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Turkey's involvement in the F-35 program

One step forward, two steps backward?

Turkey has been involved in the international consortium that builds the F-35 Joint Strike Fighter (JSF) since 1999. The relationship between Turkey and the consortium may appear to be rocky, however, because of Turkey's many hesitations to commit to the JSF program. In this article we argue that these hesitations are strategic, designed to extract maximum benefits for Turkey's defence industry from the consortium manufacturing the fighter jets. For in addition to wanting to buy these fighter jets, Turkey seeks to maximize the amount of local work-share to secure access to the software of the aircraft, and to accumulate enough experience that will eventually lead to designing and manufacturing a "fully indigenous" combat aircraft.

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Currently, Turkey's arms and aviation exports total US\$1 billion, and locally-manufactured items account for more than 50 percent of Turkish defence procurement. Consequently, the professed aim of building an indigenous combat aircraft can be taken as a manifestation of the pursuit of a greater share of, and a greater say in, the global arms trade.

This article unfolds in three sections. In the first section, we give a brief history of military aviation in Turkey, including Turkey's efforts to develop an indigenous aircraft industry; in order to understand Turkey's involvement in the F-35 program, it is crucial to understand Turkey's desire to build a fully indigenous combat aircraft. Second, we give a timeline of Turkey's inclusion in the F-35 program and discuss the motives and goals behind Turkey's involvement in the JSF. Finally, we address the ebbs and flows in the Turkish approach to the entire JSF program in parallel to the rapidly changing international context, the cost overruns, and the extent of work-share secured for Turkish industries.

MILITARY AVIATION AND AIRCRAFT INDUSTRY IN TURKEY

In May 2011 the Turkish Air Force (TuAF) officially celebrated its centennial. In 1911 the ailing Ottoman Empire created an experimental aviation unit. In its infancy, the Ottoman (and then the Turkish) air force saw action in a number of major conflicts that came in quick succession from the Balkan Wars in 1912-1913, to the First World War, to the Turkish War of Liberation in 1919-1922. Once modern Turkey was established in 1923, submarines and aircraft became the weapons of choice for the defence of the new Turkish state. Yet aircraft had one distinct advantage over submarines—popular appeal. Hence aircraft and aviators quickly turned into symbols of progress and power in Turkey. Between 1925 and 1935, ordinary Turkish people paid for about 250 military aircraft through subscriptions raised by a nationwide fundraising drive organized by the Turkish Aircraft Association (later, the Turkish Air League, or THK), creating a strong and resilient bond between the people and aircraft in Turkey.

The Versailles limitations on German arms production provided Turkey with an opportunity to have an early start in aircraft production. Seeking a way around the restrictions, the German aircraft manufacturer Junkers set up an assembly line for its A-20 military and F-13 civilian aircraft in the Central Anatolian city of Kayseri in 1925. Although this first attempt ended in failure, the Kayseri Plant was used in assembling aircraft purchased from the United States, Germany, Poland, and Britain in the 1930s. Meanwhile, several individuals had started their own businesses to design

and build aircraft in Turkey. Among them, the best known were Vecihi Hürkuş, a veteran fighter pilot noted for his boldness, and Nuri Demirağ, an entrepreneur and aviation enthusiast. Such private ventures bore only modest results. Nevertheless, Hürkuş in particular left a lasting mark on Turkish aviation as the builder of the first ever Turkish aircraft.¹

In the interwar era, Turkey followed a policy of avoiding dependence of all sorts. The Turkish government took great strides in diversifying its arms suppliers. Britain, Germany, and the US supplied bombers and trainers, while the fighters were bought from Poland. On the eve of the Second World War, Ankara had to reconsider its policy. The month after the German attack on Poland in September 1939, Turkey signed a treaty of alliance with Britain and France. The treaty called for French and British military assistance to Turkey, including military aircraft. During the war, the Turkish air service began to grow under British tutelage and with US lend-lease aircraft. Moreover, Turkish officers were sent to Britain for flight training.² A new plant was built by the Turkish Air League at Etimesgut, a suburb of Ankara, to assemble British Gypsy engines and Miles Magister trainers. The plant's final product was a direct descendant of the Miles Magister, with clipped wings, an enclosed cockpit, and an uprated engine. Named MKEK-4 Uğur ("Lucky Charms"), these 60 planes were built to meet the TuAF requirement for basic trainers in 1954. The Uğur would be the last aircraft to roll off an assembly line in Turkey until the late 1980s.

Two years after the end of the Second World War, Turkey became a recipient of US military assistance under the Truman Doctrine. The US military assistance arguably helped Turkey build and sustain an air force that was beyond the country's own means in the early Cold War years. An independent Turkish air force itself was an American idea. It materialized when the Turkish parliament passed a new law in May 1949 to reorganize the Turkish defence establishment according to the US model.³ The downside of US military assistance was that it rendered Turkey's fledgling

1 For a history of early Turkish attempts at aircraft manufacture, see Tuncay Deniz, *Turkish Aircraft Production* (Ankara: Ertem Matbaa, 2004), 9–34.

2 Gary Leiser, "The Turkish Air Force, 1939-1945: the rise of a minor power," *Middle Eastern Studies* 26, no. 3 (July 1990): 383–95.

3 Craig Livingstone, "'One thousand wings': The United States Air Force Group and the American Mission for Aid to Turkey, 1947-1950," *Middle Eastern Studies* 30, no. 4 (October 1994): 778–825.

arms industries redundant. Turkey's moderately advanced aircraft design and production capability did not stand a chance to survive the flow of US military equipment and arms after 1947.

The US strategy for military assistance in the early Cold War years accorded primacy to the Turkish Army, which received the lion's share of American military aid. Despite its institutional independence, TuAF's principal function was to provide tactical air support to ground operations. In 1952 its combat wings began to transition to jet aircraft with the delivery of F-84G Thunderjets. The F-84G marked the beginning of the reign of the US—or, more precisely, the US Air Force (USAF)—jet combat aircraft in the Turkish Air Force Service. This jet combat aircraft was followed by the F-86E Sabre in 1954, the F-100C/D Super Sabre in 1958, the F-84F Thunderstreak in 1959, the F-104G Starfighter in 1963, the F/RF-5A Freedom Fighter in 1965, the F-102A Delta Dagger in 1968, the F/RF-4E Phantom II in 1974, and finally, the F-16C/D Fighting Falcon in 1987. When the Turkish government agreed to host nuclear weapons on its soil in 1958, TuAF's institutional independence was finally translated into functional independence from ground warfare with the addition of theatre nuclear strike to the air force's mission repertoire. Since then, several discernible patterns have emerged in TuAF's combat aircraft procurement (or acquisition) patterns.

First and foremost, TuAF has exclusively operated combat aircraft designed and built for USAF since 1952. A recent study based on eight USAF aircraft types operated by TuAF found the average lag time between TuAF's acquisition of a new USAF combat aircraft and its introduction into the US service was 6.9 years. The F-5A took the shortest and the F-4E the longest time to see service with TuAF, with three years and 14 years lag time, respectively.⁴ This lag time suggests that a strong element of path dependence shapes Turkish choices. TuAF has traditionally favoured combat aircraft endorsed by USAF; however, not every USAF-operated combat aircraft was welcomed by TuAF. The air force's lack of enthusiasm for non-USAF combat aircraft is nearly as strong as its reluctance to operate dedicated or mission specialized combat aircraft. Indeed, with the exception of the F-86E and the F-102A (which were interceptors), all other US-built types operated by TuAF were in multi-role, fighter-bomber configuration. For instance, in 1961 the US offered Turkey a squadron of Italian-built G-91R lightweight strike aircraft under the Mutual Assistance Program (MAP). TuAF turned down

4 Cengiz Karaağaç, "Altıncı nesil savaş uçağına giden uzun yol," *Hava Kuvvetleri Dergisi* 364 (February 2010): 10.

this offer on the grounds that it did not want to compromise TuAF's logistics system by introducing an Italian aircraft. In addition, the G-91 did not suit the air force's mission requirements. In 1984 the British proposal to sell 40 Tornado aircraft suffered a similar fate as it involved a European design dedicated to interdiction and strike only. Finally, in 1993 TuAF rejected 50 A-10A Thunderbolt II close-air support aircraft that Washington earmarked for transfer to Turkey. Though US-built and USAF operated, the A-10 was too specialized for TuAF and therefore rejected.⁵

The reliance on a single supplier for combat aircraft had obvious advantages of continuity and standardization over a diversity of suppliers; however, these advantages came with the price of heavy or asymmetrical dependence on a single source. Turkey began to experience the consequences of such dependence on the US sharply in the early 1970s. In fact, there was a reason why TuAF had to wait 14 years for the F/RF-4E Phantom II—it was a capable but expensive aircraft that was not available under the MAP, while the F-4s of all variants were needed for the war in Vietnam. Hence, Turkey had to finance the order for F/RF-4E Phantoms in 1971 from its national budget. During the détente era, the Turkish military grasped the need to develop autonomous military capabilities for national contingencies involving Cyprus. In 1964 US president Lyndon Johnson had already reminded Ankara in no uncertain terms that it could not use US-supplied military hardware in Cyprus. The short-term solution to this predicament would be diversification of suppliers. The long-term solution, however, was to develop (or jump start) a national aircraft industry. The budget constraints compelled the Turkish decision-makers to emulate what had been successfully implemented in the interwar years. In 1970 Hava Kuvvetlerini Güçlendirme Vakfı (Foundation for a Stronger Air Force) was established to raise funds from individuals and institutions to build a national aircraft industry. The foundation's motto, "kendi uçağını kendin yap" ("build your own plane"), was devised to appeal the air-mindedness, or air nationalism, in Turkey. In 1973 the foundation provided the start-up capital for TUSAŞ (Türk Uçak Sanayi Anonim Şirketi, or Turkish Aircraft Industries Inc.).

In the 1970s a chain of events precluded the implementation of the idea of a national aircraft industry in Turkey. In July 1974 Turkey intervened militarily in Cyprus. The military operations in Cyprus proved the value of

5 "Memorandum for Mr. Bundy," National Archives and Records Administration, Washington, 13 May 1961; Zübeyir Batur, *Bir Savaş Pilotunun Anıları*, (İstanbul: Kastaş Yayınları, 2006), 107-109; *Savunma ve Havacılık* 8, no. 1 (1994): 31.

airpower in deciding the outcome in modern wars; however, the Turkish move precipitated a US arms embargo. For the first time, US Congress interjected itself into US arms transfers decisions, and it has jealously guarded its status vis-à-vis the executive branch ever since. Consequently, Congress has remained an important consideration for, or constraint on, the US-Turkey arms deals.

The arms embargo seriously crippled Turkey's military capabilities, with TuAF hardest hit of all of the services. Occurring in tandem with chronic foreign exchange shortages aggravated by the oil crisis, the arms embargo also widened the capability and generational gap between TuAF and other NATO air forces. Belgium, Denmark, the Netherlands, and Norway established a consortium to build General Dynamics F-16A/B Fighting Falcon in the late 1970s. At the same time, in 1977 the TUSAŞ awarded Aermacchi of Italy a contract to build the MB 339 Trainer/Close Air Support Aircraft for TuAF. A year later, when the embargo was finally lifted, the US rushed to supply T-38A Talon advanced trainers to Turkey and effectively killed the MB 339 deal.

THE F-16: REINVIGORATING THE NATIONAL AIRCRAFT INDUSTRY

The idea of manufacturing a combat aircraft in Turkey was left to hibernate until the 1980 military coup. In 1983, before handing power to the first elected civilian government, the military government sought partners to build 270 (subsequently, 160) combat aircraft in Turkey. Although the low level of industrialization in Turkey raised questions of viability of the co-production option, two US producers, General Dynamics and McDonnell Douglas, showed interest in the Turkish deal.⁶ The former offered the F-16 Fighting Falcon and the latter, the F/A-18 Hornet for co-production. After thorough consideration, Turkey opted for the F-16C/D over the F/A-18A/B. The single-engine Falcon had a lower price tag for 160 units, costing around \$1 billion less than the twin-engine Hornet. Moreover, the F-16 was operated by the USAF, while the F/A-18A was a naval aircraft. It should be added that Washington had already identified an urgent need to modernize Turkish forces in the 1980s in view of the revival of Cold War tensions. The Iranian revolution and the Soviet invasion of Afghanistan contributed to the rise of Turkey's real estate value for western security. This new strategic imperative

6 Ron Ayres, "Arms production as a form of import-substituting industrialization: the Turkish case," *World Development* 11, no. 9 (1983): 813–823.

helped Congress and the White House to bridge their differences, though only temporarily, on arms transfers to Turkey.

In 1984 TUSAŞ and General Dynamics (which was subsequently acquired by Lockheed Martin) established Turkish Aerospace Industries (TAI) as a joint venture, with TUSAŞ holding a 51 percent controlling interest. TAI would assemble all but eight F-16C/D Fighting Falcons ordered for TuAF. Moreover, TAI was contracted to build 76 aft and 41 centre fuselages, as well as 27 wings for USAF F-16s as direct off-set sales. TAI assembly lines were complemented by another joint-venture between TUSAŞ and General Electric (GE) for the co-production of the F 110 –GE 100 turbofan engines to power the Turkish F-16s. Currently, both TAI and Turkish Engine Industries (TEI) represent Turkey's core industrial capacity for aircraft production. In addition to the original batch of 160 F-16s, TuAF was able to order a second batch of 80 F-16C/Ds, thanks to the funding from the Gulf countries that offered \$1 billion in appreciation of Turkey's support during the Gulf Crisis in 1991. Moreover, TAI was contracted with the final assembly of 46 F-16C/Ds ordered by Egypt. In November 1999 the 278th F-16 rolled off TAI assembly lines to mark the end of the co-production phase.

A number of industrial, military, and political lessons were learned from Turkey's involvement in F-16 production. First, and against all odds, Turkey managed to build an aerospace industry from scratch. The F-16 deal placed Turkey on a steep learning curve when it came to aircraft production. For instance, towards the end of the project, TAI was able to produce about 90 percent of the fuselage; however, despite gains in aircraft and composite parts production technologies and know-how, the local value added remained disappointingly low—only about 8–9 percent of the value of an F-16.⁷ This important lesson led the Turkish government to raise the bar for local value-added expectations in future co-production agreements. Another important industrial lesson learned was related to the perceived comparative advantage of early participation in multilateral cooperation agreements over bilateral deals. Looking back, many regretted that Turkey had been left out of the European consortium for F-16 production. As a late-comer and stand-alone customer, Turkey had to settle for far fewer benefits than those enjoyed by Belgium, Denmark, the Netherlands, and Norway from their F-16 co-production deal in the 1970s. A third lesson was that the foreign partners are usually, if not always, less enthusiastic about developing indigenous

7 “Türk havacılık ve uzay sanayi geleceğe hazırlanıyor,” *Savunma ve Havacılık* 115 (2006): 70.

aircraft design and production capabilities, and more interested in assembly projects. Finally, the involvement in F-16 co-production brought home the growing importance of software over hardware in combat aircraft design and production. Without access to software, the production of hardware does not necessarily secure independence from suppliers. When Ankara attempted to apply this lesson learned to another co-production deal with the US for the AH-1Z King Cobra attack helicopters, it met with stiff resistance. Consequently, the project was cancelled over the US refusal to grant Turkey unrestricted access to the helicopter's mission computer in 2003.⁸

TuAF, for its part, drew its own lessons from the F-16 operations. To start with, TuAF has never regretted the choice made in favour of the F-16 in 1983. The aircraft boosted its operational capabilities and enabled it to project power beyond Turkey's borders in national and coalition operations. It validated the theory that a multi-role combat aircraft provided a more cost effective answer to the air power requirements of a country like Turkey. Moreover, it helped TuAF swiftly close the generational and capability gap with its European counterparts. Finally, the F-16 proved the superiority of US technology and the suitability of USAF-operated combat aircraft to TuAF's needs.⁹

There were also political lessons learned. After his initial reluctance to underwrite the F-16 project, Turgut Özal, prime minister in the first elected civilian government after the 1980 coup, was quick to grasp the appeal of aircraft to the Turkish public. The F-16 stood in Turkish eyes as the culmination of the dream of building Turkey's own aircraft. And while the official name of the F-16—Fighting Falcon—never really caught on in most countries that flew F-16s, when the name was translated into Turkish—Savaşan Şahin—it struck a chord with the Turkish public.¹⁰ Until his death in 1993, Özal, who subsequently became president, made liberal use of the F-16 project in support of his claim that under his rule Turkey had made a quantum leap. It should be added that TuAF's inability to contribute to the US-led coalition during the Gulf War for a lack of combat aircraft that could survive in a high threat environment might have also persuaded Özal to

8 Lale Sariibrahimoğlu, "Confusion over Turkish attack helicopter project," *Jane's Defence Weekly*, 8 October 2003.

9 Zübeyir Batur, *Bir Savaş Pilotunun Anıları* (Istanbul: Kastaş Yayınevi, 2006), 104–105 and 140–142; Erdoğan Öznal, *Hava Kuvvetlerinde 40 Yıl* (Ankara: SFN, 1999), 135–137.

10 USAF pilots disliked the official name and instead called the F-16 the "Viper," apparently because it recalled "Colonial Viper," the name of a fighter spacecraft on the 1978 TV show *Battlestar Galactica*.

change his views about investing in military aviation. When the Yugoslav conflict required the deployment of NATO aircraft, TuAF F-16s were combat ready and participated in allied operations in Bosnia and Kosovo in the 1990s.

TURKEY'S INCLUSION IN THE JSF CONSORTIUM

Turkey's involvement in the JSF consortium should be considered in light of these factors. Compared to the local manufacturing of the F-16s, joining the JSF consortium might at first seem like increased dependence on outside resources. Yet this increased dependence should be considered as a step by Turkey toward achieving the goals that the Turkish defence industry has pursued all along—increased know-how that would minimize dependence in the production of a new generation of fighter jets, as well as the prestige (mostly international, rather than domestic) that comes with joining this consortium alongside advanced industrial nations like the US, the UK, Australia, Canada, Denmark, Italy, the Netherlands, and Norway. Turkey's interest and later involvement in the JSF goes back to the mid-1990s. Having paid approximately \$5 million to become an informed partner, Turkish defence authorities were regularly briefed on the progress of the JSF. In 1998 Turkey applied to become a partner in the consortium. By that time, TuAF had already defined its requirements for a new generation combat aircraft. The Gulf War, the Yugoslav conflict, and the F-16 operations prompted TuAF to reconsider its priorities around a force of two types of multi-mission combat aircraft. Since the F-16 was supposed to serve well into the 2000s, it needed to be supplemented by a new multi-role combat aircraft. The new aircraft that would succeed the venerable F-4E Phantom II in Turkish service had to be a force multiplier, enabling TuAF to do more with less, or punch above its weight.¹¹ Yet the Turkish emphasis on independent capabilities stands in contrast to the original operational requirements that shaped the JSF as a weapons system of network-centric warfare for US-led coalitions of the willing.

The negotiations with the US began a year later in 1999. Tacit US approval of Turkey's participation in the JSF program followed in March 2000. During a speech delivered at the American Turkish Council in Washington, Secretary of Defense William S. Cohen commended Turkey's location and role in the international system by saying that "Turkey is a vital link in terms of blending Russia and Central Asia and the Caucasus and bridging the gap

11 "Hava Kuvvetleri Komutanlığı," *Savunma ve Havacılık* 12, no. 6 (1998): 57.

between the western world and Islamic world.” He also announced that the US would grant its approval of Turkish participation in the JSF program’s development phase. As he put it, “sharing this program will put Turkey in the forefront and leadership of building a secure and stable Middle East.”¹² In the words of one Turkish diplomat, this US invitation meant taking “the rhetoric of the Turkish-US strategic partnership to a concrete level.”¹³

Turkey’s track record in the US-led coalitions most probably accounts for its inclusion in the JSF project. For instance, in 2003 a RAND study ranked Turkey the third most frequent partner after Britain and France in such coalition operations. Out of 14 UN and 26 non-UN operations covered by the study, Britain participated in 29, France in 28, and Turkey in 23. Thus Turkey was identified as a NATO member that from the US perspective was a desirable interoperable partner.¹⁴ Although the American decision permitting Turkey to join the program was based mostly on alliance calculations, several issues were unclear from Turkey’s perspective, namely, Turkey’s participation level, local work-share, and access to software source codes. According to the same report heralding the initial US approval, Turkey was asked to contribute around \$300 million in order to be able to join the Engineering, Manufacturing and Development (EMD) phase (subsequently renamed System Development and Demonstration, or SDD, phase), but did not receive any guarantees for local work-share. In March 2002 it was reported that Turkey wanted to join the SDD phase as a Level 2 partner with an investment of \$1 billion, yet in July 2002 Turkey joined the program as a Level 3 partner.

The second issue of prime concern for Turkey was local work-share. The participation of local industries was made a precondition for Turkey’s participation in the JSF project. The expectation was that work-share secured in the EMD phase could translate into major gains in the production phase; however, the two competitors, Boeing and Lockheed Martin, did not seem enthusiastic about Turkish industrial participation. Since affordability was

12 “Remarks as delivered by Secretary of Defense William S. Cohen, Grand Hyatt Hotel, Washington DC, Friday, March 31, 2000,” Department of Defense, Washington, 2000. It should also be noted that the strategic partnership rhetoric did not originate from Washington but from Ankara, which was attempting to find a credible substitute for the EU candidacy that Turkey had been denied throughout the 1990s.

13 Lale Sariibrahimoğlu, “Turkish involvement in JSF reflects first concrete step in Turkish-US strategic partnership,” *Turkish Daily News*, 5 April 2000.

14 Eric Larson et. al., *Interoperability of NATO and Allied Air Forces: Supporting Data and Case Studies* (Santa Monica: RAND Corporation, 2003), 6.

an important parameter, the work-share decisions were supposed to be made on the basis of “best value” principle. In contrast, the Turkish official target was to secure work-share for Turkish companies that would correspond to at least 50 percent of the JSF order's cost to Turkey.¹⁵ Hence, from day one Turkey lobbied for local industrial participation. Once Lockheed Martin's F-35 was announced as the winning aircraft in October 2001, Turkey's undersecretariat for defence industries (Savunma Sanayii Müsteşarlığı—SSM) signed a letter of intent with Lockheed Martin. Yet for several years, no local work-share was allocated. Nor did TAI's affiliation with Lockheed Martin appear to be a consideration of the US. Faced with the reluctance of Lockheed Martin to direct work-share to Turkey, Ankara resolved to find an alternative way to guarantee local work-share.

In addition to the uncertainty over local work-share, in 2003 US-Turkey relations went through two crises of confidence which further cast doubt on Turkey's participation in the JSF consortium. On 1 March 2003 the Turkish parliament voted down a motion that would allow the US to deploy troops in Turkey for the upcoming occupation of Iraq. The Pentagon held the Turkish general staff responsible for this outcome. On 4 July 2003 the military-to-military relationship further deteriorated when US troops in Iraq apprehended and hooded some Turkish special forces stationed in Suleymanieh, Iraq. As a result of what in Turkey is known as the “hood event,” the crisis of confidence deepened and was followed by a wave of profound anti-Americanism in the Turkish military.¹⁶ Overall, in 2003 and 2004 the weakened state of the US-Turkey strategic partnership was not conducive to continued Turkish participation in the JSF.

At this point, the Eurofighter Typhoon option made a sudden and unanticipated appearance in Turkish thinking. In 2005, the SSM issued a request for information to US and European aircraft producers for 120 combat aircraft. This request ran counter to the belief that Turkey's participation in the JSF was a foregone conclusion. While the JSF program did not involve any off-set arrangements, the Eurofighter consortium was eager to offer 100 percent offset and equal rights to Turkey as a fifth full partner, along with Britain, Germany, Italy, and Spain. At that time, Turkey had already been a full-fledged and equal partner in another major European military aircraft

15 Levent Başara, “JSF programı ve son duruma bir bakış,” *Savunma ve Havacılık* 83 (2001): 70.

16 Soli Özel, Şuhnaz Yılmaz, and Abdullah Akyüz, *Rebuilding a Partnership: Turkish-American Relations for a New Era* (Istanbul: TÜSİAD, 2009), 38.

program, the A400M. Having joined seven other European nations in the Future Large Aircraft (FLA) Exploratory Group in 1984, Turkey subsequently became an *ad hoc* participant in one of the earliest European armaments agencies, the OCCAR (Organisation Conjointe de Coopération en Matière d'armement). By the same token, it was expected that membership in the Eurofighter consortium could clear the way for Turkey's admission to the newly established European Defence Agency (EDA) of the EU.

The timing suggests that the Turkish government attempted to raise the stakes for Lockheed Martin by throwing Turkey's continued participation in the program into question on the eve of a critical decision threshold. During a September 2005 interview, Murad Bayar, the newly-appointed head of the SSM, underscored Turkey's interest in the Eurofighter:

Turkey is keen to reach a conclusion that will meet its needs in terms of operational requirements, logistical support, local work-share and project costs. However, by the end of 2006, when we come to the moment of a grand decision that will shape the future fighter needs of the Turkish Air Force, we plan to take into consideration the alternative option—the Eurofighter. By then [the end of 2006] the Defense Industry Executive Committee will be able to make the optimal decision. We may buy only the JSF, only the Eurofighter, or a combination of both. All three options are open.¹⁷

In other words, when the conditions that Turkey requested in various areas, especially in operational requirements and local work-share, did not materialize, Turkey hinted that it might take its business elsewhere—to Europe. The Turkish aircraft procurement process hence mirrored the oscillations in the country's triangular relationship with the US and the EU in the post-Cold War era.

This pitting of the JSF against the Eurofighter was taken to a new level when in November 2005 the Pentagon declared that it might cancel the air force version of the F-35, the version that Turkey wanted to acquire. The timing of Pentagon's declaration was momentous because a month earlier, in October 2005, Turkey had begun its accession negotiations with the EU. In this period the Justice and Development Party (JDP) government was very interested in the EU, and harmonization with the EU in most, if not all areas, including defence, was a prime concern. At the end of 2005 and in

17 "Tough task ahead for SSM," *Hürriyet Daily News*, 27 September 2005.

early 2006, when all of these issues were coupled with the start of Turkey's accession negotiations with the EU in October, the Eurofighter started to look like a more concrete alternative to the F-35.

This situation changed quickly. In January 2006 Lockheed Martin intervened and offered local work-share worth \$3.5 billion (at 2002 prices) to TAI—an offer that Turkey did not find satisfactory on the grounds that it was not large enough to generate work for local industry separate from TAI, such as Roketsan, Aselsan, and Havelsan.¹⁸ In March 2006, two months after the Lockheed Martin offer, the Eurofighter consortium responded to the request for information that Turkey issued in late 2005. Reportedly, as of March 2006, despite Turkey's investment of \$175 million in the development phase of the JSF, Turkish officials were left wondering about the overall cost of the program, the timing of the F-35 deliveries, and the amount of local work-share it would receive.¹⁹ For Turkey, by early 2006 the JSF program still had several unknowns, not only regarding local work-share, but also regarding the cost of the program and the scheduled delivery of the aircraft.

Another development that did not seem to favour Lockheed Martin was a change of TAI ownership in 2005 through TUSAŞ's acquisition of Lockheed Martin shares. This move effectively nationalized TAI, while TEI was unaffected by the change. Reportedly, the acquisition was part of the restructuring plans of Turkey's defence industry and aimed at consolidation and emphasizing national design solutions. As such, the acquisition represented a step forward for Turkey in the direction of enhancing indigenous aircraft design, development, and production capabilities.²⁰

Shortly after the Eurofighter consortium's response, Turkey received \$3.5 billion worth of local work-share to build composites and centre fuselage—an offer that fell short of the expected \$5-6 billion of local work-share that would offset half of the total cost of acquisition now announced to be \$11-12 billion. Turkey's ideal work-share would revamp TAI (and Turkey's defence industry as a whole), which was generating revenue of only \$100 million per year and employing only 1500 persons.²¹ In October 2006

18 "F-35 takes off soon for air—and corporate—warfare," *Hürriyet Daily News*, 11 April 2006.

19 "Eurofighter flies full swing for Turkish contract," *Hürriyet Daily News*, 9 March 2006.

20 "TAI, quo vadis?" *Hürriyet Daily News*, 2 November 2005.

21 "JSF consortium offers \$3.5 billion work for Turkish defense industry," *Hürriyet Daily News*, 22 March 2006.

Turkey announced that it would buy a new batch of 30 Block 50+ F-16C/Ds as a stop-gap in case of a delay in the F-35's delivery. The value of the new F-16 order was estimated to be between \$1.5 and \$2.9 billion. This order also rendered redundant the planned \$480 million F-4E upgrade program, under which substantial fees would be paid to Israel for licensing.²² A visit to Washington in October 2006 by the minister of defence, Vecdi Gönül, and the head of the SSM, Murad Bayar, made progress. After his meeting with Donald Rumsfeld, Gönül announced that Turkey would sign the agreement before the end of November 2006 and that F-35 was the preferred choice of the Turkish military—though Gönül had not made a final decision to buy the aircraft.²³ Gönül's announcement was important not only in declaring Turkey's renewed commitment to the JSF, but also in eliminating the Eurofighter as one of the possible providers of Turkey's next generation of fighter jets. Turkey's renewed commitment to the JSF should be interpreted as a direct consequence of the recovery in US-Turkey relations following the signing of a shared strategic vision paper in July 2006.²⁴

When the memorandum of understanding (MOU) conforming Turkey's membership in the JSF consortium was finally signed in January 2007, Turkish officials had already secured \$4.2 billion worth of local work-share and were expecting the value of work-share to increase to \$5 billion through additional contracts. According to this deal, the bulk of the local work-share was to go to TAI to manufacture the centre fuselage for about 400 of the F-35 aircraft.²⁵ Both Turkish and American officials highlighted that the deal increased Turkey's international prestige. Bayar, for example, said that "Turkey is joining this project not as a mere buyer, but as a full partner ... we are now one of the nine partners in developing and producing this aircraft." For their part, American officials claimed that the agreement would enhance the Turkey-US relationship.²⁶

22 "Turkey to buy 30 new F16s worth \$2.9 billion, says Pentagon," *Hürriyet Daily News*, 1 October 2006.

23 "Defense committee to formalize Turkey's intent to buy F-35," *Hürriyet Daily News*, 12 December 2006.

24 "Shared vision and structured dialogue to advance the Turkish-American strategic partnership," Embassy of the United States in Turkey, Ankara, 5 July 2006, www.turkey.usembassy.gov.

25 "Turkey to get work share worth over \$5 billion in F-35," *Hürriyet Daily News*, 26 January 2007.

26 "US says F-35 deal to boost ties with Turkey," *Hürriyet Daily News*, 27 January 2007.

This MOU confirming Turkey's participation in the production stage was, along with its supplementary and financial documents, debated in the Meclis, Turkish parliament in May 2008. Not surprisingly, during these debates Turkey's considerations, concerns, and rationales for adopting the F-35 over the Eurofighter surfaced. The MOU that was submitted to the legislature for approval stated

that out of the envisaged \$40 billion total cost of the production stage, Turkey would be paying \$175 million; that Turkey was planning to buy 100 F-35s, priced around \$70-75 million per aircraft; that the present MOU was only an agreement confirming Turkey's participation in the program's production stage and that Turkey would be signing a separate agreement of the aircraft orders and that this was projected to be made in 2010, followed by a 2013 delivery date; the total cost for Turkey would be \$10.7 billion and Turkish defence industry would be getting \$5.5 billion worth of local work-share.²⁷

Overall, the MOU addressed the two most important Turkish concerns—costs and local work-share; however, the issue of software access remained and became the main theme of debates in parliament. For example, Şükrü Elekdağ, a deputy from the opposition Republican People's Party (RPP), reminded parliament of the case of British jets downed by Argentinean missiles as a result of the jets' identification, friend or foe (IFF) technology, which identified Argentinean attackers as friendly. Elekdağ noted that several times the US refused to give or make changes to codes on Turkish F-16s, and argued “that a fighter jet that is not equipped with proper electronic codes fitting its mission is nothing but a stove-pipe that flies faster than sound.”²⁸ The members of the governing JDP, on the other hand, knowing that Turkey would not easily be granted access to the source codes, tried to dispel these criticisms. First, the JDP deputies argued that the government had secured “a special guarantee” from Lockheed Martin that the company would include indigenous capabilities. Second, they stated that the source codes issue would be kept on the agenda as a bargaining chip until the orders were given in 2010. Moreover, the fact that Turkey was able to get these codes

27 “Dışişleri Komisyonu Raporu,” *Türkiye Büyük Millet Meclisi (TBMM) Tutanak Dergisi*, term 23, vol. 20, session 105, 15 May 2008, 1070–1075.

28 Şükrü Elekdağ, *TBMM Tutanak Dergisi*, term 23, vol. 21, session 108, 22 May 2008, 453.

for the F-16s from earlier production blocks suggested that when the time came, Turkey would be able to get the electronic codes for the F-35s. A third argument was that Turkey had managed to negotiate a significant \$5 billion worth of local work-share, and that TAI only needed \$150 million worth of investment to be able to process that local work-share. Fourth, the mere fact that Turkey was admitted to the JSF program should be seen as an extension of efforts to create a “national defence industry” that involved, among many things, the construction of a national plane—the Hürkuş (Freebird) trainer, named after a pioneering Turkish pilot/entrepreneur, Vecihi Hürkuş. During the parliamentary debates, Minister of Defence Vecdi Gönül stated that the Hürkuş was expected to fly in 2010 and be ready for delivery in 2012.

Also in the parliamentary debates, Gönül outlined the government’s reasons for choosing the JSF over the Eurofighter. He stated that the Eurofighter was technologically inferior to the F-35; that the Eurofighter did not generate significant amount of local work-share; and, more importantly, that Turkey was not made a member of the EDA because of Greek Cypriot objections.²⁹ The timing of the fall from grace of the Eurofighter was no coincidence. The call for instituting a “privileged partnership for Turkey,” initiated by German Chancellor Angela Merkel, became more vociferous with election of Nicolas Sarkozy as president of France in May 2007. In addition to the already existing Cypriot vetoes against the opening of several chapters in EU membership negotiations, in June 2007 France effectively blocked Turkey’s EU negotiations by vetoing the opening of five other chapters.³⁰ In other words, by May 2008, as the debates regarding the JSF were being held in the Turkish parliament, Turkey’s EU accession application, and by extension its Eurofighter option, had run out of steam.

In 2011 Turkey’s work-share of the JSF program was found unsatisfactory by Turkish procurement officials. The overall cost has remained a secondary

29 Nurettin Akman, *TBMM Tutanak Dergisi*, term 23, vol. 21, session 108, 22 May 2008, 456–57; Vecdi Gönül, *TBMM Tutanak Dergisi*, term 23, vol. 21, session 108, 22 May 2008, 466–68.

30 Dan Bilfesky, “Turkish entry into Europe slowed by Sarkozy move,” *New York Times*, 25 June 2007. As of May 2012, 18 chapters of the *Acquis* remain blocked, eight by the EU and 10 as a result of the opposition from Cyprus and France. See Jonathan Head, “Analysis: Turkey’s long wait to join EU club,” *BBC News, Europe*, 17 May 2012. Sarkozy’s successor, François Hollande, recently pledged to unblock one of these chapters. “France to assist Turkey in opening EU chapter,” *Hürriyet Daily News*, 12 February 2013.

concern for defence industry management and deputies in the Turkish parliament, who cared more about the value of the F-35 contracts awarded to Turkish companies. A cost estimate for 100 F-35A Lightning IIs was revised to nearly \$16 billion, with an attendant rise in the value of work-share secured by Turkish companies to \$7.15 billion. The program's cost overruns took Turkish work-share below the targeted 50 percent. A year later, the Turkish defence industry caught up with the cost increases with new contracts for work-share. By that time Turkey had invested around \$400 million in the project, including long-term interest-free credits to Turkish companies that had secured work-shares. Such credit facilities have arguably helped Turkish companies absorb the costs associated with the delays in the project.³¹ For the time being, if there are no more cost overruns, Turkey's concerns about the local work-share seems to be satisfied.

There remain two major unfulfilled Turkish expectations in the JSF project. The first is Turkey's interest in hosting a regional Final Assembly and Check-out (FACO) facility for F-35 engines. In this regard, the US decision to cancel the GE F136 engine was probably a blow to Turkish aspirations. It ruled out the involvement of TEI, a GE affiliate, in any engine-related work, while contracting production of the F135 engine, the only option available to power the JSF, to Pratt and Whitney. The second concern is unrestricted access to source codes. Ankara attempted to use its first JSF order as leverage to extract concessions in this respect. In March 2011 Turkish authorities deferred placing the first Turkish order to no avail. On 5 January 2012, Turkey finally placed its first order, reduced from the anticipated six to two F-35As. Turkish defence media reported that the initial order was deliberately reduced to two from the originally planned six in order to make a statement about dissatisfaction with the current level of work-share given to Turkish companies and Turkey's lack of progress in pursuing access to source codes.³² In January 2013 Turkey took another step back and decided to suspend its first order for two F-35As on the grounds that the aircraft has not demonstrated the projected level of operational capability and that other consortium partners have postponed their orders. The status of the Turkish F-35 order is set to be reconsidered in 2014. If the JSF or F-35 Lightning II survives, Turkey expects to be able to operate it without any restrictions—

31 "Hedefimiz, ulusal savunma sanayimiz ile TSK'ne en son çözümleri sunmaktır," *Savunma ve Havacılık* 150 (2012): 18

32 İbrahim Sünnetçi, "Türk hava kuvvetleri yarınlarnı tanımlıyor," *Savunma ve Havacılık* 147 (2011): 46.

though Turkey might eventually settle for the integration of indigenously developed smart ammunitions, such as the TÜBİTAK-SAGE SOM (standoff missile), into the F-35 weapons suite.

CONCLUSION

In this article we identify several factors that have driven Turkey to join the consortium that builds F-35 aircraft. The primary reason for its pursuit of partnership in the consortium has been Turkey's motivation to accumulate the know-how and advanced technologies to build a true Turkish combat aircraft. By its centennial year in 2023, the republic plans to be able to replace its by then ageing Block 30 F-16s with a combat aircraft, designed and produced either indigenously or jointly with non-US partners. Turkey announced this ambition with the launch in December 2010 of its TF-X project to design, develop, and manufacture an indigenous combat aircraft. Turkey's ambitions explain its willingness to absorb cost overruns in the JSF project, as long as those overruns are compensated by local work-share amounting to 50 percent of the value of Turkey's F-35 orders.

Turkey's second reason to join the JSF consortium is that the program lends international prestige. As Turkish authorities have admitted, Turkey's place in the consortium with the major powers of world is confirmation of Turkey's status as a regional power and its potential to become a global power—an aspiration that Turkey's JDP government has frequently articulated. In addition, the fact that the Turkish defence industry will receive local work-share worth approximately \$7 billion indicates that the Turkish defence industry possesses a relatively high level of capability and know-how. Finally, Turkey learned from its experience in F-16 procurement that joining defence consortiums early on provides considerable advantages.

Turkey's hesitations during the JSF negotiations should, on the other hand, be attributed not to Turkey's opposition to the JSF but rather to Turkey-US-EU relations and to Turkey's tactical pursuit of increased local work-share for the Turkish defence industry. When, in the aftermath of the US invasion of Iraq, Turkey's relations with the US were deteriorating, while Turkey's relations with the EU were improving, Turkish officials portrayed the Eurofighter Typhoon as a serious alternative to the F-35. This stance helped Turkey to extract \$3.5 billion worth of local work-share—an amount that was found unsatisfactory by Turkish officials, who then worked hard to increase that amount first to \$5 billion and then to \$7 billion. In other words, while Turkey's participation in the JSF program has proved to be susceptible

to the ebbs and flow in Turkish-US relations, Turkey survived arguably the most serious crises of confidence between the two countries.

Finally, although military aircraft continue to capture public imagination in Turkey, it is difficult to argue that the F-35 has garnered a degree of public or political attention comparable to that of the F-16, which became a source of national pride in the 1990s. Currently, popular and political attention has shifted to the aircraft and the unmanned aerial vehicles (UAV) that have been designed and built in Turkey, such as the Hürkuş trainer and the Anka (Phoenix) UAV. Turkey continues to aspire to build its own combat aircraft; its participation in the production of the F-35A will further that purpose.