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Prospects for Polish–U.S. Defence Industrial Cooperation

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With the decision to select Patriot as its next medium-range air and missile defence system, Poland is launching a programme considered the most important one out of the \$35 billion Armed Forces Technical Modernisation Plan for the years 2013–2022. The sheer value of the contract (\$4–6 bln), its strategic and operational significance, and the technologies involved, are all enough to make it a hot topic in popular debates. But this programme is special also because it involves a U.S. contractor, which will be responsible for providing key technologies. While Poland has long been gravitating towards closer defence political ties with the United States, it has also been particularly anxious with regards to defence cooperation with Washington, even despite the fact that the U.S. became the top importer of Polish defence materiel. To make the most out of the AMD selection, and any other possible programmes that may be won by a U.S. contractor, Poland should drop unrealistic or simply false assumptions regarding defence industrial cooperation with the U.S. and push the envelope of collaboration, wherever it is possible, while limiting its ambitions where they are exaggerated.

What Makes Defence Industrial Cooperation Genuine?

There is no single, agreed definition of defence industrial cooperation. It is possible, however, to identify some factors, which make this special kind of relation genuinely beneficial for all partners, in political, operational and economic terms. An inter-governmental armaments programme, aimed at developing a new weapons system to be used by all its participants, is the most advanced form of cooperation in the defence industry. It assumes joint management of the supply chain and sharing work in such a way that the final product depends on every single partner. It also assumes a common export effort, even access to prospective markets for the developed systems. Large European projects, such as Typhoon and A400M, are the best illustrations of genuine cooperation in the defence industry. They also prove that it takes both close security and defence relations between partner states, and the industry's capacity to switch into a cooperative "mode of operation."²

But there are other models of defence industrial cooperation, in which partner states form more asymmetric relation, than in case of inter-governmental armaments programmes. A state with an innovative

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² J.-P. Darnis et al., *Lessons learned from European defence equipment programmes*, Occasional Paper No. 69, EU Institute for Strategic Studies, October 2007.

defence industry can transfer a previously developed technology to its partner(s) with the aim of having it further co-developed. This is precisely what the U.S. does in relations with its strategic allies, such as Israel, Japan, and South Korea. Some technologies transferred as a part of strategically motivated weapons sales programmes are then taken up by local industry and co-developed with U.S. prime contractors, which benefit from the cost advantages and any other edge, technological or otherwise, that their partners have. There is a close strategic relationship in this model, and there is defence industrial collaboration too, albeit less complex and advanced, not say that much more asymmetric, than in the inter-governmental programmes. A further variation of this model is the F-35 Joint Strike Fighter programme, in which different U.S. allies have divergent tasks and access to both technology and the market for JSF components, dependent on the money allocated to the project.

What is common for these models, and what thus distinguishes advanced defence industrial cooperation, are the following factors: political underpinning of the commercial relationship, the significant upgrade of existing equipment or development of new technologies as a key part of the collaborative effort, mutual dependencies in the supply chain, and focus on both the home and export markets.

It is best to approach this vague, as it might initially seem, difference between any defence industrial collaborative effort and a structured, long-term endeavour, by discussing the case of market-driven collaboration of companies in a supply chain. It is now natural that, on the globalised armaments market, firms seek technologies at the best possible price in order to develop them further or integrate them straight into their own products. Following capital restructuring, done through stock markets or privatisation, defence companies are subject to mergers and takeovers, just like firms in any other industry. Consequently, the modern defence sector is heavily internationalised. It is now impossible to find a company that is not dependent on foreign subcontractors and vendors. But even if the world's top defence companies have assets around the globe, one cannot say that all states in which these assets are located are defence industrial partners. Of course, manufacturing weapons is not like production of cars, as it always has a strategic dimension. But companies occupying the lower levels of the supply chain, and offering components, parts or materials easy to substitute, are unlikely to develop strategic clout to the extent that it would matter in their domestic government's security and economic policy. And vice versa, without the strategic interest of their governments, even vendors of key technologies may not find political attention.

The Polish (Non) Experience with Defence Industrial Cooperation

Since 1989 Poland has not been involved deeply in international collaborative programmes within the defence industrial domain. Of course, in a market driven search for competitiveness, the Polish defence sector has developed a dense cooperation network with many firms in Europe and the United States. Polish prime contractors sought components, mostly sensors and other types of electronic devices, which would later be integrated into their final products to extend the lifetime of post-Soviet land platforms and aircraft. Many of these cooperative endeavours can be considered truly successful, even if their scale remained small, but none of them had any real political significance. Further, such bottom-up cooperative projects were focused almost entirely on components or relatively small final products, such as electronic support systems for different platforms, and they have seldom involved truly innovative technologies.

Similarly, offset enforced cooperation regarding the biggest modernisation programmes did not really reach the politico-strategic level, and was hampered by limited options for Polish components, parts and final products to enter the global market. In the industrial dimension, offset reached its most advanced form perhaps in the case of the Naval Strike Missile programme, won by Kongsberg. The Norwegian company (itself cooperating closely with top U.S. firms) transferred some technologies to a number of Polish defence contractors, and agreed to manufacture a number of the system's elements in Poland, and establish a Polish run service centre for the procured system.³ Consequently, the final system, involving sensors, firing, command and support units, can be considered a result of a collaborative effort between a Norwegian provider of crucial technology and Polish partners. But the export potential of this programme is yet to

³ "Poland announces signing of offset deal with Kongsberg," *IHS Jane's Defence Weekly*, 17 February 2015, www.janes.com.

materialise. On the other hand, the agreements following the purchase of SPIKE anti-tank missiles from Israeli company Rafael allowed Polish munitions plant MESKO to provide some advanced components of these weapons on the global market, but again this was only true of components, not final products. The take-over of the PZL Okęcie aeronautics plant by what is now Airbus Group represents a different model. Vital components for Airbus aircraft are indeed manufactured in Poland and exported worldwide, but there is no political dimension to this cooperative endeavour. One can hardly say that Poland has been a key defence industrial partner for any of the Airbus Group founding states (a similar case, involving the Mielec plant, will be discussed later in this paper). In any case, these endeavours never focused on developing truly new technology to be offered later on the global market, either within or without the supply chain of the foreign prime contractor.

There are many other cases of cooperative programmes undertaken in Poland. All of them have been handicapped in one way or another. A lesson learned for Poland is thus to set a realistic level of ambition in its defence industrial cooperation with foreign partners, and particularly with the United States. And “realistic” means that Poland should both push the envelope of the scope, depth and complexity of the expected cooperation projects with U.S. firms, and limit its ambitions in areas in which it does not have enough weight or capability.

Poland and the U.S. as Defence Industrial Partners: A Mixed Record

The F-16 deal with Lockheed Martin, as the first large Polish programme involving a U.S. contractor, left Poland with mixed feelings about defence industrial relations with the United States. Truly, it provided the Polish air force with a modern and advanced capability. Offset agreements, which followed the contract, also resulted in some significant U.S. investments in the Polish economy, including the biggest U.S. acquisition in the Polish defence sector, namely the take-over of the Mielec aeronautics plant by UTC, owner of the Sikorsky corporation. The company began assembly and then production of a special export version of the U.S. Black Hawk helicopter, designed for non-U.S. users. At the same time, though, the programme had little effect on Poland’s defence industrial and technological base taken as a whole (some technology was also transferred to the WZL Bydgoszcz service plant). Consequently, the popular perception of the U.S. as a particularly difficult defence industrial partner was only reinforced, and trust towards U.S. contractors was undermined.

Meanwhile, the U.S. began to play a leading role in the Polish defence trade. Since 2009 it has remained the biggest importer of Polish defence equipment. And, before that, the U.S. was always in the top three importers of arms from Poland. In 2013, nearly 67% of Poland’s total defence exports went to the United States, with the total values of contracts over \$295.3 million. In comparison to 2008, this represented a 20% increase. The equipment exported to the U.S. consisted mainly of components, such as aero structures (elements of aircraft frames, hauls and wings) and parts thereof, elements of propulsion systems, and military electronics. Final weapons were mostly guns and S-70i helicopters. This shows that Polish partners are mostly providers of components, and by and large do not occupy prominent positions in the global supply chain for top U.S. defence prime contractors. Consequently, it is easy to substitute them with other vendors, at least theoretically. Yet it is also clear that there has been a gradual increase in the volume of defence trade between Poland and the United States, as the number of export licences covering the sale of weapons to the U.S. doubled between 2010 and 2013.⁴ This suggests a growing interest of U.S. partners in getting Polish subcontractors into their supply chains, which means that Poland has an edge in comparison to other possible foreign business partners.

At the same time, Polish companies are virtually absent on the U.S. defence market, although there are cases of successful technology transfers from Poland to the United States. An internal vehicle communication system, offered by the Harris company on the domestic U.S. arms market, is manufactured

⁴ All data according to annual reports of the Polish Ministry of Foreign Affairs on the Exports of Arms and Military Equipment from Poland, for the period from 2008 to 2013. The figures have been recalculated to U.S. dollars at the central bank’s average annual rate of exchange. The reports are available at www.msz.gov.pl/pl/polityka_zagraniczna/polityka_bezpieczenstwa/kontrola_eksportu/transparencja.

under licence from a relatively small, at least in U.S. scale, private Polish defence company called WB Electronics.⁵ This case proves that R&D potential in Poland is growing and, what is more important, technologies “made in Poland” prove to be attractive to much more developed U.S. industries. What confirms this trend is a growing number of functioning and prospective partnership agreements between large U.S. prime contractors, such as Lockheed Martin and Raytheon, and smaller Polish firms, which demonstrate top competence in some technology niches and are seen by U.S. partners as competitive providers of components. These areas of competence mostly involve sensors and military electronics, and relatively little know companies such as Filbico, Teldat, and Radiotechnika Marketing have already found or are very likely to find a place in the supply chains of the U.S. giants. At the end of the day, their products may be used by operators of U.S. defence systems worldwide, and even in the United States.

Genuine Reasons and Imaginative Barriers

By and large, though, the Polish defence industry still perceives cooperation with its U.S. counterpart in terms of barriers rather than opportunities. Its concerns apply mainly to the huge asymmetry between the partners, different motives for cooperation, and divergent corporate cultures. U.S. prime contractors are believed to consider collaboration with foreign partners mostly as a way to cut costs and gain access to the local market, whilst having no genuine will to share technology or know-how, or to establish a long-term relationship. The predominant view in Poland is that, once a contract is fulfilled, U.S. partners may easily withdraw in search of more prospective business options. Further, corporate culture in U.S. companies, and the management system in particular, is difficult to understand for Polish firms. In Poland, defence businesses are run by CEOs with backgrounds in engineering, not in management. This translates into difficulties in employing modern, project centered and result oriented management systems. Finally, it is also widely believed that the U.S. is interested in establishing peer to peer and long-term cooperation only with its core strategic allies, such as the United Kingdom, Israel and Japan, but not Poland. As a result, any U.S. involvement in the Polish defence sector is immediately seen as a short-term endeavour, in which Poland is likely to be the junior partner, risking brain drain, loss of technology and spending money on half-usable capabilities. And this is not what any company would want from a relationship with a foreign partner.

It would be an unfair simplification to say that none of those barriers are genuine, but most of them are imagined, or can be overcome with some effort. A good case is the U.S. export control system, the International Traffic in Arms Regulations (ITAR), being one of the most commonly indicated barrier for defence industrial cooperation between Poland and the United States. These rather strict regulations are perceived in Poland as a tool used exclusively to block foreign industries both access to the U.S. home armaments market and to technological innovations developed by U.S. contractors. But, as the U.S. stresses, the lengthy formal procedure required for a foreign defence company to enter the U.S. market, or for a technology to be released to a third country (especially the checking process, which takes a significant length of time), serves in fact as a security guarantee for both partners. A country that establishes close collaboration with the U.S. defence industry can be sure that the technology eventually acquired will not be sold to its foes. And these external guarantees apply automatically to all NATO Allies.

There are plenty of cases of economically effective and politically beneficial cooperation following technology transfer from the United States. The most illustrative is Israel, which has developed an advanced, modern, multi-layered air and missile defence system, based on U.S. technologies, and upgraded in collaboration with U.S. prime contractors such as Raytheon, Lockheed Martin and Boeing.⁶ Japan is also a key industrial partner for the United States, providing components and soon to deliver complete missiles for the Aegis AMD system.⁷ The United Kingdom is a unique U.S. partner, and BAE Systems not only develops technologies together with U.S. firms, but is able to market ready weapons successfully inside the United States. As recently as 2014, BAE Systems was awarded contracts, worth over \$1.6 bln, to provide

⁵ Harris, “RF-78001 Vehicular Intercom System,” <http://rf.harris.com>.

⁶ M.A. Piotrowski, “Israeli Anti-ballistic Missile and Counter-rocket Systems: Architecture and Operational Record,” *Bulletin PISM*, no. 14 (467), 11 February 2013.

⁷ M.A. Piotrowski, “Samurai Shield: Japan’s Air and Missile Defence,” *Bulletin PISM*, no. 98 (693), 10 July 2014.

the U.S. armed forces with a common missile warning system and 29 armoured multi-purpose vehicles.⁸ It is also believed to be a favourite in the ongoing bid process for delivering training aircraft to the U.S. army. But there are many less known examples of successful technology transfer from the United States. South Korea, for instance, developed the advanced T-50 jet trainer in close cooperation with Lockheed Martin, and is now offering it on the global market. Sweden and Italy acquired U.S. technologies, which were later used in their flagship weapon systems, such as the Gripen multi-role jet, which benefitted from the U.S.-designed fly by wire system. The Norwegian company Kongsberg was also engaged in supporting development of the Stryker APC programme,⁹ and Germany's Heckler & Koch provided the new grenade launcher used in Afghanistan and Iraq by U.S. troops.¹⁰

In an attempt to simplify widely criticised procedures and allow wider cooperation, at least with those non-U.S. firms that can offer added value for the U.S. defence sector, the U.S. has recently started the process of transferring various kinds of technologies and equipment (mainly dual-use) from ITAR to the Commercial Control List (CCL), which should help small companies from abroad to enter the U.S. defence market or gain access to U.S. technologies. This is to be achieved due to different, less complicated procedures, longer deadlines, a simplified licence system, and more. But even now it is a myth that the U.S. is completely autarkic with regards to defence technologies, and that it never allows dependence on foreign vendors. There are areas in which the U.S. is entirely dependent on imports, such as rare earth minerals, mined in China, Africa and even Russia, and explosives (in general, gun powder), manufactured by suppliers from abroad. At one point or another, the U.S. has also imported some kinds of munitions exclusively from European countries, such as Switzerland. Today, imported components involve, for example, instruments and electronics systems for platforms. The supply chains of the top U.S. prime contractors is now as internationalised as never. A good example here is Boeing, which used to have 70% of its supply chain in the United States, but which has gradually moved production of components to other countries, for instance Italy and Japan.

Towards a Realistic Model of Polish–U.S. Cooperation

To date, the Polish–U.S. relationship has been far from any advanced model of defence industrial cooperation. It has been largely lacking a political dimension, and has not focused on truly innovative technologies. The involvement of Polish companies in the supply chain of U.S. prime contractors was, to a great extent, enforced by offset (such as the takeover of Mielec by Sikorsky), and only later turned out to be economically sound, as proved by Polish arms exports statistics. The cases of market driven cooperation in the supply chain, in which Polish companies had an edge that was a decisive factor in their selection as partners by U.S. prime contractors, were few if any. And, to reiterate, there has been no tangible cooperation in developing, or at least upgrading, any innovative U.S. technology by Polish partners. This could, and hopefully will, change.

The AMD programme already has significant potential for inducing genuine, structured and long-term, defence industrial collaboration between Polish and U.S. companies, and this will increase with any further contract awarded to a U.S. contractor. But, for now, it is only potential. To exploit it, the Polish and U.S. partners on the governmental and industrial levels must establish a sound model of cooperation, not a formalised vehicle, but rather a common understanding of the shared goals, a vision, and principles governing the relationship.

For a good start, both partners need to acknowledge where the absolute boundaries of cooperation lie. Even if this sounds blunt, Poland will not get from the U.S. any technology it wishes. Thinking otherwise is an unrealistic assumption, which disregards U.S. interests in maintaining the industrial edge on the global armaments market, not to mention its strategic interests in keeping crucial technologies out of the reach of

⁸ "BAE Systems to Provide U.S. Army Troops with Latest Aircraft Survivability Equipment," 23 July 2014, www.baesystems.com; P. McLeary, "Army Awards AMPV to BAE Systems, Future Fights Loom," *Defense News*, 24 December 2014, www.defensenews.com.

⁹ "KONGSBERG Awarded Contract from GDLS Supporting U.S. Army Stryker ECP Program," 9 July 2013, www.kongsberg.com.

¹⁰ "Heckler & Koch Defense Wins Multi-year Contract for New U.S. Army Grenade Launcher," 12 May 2005, www.hk-usa.com.

U.S. opponents, such as China and Russia. For the U.S. it is important to realise that cooperation in Poland cannot be business as usual, and that the Polish political goal is to find place among the United States' closest defence industrial partners, even if not those in the top flight, such as Israel and Japan. This already excludes short-term, everyday engagement, in which offset would be implemented only superficially and would leave only a faint footprint on Poland's defence technological and industrial base.

So what should a shared Polish and U.S. goal be? The answer is, to develop a relationship between an exclusive supplier of vital elements for a weapons system, currently in use by the U.S. and/or its allies, and the prime contractor, benefitting from the suppliers' edge in different dimensions. Polish companies should aim to work on a number U.S. technologies, including innovative ones, which are likely to be released abroad. In the context of the Patriot system chosen by Poland, Raytheon promises it will engage Polish firms in work on the new 360 degree radar, interceptors and other elements of the fire control and command system. These plans offer serious opportunities, which may be further reinforced if Poland chooses any other U.S. contractor in the upcoming modernisation programme. If the offset programme is set correctly, and thoroughly implemented, Poland can, and should, acquire technological skills not only to manufacture vital elements for the Polish variation of the Patriot system domestically, but also to develop components that would find an export market among the large and growing community of Patriot users around the world. An ideal situation, though very difficult to bring to fruition without a great deal of effort from both sides, would be for Poland to become a supplier of Patriot components to the U.S. domestic armaments market. At the same time, U.S. prime contractors should look at where Polish defence enterprises have an edge, such as in costs of highly-skilled labour (engineers, software designers and technicians) and some niche technologies (sensors, electronics and software). And they should build their business model, a long-term one, on this basis. More engagement with the Polish academic and research environment, such as technical universities, research institutions and others, would also be of much help, as this would surely present new opportunities for developing business in Poland and with Polish partners. Here, innovative technologies are key. Poland and the U.S. have to start working on R&T, even if on a small scale at the beginning, if defence industrial cooperation is to be truly structured, long-term and beneficial beyond the purely operational aspect.

But, no matter how advanced, structured and far-sighted, defence industrial relations between Poland and the U.S. would be genuine only if they serve also to underpin a broader strategic partnership between Poland and the United States, based on common interests. Given the rapidly worsening security environment in Europe, both states need to develop additional vehicles of political and military cooperation, which would ensure that, despite a global shift of strategic and economic attention to China and East Asia, Europe will remain a continent able to deter potential foes from any kinds of aggression. Through NATO programmes and in the bilateral format, the U.S. should keep Poland, and Central Eastern Europe as a whole, on its map of continuous military involvement. Only then would a more advanced defence industrial relationship serve as an additional security pillar, reinforcing the transatlantic and European institutional framework and offering something that Poland really needs, considering the prospects of an evolution of threats coming from the immediate neighbourhood of the transatlantic area.

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