“Industrial analysis of opportunities derived from the collaborative database (CODABA) in the area of Field Camp Solutions (FCS)”

EUROPEAN DEFENCE AGENCY

Insights into cooperation opportunities in the area of FCS

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ABBREVIATIONS

CDP	Capability Development Plan
CODABA	Collaborative Database
CSDP	Common Security and Defence Policy
DG	Directorate-General (of the European Commission)
EDA	European Defence Agency
EDTIB	European Defence Technological and Industrial Base
EEAS	European External Action Service
EU	European Union
EUMC	EU Military Committee
EUMS	EU Military Staff
FCS	Deployable field camps solutions
MS	Member State
MoD	Ministry of Defence
NATO	North Atlantic Treaty Organisation
NORDEFCO	Nordic Defence Cooperation
OP	Operational Programme
pMS	Participating Member State
R&D	Research and Development
R&T	Research and Technology
SMEs	Small and Medium-sized Enterprises
TFEU	Treaty on the Functioning of the European Union

1 EXECUTIVE SUMMARY

This study delivers market analyses for FCS full solutions (equipment), mobile containers, field kitchens, water supply systems, and power supply.

The results of the study show that out of these topics**, FCS full solutions** seem to have the most **potential for collaboration at the EU level.**

The variety of products and suppliers in the field of FCS full solutions indicates that there is a competitive but fragmented market. Fiches detailing the providers and their products are available in Annex 1 of this document.

The large number of SMEs in this market also signals that they mainly evolve in national markets and that there is a duplication of offers and/or a multiplication of customized solutions.

The formulation of common requirements and the pooling of the demand at the EU level on such products would enable:

- Consolidation of the market structure
- Reduction in R&D and production costs
- Economies of scale (up to 30%) for pMS

1.1 AN ARGUMENT IN FAVOR OF COOPERATION IN THE FIELD OF FCS

According to a recent publication of the European Commission, ***"the average cost of deploying a European soldier on missions abroad is 310,000 euros higher than that of an American soldier"***[1]. This figure suggests two shortcomings at the EU level: the lack of interoperability in equipment and the duplication of logistical equipment due to the market structure.

Because of the current economic situation in Europe, increasing spending on defence can only go so far in terms of procurement. Admittedly, the declining trend that has affected European defence budgets has halted but there is no evidence that the upward trend will last[2]. In the case of EUFOR RD Congo, for instance, the respective costs of the two main troop contributors, France and Germany, exceeded the common costs. The overall expenses amounted to about 100 million euros – out of which 23 million were paid through the ATHENA mechanism - while France and Germany, respectively, contributed 27 million euros and 26 million euros[3]. In light of high costs of logistics, Member States tend not only to lease transport capacities but also seek ways to reduce costs in areas such as life support or accommodation with a number of Member States looking to outsource some of the logistical tasks to

[1] EPSC Strategic Notes - Issue 4 / 2015 - http://ec.europa.eu/epsc/publications/notes/sn4_en.htm
[2] (ED) Alessandro Marrone, Olivier de France, Daniele Fattibene, Defence Budget and cooperation in Europe, developments, trends and drivers, January 2016
[3] https://www.swp-berlin.org/fileadmin/contents/products/arbeitspapiere/AP_Major_2011_Logisics_in_EU_Operations_ks.pdf

private contractors.

The increasing technological complexity of the equipment and concomitant rise in costs of maintenance highlight the need for a more competitive and structured industrial base. Indeed, in order to have products and solutions that are more technologically advanced and competitive, developing export sales and being prominent in the international market is paramount. This enables a larger production that would alleviate the costs of research, development and production. On the other hand, closer integration of logistics into strategic campaign planning is necessary to enable faster adaptation of suppliers. The consolidation of both the demand and supply sides would then help achieve economies of scale, improved logistics, and would contribute to the reduction of logistical costs and burden greatly benefitting both the civilian and the military sectors.

The infrastructure and logistics market is also largely a dual-use market that is less sensitive than others such as the weapon systems market. In this perspective, common requirements among interested Member States would be much easier to draw. However, Member States have not so far looked beyond national suppliers. The percentage of cooperation in the field of maintenance, supply and logistics only amounts to 13,5%[4]. It is particularly clear in regards to FCS solutions as the market structure could attest. There is a multitude of SMEs in the field, stemming from 3 main countries: Germany, France, the United Kingdom and, to a certain extent, Spain. One of the consequences is the duplication of offers in the European FCS sector and the lack of a European champion, thus diluting the offer and the cutting-edge aspects of some of the solutions proposed.

New collaborative projects, joint procurement and open market mechanisms would have an important structuring effect on FCS SMEs – given that many of those SMEs would possibly not have the critical size to tackle a joint public procurement by themselves - and deliver much more value for money as well as contribute to the creation of value and supply chains. Those could easily integrate new and innovative modules leading to end-to-end logistics solutions.

The infrastructure, support and logistics market through the creation of supply chains and maintenance capabilities presents an opportunity for efficiency improvements. Indeed, the logistics and FCS market could be a perfect trigger for increased cooperation at the EU level as the NORDEFCO initiative has shown. Norway and Sweden agreed on a lease of two complete base camp material sets in order to support the mission in Mali[5]. NORDEFCO is furthermore implementing a technical agreement for a common Nordic pool of base camp material in international operations. Under this agreement, Norway will stand up 12 complete base camp material sets that can be drawn upon by the participating nations, which, according to NORDEFCO, will "*provide substantial cost savings for the participating nations compared to the alternative of procuring the camp sets nationally*"[6].

While "scattered islands of defence cooperation"[7] are indeed more and more frequent in several areas, many Member States have not yet tackled cooperation in the FCS sector. Lessons learned from the NORDEFCO initiative, once it is fully implemented, operational, and a thorough cost-benefit analysis is

[4] (ED) Alessandro Marrone, Olivier de France, Daniele Fattibene, Defence Budget and cooperation in Europe, developments, trends and drivers, January 2016, p.38
[5]https://www.regjeringen.no/globalassets/departementene/fd/dokumenter/1131-nordefco_arsrapport_2014_screen.pdf
[6] http://www.nordefco.org/files/COPA%20ARMA%20Yearbook%202015%20-%20FINAL.pdf
[7] Jean Joel Andersson, "European defence collaboration – Back to the future", in EUISS briefs, n°19, June 2015

delivered, could provide an incentive for other Members States with similar needs to explore possible collaboration on this topic.

In this short study focusing on Field Camp Solutions, the following topics of interest for collaboration have been identified:

- Deployable field camps solutions (full solution)
- Mobile containers
- Field kitchens
- Water supply systems
- Energy: Power generators and mobile energy

As a result of the analysis of the FCS market, it seems that there are several ways in which pMS could benefit from collaboration at the EU level, with the support of the European Defence Agency. These elements underlining the added value for cooperation are synthetized in the table below:

Topic	Assessment of market	Added value of cooperation	Challenges	EDA possible role
Full camp solutions	A fragmented market mainly composed of SMEs Duplication of offers National markets mainly	High potential for cooperation Consolidation of the demand and supply side Creation of supply and value chains Economies of scale and economies of scope	The existence of national markets which either leads to the duplication of offers or the multiplication of customised solutions.	Facilitate interoperability of equipment Encourage better sharing of requirements on future FCS acquisition programmes Facilitate the formulation of common requirements Build upon lessons learned from the NORDEFCO pool of base camp material The EDA's Project Team (PT) Logistic Support could support the launching of a Request for Information (RFI) to the FCS full solutions suppliers in order to gain a more thorough knowledge of potential savings this could include services such as shared storage or leasing
Mobile containers	A dual-use market with standardised products	Economies of scale Standardized (ISO) products which facilitate common procurement	Many pMS may already have all the necessary equipment.	As this study focuses on equipment, further exploration of potential services regarding rental and leasing, especially in regards to CSDP operations could prove to be useful in gaining a wider perspective on potential cooperation and savings.
Field camp kitchens	Niche market: very few providers of only field kitchen modules	Limited added value for cooperation.	At the moment, cooperation in the field of field camp kitchen does	Considering the strong dual-use dimension of this topic, the EDA could look into synergies with the European Commission DG ECHO

	Competition from suppliers of full camp solutions		not seem to be a priority for pMS.	WASH initiatives in crisis management and humanitarian aid.
Water supply systems	SMEs providing innovative dual-use solutions	Integration of modules in full camp solutions	Economies of scales might be very limited as hardware modules (field kitchen and water supply systems) do not require their purchase in big enough quantities.	
Power supply	Niche market: few SMEs only specialised in generators or power supply. Dual-use market	Economies of scale	Aside from potential economy of scales – which might prove difficult since the SMEs might not have the critical size to cater to such demand – and the variety of needs, this topic does not present a real potential for cooperation.	Exploration of topics regarding alternatives sources of energy would be of added value. This work is already partly conducted by the Smart Energy Camp initiative and the Energy Working group.

According to the EDA, the aim of cooperating at a European level in the field of FCS is to develop FCS capability in all its aspects, finding shared effective solutions through multinational cooperation. This could be facilitated by not only harmonizing requirements but also consolidating the supply side which might lead to joint procurement initiatives.

1.2 FCS FULL SOLUTIONS AS A BUSINESS CASE FOR COLLABORATION

1.2.1 Inputs from FCS full solutions providers

Taking into account the results of this study, FCS full solutions have the potential for collaboration at the EU level. The EDA could look into the possibility of launching a RFI in order to gather more specific requirements from interested pMS. A wide range of frameworks for cooperation can therefore be envisaged. A feasibility study would aim at comparing options and identifying the best framework for collaboration.

In the framework of this short study, eight suppliers of FCS full solutions were contacted by email with a short questionnaire. **Three companies from three different Member States** supplied the research team with replies on their offers.

The products of these three companies are presented in more detail in the providers' fiches in 4.1.

The replies highlighted three elements: firstly, a clear interest from some of them to potentially provide for several pMS. However, the need for specific and detailed requirements was also highlighted. Secondly, while cost-savings and economies of scale are possible, an estimation would depend on gaining access to clearer specifications. Nevertheless, an estimation of potential cost-savings could range from 15% to 30%. Finally, a pooled demand would be beneficial to reducing production costs and send better quotations.

1.2.2 SWOT Analysis

Based on the study and elements provided by the contacted FCS providers, the following SWOT analysis can be drawn for full FCS solutions as a business case for collaboration at the EU level.

Strengths	Weaknesses
• Competitive market (many providers and solutions) • Market principally composed of SMEs • Dual-use market with a wide range of applications (disaster relief, oil & mine, etc.) • Turnkey and bespoke solutions available	• National markets making it a fragmented one • Lack of detailed requirements available • Duplication of offers
Opportunities	**Threats**
• Consolidation of the market structure • Better production visibility for SMEs • Reduction of R&D and production costs • More competitive offers (prices and technology readiness levels) • Creation of value and supply chains • A less sensitive defence market enabling the sharing of requirements	• Few exports • Larger production costs (customised solutions rather than standardized ones) • Lack of critical size for SMEs

1.3 MAIN FINDINGS OF THE MARKET ANALYSIS

1.3.1 Analysis of the demand side

The analysis of the information in the CODABA[8] as well as of information on national plans derived from open sources through additional desk research has revealed that several European countries are in the process of, or planning to acquire new FCS capabilities.

This document presents this analysis and identifies the following topics of interest for Member States and the EDA for collaboration:

Topic
Deployable field camps (full solutions)
Mobile containers
Field kitchens
Water supply systems
Power generators and mobile energy

The selection of these five topics above is based on several factors:

- Expressed interest by pMS
- Relative matching in terms of substance
- Relative matching in terms of timelines
- Strategic capabilities/services for the battlefield

In addition to plans to procure capabilities by several Member States, many countries have on-going programmes to acquire new capabilities. Therefore, the EDA underlines that synergies might be found in sharing the requirement documents, test and evaluation results as well as lessons from acquisition processes.

It is important to note that many collaboration schemes already exist (NATO, NORDEFCO frameworks) especially in the field of energy (alternative) for enhancing logistic support for deployed forces. These initiatives aim at ensuring capability and training requirements and standards are shared.

[8] Collaborative opportunities database of the EDA

Pushing for new collaborative projects would therefore be relevant only if they take into account the work done in these initiatives.

1.3.2 Analysis of the supply side

In part 3, a market analysis and a list of potential suppliers is presented. More details on the products are provided in Annex 1 of the study report. This information is aimed at technical experts, should collaborative initiatives be launched at the European level.

The main results of the market analysis are as follows for each of the selected topics;

- **Deployable field camps solutions**: **a strong dual-use market spearheaded by SMEs**. There is a large number of suppliers offering turnkey or bespoke deployable field camp solutions. The market is rather fragmented and dominated by SMEs suppliers stemming from three main countries: Germany, France, and United Kingdom, and Spain to a certain extent. This topic is therefore relevant to explore further cooperation among European Member States as it could enable the **consolidation of both the demand and the supply side and enable substantial economies of scale (up to 30%) if common requirements could be formulated and shared by some pMS**. The study has focused on companies that supply military forces, however other exist in the civilian sector and have developed similar solutions for other applications (large events, oil&gas, etc.)
- **Mobile containers: a standardised market.** A variety of solutions exists from multiple suppliers in Europe, especially as mobile containers are also used in the civilian market. The offer for military containers is to a large extent already harmonised with current ISO standards which would greatly facilitate common procurement. However, many pMS might already have all the necessary equipment, which might not often require renewal of stock.
- **Field Kitchens**: **a niche market.** Very few suppliers only specialise in the provision of field kitchens modules. The market of field kitchen modules seems to be a niche market that can also suffer from the competition of suppliers offering complete deployable field camps solutions. Furthermore, as field kitchens would not entail their acquisition in big quantities, economies of scale are limited, which in turn restricts the scope of this topic for further cooperation.
- **Water supply systems**: **innovative solutions with dual-use applications**. Few suppliers only specialise in water supply systems modules. However, this market presents SMEs with innovative dual-use solutions that can be implemented as **commercial off-the-shelf** (COTS) components in full FCS solutions or be acquired independently for humanitarian relief operations.
- **Power supply (generators, mobile energy)**: **going beyond existing products**. SMEs are proposing several solutions to deal with power supply in deployable field camps. There is a variety of solutions offered in the market ranging from power generators to batteries and solar panels. While these SMEs also suffer from the competition of other suppliers offering more complete solutions, an opportunity for cooperation could be derived from the needs of several Member States to switch to more alternative sources of energy to limit the ecological footprint while retaining enough power to execute their missions.