Regional Center for Democracy and Security

Towards an Asymmetric Defense Model: Building a Layered Drone Capability in Armenia

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INTRODUCTION

The military parade in Yerevan on 28 May 2026 demonstrated the preliminary results of the transformation of the Armenian Armed Forces that began following the defeats of 2020 and the September 2022 escalation. For the first time on such a scale, new systems of Indian, French, Chinese and domestic production were presented, publicly confirming the course toward diversification of defense procurement and the gradual abandonment of the previous dependence on Russia. At the same time, attention is increasing to unmanned systems and the development of the domestic defense-industrial complex.

However, the change in the structure of armaments does not eliminate the fundamental asymmetry with Azerbaijan. Baku's budgetary, demographic and economic capabilities remain significantly higher, and Turkey continues to hold important military-technological and military-political significance for Azerbaijan. Therefore, an attempt to achieve classical conventional parity with it is extremely difficult and economically irrational for Armenia. The objective, therefore, should be to build armed forces capable of ensuring that the adversary's superiority in resources does not automatically translate into superiority on the battlefield.

I – The 2024–2035 Reform and the Shift in the Military Model

After 2022, Armenia moved from partial modernisation to a deeper reform of the armed forces. The roadmap for 2024–2035 provides for the professionalisation of the army, reform of the personnel training system, increased compatibility with Western standards, modernisation of armaments and development of territorial defense.

In parallel, the system of military education and command is changing. Cooperation with NATO within the framework of DEEP is oriented toward reform of military education, development of the non-commissioned officer corps and improvement of the mechanisms of strategic and operational command. At the same time, the main challenge remains not the adoption of new normative documents, but their consistent implementation at the level of the entire military organisation.

Although politically motivated, the reduction of compulsory military service to 18 months can nevertheless be considered part of the transition to a new model. In the short term, however, it places greater demands on the quality of the contract component, reserve training, and the organisation of military instruction. Professionalisation without a sufficient personnel base could create new vulnerabilities rather than eliminate existing ones.

Diversification of Defense Partnerships

At the same time, Armenia began rapidly reducing its dependence on Russian defense cooperation. Whereas previously Russia almost monopolistically occupied the Armenian arms market, by 2025 its share in new procurements had sharply declined. The main directions of diversification became India, France, Iran and China as well as the United States and the Czech Republic.

This made it possible to close some of the most obvious shortages and at the same time to create a broader technological base. However, this multilateral model also has a reverse side: differences in standards, command systems, ammunition, technical maintenance and personnel training complicate the operation of equipment. Therefore, diversification of suppliers in itself is not the final goal. It must be transformed into a single system capable of integrating various means of reconnaissance, strike, communications and command.

From Conventional Parity to Asymmetric Deterrence

The main conclusion from past wars and escalations is that Armenia cannot compete with a potential adversary solely by quantitative build-up of traditional armaments. Given the existing difference in economic and demographic potential, an attempt to reproduce the structure of a larger army will lead only to constant lagging behind.

Therefore, the next stage of reforms must become the transition to a full-fledged model of asymmetric deterrence. Its foundation must consist of distributed, mobile and relatively inexpensive systems capable of inflicting disproportionately high damage on the adversary while simultaneously reducing the effectiveness of its superiority in equipment and resources. A key place in such a model is occupied by unmanned systems. This refers to mastery of the entire range of unmanned means from small reconnaissance aircraft and observation systems to loitering munitions, strike and heavy platforms, electronic warfare means, relay and counter-drone systems. Such a system must ensure a continuous cycle: detection, reconnaissance, target designation, engagement, battle-damage assessment.

Drones, however, are not a standalone solution. As electronic warfare, radio-electronic suppression means, counter-drone complexes, laser systems and other means of counteraction proliferate, the advantage will go not to the one who has a separate “best” drone, but to the one who is capable of rapidly replenishing losses, scaling production and continuously adapting platforms, software and the tactics of their employment. Thus, the ultimate goal of Armenia’s military transformation

must be not simple rearmament and not the mechanical replacement of Russian systems with Indian, French or other models. It is a matter of transitioning from a model of a quantitatively heavy and predominantly positional army to a more flexible system of asymmetric deterrence, in which unmanned technologies, reconnaissance, precision strike, electronic warfare, mobility and domestic production form a single architecture. Precisely the ability to master the entire ecosystem of unmanned means and to renew it rapidly can become one of the key instruments for compensating Azerbaijan's continuing quantitative superiority.

II – Domestic Developments: The First Krunk UAVs

The Birth of Armenian UAVs: Ambitions and Reality

The history of Armenian unmanned systems dates back to the second half of the 2000s. The pioneer in this field was the *Khanferyants Military Aviation Institute*, where local specialists began developing the first domestic reconnaissance aircraft.

The culmination of this stage was the appearance of the tactical reconnaissance unmanned aerial vehicle "Krunk-25," first officially presented at the military parade in Yerevan in September 2011. Later the line was expanded with the "Krunk-25-2" modifications, as well as developments such as the "X-55" UAV and the light reconnaissance drones "Baze." These systems were presented as proof of the technological competence of the Armenian defense industry. In addition, the "Krunk" possessed decent basic characteristics for the conditions of that time: an operational radius of up to 70–100 km, a flight endurance of up to 4–5 hours, and equipment with a compact gyro-stabilised electro-optical turret. It was assumed that these complexes would be integrated into automated artillery fire-control systems.

Systemic Failures and Implementation Errors: Why the Army Was Not Ready for 2020

Despite the existence of both departmental and independent domestic developments, the large-scale introduction of drones into the troops encountered deep institutional and conceptual barriers that fully manifested themselves during the 44-day war of 2020:

Military leadership for a long time regarded drones exclusively as an auxiliary means for long-range artillery reconnaissance and fire adjustment. The concept of strike drones and, even more so, of

mass loitering munitions was not only not integrated into operational planning but most likely was not even considered.

Long before 2020, private engineering companies and enthusiasts in Armenia were developing their own drone designs. At various military-industrial exhibitions and forums, interesting and promising samples were regularly demonstrated. However, due to rigid bureaucracy, the closed nature of the military system and departmental barriers, these developments remained for years without real attention from the Ministry of Defense and army leadership. The process of departmental testing and adoption into service was slowed down or did not move at all, depriving the army of innovations. Promising engineering teams could create prototypes, but the transition to a serial product, a stable state order and subsequent modernisation remained extremely difficult.

Developments for a long time remained confined within a narrow circle of enterprises linked to the ministry. Private initiative, engineering teams and start-ups were effectively cut off from state funding and military contracts. There was no environment for rapid iteration and testing of new samples. The first Armenian drones were heavily dependent on imported civilian components, which were difficult to scale in the absence of stable supply channels. At the same time, the resilience of communication channels and protection against electronic suppression did not occupy a central place in the design of the systems. The use of UAVs remained relatively limited and did not turn into a mass military capability.

As a result, by 2020 Armenia did not possess a full-fledged unmanned ecosystem. There were developers, prototypes and limited samples, yet the chain “development — testing — serial production — personnel training — tactics of employment — continuous modernisation” was absent.

Coming to Terms with Reality (2020–2022)

During the Second Karabakh War in 2020, these domestic developments confronted the harsh realities of the battlefield. While Azerbaijan systematically and massively employed technologically advanced Israeli loitering munitions (Harop, Orbiter 1K, SkyStriker), long-range reconnaissance-strike complexes (Hermes 900, Heron) and Turkish strike-reconnaissance platforms (Bayraktar TB2), tightly integrated into a single battle-management system, Armenian forces disposed of only weakly effective reconnaissance drones of the “Krunk” and “X-55” series, a limited number of commercial Chinese quadcopters and isolated examples of experimental strike drones.

Attempts to employ the available isolated domestic loitering munitions under combat conditions were episodic and largely unsuccessful. Due to the absence of serial production, weak protection against the adversary's electronic-warfare means, and the underdevelopment or even absence of tactics for their employment, these attempts were unable to exert any influence on the course of hostilities. Armenia faced a severe crisis and proved incapable of competing with the rapidly changing character of high-technology warfare.

It was precisely here that the fundamental error of the preceding period manifested itself: Armenia evaluated unmanned aerial vehicles primarily as a separate type of equipment, whereas the adversary already perceived them as an element of a unified system of warfare.

The Turning Point: Transition to a Flexible Ecosystem

The lessons of the 2020 defeat forced Armenia's military-political leadership to completely revise its approach to unmanned aviation.

This led to a transition to a model of stimulating private technology companies. The shift to such a model is of fundamental importance for the unmanned sector. Unlike traditional armaments, the life cycle of an FPV drone, a loitering munition or a reconnaissance platform is measured in months. The tactics of their employment change rapidly under the impact of electronic warfare, detection means and new methods of interception. Therefore the production system must allow not only the creation of new samples but also the continuous modernisation of existing ones.

The state provided a contractual base and financing to those teams that, already under artisanal or semi-industrial conditions, had demonstrated the ability to create working samples of reconnaissance drones, FPV systems and loitering munitions. Gradually a new logic took shape: the state must create conditions under which several private companies compete, rapidly produce prototypes, test them, receive feedback from the army and scale the most successful solutions.

It was precisely this change of paradigm, from attempts to build by means of an inflexible state order to the formation of a flexible network of private defense start-ups, that laid the foundation of the "drone ecosystem" that began to unfold in Armenia by 2024-2026.

The Drone Fleet: Expanding Capabilities and Remaining Gaps

The military parade of 28 May 2026 served as a public demonstration of Armenia's unmanned systems and was intended to project an image of military modernization. While the display was

impressive in its breadth, a closer examination suggests that the current drone fleet still does not satisfy all operational requirements.

Armenia has developed a reconnaissance UAV capability that provides battlefield surveillance, detects enemy positions, equipment, ammunition depots, and logistical infrastructure, and generates the intelligence picture required for operational planning as well as for targeting artillery and strike unmanned systems.

Over the past several years, Armenia's domestic defense industry has significantly expanded its product portfolio, progressing from an almost non-existent industrial base to a range of serially produced and pre-production systems. The leading manufacturer remains *Davaro Defense Systems* (founded in 2007, employing approximately 300 personnel). The company produces the Dragonfly/Dev family of loitering munitions (including the DDS-1, DDS-3, DDS-3.1,DDS -4, and other variants) with operational ranges extending from several dozen kilometers to more than 120–200 km. It also manufactures the DDS-10K jet-powered interceptor (maximum speed up to 200 km/h, engagement range up to 70 km, operational ceiling up to 8 km), reconnaissance and reconnaissance-strike UAVs, small FPV drones, unmanned ground vehicles, command-and-control stations, and warheads. During the 2026 military parade, Davaro displayed six separate systems, more than any other manufacturer represented.

UAVLAB specializes in medium- and long-endurance reconnaissance and reconnaissance-strike platforms, including the UL-350, UL-450, UL-550, and the armed UL-650.

Aerodynamics presented two loitering munition systems from its Meghu (“Bee”) family. The Meghu-1 was presented as a system with an operational range of up to 60 km and a truck-mounted launcher capable of simultaneously deploying six UAVs, while the smaller Meghu-5 was reported to have a strike range of up to 40 km.

Zeel AI is developing loitering munitions incorporating artificial intelligence, with particular emphasis on autonomous operation, GPS-independent visual navigation, and functionality under conditions of electronic warfare and signal jamming, with a claimed operational range of up to 250 km. *Feron*, together with several other companies, focuses on the mass production of FPV combat drones, including fiber-optically controlled variants. Some manufacturers claim a high degree of localization, including domestic production of warheads. Other producers include *AirWorker*, which manufactures lightweight reconnaissance UAVs and loitering munitions, and *IDS*, which produces the Storm-320 vertical take-off and landing (VTOL) platform.

China has supplied ASN-301 anti-radiation loitering munitions, designated in Armenian service as Vorot-1 and Vorot-2, with a declared operational range of 280–288 km, a warhead weighing approximately 30 kg, and an endurance of up to four hours. These systems significantly expand Armenia's ability to conduct strikes at the operational and strategic depth of the battlefield. The Chinese CH-4B occupies the medium-altitude, long-endurance (MALE) reconnaissance and strike niche, although its relatively large size increases its vulnerability against an adversary possessing a capable integrated air-defense network.

Taken together, the range of domestically produced and imported loitering munitions and strike unmanned systems has expanded considerably and now covers the tactical, operational, and long-range echelons. Nevertheless, important limitations remain. The Armenian Armed Forces' quantitative requirement for mass-produced FPV drones and the precise role these systems are expected to play within operational planning remain unclear. Furthermore, a fully integrated C4ISR architecture capable of linking these heterogeneous platforms into a unified reconnaissance and strike network is still under development.

III – Ukraine and Iran: A Layered Drone Doctrine in Response to Asymmetry

Two Laboratories, One Doctrine: Saturation Rather Than Competition

When Russia launched its full-scale invasion of Ukraine in February 2022, Kyiv possessed only a limited number of unmanned systems, primarily the Turkish-made Bayraktar TB2. The balance of military power was overwhelmingly in Russia's favor. During the initial phase of the war, it was the massive inflow of Western military assistance that enabled Ukraine to stabilize the front. At the same time, Kyiv rapidly expanded the employment of unmanned systems, destroying expensive Russian military equipment at a fraction of the cost of conventional weapons. This logic of cost-differentiated warfare became the foundation for the rapid expansion of Ukraine's drone industry. According to Ukrainian officials, drone operators are responsible for roughly 80 percent of Russian equipment and infantry targets. For a considerable period, the FPV drone remained the principal tactical instrument. Ukraine has also developed domestic analogues of the Iranian Shahed loitering munition and employs them against Russian infrastructure and logistical networks.

This experience fundamentally reshaped doctrinal debates surrounding drone warfare. Ukraine itself experienced internal tensions between a modern, drone-centric approach and a more traditional military outlook rooted in the Soviet legacy, characterized by centralized command structures and the primacy of infantry and artillery. Ukraine's overall strategy has been to overcome its initial numerical and technological inferiority through the mass deployment of drones and the systematic saturation of Russian air defenses. FPV drones and ground-based drone systems have been used to break up Russian assault formations and compel the enemy to shift toward small-group infiltration tactics, slowing territorial advances considerably.

The Iranian case is structurally different but analytically similar. Iran faces an aging combat aviation fleet, the majority of which was rapidly destroyed, limited air-defense capabilities, and adversaries that possess overwhelming air superiority. Tehran's response has not been to attempt victory through conventional warfare but rather to impose strategic costs on its opponents. This strategy combines massed Shahed drone strikes against military targets and energy infrastructure with the persistent threat of closing the Strait of Hormuz, through which a substantial share of global oil and liquefied natural gas trade passes. Much like Ukrainian strikes against Russian oil refineries, Iranian operations generate economic pressure that would be considerably more expensive to achieve through conventional military means.

Ukraine and Iran operate in fundamentally different strategic environments, yet both have arrived at the same structural solution to the same military problem. A doctrine based on drone saturation is the natural strategy for a state that lacks air superiority while confronting a conventionally stronger opponent. This is precisely Armenia's strategic situation, albeit with a weaker industrial base and more limited external support. Given the favorable cost-effectiveness of unmanned systems, Armenia's constrained defense budget, and its lack of substantial combat aviation, the case for large-scale investment in drone capabilities is compelling.

A Layered Architecture: From the Line of Contact to Strategic Strike

Unmanned systems can be divided into three operational echelons.

The first echelon (0–10 km) encompasses the zone of direct engagement. These are the systems that contest infantry advances and armoured assaults directly. Its principal instrument is the low-cost FPV drone (typically priced at approximately $300–500), capable of speeds between 100 and 300 km/h while carrying a warhead weighing 150–500 grams. The cost-to-effect ratio of these systems is extraordinary. A drone costing 400 dollars can destroy a tank or armoured vehicle worth several

million. In a prolonged war of attrition such as the one Ukraine is fighting, this economic asymmetry is strategically significant, as it places pressure not just on enemy forces but on the adversary's capacity to sustain losses over time. These systems are also relatively straightforward to produce at scale without advanced manufacturing infrastructure. Ukrainian FPV production rose from around 5,000 units per year in 2022 to approximately four million in 2025, a trajectory that illustrates the potential for rapid industrial scaling under wartime conditions. Given Armenia's mountainous terrain, which naturally constrains an attacker's avenues of approach, such systems are particularly effective for disrupting infantry and armored assaults. Drone interceptors designed to protect artillery units and air-defense assets also belong to this operational echelon.

The second echelon (approximately 10–80 km) is intended to disrupt the enemy's logistical system. This layer relies on extended-range FPV drones and loitering munitions capable of remaining airborne for one to three hours while carrying payloads ranging from several kilograms to several dozen kilograms. Targets in this layer include forward ammunition depots, armoured vehicle concentrations held in reserve, command posts and key supply junctions. The strategic significance of this layer has grown substantially over the course of the war in Ukraine. Areas that were previously considered relatively safe for the accumulation of troops and equipment are now routinely targeted. Forces can no longer mass in the rear without risk, armoured vehicles must be dispersed and concealed, and command posts and supply depots must be carefully hidden and regularly moved. This has created severe logistical constraints on both sides of the front, but particularly for the attacking force, which must move large quantities of ammunition and fuel forward under persistent drone surveillance. In Ukraine, this echelon has made it virtually impossible for both forces to concentrate troops and equipment safely in the near rear area. For Armenia, investment in this layer would provide a meaningful capacity to degrade Azerbaijani offensive preparations before forces reach the line of contact, without requiring air superiority.

The third echelon consists of long-range strategic strike capabilities. Systems comparable to the Shahed family (with an estimated unit cost of approximately $20,000–55,000) are designed to strike energy and industrial infrastructure. Their effectiveness depends primarily on mass employment. Individually, they are vulnerable to air defenses; deployed in large swarms, however, they are capable of saturating and overwhelming defensive systems. MALE (Medium-Altitude, Long-Endurance) platforms are less suitable for such missions because they are more expensive, more detectable, and significantly more difficult to employ on a large scale. Ukraine's deep strike campaign accelerated significantly in 2025 and 2026, with an increasingly systematic focus on Russian refineries, energy infrastructure, key economic targets such as Wildberries distribution

centers, and commercial oil tankers. As these strikes demonstrate, this class of long-range drones has proven highly effective, allowing Ukraine to impose severe economic and logistical costs on Russia. Iran has applied the same mechanism in a different geographic context, combining drone strikes on Gulf energy infrastructure with the closure of the Strait of Hormuz to impose costs on the United States and its regional partners that no conventional military response could have achieved at comparable cost. Azerbaijan's dependence on hydrocarbon revenues makes its energy infrastructure a potential target for strategic deterrence, provided that Armenia possesses a credible long-range strike capability.

Broader Lessons for Armenia

Three principal lessons emerge from the experiences of Ukraine and Iran.

The first is that mass matters more than technological sophistication. A large number of relatively inexpensive systems imposes a burden that an adversary's defenses cannot fully neutralize while enabling simultaneous pressure across multiple sectors.

The second is that dispersion has become a fundamental requirement for survival. The modern battlefield is transparent: once detected, a target is highly likely to be destroyed. Dispersion of assets is no longer a tactical option but a basic survival requirement. Iran has responded to this reality through a model based on dispersed storage sites and concealed stockpiles. For Armenia, which lacks air superiority, the pre-conflict dispersal of ammunition, equipment, and storage facilities would substantially increase the survivability of critical assets during the opening phase of a conflict.

The third is the strategic necessity of domestic production. Both Ukraine and Iran manufacture the overwhelming majority of their unmanned systems domestically. For Armenia, a landlocked country, dependence on external suppliers during wartime constitutes a critical strategic vulnerability. Developing an indigenous production base is therefore not merely an industrial objective but a national security imperative. In modern warfare, drone technology evolves at a breakneck pace, and systems rapidly lose effectiveness as adversaries deploy effective countermeasures. Consequently, while Armenia’s limited strategic depth and the vulnerability of its industrial base require maintaining a baseline operational stockpile, sustaining an agile defense sector capable of continuous technological iteration remains far more vital than relying on large, static inventories that risk swift obsolescence. This process has already begun; however, Armenia starts from a considerably weaker position than either of the two cases examined above. For

precisely this reason, partnerships with countries capable of providing not only weapon systems but also frameworks for industrial cooperation, above all, France should be regarded not as a supplement to Armenia's defense strategy but as an essential precondition for its long-term sustainability.

IV – Capability Gaps in Armenia Under This Framework: Why the Urgency Is Real

Structural Asymmetry with Azerbaijan

Despite Armenia's efforts to increase defense spending and expand military procurement since 2020, the structural imbalance between Armenia and Azerbaijan remains substantial. In 2025, Azerbaijan's defense budget amounted to approximately $4.94 billion, compared to $1.7 billion for Armenia, a ratio of roughly three to one. Azerbaijan benefits from hydrocarbon revenues that enable it to sustain high levels of defense expenditure with considerably less fiscal pressure, while its geographical position provides additional economic advantages.

The budgetary gap translates directly into a capability gap. Azerbaijan continues to modernize its combat aviation. An order for approximately 40 JF-17C Block III fighter aircraft from Pakistan complements its existing fleet of Su-25 attack aircraft and MiG-29 fighters. The current Su-25 fleet is undergoing modernization with Turkish assistance, including the installation of new avionics, navigation and targeting systems, as well as the integration of Turkish SOM cruise missiles. These upgrades significantly enhance the aircraft's combat effectiveness.

Azerbaijan also possesses a well-developed unmanned aerial capability comprising combat-proven Bayraktar TB2 systems, Israeli Harop and SkyStriker loitering munitions, Hermes 900, Heron, and Aerostar reconnaissance-strike platforms, as well as the Ice Breaker cruise missile. Investments in FPV and loitering "kamikaze" drones continue to expand. Turkey also maintains an extensive program for training Azerbaijani officers and senior commanders, reinforcing Azerbaijan's qualitative military advantage.

Armenia, by contrast, possesses only limited combat aviation. Its small fleet of Su-30SM fighters was initially delivered without compatible munitions and the Su-25 ground attack aircraft in service are technologically dated and insufficient in number to contest air superiority, while its armored vehicle fleet remains inferior in both quantity and quality. Geography further aggravates the

situation. Armenia is a compact country lacking strategic depth, while its extensive borders with mainland Azerbaijan, Nakhchivan, and Turkey leave most of its territory vulnerable to strikes from multiple directions leaving few areas genuinely shielded from attack. Regions such as Syunik are particularly vulnerable, with limited road infrastructure and geographic isolation that makes the reinforcement and resupply of pre-positioned units difficult. This reinforces the necessity of pre-positioning equipment and forces rather than relying on the ability to surge capability toward a threatened sector once a conflict has begun.

Under these circumstances, a strategy based on achieving conventional military parity is unrealistic. Asymmetric deterrence remains the only viable option.

What the Drone Capability Gaps Mean in Practice

The absence of a substantial inventory of contact-layer FPV drones reduces Armenia's ability to impose costs on enemy infantry and lightly armored vehicles directly along the line of contact. Without sufficient strike capability at the operational depth (10–80 km), Azerbaijan can concentrate reserves and prepare offensive operations with relative safety. Without a credible long-range strike capability, Armenia lacks an instrument capable of threatening an adversary's economic infrastructure beyond the reach of conventional artillery.

Taken together, these shortcomings mean that during the initial phase of a major conflict particularly if Armenia's air-defense network is degraded and military assets have not been adequately dispersed. The country risks repeating the scenario of 2020, losing a significant portion of its heavy equipment before it can be employed effectively. A layered drone architecture cannot eliminate this risk entirely. It can, however, fundamentally alter the cost-benefit calculations of a potential aggressor while substantially increasing Armenia's ability to sustain defensive operations over time.

Opportunities for modernizing Defense Capabilities

Armenia's defense budget has remained at one of its highest levels since 2021. Although a moderate reduction is projected for 2026, the current level of financial resources creates a window of opportunity for defense procurement and industrial investment that may not recur in the coming years. Building a layered unmanned capability is inherently a long-term undertaking, requiring time to develop doctrine, train operators, and expand the domestic defense-industrial base.

Investment in long-range unmanned systems can also enhance overall deterrence and strengthen the country's defense capabilities. Developing credible capabilities to employ unmanned systems at significant depth would expand the range of available strike options, including against the critical infrastructure of a potential adversary, while increasing flexibility in military planning.

At the same time, the Iranian example can also be complemented by the Ukrainian and Russian experience which demonstrates that the most effective strike campaigns combine loitering munitions with high-precision operational and tactical missiles. Armenia's arsenal has included and most likely continues to include the Tochka tactical missile system, the Iskander operational-tactical missile system, and Scud-B liquid-fueled ballistic missiles. The Scud-B is both outdated and characterized by poor accuracy. Owing to its relatively short range, the Tochka system offers a comparatively small circular error probable (CEP). When employed correctly, the Iskander provides substantially greater precision and overall performance. Nevertheless, Armenia's missile capabilities at both the tactical and operational-tactical levels require not only quantitative expansion but also qualitative modernization, above all through the acquisition of contemporary precision-guided systems.

Accordingly, Armenia should pursue the parallel development of both long-range unmanned strike systems and an expanded inventory of high-precision missiles. The European and particularly the French drone industry is currently undergoing a period of rapid expansion, while the Strategic Partnership Agreement signed between Armenia and France in May 2026 provides the institutional framework for moving beyond procurement toward joint production. Armenian defense companies have already reached a stage of development at which targeted government support and industrial cooperation could significantly accelerate their growth. Waiting for a more favorable moment risks missing the current window of opportunity altogether.

V – An Adapted Armenian Doctrine: Mass, Layers, and the Division of Labor

The Guiding Principle: Replacing Technological Complexity with Mass Wherever Possible

Armenia's defense budget limits its ability to procure large numbers of sophisticated and expensive systems, both in the conventional domain and in the field of unmanned systems. Yerevan cannot

realistically match its adversary in either the quantity or the quality of high-end military equipment. The current procurement strategy already reflects a pragmatic mix: relatively expensive, high-performance systems such as the Ground Master 200 radar and the Caesar self-propelled artillery system which are combined with more affordable, large-volume acquisitions, including Pinaka multiple-launch rocket systems and howitzers and air defense system of Indian and Iranian origin.

The experience of Ukraine demonstrates that saturating the battlefield with low-cost unmanned systems is operationally more effective against modern defenses than relying on a limited number of sophisticated and expensive platforms. Moreover, under conditions of high equipment attrition, survivability becomes the overriding priority. Unmanned systems are considerably easier to disperse, conceal, and replace than armored vehicles or artillery.

Investment in unmanned systems should therefore be based on a multi-tiered budget allocation, closely aligned with the operational echelons of employment.

The largest share of funding should be allocated to systems costing up to approximately €50,000 per unit. This constitutes the foundation of the force structure: above all, contact-layer FPV drones, low-cost short-range loitering munitions, and simple interceptor drones. It is at this level that the necessary mass can be achieved, ensuring battlefield saturation while enabling rapid replacement of combat losses.

A substantial share of the budget should be devoted to systems in the €50,000–200,000 range. These systems cover the operational-depth echelon (approximately 10–80 km) and include medium-range loitering munitions, platforms with enhanced resistance to electronic warfare, and reconnaissance-strike systems capable of engaging logistics, armored reserves, command posts, and air-defense assets.

A limited allocation should be reserved for systems costing more than €200,000 per unit. This category includes a relatively small number of more sophisticated, long-range platforms belonging to the strategic echelon, intended to threaten high-value targets deep inside enemy territory. Because these systems are expensive, the emphasis should not be on mass but rather on quality, range, and the ability to conduct limited yet highly precise strikes, including in combination with missile systems.

This distribution reflects a simple operational principle: the closer a system operates to the line of contact, the greater the priority assigned to mass production and replaceability; the deeper the target, the more acceptable a higher unit cost becomes, provided that overall budgetary discipline is maintained.

Echelon One (Contact-Layer FPVs): A National Development Priority

Investment in the contact echelon should serve two objectives simultaneously: addressing Armenia's most immediate capability gap while laying the foundation for long-term industrial resilience. This segment, low-cost FPV drones, is the most suitable for localization and has the greatest potential to become the core of Armenia's domestic unmanned systems industry.

Several Armenian companies are already engaged in the serial assembly and production of combat FPV drones. Among the most prominent are Feron and Davaro, both of which presented families of armed FPV drones equipped with warheads at the RISE 2026 defense exhibition. Other enterprises are developing fiber-optically guided variants that significantly improve resistance to electronic warfare and signal jamming. Some manufacturers claim a high degree of localization, approaching full domestic production, including the manufacture of warheads. Davaro is also active in adjacent categories of small reconnaissance and strike unmanned systems. Although the exact scale of military procurement and the degree to which these drones have been incorporated into operational planning remain opaque, the technological foundation for serial production already exists.

Western manufacturers are generally ill-suited to filling this particular capability gap. They lag behind in the segment of genuinely mass-produced, low-cost FPV drones, while the unit prices of their systems are too high to support procurement on the scale of thousands of units. Consequently, strategic priority should be given to sustained financial, institutional, and engineering support for Armenian manufacturers. The objective should not be one-time deliveries but rather the creation of a reproducible industrial production chain capable of rapidly expanding output while continuously adapting designs to the evolving conditions of the battlefield.

The pace of technological evolution in the FPV sector is extraordinarily rapid. Large one-time foreign purchases inevitably become obsolete within one or two years, leaving the country without an indigenous engineering base. From a strategic perspective, several domestic manufacturers continuously iterating and improving their own systems are far more valuable than a warehouse stocked with a single, even highly successful, foreign model.

During the transition period, while domestic production capacity continues to expand, limited procurement from Chinese manufacturers, whose products remain competitively priced, or from selected Eastern European companies may be appropriate. Ukrainian FPV drones remain the most relevant in terms of combat experience and cost-effectiveness. However, open intergovernmental procurement from Ukraine would entail significant political risks given Armenia's residual strategic

dependence on Russia. A more realistic approach would be cautious technical cooperation conducted with limited public visibility.

Over the longer term, a competitive Armenian FPV industry could also generate export potential. Relatively low labor costs combined with steadily growing engineering expertise provide Armenia with a potential price advantage in markets facing similar asymmetric security challenges. The development of the contact echelon is therefore not merely a military necessity but also one of the most realistic pathways toward establishing a sustainable domestic defense-industrial sector.

Echelons Two and Three: Where Foreign Partnerships Become Essential

Medium and long-range unmanned systems impose significantly higher technological requirements, combining extended range, greater payload capacity, and resilience against electronic warfare. At Armenia's current level of industrial development, it is difficult to fully satisfy these capability requirements through domestic production alone.

In the medium-range segment, Armenia already possesses a number of indigenous developments. Davaro's Dragonfly family of loitering munitions is advertised with operational ranges of up to 80–120+ km and the ability to engage armored vehicles, logistics infrastructure, radar systems, and air-defense assets. Zeel AI is developing artificial intelligence-enabled loitering munitions with a claimed range of up to 250 km. UAVLAB offers medium and long endurance reconnaissance strike platforms. However, most of these systems are relatively new. Their actual operational readiness, resilience under electronic warfare conditions, and capacity for large-scale serial production remain limited.

For the strategic-depth echelon, regarding targets located several hundred kilometers from the line of contact, Armenia currently lacks domestic systems that have reached the required level of technological maturity and production scale. It is precisely in this segment that foreign industrial partnerships become indispensable. Armenia requires systems that have already completed testing and entered serial production, combined with a cooperation framework that creates a pathway toward local assembly and the gradual increase of domestically manufactured components.

In this respect, France appears to be Armenia's most promising partner, both politically and technologically. The Strategic Partnership Agreement signed in May 2026 provides the institutional foundation for expanding cooperation beyond procurement toward technology transfer, joint production, and industrial integration. Such an approach would allow Armenia not only to acquire

advanced long-range unmanned systems but also to develop the engineering expertise and production capacity necessary to reduce long-term dependence on foreign suppliers.

This model is considerably more sustainable than reliance on direct imports alone. It enables the gradual accumulation of domestic technological competencies while ensuring access to operationally proven systems during the transition period. For Armenia, whose security environment requires both rapid capability development and long-term industrial resilience, industrial partnership should therefore be regarded not simply as a procurement mechanism but as a central element of national defense strategy.

VI – The Franco-Armenian Partnership: From Procurement to Joint Production

Why France Is the Primary Partner

Armenia has compelling reasons to deepen its cooperation with France specifically in the unmanned systems sector. Bilateral relations have already reached a level of maturity that makes this a realistic near-term objective. France has become Armenia's leading European defense partner. President Emmanuel Macron's visit to Yerevan in May 2026 and the signing of the Strategic Partnership Agreement marked the most significant development in bilateral relations since Armenia began its strategic reorientation away from Russia. Defense constitutes one of the central pillars of the agreement. The two sides committed themselves to expanding cooperation not only in existing areas such as defense equipment deliveries and military training, but also in new fields including unmanned systems, artificial intelligence, and advanced technologies.

France is a particularly suitable partner for the medium- and long-range unmanned systems segments, not merely as a convenient supplier but as a natural strategic partner.

First, there is strategic continuity. *KNDS* already supplies and supports the Caesar self-propelled artillery systems; *Thales* provides the Ground Master 200 radar systems; and Safran is engaged in discussions regarding further defense cooperation. Supply chains, maintenance procedures, and training frameworks have therefore already been established, at least in part. The Strategic Partnership Agreement and the 2026 bilateral defense cooperation plan provide both the legal and political foundations for expanding cooperation without the need for prolonged new negotiations.

Admittedly, France was late to mature its unmanned system ecosystem and integrate drone doctrine across its armed forces, reflecting a broader delay among conventional Western armies. Yet, as Paris actively catches up, this developing architecture offers a distinct advantage for bilateral cooperation. Partnering with Armenia presents a win-win scenario: it allows France to boost production volumes and lower unit costs, while enabling Armenia to co-develop modern capability rather than simply importing off-the-shelf systems.

The French Offer in Long-Range Systems

Since 2023, drawing directly on the lessons of the war in Ukraine, France has accelerated the development of loitering munition and remotely operated strike system programs. Several of these systems have already entered service or reached advanced stages of development, offering capabilities that closely correspond to Armenia's operational requirements.

The Rôdeur 330, developed by *EOS Technologie* in partnership with *KNDS* and *TRAAK*, is a loitering munition with a maximum range of approximately 500 km and an operational control radius of 80 km. Within this radius, the system maintains two-way communication with the operator; beyond it, the munition transitions to autonomous optical navigation. This operating mode makes it particularly suitable for strikes against fixed targets such as air bases and energy infrastructure. The system is launched from a catapult within a short preparation time, requires only a minimal operating crew, and features GPS-independent navigation, significantly improving its resilience against electronic warfare and signal jamming. Its estimated unit cost is approximately €200,000. The Rôdeur 330 has already been supplied to and employed in Ukraine, providing a proven baseline of operational effectiveness.

The Chorus system, developed by *Turgis & Gaillard* in cooperation with *Renault*, is designed with large-scale production in mind and is conceptually closer to low-cost loitering munitions such as the Shahed. Its principal purpose is to generate sufficient numbers to saturate enemy air defenses. Export availability is expected between 2027 and 2028. When employed alongside the Rôdeur 330, the Chorus system enables both high-precision strikes against priority targets and large-scale saturation attacks.

Taken together, these systems provide capabilities that Armenia's domestic developments do not yet fully offer: low observability, resistance to electronic warfare, the ability to operate from dispersed launch sites, and coordinated employment as part of multi-system strike groups.

A Model of Joint Production

Even successful procurement alone cannot solve Armenia's long-term defense requirements. The objective of the Franco-Armenian partnership should extend beyond acquisitions to include the development of Armenia's domestic industrial base, the reduction of dependence on foreign suppliers, and the gradual establishment of elements of industrial sovereignty.

The Ukrainian experience offers a practical model. *KNDS* established a local subsidiary initially responsible for servicing Caesar self-propelled artillery systems, with subsequent expansion into the production of ammunition and components. Other French defense companies have likewise announced plans to establish unmanned systems assembly lines in Ukraine. The logic behind such arrangements is straightforward: the partner country gains access to advanced technologies and manufacturing expertise, while the French side receives valuable operational feedback and opportunities to refine its systems under real-world conditions.

KNDS's activities in Ukraine provide the closest precedent. The process begins with the establishment of a local maintenance and technical support organization. In parallel, production of consumable items and relatively simple spare parts is organized domestically, while critical and technologically sophisticated components continue to be supplied from Europe. Over time, the proportion of locally manufactured components gradually increases. The principal logistical advantage of this model is a significant reduction in equipment repair times and the creation of strategically important stocks of spare parts and components within the partner country.

Armenia meets the basic prerequisites for implementing a similar model. *Davaro*, together with several other domestic defense companies, already operates under military contracts and could serve as industrial partners. *KNDS* maintains an established presence through the Caesar program. Armenia's growing technological ecosystem and its diaspora, particularly engineering communities based in France, could represent an additional strategic resource that has thus far been utilized only to a limited extent. For Armenia, however, this model must be adapted to several important differences. Unlike Ukraine, Armenia is not currently at war, possesses a considerably smaller industrial base, and is a completely landlocked country.

The greater the proportion of locally manufactured components, the shorter and more resilient the supply chain becomes during periods of crisis. Achieving genuine industrial resilience requires protected and geographically dispersed storage facilities for critical components, manufacturing sites designed with the possibility of enemy strikes in mind, and strategic reserves of key imported components sufficient to sustain at least six to twelve months of intensive production. Equally

important is the transfer of human capital and technological expertise. Without comprehensive specialist training and the establishment of joint engineering teams, local assembly would remain little more than "screwdriver assembly" , a low-value-added activity that could easily be disrupted by interruptions in foreign supply.

Three successive levels of cooperation are both feasible and desirable:

Direct procurement combined with comprehensive training for operators and technical personnel, enabling the rapid introduction of new systems into service while building institutional expertise.

Licensed local assembly of selected components and subsystems, while critical technologies, including navigation systems and warheads, remain under French control. This stage reduces procurement costs while simultaneously developing domestic manufacturing capabilities.

A joint venture or an advanced engineering partnership, in which Armenian companies contribute software solutions, guidance technologies, and engineering expertise, while French partners provide platform architecture, systems integration, and certification. In the longer term, systems developed through such cooperation could also possess significant export potential.

This model is becoming increasingly common among European defense companies. Armenia's Strategic Partnership with France provides a unique opportunity to embed the development of its unmanned systems sector within a broader and more sustainable industrial framework.

Conclusion

Armenia began its military transformation in 2022, but the process remains incomplete. The Second Karabakh War of 2020 and the September escalation of 2022 exposed systemic failures that went far deeper than equipment shortfalls: a flawed doctrine inherited from the Soviet model, institutional inertia, and a security architecture built around a partner that proved unwilling to act when it mattered.

The reforms underway, from the 2024-2035 Transformation Concept to the diversification of defense partnerships and the emergence of a nascent domestic defense industry, could mark a genuine departure from the past. Yet the structural asymmetry with Azerbaijan persists. A budget ratio of one to three, the absence of meaningful air power, and limited strategic depth mean that conventional parity remains out of reach. The capability gaps in the drone domain, across all three operational echelons, are the most consequential expression of this imbalance.

The experiences of Ukraine and Iran offer a clear strategic lesson: a state denied air superiority can impose disproportionate costs on a stronger adversary through the mass employment of cost-differentiated drone systems. This doctrine is not specific to either conflict. It is the natural strategic response to structural inferiority, and it is the most realistic path available to Armenia.

Three priorities follow from this analysis. The first is the development of a domestic drone production capability. The contact layer cannot be outsourced. Armenian companies already possess the technical foundation; what is required is sustained government investment, institutional support, and a procurement policy that prioritises volume and continuous iteration over one-time foreign purchases. The rapid pace of drone innovation and the swift deployment of countermeasures, ranging from air defense, electronic warfare to directed energy weapons like lasers, make a responsive national ecosystem essential to adapt systems in real time.

The second priority is to close the operational-depth and strategic-strike gaps through the French partnership. France is the right partner for these segments, not because it is the only option, but because the industrial, legal and political foundations are already in place. The Strategic Partnership Agreement of May 2026 must be translated into concrete co-production arrangements, moving beyond procurement toward local assembly, technology transfer, and ultimately a joint industrial presence on Armenian soil.

The third priority is to do this now. The defense budget, the political conditions, and the availability of proven French systems all converge at this moment. Waiting reduces the window. Armenia's goal is not simply to acquire better equipment. It is to build a defense sector capable of sustaining itself, adapting in real time, and reducing its dependence on any single external supplier and it takes time. That is perhaps the most important lesson from both Ukraine and Iran: resilience is not measured by the size of a stockpile, but by the capacity to continuously produce, adapt, and replenish what defense requires.