



Ministry of Defense of Ukraine  
Air Force Command of the Armed Forces of Ukraine



# AIR FORCE VISION 2035





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# **AIR FORCE VISION**

## **2035**

May 2020

**Observe** (carefully), **Orient** (faster), **Decide** (first), **Act** (decisively)  
*John Richard Boyd, pilot, military strategist*



*Approved by the decision of the Military Council of the Air Force Command  
of the Armed Forces of Ukraine  
from 15 May 2020*

The Air Force Vision 2035 is a long-term defense planning document which was developed based on the Vision of the Armed Forces of Ukraine. It is intended to identify rational ways for the development of the Air Force by 2035 and to generate baseline data for the State Program of Development of the Armed Forces of Ukraine through 2025, the Air Force Development Program, and other defense planning documents. It defines the Air Force's mission and tasks within the Armed Forces of Ukraine, challenges and threats to national security (including in the air), a description of the operational environment in which the Air Force will execute its tasks, and the target development model and requirements for needed capabilities with an assessment of resources requirements.

This Vision was developed within the Air Force Command of the Armed Forces of Ukraine with the involvement of representatives and experts from the Kharkiv National Air Force University, National Defense University of Ukraine, structural units of the Ministry of Defense of Ukraine and General Staff of the Armed Forces of Ukraine, other services of the Armed Forces, and international partners and advisers. The head of the working group was **Lieutenant General Arkadii Vashutin** and the project coordinators were **Colonel Artem Antonov** and **Colonel Oleg Bilous**.

The team's work was inspired by the **OODA loop** concept (Observe, Orient, Decide, Act), developed by military pilot and strategist John Richard Boyd. It was formulated as a tactical concept for air combat, but due to its comprehensiveness, it was quickly adapted and scaled for all command and control processes within highly competitive environments. Its correct implementation allows, by taking advantage of the speed and quality of command decision making, gaining advantages over a more powerful but less flexible opponent. The one who studies and analyzes the situation in advance is the first to make and implement a decision, and as a rule prevails both in the air and in life, as one's opponent remains one step behind, responding to a situation that has already changed.

# **FOREWORD**

## **FROM THE AIR FORCE COMMANDER OF THE ARMED FORCES OF UKRAINE**



The Air Force is a powerful, highly mobile, and technological service of the Armed Forces of Ukraine. It is and will remain one of the main instruments to deter military aggression against Ukraine; ensuring the resilience of its defense system, guaranteeing peace and security of the state in interaction and cooperation with other defense forces' components, and our international partners.

In peace and war, the Air Force bears full responsibility for the security of our skies across the state and the protection of our country and its citizens from threats in the airspace, and assists civilians in case of emergency situations both domestically and abroad. In the event of a military threat, our Air Force must deny the enemy gaining air superiority and be a reliable partner for the ground and naval components of joint defense forces in the full range of operations to inflict unacceptable losses to force the enemy to abandon further aggression.

The air shield of Ukraine became a deterrence factor for the further spread of aggression against our state in 2014-2020. Military pilots and Air Force ground combat systems operators demonstrated honor, dignity and sacrifice while accomplishing the tasks of reliable air defense cover to our brothers in arms from other services and branches of forces, conducting airstrikes, carrying out air reconnaissance, delivering cargo, deploying assault forces, and providing air evacuation. Hardened in the battles for our independence, at the cost of their lives and in brotherhood and joint efforts with other services and branches of the Armed Forces, they guaranteed the inviolability of our skies, halted the creeping offensive in the East of Ukraine by the Russian Federation and its supported forces, and protected the values and way of life which the people of Ukraine have chosen.

However, we see that the Russian Federation continues trying to undermine the unity and integrity of our state, its independence and sovereignty, and continues to build up its airpower potential near our borders. In addition, we expect new challenges to national security in the airspace in the long term. At the same time, the potential of the Ukrainian Air Force inherited from the Soviet past is almost exhausted. The issue of military equipment upgrade has become urgent, and

the Euro-Atlantic course of the state requires us to achieve interoperability with partners both at the organizational and technical levels.

Therefore, in order to develop rational ways of reviving the state's air power and creating prerequisites for Ukraine's accession to the Euro-Atlantic community, we have developed this Vision. It is time to finally break from the Soviet past, both on mental and technical levels. The Air Force 2035 should become a modern, versatile, flexible, and highly mobile military force tool that utilizes advanced network building and control technologies. Manned with highly-skilled, motivated personnel, equipped with modern multifunctional combat platforms (first of all distributed air defense missile complexes and multi-role fighters), integrated into a single distributed network of air and ground swarms, it will be able to disperse fast to avoid harmful blows, and quickly focus efforts to return devastating strikes on a more powerful but less flexible enemy. This will cause unacceptable losses and force the adversary to abandon its aggressive goals.

I believe that, considering the exceptional uniqueness and importance of the mission and tasks executed by the Air Force, its development will become the priority of the national security and defense policy for the next 15 years.

**Colonel-general**

A handwritten signature in black ink, appearing to read 'Serhii Drozdov', with a large, stylized flourish at the end.

**Serhii DROZDOV**

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# 1. WE ARE THE AIR FORCE!

(Observe)

We are the main providers of our state's air power. Just like the Land Forces on land, and Navy at sea, the Air Force bears full responsibility for securing Ukraine's airspace and repelling armed aggression in the air. In modern conflict (war), we deter the enemy's infringement of our skies, we meet the enemy first, fight and win in air battles, and establish the foundations for a conflict's (war) inflection point in favor of Ukraine. This nature and

essence of the Air Force outlines our unique mission, which differs from the rest of armed forces services and defines our contribution to joint capabilities.

**We are the Air Force!**

**Our mission**  
is the experience of the past and tasks of today.

**Our vision**  
is the development and beacon for the future.

**Our values**  
are what unites and inspires to our endeavors.

**Our Strategy**  
is the way for future generations!

The main unique mission of the Air Force is

## **TO DEFEND THE AIRSPACE OF UKRAINE**

- Airspace early warning;
- Security of the state border in the airspace;
- Air defense coverage of important state and military installations;
- Prevention of terrorist attacks in the airspace;
- Conducting air combat and denying the enemy advantages (superiority) in the air in future armed conflicts;
- Inflicting decisive impacts on the enemy on the ground in the course of joint operations;
- Conducting other air missions to support defense forces operations, including airlift, intelligence, etc.

### **1.1. Mission: defend the air space of Ukraine!**

The main task of the Air Force as a part of the Armed Forces of Ukraine is to ensure the protection of the airspace and wage air combat with the purpose of defending critical state and military facilities as well as joint task forces from enemy air strikes and to establish favorable conditions for their employment in the course of repulsion of armed aggression.

These tasks will dominate for the next 15 years. Moreover, taking into account development trends of armed conflict and the constant

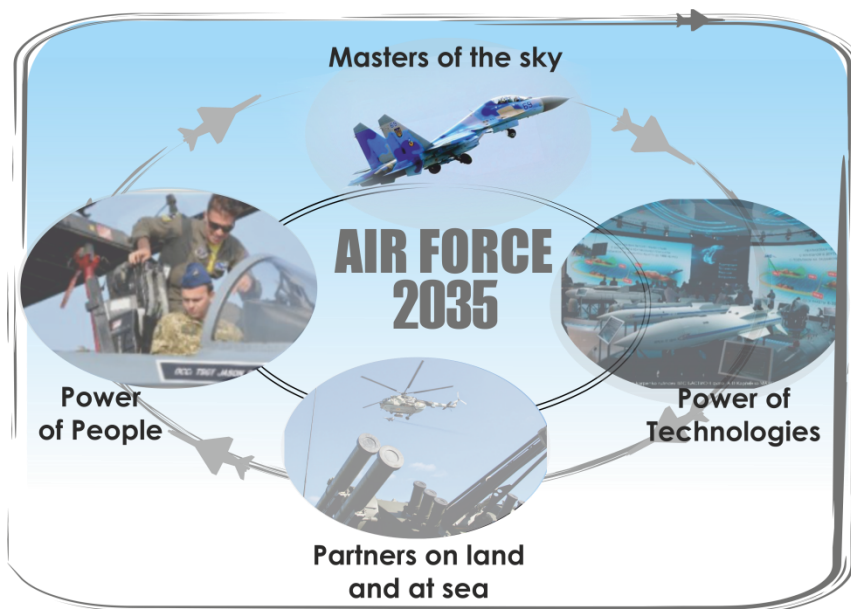


growth of the role, place, and contribution of the air component of the Armed Forces in the resolution of armed conflicts, its importance will only increase.

That is why the Air Force 2035 model should be modern and innovative, capable of protecting the people of Ukraine and the national interests in the airspace, utilizing a united, trained, and professional staff who are motivated to win.

## **1.2. Vision: Air Force of Ukraine 2035 is the power of people and technology, masters of the sky, partners on land and sea!**

The powerful fusion of people and technology is the foundation for further development of the Air Force. Devoted to the service to the Homeland and united by the single idea of protecting the skies of Ukraine, we are highly professional and motivated personnel that use innovative technologies which combine in a single distributed network of air and ground swarms of modern multifunctional combat platforms. We are a powerful and unshakable instrument of the state's military power.



This power should become the single master of the sky of Ukraine. Using advanced network architecture and command and control systems, the Air Force 2035 should be able to disperse quickly, avoiding devastating strikes, and in the same way quickly concentrate efforts by striking in

response to a more powerful but less agile opponent. By inflicting unacceptable losses and preventing the enemy forces from using our airspace to achieve their own aggressive goals, ensuring a reliable cover of joint forces from air strikes, creating for them favorable conditions with fire support, reconnaissance, transportation, etc. in the full spectrum of joint operations, the Air Force will establish the necessary prerequisites to force the enemy to abandon further aggression and resolve the conflict in Ukraine's favor.

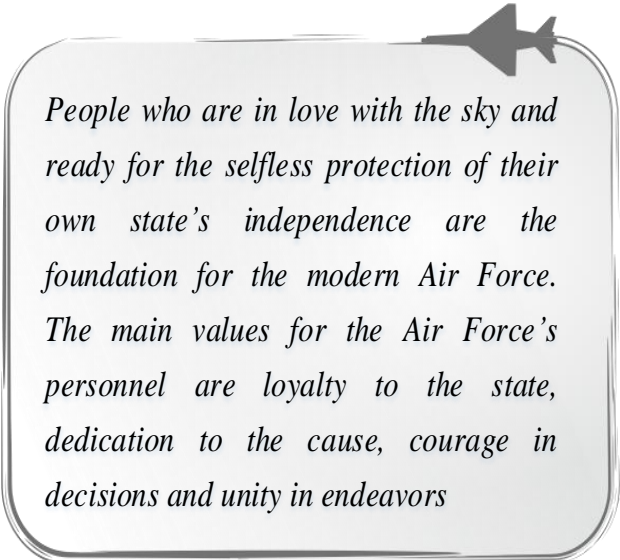
At the same time, notwithstanding the crucial importance of the technological aspect, it is specifically the people who are in love with the sky and ready for the selfless defense of their state's independence which are the main driving force on the way of transformation and development of our Air Force. The foundation of its cohesion and efficiency is their moral features and behavioral models, expectations, and demands that shape mental environment in a team.

### **1.3. Values: loyalty to the state, dedication to duty, courage in decisions and unity in endeavors!**

Love to our Homeland, the desire to serve its interests by one's actions, the willingness to sacrifice in the name of the interests of our nation and take a stand to protect it when necessary – this is the basis of loyalty. It manifests itself in a sense of pride for the material and cultural heritage of our people, in a desire to preserve the unique identity of our culture, language, and traditions of our ancestors.

A high level of professionalism is a sign of dedication. Its basis is the ability to take responsibility for one's own decisions, the highest level of self-discipline, personal courage, and self-criticism.

The combination of loyalty and dedication to a chosen path should lead to courage in decisions and unity in endeavors. Leadership and cohesion merge all Air Force servicemen into a single, well-functioning organism. No pilot or operator of an air-defense complex will ever be left alone against the enemy in combat. Behind their backs there will always be thousands of their brothers-in-arms, engineers, technicians, command post operators, and other professionals who will provide all the necessary support to execute combat tasks.



*People who are in love with the sky and ready for the selfless protection of their own state's independence are the foundation for the modern Air Force. The main values for the Air Force's personnel are loyalty to the state, dedication to the cause, courage in decisions and unity in endeavors*

## 2 STRATEGIC CONTEXT

(Orient)

*The Foreign Policy Area 2035 - Euro-Atlantic course. The Russian Federation is a destabilizing factor for national security.*

*The military-political space 2035 - a high likelihood of armed conflict with the widespread use of air power.*

*The Air Space 2035 - a complete physical and moral degradation of the capabilities inherited from the USSR, the need for a large-scale re-equipment of the Air Force.*

*The economic space 2035 - a lack of resources and insufficient capacity of the national defense-industrial complex.*

*Social space 2035 - a demographic crisis and fierce competition in the labor market.*

*Information Space 2035 - information operations against the statehood of Ukraine.*

*Cyber Space 2035 - threats to the Government and the Armed Forces C4ISR system.*

### 2.1. Security environment 2035

The strategic environment in which Ukraine currently exists is characterized by speed, surprise, and the unpredictability of changes. However, surprise of change is not unpredictable. Signs of anticipated changes in the global, regional, and national information space usually emerge 10-15 years before their realization.

The creation and transformation of this security environment, which will affect the development of the Air Force,

is driven by both the strategic goals and tasks of the key actors in the international arena and by Ukraine's place in this world. In the context of the Eastern European region, such actors are Ukraine itself, the Russian Federation as one of the major destabilizing forces in the Eastern European region, and the USA and leading countries of European Community.

*Timely identification, tracking, and forecasting of the consequences of changes in the security environment are the basis for strategic decision making in preparing the Air Force to face new challenges and threats to the national security of Ukraine.*

*Forecasted course of action of the key actors in the Easter European region*

Actor	Strategic goals by 2035	Forecasted course of action
Ukraine	European and Euro-Atlantic integration	Will remain without changes by 2035
UN, EU and NATO	Ensuring security and stability in the region.	<ul style="list-style-type: none"> <li>– Search of peaceful (compromise) ways of resolving conflicts;</li> <li>– Limited effectiveness of the UN;</li> <li>– Decisive EU and NATO actions are unlikely</li> </ul>
Leading and neighboring EU countries	Ensuring sustainable development, security on the eastern borders	<ul style="list-style-type: none"> <li>– Support of Ukraine’s course to join European community;</li> <li>– Decisive actions are unlikely;</li> <li>– <i>Support level of Ukraine will depend on many factors:</i></li> </ul>
USA	Keeping Status Quo and preventing Russia from achieving its goals	<ul style="list-style-type: none"> <li>– Support of Ukraine’s course, preventing Russia from establishing control of influence over Ukraine;</li> <li>– <i>The support level by 2035 may change depending on changes in the US senior leadership</i></li> </ul>
Russian Federation	Shaping of a new multipolar model of world order, in which Russian Federation will take appropriate place of a leading actor («equal among equals»)	<ul style="list-style-type: none"> <li>– The weakening of US influence in Europe, the split of NATO and the EU;</li> <li>– The support of other international actors who may claim a place among leading countries in the new model of world order;</li> <li>– A renewal of influence in the sphere of "exclusive" national interests (Ukraine - center of gravity for implementation of foreign policy ambitions of the Russian Federation).</li> </ul>

We can affirm that we are committed to a pro-European and Euro-Atlantic vector of development, that is, regardless of changes in the highest political leadership by 2035, this course will remain unchanged.

It is expected that international organizations and communities such as the UN, EU, NATO and others will broadly support Ukraine's efforts to implement democratic reforms and transformation in all areas of life, to ensure human and civil rights and freedoms, and to ensure security and stability in the region. However, their activities will focus on finding, first, peaceful ways of resolving conflicts, and decisive action in the event of an escalation of the situation is unlikely. Moreover, the activities of specific organizations, such as the UN

Security Council, may be paralyzed by the destructive position of individual members, especially the Russian Federation.

Among the leading countries of the world, the United States will continue providing the greatest level of support to Ukraine. For the US, Russia's attempts to destabilize the established model of world order and international law are unacceptable.

However, the expected level of support for the period by 2035 may change depending on changes in senior US leadership. In particular, there is a risk of the US returning to an isolationist policy.

Leading European countries will continue supporting the sovereignty and territorial integrity of Ukraine, as well as our efforts to join the European community, first, in the context of ensuring their own security and stability in the region. However, the expected level of support will depend on several factors which will by 2035 continue to constantly change and be conditioned by:

The economic and political progress in Ukraine;

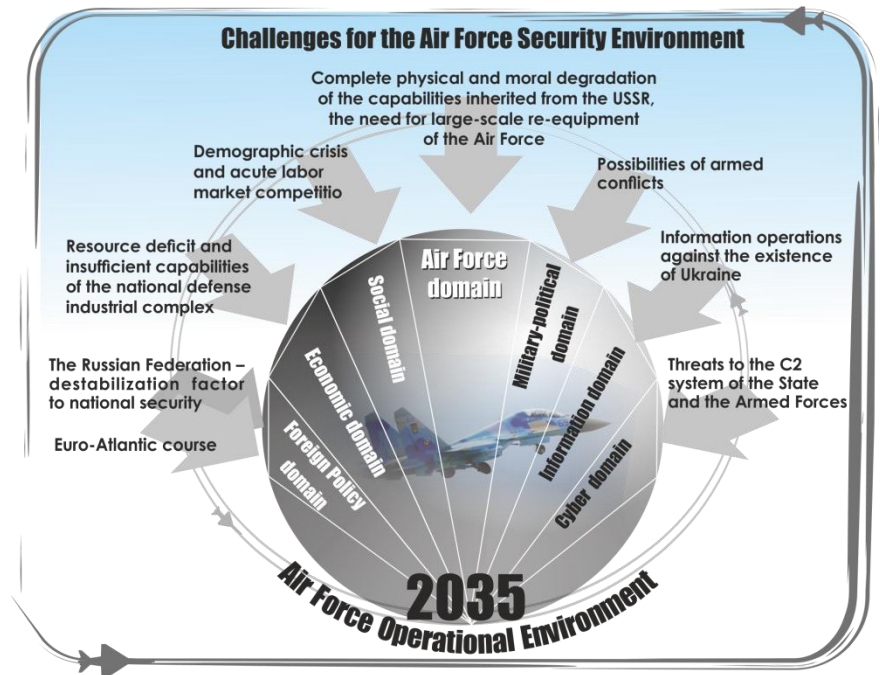
The consistent course of senior leadership of the USA and leading European countries to prevent the establishment of Russia's controlling influence over Ukraine;

The ability of the Russian Federation to use political and economic pressure (primarily in the energy sphere) on the political course of Europe, and existing controversies of ethnic, religious, ideological nature that exist between Ukraine and neighboring countries.

On the other hand, the main military-political goal of the Russian Federation will remain the same: To revise the current world order and to form a new multipolar model in which it will take a dominant place.

To reach this goal, the priorities of foreign policy of the Russian Federation will be the following:

Depriving the USA of the status of world leader and undermining its position in the international arena;



The weakening and split of NATO and the EU;

Support for other “young” emerging regional powers, such as BRICS, Turkey, Iran, and those which may support the Russian Federation;

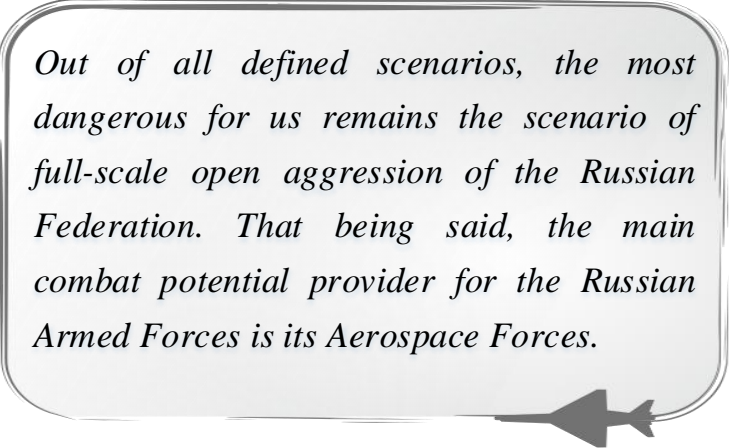
The renewal of influence in the sphere of "exclusive" national interests.

It can be noted that Ukraine is and will remain the center of gravity for the implementation of the Russian Federation's foreign policy ambitions. The political-military leadership of the Russian Federation will continue to perceive our country as an integral part of the so-called “Russian world” within the framework of its civilizational model, and the restoration of influence and control over our country is a necessary prerequisite for restoring the Russian Federation's status as a great power.

Thus, the vector of European development that Ukraine has chosen will face strong opposition from Russia through 2035. At the same time, given the critical importance of Ukraine for the implementation of the Russian Federation's foreign policy goals, its military and political leadership will resort to the use of all available influences, both non-military (political, economic, informational and propaganda, and cyber), and military in nature (including nuclear missile blackmail and open full scale aggression), all while ignoring the fundamental principles of the international law.

## **2.2. Threats of a military nature in the airspace of 2035**

Considering the prospects of developing a security environment around Ukraine and during the recent defense review, key risks and threats to national security and probable scenarios for military situations of mid- and long-term perspectives were identified and developed. In the context of the use of air power, the most dangerous scenario is open full-scale aggression against Ukraine by other states or their coalitions (including the Russian Federation and its allies). The most likely scenario is an armed conflict within the state, supported from the outside. Such a scenario is already being implemented in the east of our country.



*Out of all defined scenarios, the most dangerous for us remains the scenario of full-scale open aggression of the Russian Federation. That being said, the main combat potential provider for the Russian Armed Forces is its Aerospace Forces.*

It should be noted that in both the most dangerous and the most likely scenarios, the Russian Federation remains the main destabilizing factor to Ukraine's national security. We forecast that, despite ongoing and new political and economic sanctions, Russia will continue to pursue an aggressive policy that will rely on significant military potential while pursuing its geostrategic interests.

The Russian Federation has significantly built up, in quantity and quality, the ground and air components of Armed Forces in the western regions, near the state border of Ukraine, and in occupied Crimea. This causes an increasing danger of direct invasion by Russian offensive groups into the territory of Ukraine from its eastern borders, it creates additional tension in the region, and it is an instrument of pressure.

The main carrier of combat potential of the Russian Federation's Armed Forces is their Aerospace Forces. In the event of the most dangerous scenario of unleashing open armed aggression against Ukraine, the Russian Federation is able to set up air task forces of up to 500 aircraft, up to 335 helicopters, and up to 500 cruise and tactical ballistic missiles on one or more operational fronts.

These task forces are a major threat to the Air Force of Ukraine and outlines the maximum level of Ukraine's military-political ambitions in the

airspace - to provide adequate and decisive responses in the event of further escalation of the confrontation between Ukraine and the Russian Federation.

At the same time, during the next 15 years, we do not expect any significant changes in the quantitative composition of the Russian Federation's Aerospace Forces, however the qualitative composition will undergo significant changes. The military-political leadership of the Russian Federation is directing significant efforts and resources to increasing the combat potential of the Russian Federation's Aerospace Forces. It is implementing large-scale programs for the development of new modern types of aviation equipment (including next generation) and weapons for further re-equipment of its armed forces.



The Aerospace Forces of the Russian Federation have already begun planned upgrades of tactical aviation, to include multi-purpose fighter jets and fighter-bombers of Generation 4 ++ and Generation 5 such as the Su-34, Su-35, MiG-35, and Su-57. At the same time, existing models of fighter, attack and bomber aviation are undergoing deep modernization and are acquiring qualitatively new capabilities: increasing their range, ensuring multifunctionality, expanding the inventory of weapons, greatly increasing the survivability by reducing radar signature and utilizing modern radio-electronic warfare equipment. Air reconnaissance, air transportation, airdrop, and airspace domain awareness capabilities are also being increased. Air operations command and control is being improved based on the formation of a single information space. Additionally, by 2030 a significant increase in unmanned aerial components (including strike UAV complexes) and the beginning of retrofitting long-range aviation to modern aviation complexes is expected.

A separate direction is the development and fielding of new and modern air, sea, and ground-based weapons: hypersonic aviation missile systems, cruise missiles, and other high-precision munitions.

These threats in the airspace from the Russian Federation are the main factor that will determine the choice of further ways of development of the Air Force of the Armed Forces of Ukraine, with the purpose of adequate and effective deterrence against them and ensuring proper response in the event of armed aggression.

At the same time, the spectrum of potential and likely threats in the airspace during the next 15 years is not limited only to the Russian Federation. We also need to be prepared for other threats of military nature, such as drawing Ukraine into military conflict between other states, armed conflict in the border area, and terrorist acts, including in the airspace.

Under these scenarios, the deliberate use of weapons by a third party above, though, or from the territory of Ukraine is likely to result from the escalation of frozen border conflicts, or the negative development of economic, political, social, ethnic or religious controversies in relations between and with neighboring states and military-political alliances. This may include air, cruise missile, or unmanned aerial vehicle strikes from neighboring countries, or the use of aircraft and helicopters for illegal transportation of armed forces through the territory of Ukraine, or airborne landings of illegal armed groups of third countries. Armed provocations carried out without crossing the state border may take the form of shelling (shooting) of border posts, aircraft, vessels, state border guard (maritime



border guards) garrisons, border crossing check points, and other facilities and civilians, which in turn may lead to broader armed clashes (including in the airspace).

In response to the terrorist threat, the Air Force must be prepared for the increase in probability that aircraft could be used for terrorist acts by terrorist and religious- separatist organizations. This may include the hijacking of civilian or military aircraft with the intent of using them as a means of destruction, as well as the use of light aviation and small unmanned aerial vehicles as delivery means of attacks on facilities by terrorists.

These factors create additional threats to our country's security in the aerospace environment to which adequate responses must be ensured and necessary capability packages developed.

### **2.3. Internal factors and limitations**

The main internal factor that will have an impact on the further development of the Air Force of the Armed Forces of Ukraine is the end of operational lifecycles of major combat weapon systems and military equipment.

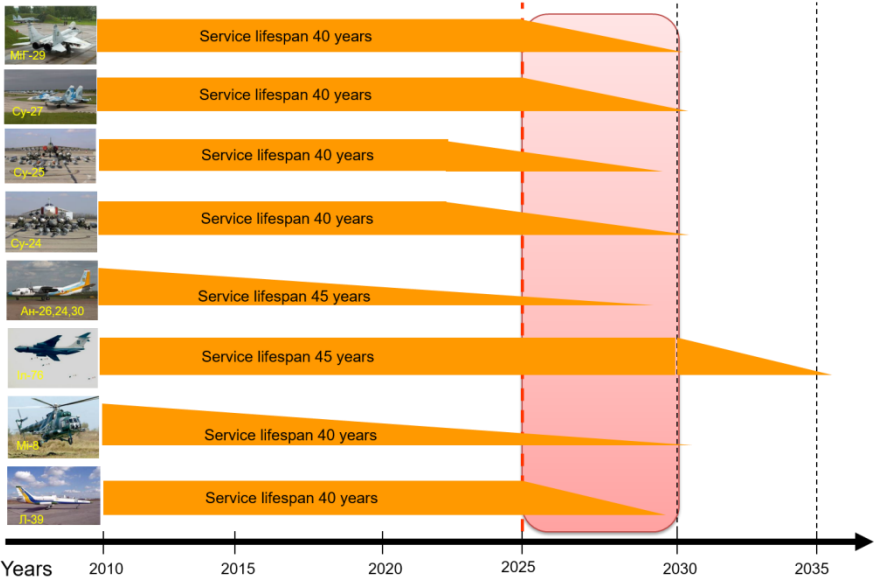
The Air Force 2020 still relies on combat potential inherited from the Soviet Union. Repair, modernization, and maintenance on a proper level of military equipment requires increasing financial resources, the amount of which has already come close to the funding indicators for the procurement of new modern models. Thus, the sustainment of an old fleet of weapon systems and military equipment will become cost-ineffective in the coming years.

Moreover, despite considerable efforts and financial resources aimed at restoring, maintaining, and modernizing combat aviation and arming air defense missile forces, their level of material readiness is steadily declining. This is due to their physical aging and the inability to access the spare parts market and repair facilities, which are located mainly in the Russian Federation. Given the planned and gradual development of the Aerospace Forces of the Russian Federation, which are and will remain within the foreseeable future the main opponent of the Air Force of the Armed Forces of Ukraine, this state of affairs has an absolutely destructive impact on the security level of our country in the airspace.

Therefore, it can be stated that now is the time to make important and decisive decisions at the state-level about re-equipping to modern models of weapons and military equipment.

It should be noted that the national military-industrial complex has a quite limited capacity to meet the needs of the Air Force with regards to providing modern models of combat aviation and ground-based air defense systems.

Ukraine inherited from the USSR both a developed military-industrial complex capable of producing modern and formidable military equipment, and the most powerful Air Force in Europe, modern and substantial, capable of responding to the full range of threats in the airspace in any conflict with any likely adversary.



However, over the years since independence, Ukraine has not procured any new combat aircraft or air defense missile systems and used the internal resources of surplus military equipment to maintain the capabilities of the Air Force. This, in turn, has led to a significant decline of the national military-industrial complex. We have stopped investing in our future and have created the prerequisites for the emergence of a critical situation which is the need for massive and almost simultaneous rearmament of the Air Force to modern models of military equipment (first of all multi-role fighters and air defense missile systems) that national industry has not yet created and cannot create within the required timeframe. This necessitates the acquisition of these capabilities abroad and significant financial investments. At the same time, the development of other components of the Air Force's capabilities, such as radar, radio and radio-technical intelligence, transport and unmanned aviation, etc., should rely primarily on the capabilities of the national economy, although it will also require steady and significant funding.

This poses another challenge that the Air Force has faced while developing this Vision: the considerable financial requirements in the face of the state's limited capacity and the exhausting conflict in eastern Ukraine. The Armed Forces of Ukraine cannot afford any further delay of Air Force rearmament given the projections of the status of the main weapons and military equipment and the level of military threats that currently exist and will arise in the future. At the same time, the state does not have sufficient resources to meet all of the Air Force's needs. This considerable dilemma forces us to seek extraordinary and sometimes difficult decisions, compromises, and to abandon certain political-military ambitions in the airspace, focusing instead on the main tasks.

Other factors that will affect the development of the Air Force will be the following:

A demographic crisis and deficit of human resources and the need to compete with other sectors of the national economy and foreign employers for trained, professional and motivated personnel;

The need to counter challenges in the information environment, attempts to break the unity of society in general and the Air Force in particular, and attacks from outside and inside on leadership decisions, including on the proposals for the Air Force's further development;

The vulnerability of the state and Armed Forces' governance system and the need to counter new threats in cyberspace.

These factors of external and internal nature shape the strategic context in which the Air Force Vision was developed and lay the foundation for defining the concept of its development.

### **3. STRATEGIC COURSE**

**(Decide)**

#### **3.1. Political-Military ambitions of the state in the airspace**

As defined by this document, the vision of the role and place of the Air Force in the Armed Forces of Ukraine, as well as the strategic context in which we will develop and operate over the next 15 years, require us to generate rational ways of developing the Air Force that will ensure the security of the airspace of the state, prevention of the unimpeded use of airspace by any party to commit acts of terrorism, and violation of the national interests, sovereignty and integrity of Ukraine. We should also under favorable conditions provide all possible assistance and support to our partners from the other defense forces components, both at sea and on land. In addition, taking into consideration the declared Euro-Atlantic course of our country, we should achieve such levels of interoperability that would allow us to carry out joint operations with our partners throughout the multidimensional battle space of potential future conflicts, transforming our country not only into a consumer of security but also into a provider and reliable partner for free and democratic nations.

Taking into consideration the outlined level of political-military ambitions in the airspace over the next 15 years, the Air Force should be able to:

1. In the event of armed aggression, deny the enemy from gaining advantage in the air and achieving operational and strategic effects using the airspace;
2. Under favorable conditions, ensure advantage in the air and in cooperation with other defense forces components to achieve operational and strategic effects in resolving armed conflicts;
3. Conduct combined operations with Euro-Atlantic partners and ensure a proper contribution, under UN and NATO leadership, for supporting peace and security in the Eastern-European region and the world.

#### **3.2. Required capabilities**

To implement defined tasks in the airspace, the Air Force should have the following three groups of capabilities:

- 1) Defensive counter-air capabilities which can deter enemy aggression in the airspace and, in the event of such aggression, to inflict critical (unacceptable) losses and force the enemy to abandon its plans;

2) Offensive, strike, transport and intelligence capabilities which will allow, in the event of armed conflict, gaining advantages in the air in defined areas for a certain period of time, creating necessary prerequisites for further infliction of damage to the enemy, and to conduct airlift, air intelligence and other tasks to support the joint forces;

3) Capabilities which enable the Air Force to accomplish its assigned tasks, including organizational and technical interoperability with NATO:

- A modern, flexible, resilient, highly efficient, technically, and organizationally NATO-compatible command and control system, capable of providing appropriate and decisive responses to air threats;

- An efficient and flexible air domain early warning system that allows early detection of threats in the air;

- An extended ground infrastructure (primarily the airfield network) and logistical support system;

- Motivated and trained personnel who establish the necessary foundation for the realization of the Air Force's potential.

However, given the current status of the Air Force, defensive counter-air capabilities should become an absolute priority for development. It is the search for rational ways of rearmament of the air defense missile troops and tactical (fighter) aviation, which are the main providers of combat potential and in which there are the greatest deficiencies, that are the center of gravity for the implementation of this Vision.

<b>Goal:</b> to develop rational ways for the revival of the nation's air power	
<b>End state:</b> masters of the sky, partners on land and at sea	
<b>Center of gravity:</b>  Air Force combat set (GBAD and fighter aviation)	<b>Required capabilities:</b> <ul style="list-style-type: none"> <li>✓ Air early warning system</li> <li>✓ Flexible, resilient, NATO-interoperable, and efficient C2 system</li> <li>✓ Defensive counter-air capabilities (GBAD and fighter aircraft)</li> <li>✓ Offensive counter-air capabilities (fighter aircraft)</li> <li>✓ Air strike capabilities (attack aircraft)</li> <li>✓ Airlift capabilities</li> <li>✓ Air intelligence capabilities</li> <li>✓ Well-developed ground infrastructure (airfield network)</li> <li>✓ Efficient logistic and sustainment system</li> <li>✓ Motivated and trained personnel</li> </ul>
<b>Critical vulnerabilities:</b> <ul style="list-style-type: none"> <li>• Defensive counter-air capabilities (GBAD and fighter aircraft)</li> </ul>	<b>Critical capabilities:</b> <ul style="list-style-type: none"> <li>✓ Air early warning system</li> <li>✓ Flexible, resilient, NATO-interoperable, and efficient C2 system</li> <li>✓ Defensive counter-air capabilities (GBAD and fighter aircraft)</li> <li>✓ Well-developed ground infrastructure (airfield network)</li> <li>✓ Efficient logistics and sustainment system</li> <li>✓ Motivated and trained personnel</li> </ul>
<b>Conclusion:</b> 1. The main efforts should be focused on finding rational ways for the rearmament of the ground-based air defense troops and fighter aviation with the restoration of the rational balance between these capabilities. 2. The availability of financial resources is a matter of concern and attention 3. The ability of the national economy (military industrial complex) to fulfill requirements is a matter of concern and attention	

### 3.3. Ways of development

The formulated list of tasks and critically necessary set of capabilities require difficult but extremely vital decisions to abandon certain ambitions, retire



outdated equipment, and optimize the end strength and combat inventory of the Air Force, particularly under the conditions of the increasing level of security threats to the country in the airspace. Similarly, on the state level, the sources of funding for rearmament programs should also be identified in order to provide the basic required level of security and defense

capabilities, under the present conditions of resource constraints and scarcity. To address these contradictions, this Vision envisages focusing on three main directions.

1. Qualitative enhancement of defensive counter-air capabilities. The way of achieving this task under conditions of limited funding is for the first priority of re-equipping ground-based air defense troops. The basic capability for air defense missile troops should be a modern distributed short/medium range air defense missile complex capable of creating a networked system of air defense cover. Long-range air defense missile complexes with cruise and theater missile defense capabilities should be procured in limited quantities to provide air defense cover to the most sensitive and critical government, national economic and infrastructure facilities, and certain critical elements of operational combat forces. With the purpose of qualitative strengthening of the air defense system and development of the state's air defense system as a whole, tactical aviation should undergo unification and re-armament to a single type of multi-purpose fighter with the simultaneous gradual retirement of other airframes (bombers, attack and tactical reconnaissance aviation). To reduce the efficiency of enemy air strikes and to

replenish missile defense capabilities, significant efforts should be focused on improving the survivability of military infrastructure.

2. Aviation will remain the main capability of the Air Force to support the actions of other components of the defense forces. Tactical aviation (multi-role fighters) will conduct strikes on the enemy throughout its operational and tactical depth, air interdiction attacks, and air reconnaissance. At the same time, in order to provide close air support and reconnaissance in operational and tactical depth, unmanned aerial components should be significantly developed (unmanned reconnaissance and strike systems). Also, in order to ensure actions of other components of defense forces (primarily Airborne Assault and Special Operations Forces), airlift capabilities should be maintained (taking into account a reduction in the quantity of transport and special aviation aircraft).

3. For the Air Force to execute its assigned tasks, the steady and gradual development of the C4 system, airspace domain early warning system, logistical sustainment system and airfield network must be provided. The focus should also be on changing our approaches to training personnel and troops. These activities should take place in the context of ensuring interoperability with partner nations, creating prerequisites, and meeting requirements for accession to the North Atlantic Treaty Organization, both at the organizational and technical levels.

These tasks should be completed in stages, with a duration of 5 years each.

**The main goal of the first phase (preparatory, by 2025)** is maintaining existing capabilities and beginning of the rearmament of the Air Force. The main efforts of this phase should be focused on the re-equipping of air defense missile troops to the new medium-range air defense missile complex (from 2021 - 2022).

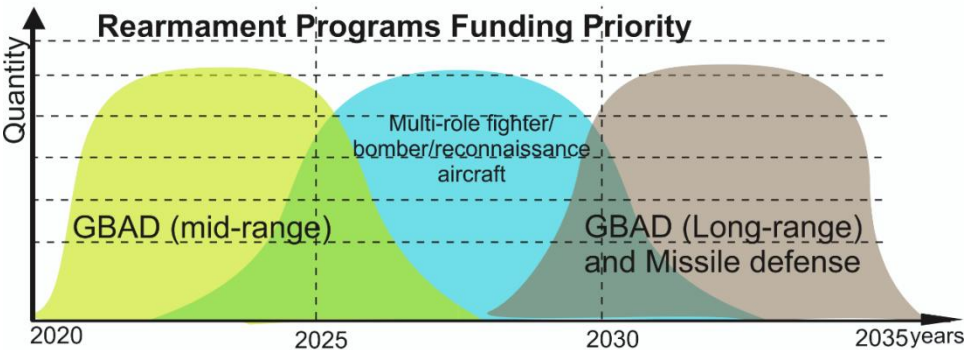
At the same time, in order to ensure the rearmament of tactical aviation in the second phase, bidding should be conducted in 2021 - 2022 and a procurement contract should be signed for a multi-role fighter, limited deliveries of which (total quantity of 6-12 aircraft during this phase) should begin in 2023 - 2025 in order to begin operational test and evaluation activities to study forms and methods of employment and the organization of personnel training.

In addition, in order to prevent reductions in the levels of available capabilities, repairs and operational life extensions of existing weapon systems and military equipment should be continued (until new models are delivered), with the simultaneous closure of unpromising modernization programs.

The sustainable development of the C2 system should be ensured, to include the completion of its transformation in accordance with NATO standards, the deployment of an automated aviation and air defense C2 system, the expansion of the air domain early warning system at mid- and low-altitudes in the eastern and southern directions, and other capabilities. The personnel training system must also undergo significant changes in order to increase the level of professionalism and competence and to provide readiness for operations and the combat employment of new weapons and military equipment, while taking into account the implementation of NATO procedures and standards.

**The main goal of the second phase (execution, by 2030)** is the armament of the air defense missile troops and the transition to the planned rearmament of tactical aviation, which will stop the degradation of the Air Force. Regular deliveries of new combat aviation equipment should be established (8 - 12 multi-role aircraft annually), while simultaneously decommissioning obsolete models and abandoning certain types of aviation branches. By 2030, at least 2 tactical aviation brigades and four air defense missile regiments must be fully re-equipped with new aircraft and air defense complexes which must reach full operational capability. In addition, during this period the rearmament of transport and special aviation (1-2 annually), and deployment of new unmanned aviation units to replace attack, bomber and reconnaissance aviation should also begin. Remaining capabilities should have sustainable and planned courses of development.

**The main goal of the third phase (binding by 2035)** is the completion of rearmament and ensuring the sustainable



development of the Air Force. Major efforts should be focused on the supply of long-range air defense missile systems with missile defense capabilities and the transformation of air defense missile regiments into brigades. Remaining capabilities should develop gradually and sustainably.



By 2035, practically all obsolete military equipment should be decommissioned, and a new Air Force will have been formed with new operational capabilities. The C2 system, comprehensive sustainment, and personnel should be prepared for the effective employment of acquired capabilities in all identified scenarios.

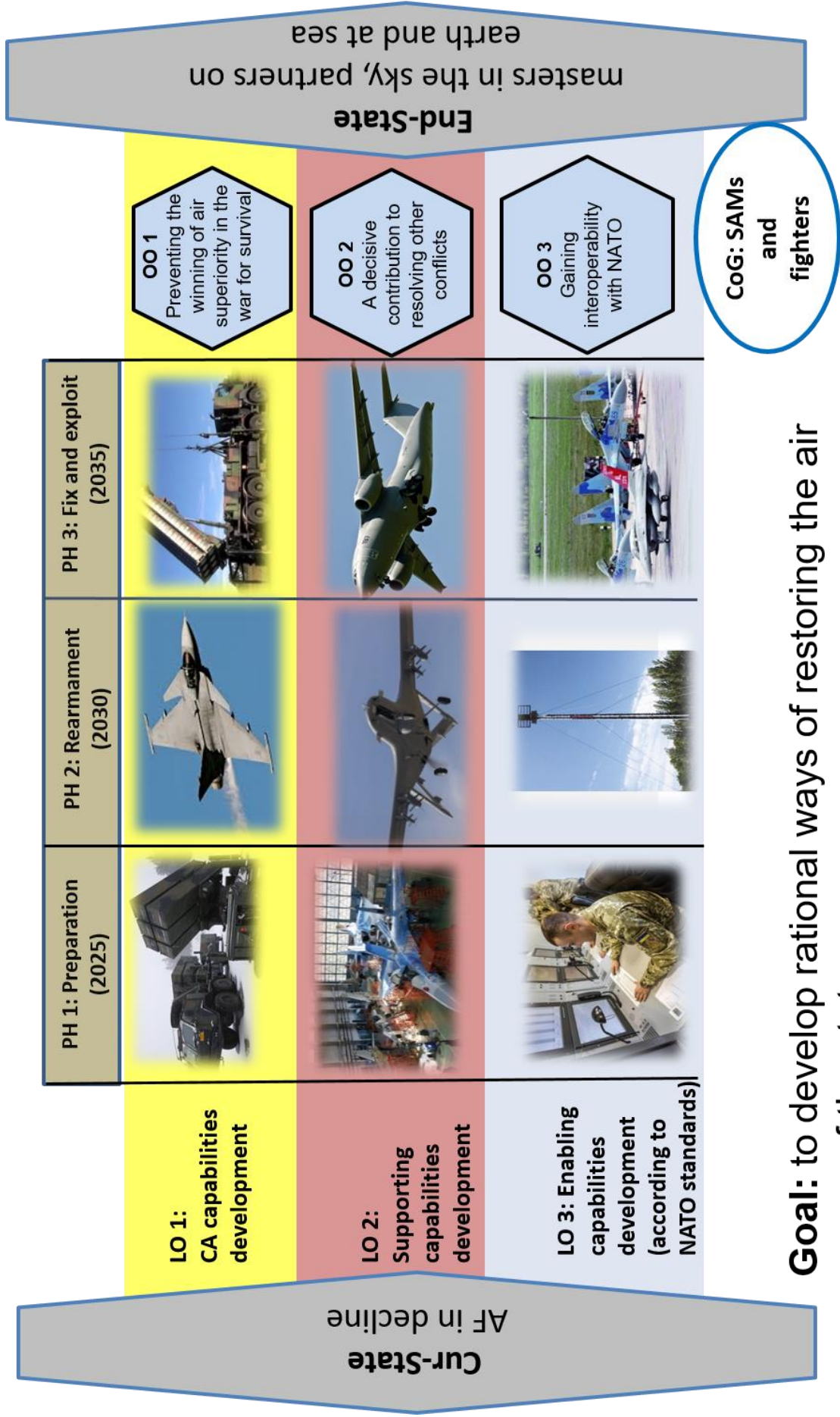
### **3.4. Objective Force**

The Air Force 2035 is to become a versatile, flexible, and highly mobile military tool that employs advanced network architecture and C2 technologies. They should have:

- At least four tactical aviation brigades armed with a single type of modern, multi-role fighter aircraft of generation 4 ++;
- At least four air defense missile brigades armed with modern, medium-range, highly mobile air defense missile systems and limited number of missile defense systems;
- At least four brigades (regiments) of unmanned reconnaissance and strike aircraft;
- At least four radar brigades;
- At least four signal and radio-technical support brigades (regiments);
- A brigade of transport and special aviation;
- A radio and signals intelligence brigade;
- A aviation training brigade;
- Other support units.

This objective force will provide sufficient deterrence, response, and defensive capabilities at the defined level of political-military ambitions in the airspace and across all security environment scenarios.

Manned with highly professional and motivated personnel, equipped with modern multifunction combat platforms, and united into single a distributed network of air- and land-based swarms, this objective force should be able to; disperse quickly and avoid devastating strikes while quickly concentrating efforts to strike a more powerful but less agile opponent, causing the enemy unacceptable losses and forcing it to abandon its aggressive goals.



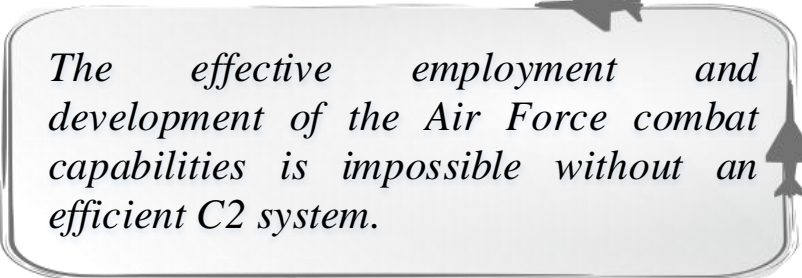
## 4. STRATEGIC PLAN

(Act)

The Air Force 2035 is a powerful, technology-based service of the Armed Forces, interoperable with the armed forces of NATO partner nations, capable of deterring an enemy in the air and, if not successful, inflicting unacceptable losses and providing rapid air support and cover. The Air Force organically combines aviation and ground-based air defense components. Air Force personnel are trained to execute joint actions in the air and on the ground, including in combined operations with our partner nations. Air Force weapon systems and military equipment are represented by modern models of combat and special equipment, produced abroad and domestically. Improved operational art and tactics permits the application of the main features of the Air Force (speed, agility, and concealment) and correlates to the advances in weapons and military equipment and innovative forms of waging air warfare.

### 4.1. Air Force C2 System

The C2 system of the Air Force of the Armed Forces of Ukraine 2035 should fulfill its combat potential in all scenarios of the security environment while accounting for the principles of jointness with other components of the defense forces and interoperability with international partners.



*The effective employment and development of the Air Force combat capabilities is impossible without an efficient C2 system.*

The reorganization of the Air Force's C2 bodies in accordance with the principles of building a NATO-type C2 system is one of the main priorities of

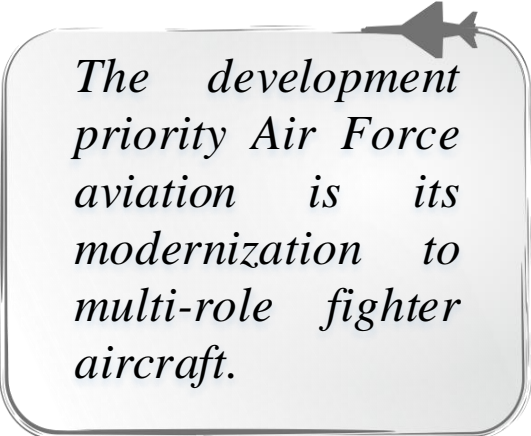
the first stage of the Vision's implementation and should be completed by the end of 2020, and in 2021 - 2022, the upgraded C2 system should acquire full operational capabilities. Force generation and employment functions in the upgraded system should be delineated. Other key NATO principles must also be widely implemented in daily practices: democratic civilian control, the delineation of policymaking and implementation functions, the jointness of all operations,

delegation of authority, mission command, etc. Military personnel of C2 bodies should acquire the ability to plan and manage troops in accordance with NATO principles and standard management procedures.

With the purpose of implementing NATO's C2 processes and procedures and improving the efficiency and quality of decision making by the end of 2020, a system of doctrinal Air Force documents should be reviewed and aligned with the relevant NATO standards, primarily those that determine the basic principles for the generation and employment of the Air Force's capabilities.

## 4.2. Air Force Aviation

The main task of Air Force aviation for the next 15 years will be to provide fighter aviation as a contribution to air defense (in cooperation with the ground based air defense troops) against enemy air strikes on important (critical) infrastructure facilities and lines of communication as well as troop formations which require defense to maintain their combat potential and to create conditions for execution of the tasks they were assigned.



*The development priority Air Force aviation is its modernization to multi-role fighter aircraft.*

Other tasks for aviation will be:

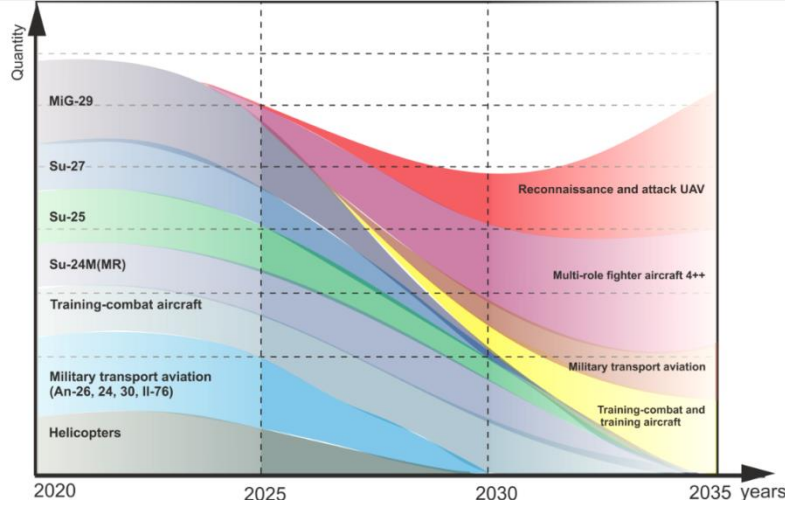
Air strikes against ground (maritime) targets throughout an adversary's tactical and immediate operational depth, and close air support using manned and unmanned aerial complexes;

Conducting aerial reconnaissance with manned and unmanned aerial complexes;

The airlift of personnel and cargo at defined distances under all conditions.

The Air Force aviation of 2035 will have tactical, transport, training, and unmanned aviation, all equipped with modern aviation weapons and equipment.

The existing model of tactical aviation, composed of branches (fighter, bomber, attack, reconnaissance) and armed with a wide range of aircraft such as the MiG-29, Su-27, Su-24M, Su-25, and Su-24MR, should unify and transform into an objective force model of multifunction tactical aviation units. Rearming with a single type of multi-role generation 4 ++ fighter, manufactured abroad (such as Saab JAS-39E / F Gripen, F-16 Block 70/72 or other), will provide commonality and cost savings. These aviation units with updated tactical aircraft should become the main provider of defensive (in cooperation with ground-based air defense forces), offensive, strike and reconnaissance air capabilities. The end strength



of tactical aviation units should decrease (the estimated need is 72 - 108 multi-role fighters), but the combat potential (at the expense of re-equipping to new multi-role models) will increase significantly. Major rearmament activities (including the disposal of outdated aircraft models) should occur during the second implementation stage of the Vision (2025-2030). At the same time, in order to study the characteristics of the new type of aircraft, operational employment, organization of retraining for aviation personnel, and improvement of ground infrastructure, it is advisable to procure a limited number of aircraft (up to 6 - 12) during the first phase (2023 - 2025). The estimated resource requirement for the rearmament of tactical aviation is approximately UAH 200 billion.

The transport and special aviation fleet, which is equipped with wide range of aircraft such as the An-30, Il-76MD, An-26 and Mi-8 helicopters, should also undergo consolidation. A single modern, medium-size national transport aircraft should be selected, upon which other types of special aviation equipment will be created. The rearmament of transport and special aviation should start during the second phase and end at the third phase of the Vision's implementation (2027 - 2035). The estimated resource requirement for the rearmament of transport and special aviation is approximately UAH 40 billion.

Training aviation, equipped with L-39 aircraft, should be upgraded to a modern multi-role combat-training aircraft, which will become the main training platform and, if necessary, can be used for some combat tasks to enhance tactical aviation capabilities. The estimated resource requirement to re-equip training aviation is approximately UAH 35 billion.

The unmanned component should be represented by two types (reconnaissance and reconnaissance-strike) of operational-tactical (operational) level complexes. The resource requirement is approximately UAH 30 billion.

A separate task of aviation development support and follow-up is to provide training to flight and engineering staff at educational institutions (centers) of partner nations (the initial unit could take up to five years).

In order to maintain the Air Force's aviation capability to execute assigned tasks during this transition period, the service life of existing aviation weapons, aircraft and their components will be extended by reevaluating lifespan indicators, transferring to operational technical status, and by conducting repairs.

The total financial resources needed for the implementation of the Air Force's aviation development measures are estimated at UAH **320 billion** over the entire 15-year development period (in fiscal year 2020 prices).

### **4.3. Air Force Ground Based Air Defense Troops**

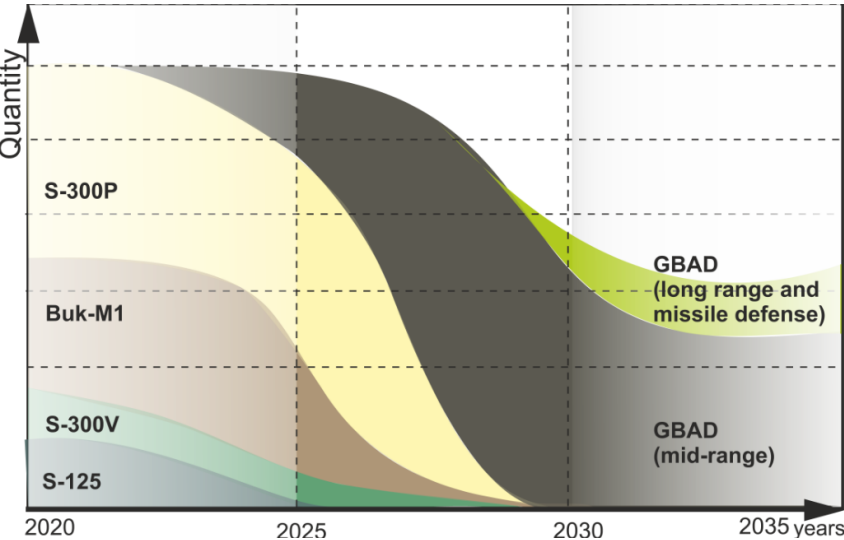
The main task of the Air Force's ground based air defense troops over the next 15 years will be to provide ground based air defense missile forces as a contribution to air-defense (in cooperation with aviation) against air strikes from enemy air force weapons on important (critical) infrastructure, lines of communication, and troop formations which require defense to maintain their combat potential.

Air defense missile troops in 2035 will have unified and highly mobile units which will be capable of covering troops and facilities with smaller quantities, exploiting maneuverability and the precision of weapons.

In order to save resources, the existing air defense missile complexes and systems "Buk-M1" (SA-11), S-125 (SA-3), S-300P (SA-10), S-300V (SA-12) and their modifications should be consolidated and transitioned to a highly mobile, net-oriented, geographically distributed mid-range air defense missile complex of foreign production, in the amount of 36-40 units (NASAMS type or similar) that

will be given priority for re-equipment. Major retrofitting activities (including disposal of outdated pieces) should occur during the first phase of the Vision implementation (2020-2025). The estimated resource requirement is approximately UAH 50 billion.

At the same time, in order to create the conditions for further development of ground based air defense troops and to reduce dependence on foreign suppliers, research and development should be carried out by the national defense-industrial complex for the development (including in cooperation with foreign partners), further production, and introduction of an indigenous mid-range air defense complex. The expected completion date is 2030. The estimated resource requirement



is approximately UAH 10-15 billion.


In order to protect the most sensitive and critical facilities of the state governance system, facilities of the national economy and infrastructure, and some critical elements of

operational military formations, a limited number of medium and long range air defense missile systems with missile defense capability should be procured in quantity of 9 - 12 units (such as the SAMP-T, Patriot or other types of mid- or long range GBAD with missile defence capability). Procurement of this piece should take place during the third phase of the Vision implementation (2030 - 2035). Priority should be given to domestic manufacturers (subject to the successful implementation of a mid- or long-range air defense complex project). The estimated resource requirement is approximately UAH 20 to 100 billion, depending upon the choice of supplier.

This transition to a new objective force requires changes in ways and methods of employment of ground-based air defense forces, the replacement of ground-based air defense weapon systems, and a new level of personnel training.

New doctrine for the training, employment and development of air defense missile troops will require the transition to speed, concealment, and accuracy of weapons employment by highly trained and sustained units as members of joint task forces.

The acquisition of these capabilities by ground-based air defense units will be possible through the gradual decommissioning of obsolete Soviet-made weapons and the introduction of medium-range air defense missile units. These units will be trained and sustained according to NATO standards and will have gained experience through international exercises, making them interoperable with NATO forces; including the automation of the planning and C2 processes for employment of air-defense missile units.



*The development priority of the Air Force ground-based air defense troops is the development and production of a domestically manufactured medium range surface to air missile system and the procurement of a foreign surface to air missile system.*

The total resources needed to implement the Air Force's air defense missile development measures, in monetary terms over the 15 years, is estimated at up to UAH **195 billion** (in fiscal 2020 prices), depending upon the type of systems chosen.

#### **4.4. Air Force Radar Troops**

The main task of the Air Force's air defense radar troops over the next 15 years will be to conduct surveillance in order to detect violations of the state border in the air, detect air enemies, recognize the intent of an air attack, and deliver early warning to the Armed Forces pertaining to existing and potential threats from the air.

The development of radar troops should have a planned and gradual nature and take place in accordance with priorities that have already been identified: the expansion of radar surveillance systems at medium and low altitudes along threatening axes and with the simultaneous introduction of automation tools.



*The Air Force radar troop's priority is the development and procurement of nationally produced radar equipment.*

The formation of an additional 13 automated radar units will increase the capabilities to detect air threats at medium and low altitudes in the eastern and southern axes. The resource requirement, without considering the cost of military

equipment, is UAH 2.9 billion.

At the same time, in order to save human resources and increase the information capabilities of a typical radar unit, the priority in development of weapons and military equipment of radar troops should be given to modern mobile automated radar systems and complexes of national production, equipped with modern digital communications and means for transferring information. This includes the introduction of automated and remotely controlled radars and mobile maintenance and repair means. Other measures include:

- The procurement of 174 new units (including remotely controlled) and the modernization of 122 units of domestic radar equipment (the resource requirement is UAH 21.3 billion);

- The technical re-equipment of automation complexes through the procurement of 53 domestically produced 9C162-4P automated aviation and air defense C2 systems (the resource requirement is UAH 4.2 billion).

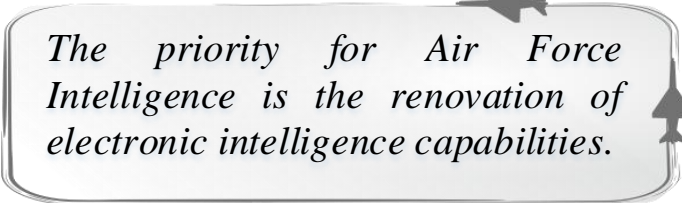
A separate effort for the development of radar troops will be to ensure the interoperability of the recognized air picture production and dissemination systems with those of our partners, and to ensure the staff is trained to work in automated formations.

The overall funding requirement to implement these activities is UAH **28,3** billion.

Under certain conditions, in order to significantly increase capabilities to detect air targets at low and extremely low altitudes and to improve Air Force C2, it is possible to procure up to 4-6 long-range Airborne Early Warning and Control (AEW&C) aircraft of foreign production. However, this option will require an additional UAH 50 billion of investment, along with additional costs for annual maintenance of these aircraft at UAH 7 billion, and this capability should be considered only after the completion of tactical aviation rearmament measures.

## 4.5. Air Force Intelligence Capabilities

The Air Force's Intelligence System (as part of the Ukrainian Armed Forces Intelligence System) over the next 15 years should provide a round-the-clock location and detection picture of airborne enemies amidst dense electromagnetic environments in the air and on the ground, and identify adversary intentions for preparing and striking from the air.



*The priority for Air Force Intelligence is the renovation of electronic intelligence capabilities.*

The main priority for the development of intelligence forces and means should be given to reviving the Air Force's electronic intelligence capabilities (airborne

and ground-based systems). Also, the development of appropriate infrastructure for imagery and communications intelligence capabilities as well as the interoperability of the Air Force intelligence system with the Ukrainian Armed Forces and NATO partner-nations should be ensured, as well as increased information capabilities and the automation of intelligence by a separate unit and the system as a whole.

The existing intelligence model will be transformed into one capable of the reliable recognition of enemy intentions and its preparations and strikes from the air.

This target model provides for the development and adoption of:

- Modern direction-finding systems in the High Frequency (HF) and Very High Frequency (VHF) bands (5-7 complexes);
- The newest complexes of ground-based electronic intelligence (5 complexes);
- Universal imagery and communications intelligence pods for tactical aviation aircraft (for up to 30% of tactical aviation aircraft);
- Aviation complexes of electronic intelligence (1 - 2 complexes);
- Aviation complexes of imagery and communications intelligence of ground objects (1 - 2 complexes);
- Universal intelligence processing units (3 units);
- Unmanned aircraft complexes for operational and tactical intelligence (6 - 12 complexes).

The total resources needed to implement the Air Force intelligence development measures, in monetary terms over 15 years, is estimated at UAH 25 billion (in fiscal year 2020 prices).

## 4.6. Air Force Electronic Warfare Capabilities

The experience of modern conflicts and a series of exercises for local air defense task forces conducted in 2018 - 2019 showed the exceptional importance of electronic warfare capabilities in the execution of tasks for building an effective and stable air defense system.

*The priority for Air Force Electronic Warfare capabilities is the development of nationally produced pieces of armament.*

For the next 15 years, the Air Force's EW capabilities should ensure the detection and suppression of the enemy's airborne electronic intelligence and aerial targeting in

threatening areas as part of the air defense system for important state and military installations.

Electronic warfare in the Air Force 2035 should include ground and air capabilities which are automatically controlled by highly trained personnel and employed in a unified AFU-EW infrastructure within a single information space.

The ways to develop the capabilities of the Air Force to conduct electronic warfare by 2035 are:

- The development of an automated system for EW C2 and the preparation of necessary infrastructure and personnel for rapid mobile actions on threatening axes;
- The gradual replacement of EW equipment with domestically produced pieces which correspond to the best worldwide equivalents, and the acquisition of new operational capabilities by EW military units through the employment of new intelligent technologies for conducting EW;
- The development of the logistical sustainment of the EW units in future joint task forces of the Armed Forces of Ukraine;
- The deployment of aircraft and formation threat counter-measure capabilities for domestically produced airframes;

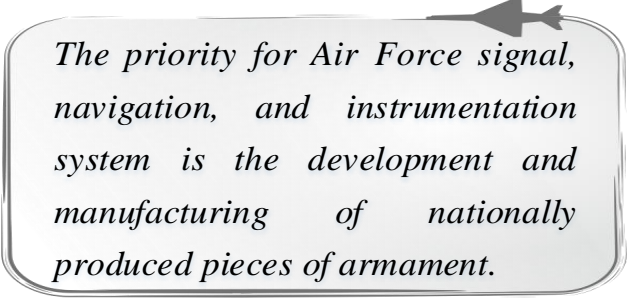
The total resources required for the implementation of the Air Force's EW development measures, in monetary terms over the entire 15-year development period, is estimated to be in the range of UAH 5 to 10 billion (in fiscal year 2020 prices).

## 4.7. Air Force Signal, Navigation, Instrumentation, and Automated C4 System Capabilities

The Air Force's aviation flight signal, navigation, and instrumentation system (as an integral part of the Armed Forces Signal System of Ukraine) is the technical basis of a C2 system that integrates the Air Force's capabilities into a single, powerful, synchronously functioning organism.

This signal, navigation, and instrumentation system of the 2035 objective force should have the capability to ensure the take-off and landing of modern and advanced aircraft under all weather conditions and at any time of day, with reliable control in the air and uninterrupted communications at all levels of the Air Force C2 system.

The existing signal system model will be transformed into a multi-function, sustainable, and flexible system that ensures the functioning of the perspective network centric C2 system, adequately responding to threats in cyber domain.



*The priority for Air Force signal, navigation, and instrumentation system is the development and manufacturing of nationally produced pieces of armament.*

The main directions of development of the signal, navigation, and instrumentation support system of the Air Force of Ukraine for **the period to 2035** are:

- The modernization (re-equipment) of existing navigation and instrument aids means and aviation communications to ensure interoperability with new aircraft;
- The modernization of airfields to International Civil Aviation Organization (ICAO) Category II standards;
- The procurement of new radios and Internet Protocol (IP)-telephones of foreign production with the maximum opportunity for serial production in domestic industry enterprises.

The Implementation of these development proposals will allow the provision of timely, reliable, and secure communications between the Air Force's units and aircraft even during the enemy's use of electronic warfare techniques.

The existing model of automation of the Air Force will be transformed into a complex automation model for all control processes, integrated into the Unified Automated Control System of the Armed Forces of Ukraine, with the creation of a single information environment.

*A separate line of effort is ensuring interoperability of the Air Force C4 system with those of relevant partner-nations.*

The main efforts should be focused on maximizing the use of industrial capacities of the national defense-industrial complex for the production of promising automation tools and conducting research and development

on the modernization of automation tools, taking into account the supply of the latest types of weapons and military equipment.

The total resources needed to implement the Air Force's signal, navigation, and instrumentation development measures, in monetary terms over the entire 15-year development period, are estimated at between UAH **5 and 11 billion** (in fiscal year 2020 prices).

#### **4.8. Air Force Manning, Training, Education and Research Systems**

The manning and training system of the 2035 objective force should provide the Air Force of the Armed Forces of Ukraine with patriotic, motivated, and professional personnel.

Special attention should be given to manning the Air Force with motivated personnel and additional training and professionalization using the best-practices of the West. Officials of all levels should widely implement the principle of Mission Command, by execution of command and control and through the delegation of authorities (centralized command, decentralized execution). They must abandon

*The priority of development of manning, training, education and science system is the professionalization of the Air Force's officers and NCOs and innovation of scientific research.*

Soviet practices of detailed command and control. By 2030, 100% of the officers and at least 50% of the NCOs should have at least a functional proficiency in English.

The combat training system should ensure a high level of readiness of the Air Force's combat units to execute assigned tasks through an objective level of assessment and certification. Air Force Training Command should play the leading role in the implementation of this task.

The leading role in ensuring the proper level of education and professional training of the Air Force NCOs and officers will be played by Kharkiv National Air Force University. To implement this, it should significantly advance its structure, professor and instructor training system, cadets' training system and facilities, and the training base itself. Further professional development of officers should be provided by the Aviation and Air Defense Institute of the National Defense University of Ukraine, taking into account the principles of joint training and education and the implementation of best practices and methods of partner-nations.

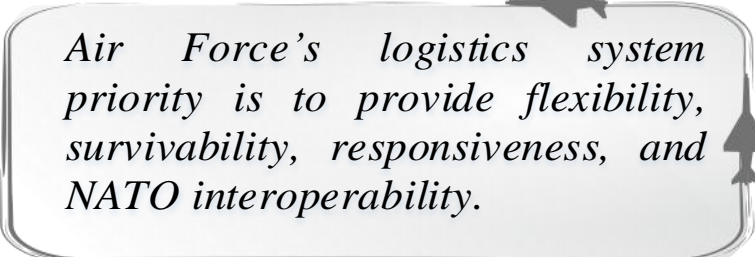
Scientific and research support for the Air Force development measures should be provided by a system of scientific institutions and units of higher military educational establishments. The Air Force Science Center of the Kharkiv National Air Force University should play the leading role in this process., This center should be transformed into the Air Force Scientific and Research Institute by the end of 2020, which will enhance its status and better organize the scientific research system- - toward the interests of the Air Force of the Armed Forces of Ukraine.

#### **4.9. Air Force Logistics Sustainment System**

The logistics system of the 2035 objective force should establish a solid foundation for the day-to-day operations, combat training, and the employment of the Air Force, taking into account its rearmament with new weapon systems and equipment, and acquiring interoperability with NATO.

In order to implement the Air Force C2 and employment network principles, the ability to disperse quickly to avoid enemy strikes and to concentrate efforts on specific axes for striking in response, the logistics system must undergo changes to increase flexibility, survivability, resilience and responsiveness. For this purpose,

adequate stocks of weapons, military equipment, munitions, and other material resources should be created and dispersed in protected bases, depots, and arsenals, with procedures for their rapid delivery to appropriate areas, bases, and airfields for dispersion.



*Air Force's logistics system priority is to provide flexibility, survivability, responsiveness, and NATO interoperability.*

The airfield network should be developed along the same principles. In peacetime, in order to save resources, aviation should be based at 5-6 aviation bases, which will reduce operational costs needed to provide combat training and the execution of the air policing mission. Particular attention should be paid to the modernization and certification of airfields, their ability to receive and provide flights to the -air forces of partner nations, to ensure security and survivability of aircraft and aviation equipment on the ground, and the ability to rapidly restore the infrastructure and continue operations of an aviation base in general. The pilot projects to implement these tasks should be at Staro-Konstantyniv and Ozerne airfields.

At the same time, to ensure operational maneuver, operational flexibility, and survivability, up to 15-20 operational airfields (aviation garrisons) should be sustained. These will be capable of receiving aircraft and helicopters immediately and ensuring their combat employment, allowing them to disperse aviation equipment to threatening axes during special periods.

The Air Force Logistics Command should play a leading role in the implementation of these tasks.

## CONCLUSION

An analysis of the security environment over the next 15 years shows that the level of threats to our country's security, including in the airspace, will remain consistently high with a worsening trend. We see that the Russian Federation leaves no attempt to undermine the unity and integrity of our state, its independence and sovereignty, and continues to increase its potential in the air space near our borders. Similarly, in the long term, new challenges to national security in the air are expected. Therefore, the Air Force has been, is, and will be the primary instrument for protecting the Homeland in the air.

At the same time, the potential inherited from the Soviet past is almost exhausted. Decades of chronic underfunding led to a situation wherein the issue of modernization of military equipment is urgent, and the Euro-Atlantic course of the state requires us to become interoperable with our partners, both at the organizational and technical levels. Therefore, in order to develop rational ways of reviving the air power of the country and creating preconditions for Ukraine's accession to the Euro-Atlantic community, this Vision was developed.

This Vision allows the identification of critical capabilities for the Air Force; such as ground-based air defense troops (distributed air defense missile systems) and tactical aviation (multi-role fighter aircraft) and priorities for their development, identifying the needed resources, and planning priorities and further development activities.

The implementation of this Vision requires considerable financial resources beyond the current funding of the Armed Forces and will be impossible without the support of the Government of Ukraine. In particular, its implementation will require the development of state target programs for the re-equipment of ground-based air defense troops (the procurement of distributed medium-range air defense missile complexes) and tactical aviation (the procurement of multi-role fighter aircraft), as well as military and technical assistance from partner-nations.

Our failure to comply with the measures defined in this Vision will result in the final degradation of the Air Force's capabilities to conduct air combat through the inevitable resource exhaustion of air defense missile complexes and tactical aviation. Consequently, the liquidation of the Air Force as a separate service of the Armed Forces of Ukraine by 2030 is unavoidable. This, in turn, will lead to the abandonment of the state's ambitions to secure the airspace, to protect it in the event of aggression, to prevent its use by the enemy to inflict damage to the state's defense forces, and to use the air component to support its actions.



Consequently, future conflicts with that involve Ukraine will occur under complete enemy air superiority. In this case, the purpose and main tasks of the Armed Forces of Ukraine, and the structure, role, tasks of other services, branches of troops (forces) and their components, forms and methods of their employment should be reviewed.

Another major risk of failure to comply with the Vision's measures is an inability to acquire interoperability with NATO, which will make the implementation of state policy for membership in this organization impossible.

The citizens of Ukraine must be confident that the Air Force can protect them from aerial threats today and into the future. Therefore, given the exceptional uniqueness and importance of the tasks that the Air Force accomplishes, its development should become a state priority in the area of national security and defense policy for the next 15 years.



# **We are the Air Force!**

**Our mission is the experience of the past and tasks of today.**

**Our vision is the development and beacon for the future.**

**Our values are what unites and inspires to our endeavors.**

**Our Strategy is the way for future generations!**