles. Today, the domain has been enlarged to the naval construction, space, the information and communication technologies, for reasons of competency and control of development and implementation costs.

- As a rule, the programs in cooperation have known some success. The fact of being able to rely on a strong national demand created the basis (critical size) to face the external market in good conditions. It is no longer quite the case today. Beside the important success with missiles (Milan) and helicopters (Gazelle, Puma) the European cooperation has known a partial failure in the area of combat aircrafts, first in the 1980s, the tremendous breakthrough of the F-16 at the expense of a European fighter. This tendency is a new confirmation with the F-35 program (Joint Strike Fighter), which profits of the intra-European concurrence, highlighted by the development of three types of fighters (Rafale, Eurofighter, Gripen). This transatlantic program has so far drawn more than 4 billion Euro of development credits from five European countries (UK, Denmark, Netherlands, Norway and Italy) to the US market (Capaccio, A., 2017).

There is an awareness of the European countries for the development of multinational cooperation which represents a credible alternative to safeguard the European defense industries. The cooperation becomes compulsory taking into consideration the new sophisticated arms systems which are using new technologies and higher development costs, that can't be assumed by a single country and being necessary to be payed off over an appropriate series. It is also necessary that these cooperation programs be studied upstream so that the needs are harmonized in operational and calendar specifications, to avoid surcharges.

3.2. Operational and technological support

The risks of technological dependence in exporting cooperative programs are higher and difficult to deal with. The defense materials consist of many sub-systems and therefore industries. The blockage of export due to the

impossibility to export one of its components is real.

This problem is particularly with the Atlantic Maritime Patrol Aircraft (ATL). Originally, this program was the result of a European-US cooperation program, under the NATO framework. The US continued on a national route (P-3 Orion of Lockheed Martin), but their initial participation in the program allowed them to control a number of key aircraft systems. This American origin conditioned the choice of the client countries.

The assurance of supply control is difficult to maintain until the lowest levels of the subcontracting chain. A reflection would undoubtedly have to lead to the ready acquisition plans in order to propose a generic procedure for the selection of suppliers by the project managers. It could be envisaged to draw up an acquisition plan for cooperative programs applicable to all stakeholder enterprises.

The programs in cooperation are sensitive to the quality of their technical assistance. Taking into account the framework of the cooperative programs at the level of operational assistance and more particularly at the level of training and instruction represents a strong asset for export.

The cost, the quality and the endurance of the after-sales support for the materials constitutes a major element of satisfaction for the buying country and it is therefore his fidelity as well as the image that he will be able to give to other potential customers of the quality of the acquired products.

From this perspective, the gross possession cost of programs has to be taken into consideration, including those of spare parts and technical documentation. It seems indispensable to know how this procedure is applied in the context of the cooperative programs and whether cooperative partnerships in which Romania is not a party, are benefiting from similar methods.

As long as the buying countries could belong to different geographic areas, the share of the after-sale activities and the maintenance should be the subject of consultation prior the start of the program. A solution is to design a

framework country by geographical area or by linguistic area.

In **Figure 1**, below, the hierarchy of relationships in Acquisition, Technology and Logistics (AT&L) is highlighted as a pyramid. Even though International Cooperation (IC) in AT&L programs form the capstone, it does not imply that cooperative Research, Development and Acquisition (RD&A) is the ultimate form of cooperation. It does, however, illustrate that effective IC in AT&L normally rests on a broad foundation of other prerequisite relationships and conditions. It should be noted that IC in AT&L can also complement, lead to, or emerge from defense sales activities (Handbook, p.18).

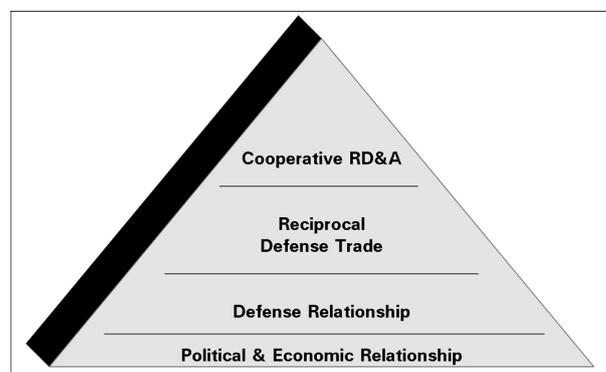


Fig. no. 1 Hierarchy of Relationships Leading to International Cooperation in Acquisition, Technology and Logistics

3.3. Insurance and export financing of cooperative programs

States allowed the national programs of armaments to benefit from the insurance-credit mechanisms to support the exports. The gradual establishment of European cooperation programs under the PESCO mechanism implies a change of approach by credit insurers, even if already developed techniques make it possible to respond in most cases to the induced changes. Remains that this balance between EU and the US will not be achieved as long as the guarantee and financing of arms exports fall outside the regulatory standards of OECD agreements and that direct or indirect financial support for exports will not be equivalent.

The integration of sales of military material in the OECD's list of operations would be an important step to a competitive balance.

Besides cash sales, in the field of military equipment, new *innovative financing* formulas are being developed. These techniques, commonly used by industrialists in their financial operations, enable states to finance heavy investment programs with a different impact in terms of debt and deficit, as well as greater flexibility with respect to the military programming law (or their equivalents).

The relatively low quality of the credit risk of the suppliers, which measures their ability to borrow on the capital markets, and their balance sheet characteristics represent an additional constraint which ultimately results in additional cost to the State.

Therefore, it's about finding solutions that allow:

- the state, to reduce its costs and enforce as late as possible an impact on its budget, debt and deficit;
- the supplier, to obtain the necessary cash as soon as possible for the construction of the equipment without impacting their balance sheet.

The US example shows that the strong guarantees provided to the buyer inscribe the relationship with the customer in a long-term perspective.

The payment terms play a main role in the quality of offers. Starting from the simple financial facility to the more complex of public-private partnership mechanism, there are plenty of financial formulas on which the states and industries should take into consideration in order to adapt the offer to the client needs.

4. CONCLUSION

The export of military equipment developed in cooperation ensures the economic viability of the cooperation programs, bringing economies of scale and high margins. In order to succeed, the member states in such projects shall negotiate extensive agreements prior to the development of joint cooperative programs. Thus, under the European industrial cooperation, it is possible to be developed a concentration of the programs between the cooperative states and their industries.

In conclusion, the quality of the financial support of the exports is an important issue for the European cooperative programs that should be further investigated.

Hence the importance of European awareness around ambitious technological projects such as the PESCO programs, as far as the greatest number of countries will be associated, each bringing their technologies of excellence.

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