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Since 1978

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140 Countries

The Best Defense Industry Practices of the World: Türkiye's Place

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Our submarines: Depths Silent, Impact Loud

A Look at the Turkish Air Power and Aviation Industry in the New Century of the Republic

We talked about the company's recent breakthroughs with Mr. Recep Ali Erdogan, the General Manager of ASELSANNET

Turkish Defense Industry Gathered at SAHA EXPO

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Türkiye's Power in the Defense Industry: Second in the World After the USA!

With its recent breakthroughs in the defense industry, Türkiye is emerging as a strategic actor in the global arena. Increasing its domestic and national production capacity and influencing the regional and global balance of power, Türkiye draws attention with the international successes of its defense industry companies. According to the Defense News Top 100 list, 9 companies from Türkiye have been included in this prestigious list in the last 5 years and have become the second country with the most companies after the USA. This success demonstrates not only the country's global competitiveness, but also how strong a player it is in the defense industry.

Domestic and National Production: The Rise of Economic and Strategic Power

The Turkish defense industry has gained a solid place in the global market with the advanced technology products and systems it has developed. Leading companies such as ASELSAN, TAI, ROKETSAN and HAVELSAN are among the important players not only in Türkiye but also in the world defense market with their billion-dollar projects they carry out every year. Sales of ASELSAN are around $2.5 billion and of TAI around $ 2.2 billion in 2023 and are reinforcing the power and competitiveness of the Turkish defense industry in the international arena.

While Türkiye's defense industry exports stood at $1.68 billion in 2015, they have almost tripled, reaching $4.4 billion by 2023. This growth is a reflection of Türkiye's technological capacity and innovation capability in the field of defense industry. An average annual export growth of 30 percent in the last 5 years clearly shows Türkiye's rise and strategic importance in this field.

ASFAT and the Role of High-Potential Firms

One of the companies that have achieved great success in the defense industry in a short time is ASFAT. Despite being established 5-6 years ago, ASFAT has gained recognition for its innovative solutions and rapid growth performance and has been included in the Defense News 100 list. This success shows how ASFAT has a strong potential in the field of defense industry and how effective it has become in the global market in a short time. In addition, some companies are not included in the list but make a great contribution to the defense industry. In particular, Baykar and Miilux OY, which belongs to Oyak Group, stand out among these companies. Both companies have achieved worldwide recognition and high success in their respective fields. Baykar creates a great impact worldwide with the unmanned aerial vehicles (UAVs) and armed unmanned aerial vehicles (UCAVs) it develops. Bayraktar TB2 and Akıncı UAVs are in the inventories of more than 30 countries and are attracting global attention with a total of more than 500 vehicles being manufactured.

Similarly, Miilux OY has a strong position in the international market with its expertise in armor steel and armoring solutions. The company exports to more than 15 countries by producing armor steels that meet NATO standards and achieved approximately $150 million in sales in 2023. These firms have made a strategic decision to not to be included in the Defense News 100 list and have preferred to implement their own strategies in this way.

Strategic Autonomy: Vision of an Independent Defense Industry

This rise of Türkiye in the field of defense industry is not only an economic success; it is also a result of its vision of strategic autonomy and independence. Türkiye is taking great steps in the field of defense industry in order to reduce foreign dependency and meet its defense needs with domestic and national solutions. In this context, the high-tech products developed by Turkish defense industry companies are making a great impact both in the local and international markets.

As a result, Türkiye's defense industry companies are achieving remarkable success around the world. The fact that Baykar and Miilux OY are not included in the list as a strategic decision shows that companies have different strategic goals and marketing approaches. As a result of its national and independent defense policies, this point Türkiye has reached in the field of defense industry continues to establish new balances in the world defense market. In our new issue, while covering the latest developments in the defense industry, we have also provided you with information about the fairs where the heart of the defense industry beats.

We wish you a pleasant reading...
Kind regards,

Editor in Chief

Ret. Airforce Int. Col.
ERDOĞAN İPEK
Editor in Chief

Defense Industry and Military Logistics: The Backbone of Security

Today, states use soft power elements such as political, economic, and diplomatic channels to protect their national interests and establish a sustainable security policy. However, in cases where these elements are insufficient or threats increase, military power becomes the most effective tool that comes into play. In this context, defense industry and military logistics play a vital role in ensuring the security of a country.

Logistics has emerged as a phenomenon of military origin with the need to survive and ensure its security, which is one of the most basic requirements of humanity. Today, military logistics plays a critical role not only in times of war but also in times of peace. Proper planning, organization and management of all the materials, human resources and services required by the army and the elements of military power constitute the basis of military logistics processes. This process has a direct impact on the success of operations by increasing morale and motivation, as well as ensuring that weapons, ammunition, equipment, personnel, food and medical aid reach the site effectively.

The Ministry of National Defense (MSB) and the Presidency of Defense Industry (SSB) are the pioneers of modernization and strategic developments in Türkiye's defense industry. The decisive role of the MSB in security policies is supported by the SSB's domestic and national production projects. In this context, large organizations such as IDEF and SAHA Expo bring Türkiye's technological advances and export opportunities in the defense industry to the world stage. In these events, important topics such as digital transformation and logistics modernization are on the agenda, while leading companies in the sector, military personnel and academics come together.

Defense industry and military logistics also make a great contribution to economic development with its mission to protect Türkiye's strategic position and national security. While minimizing foreign dependence, especially with domestic and national production moves, Türkiye is on its way to becoming an important player in the global market. The successful implementation of defense industry projects is not only important for the security of the country, but also provides serious support to the economy through exports.

As a result, every investment made in the field of military logistics and defense industry directly affects the strength and operational capability of an army. The steps taken by Turkiye in this field reinforce national security and consolidate its position as a strong actor in the international arena.

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Table of Contents

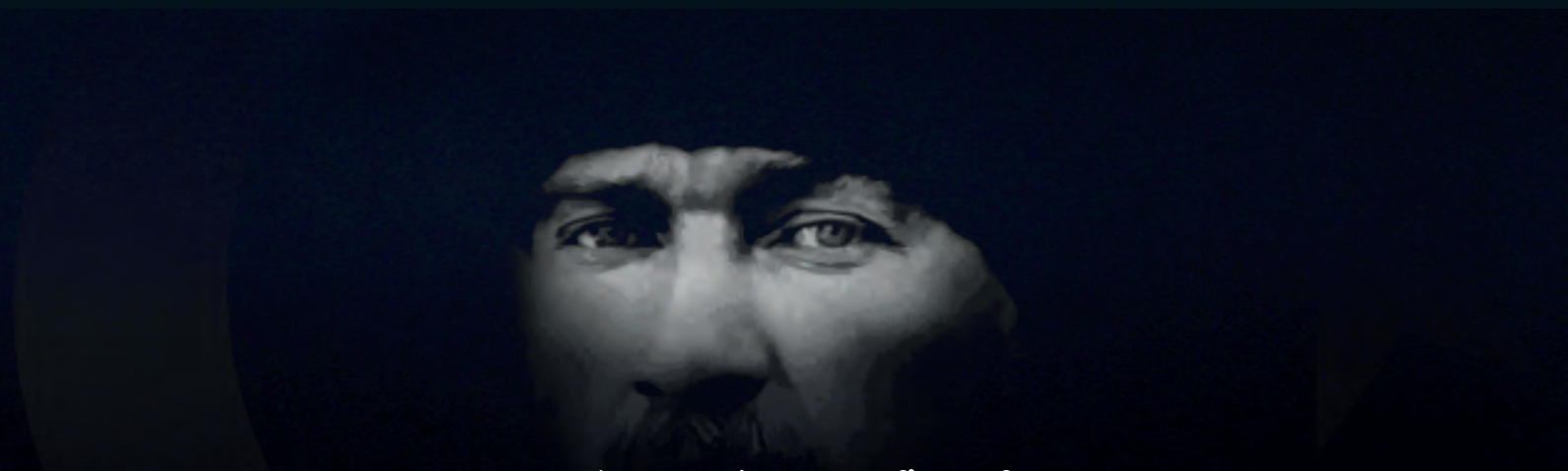

10 KASIM

With love, respect and longing...

NOVEMBER 10

November 10 is the day of commemoration of Mustafa Kemal Atatürk, the great leader of the Turkish nation. On this special day, Atatürk's vision and understanding of national independence inspire the development of our defense industry. Atatürk's statement "The greatest war is the war on knowledge" forms the basis of our technology and innovation-oriented approach today. As we honor Atatürk on this significant day, we will remain resolute in our efforts to uphold his principles and advance our defense sector. We emphasize the importance of honoring his legacy once more on November 10.

Ataturk fought hard for our national independence and modernization. His vision is our guide in the progress of our defense industry.



Every year, November 10 is celebrated with deep respect as the day of commemoration of Mustafa Kemal Atatürk, the great leader of the Turkish nation. Ataturk is not only a soldier and statesman, but also the founder of modern Türkiye and the symbol of our national independence. Atatürk, who passed away in 1938, continues to be a great source of inspiration in today's Türkiye with his legacy. Atatürk's statement "The greatest war is the war on knowledge" emphasizes the importance we attach to technology and innovation in the defense industry today. Today, the work carried out in the field of national defense continues to fulfill the requirements of being an independent nation in line with Atatürk's vision. While our defense industry strengthens through domestic and national production, it also increases its competitiveness in the international arena. In line with Atatürk's goals, the biggest goal we have determined for ourselves as a nation is to have a strong defense industry.

Our defense industry is growing based on Ataturk's vision

Thanks to investments in both military and civilian areas, our defense industry is moving forward day by day. With developing technologies, new generation defense systems and human resources, our country's defense industry has become an important actor in the global arena. Adopting Atatürk's statement "The most genuine mentor in life is science", we increase our research and development activities and see progress in the field of science and technology as our primary goal.

Export figures for our country are increasing

On November 10, while commemorating Atatürk, we once again remember the importance of keeping his ideals alive and protecting his legacy. Advances in our defense industry are a major contributor not only to our national security but also to international peace and stability. In this context, keeping Atatürk's memory alive is one of our most important responsibilities. The nationalization of the defense industry has moved Türkiye to an important position in the world. Today, products are exported to many countries of the world. Closing 2020 with $ 2 billion 278 million 695 thousand of exports, the Turkish defense industry achieved an export of $ 5 billion 500 million in 2023. In the first 7 months of 2024, exports amounted to $ 3 billion 335 million, an increase of 9.4 percent compared to the same period of last year. Türkiye continues to take firm steps forward in high value-added exports.

We are committed to his legacy

As a result, November 10 is not only a memorial day for Turks; it is also an opportunity to reconsider our goals for the future of our country. We see how far we have progressed in line with Atatürk's vision. In line with Atatürk's ideas and vision, we will continue to move forward with determination to strengthen our defense industry. Keeping its principles and revolutions alive is the most sublime duty of every Turkish citizen. On November 10, we commemorate our great leader with mercy and once again emphasize our commitment to his legacy.

CAHİT UTKU ARAL

General Manager of SYS Group – CANİK

SYS (Samsun Yurt Savunma) Group, of which CANİK is a part, draws attention through the innovative projects it has developed in the defense industry. One of them is CANİK Academy. We talked with Utku Aral, General Manager of SYS GRUP-CANİK, about the projects they carry out within CANİK Academy.

How do you define the founding purpose and vision of CANİK Academy and the general strategy of SYS Group companies?

The main purpose of CANİK Academy is to provide training to ensure that our products are used correctly after they meet the end users. Initially, these trainings were aiming to ensure the safe and correct use of firearms. However, over time, it was realized that a systematic approach was needed for more specialized areas of use, such as tactical and sport shooting. Considering that SYS Group has created an ecosystem that addresses not only the Turkish market, but also international markets, the necessity of an academic organization in line with this vision has become evident. In this context, CANİK Academy's vision has been shaped as a training and development center to meet these needs. SYS Group companies have a structure that not only offers the products they produce for sale, but also delivers these products to their users in the most effective way. By supporting the performance of the products we sell with the right techniques, this approach provides a significant competitive advantage in the

market. As an integral part of this strategy, CANİK Academy aims to enable end-users to use the product they have purchased most effectively. In addition, through CANİK Academy, we aim to ensure that civilians who acquire weapons have a license to use weapons both safely and with the highest performance. We are also working on accreditation together with the General Directorate of Security. By standardizing the curriculum of the training given at CANİK Academy, we aim to support the conscious use of weapons in our country. While our work in this regard continues, we aim to increase our recognition in the international arena by continuously developing CANİK Academy.

What are your plans for CANİK Academy in the future? What kind of innovations will there be in the Academy?

Since the defense industry is a highly specialized field necessitating high technical know-how and skills, it is of great importance to train qualified human resources in this sector. As SYS Group, one of the main missions of CANİK Academy is to train qualified human resources to meet this need and to increase the level of proficiency in the defense industry. In this context, the personnel we train at Samsun Yurt Savunma increase their security competencies not only at the individual level, but also at the corporate level, and contribute directly to the defense capacity of our country. Our long-term goals include supporting the overall efficiency of the defense industry by increasing the operational competencies of individuals who will work in the sector. This goal offers a strategy that will strengthen the security and defense capacity of our country by enabling individuals and institutions to achieve a more effective and professional structure. CANİK Academy aims to create a long-term transformation and progress in the sector by providing qualified training and development processes in line with these goals.

How do the training programs provided by CANİK Academy contribute to the overall goals of the defense industry? Do you think that these programs contribute to your company's competitive advantage both in Türkiye and in the international arena?

As I mentioned before, the effective use of the products by the end-users offers a significant advantage in terms of product performance and lifetime. The training programs created by professionals who have field experience within CANİK Academy ensure that these products are used most efficiently and appropriately. Thus, the users not only get the best performance from the product, but they also understand the technical capacities of these products better. Our training programs contribute to the professional development of the audience we address in the sector and serve as a bridge between the relevant countries and the defense industry. This allows us to provide strategic advantages in the long term. This structure offered by CANİK Academy strengthens SYS Group's competitive advantage in both local and global markets. Especially in the international arena, users who are supported by this training, while increasing their confidence in our products, also contribute to defense cooperation between countries.

İSMAİL DUT
Director of CANİK Academy

İsmail Dut, Director of CANİK Academy, which undertakes innovative actions in the defense industry, told A5 Defence Industry Magazine about the important points that shape the sector through their strategies and visions. We recommend you to take a look at our interview for a deeper perspective on the technologies of the future.

Can you tell us more about CANİK Academy, the first of its kind in Türkiye? CANİK Academy was established in 2021 and is Türkiye's first training academy in the field of firearms, security and individual defense. Our academy aims to teach the safe and effective use of firearms by offering comprehensive training programs for individual and sectoral end users. CANİK Academy serves with its expert staff and comprehensive training content under the mission of raising awareness on individual defense and security issues.

Can you briefly tell us about CANİK Academy's training programs?

CANİK Academy offers training programs prepared by experts in various fields. These programs are grouped under 6 main categories: Tactical Pistol Shooting Training Programs, Tactical Operator Training Programs, Sport Shooting Training Programs, Medical Training Programs and Special Training Programs. All these programs include more than 40 training modules structured according to the needs of the participants. Each module is designed following the knowledge and skill levels of the participants and offers both individual and professional development opportunities.

What would you like to say about your training methods? Do you provide training in different countries? How do you consider your training in the national and international arena?

Our training approach is based on the principles of “Safety, Consciousness and Awareness”. We structure real-life scenarios scientifically and systematically and blend this process with the experience of our trainers who have field experience. This ensures that our training programs are strong both in terms of theoretical and practical aspects. Since the day we were founded as CANİK Academy, we have reached more than 2000 participants not only in Türkiye but also in more than 10 countries such as Singapore, the Philippines, the USA, Brazil, and South Africa and we are continuing this process. The positive feedback and intense demand we have been getting show that we are on the right track. Furthermore, seeing at the championships in America and Europe, the results of our training programs carried out with CANİK Team, our first sportive shooting club established in 2021 with the support of the defense industry in Türkiye, is another indication of our success in the global arena. In the future, we aim to have athletes trained within our academy represent our country in the international arena.

Could you briefly tell us about your training staff?

Our training staff consists of professionals who have field experience and have adopted the motto “Experience Teaches”, which is at the heart of our organizational approach. Some of our staff consists of personnel who have served in the military and law enforcement agencies, while the other part consists of trainers who have proven their competence in this field at the sportive and academic level. While discipline, safety and experience are the main pillars of our training programs, the knowledge of

our trainers in these fields increases the quality of the training we offer to our participants.

Who can participate in the training programs? What are your general considerations about the participants?

Individuals who are over the age of 18 and industry experts working professionally in this field can participate in our training programs. While we target industry professionals with our Tactical Operator Training Programs, we offer various levels of training to civilian participants who are interested in this field and want to gain experience with our Tactical Pistol Training Programs. We carefully design our training processes according to the needs of the participant profiles. Our participants include a wide range of people of all ages who want to improve themselves in shooting. You can find all the details about our training programs on our website www.academy.canik.com.

How do you evaluate the long-term effects of the training programs offered by CANİK Academy on the personal development, safety awareness and potential career goals of the participants?

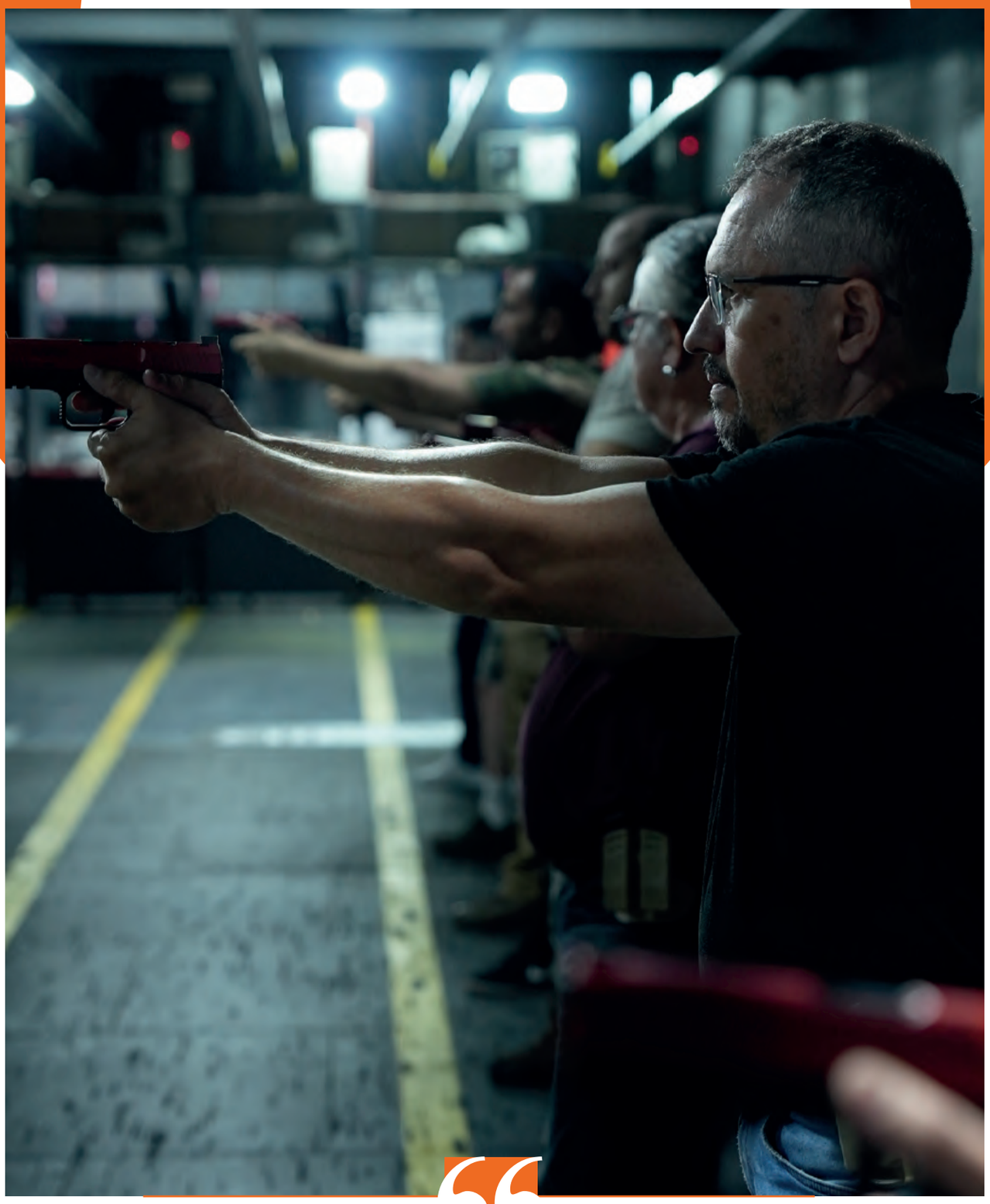
"Safety, Consciousness and Awareness" are the three main concepts that constitute the foundation of our academy and are the main starting point of all our training programs. Our training programs are implemented with contextualized content according to the characteristics of the participants. Our training starts with General Safety Rules and is based on the transfer of methods applied in the field with a systematic and scientific approach. This enables participants to improve their environmental awareness and physical skills for situations they may encounter in real life. Participants have the chance to continuously improve their skills in this field through evaluations made at the end of the training process, mentor support of trainers and development training.

What role do your training programs play in terms of social security?

We can explain the role of our training on social safety as follows: A person who is driving a car for the first time has to take a driver's license course for safe driving. Based on a similar logic, CANİK Academy aims to teach the most up-to-date and accurate techniques to those who will be using pistols or other small arms for the first time. During the training sessions, participants are not only taught physical skills, but also general safety principles are practiced without exception, supporting the development of environmental awareness skills. In this way, participants with enhanced safety awareness contribute to creating social awareness by transferring this awareness to their environment.

What are CANİK Academy's future strategic goals and innovative projects?

Since the first day of its establishment, CANİK Academy has adopted safety, consciousness and awareness as its mission and has been working in this regard. As CANİK Academy, our goal is to expand our "Experience" network by reaching more participants worldwide and to increase the number of training modules we offer once our new training facility that is under construction is completed. In this direction, we aim to contribute to raising awareness of more individuals about safety and shooting. We keep working in this respect. At the same time, one of our biggest goals is to raise successful athletes and carry both our brand and our country to higher levels. In this way, we plan to bring CANİK Academy to a stronger and more effective position in the national and international arena.



Since the day we were founded as CANİK Academy, we have reached more than 2000 participants not only in Türkiye but also in more than 10 countries such as Singapore, the Philippines, the USA, Brazil, and South Africa and we are continuing this process.

Tuğba Tanıl

Head of ATP GreenX Unit

In an exclusive interview with Tuğba Tanıl, Head of ATP GreenX Unit, we had an in-depth conversation about the company's innovative strategies and vision in the defense industry.

ATP GreenX is a brand-new platform. Can you give us some insights about the functioning of the platform?

ATP GreenX, ATP's eco-friendly technology solutions brand, has developed Türkiye's first digital green energy marketplace that facilitates the trading of green and carbon credit certificates. ATP GreenX, which can globally manage the clearing and custody processes of sustainable energy products through cloud-based architectures, digital wallet infrastructure, smart contract and blockchain technologies, provides institutions with sustainable market data on local and global markets and brings energy producers and institutions together on the same platform to realize secure clearing and custody transactions.

Our platform increases the security and transparency of transactions using blockchain technology. This allows users to securely trade various green energy certificates such as I-REC, YEK-G, GO, Verra and Gold Standard. Using these features, ATP GreenX facilitates and promotes the use of renewable energy in Türkiye and contributes significantly to achieving the country's sustainable energy goals. The platform also helps to expand investments in renewable energy sources by increasing transparency and accessibility in green energy markets. ATP GreenX transactions carried out through our platform support the use of renewable energy

and help to reduce carbon emissions. Each certificate received by our customers means offsetting a certain amount of carbon emissions.

How do you plan to integrate ATP GreenX's sustainability solutions into the defense industry? How do you think this integration can help defense companies reduce their environmental impact?

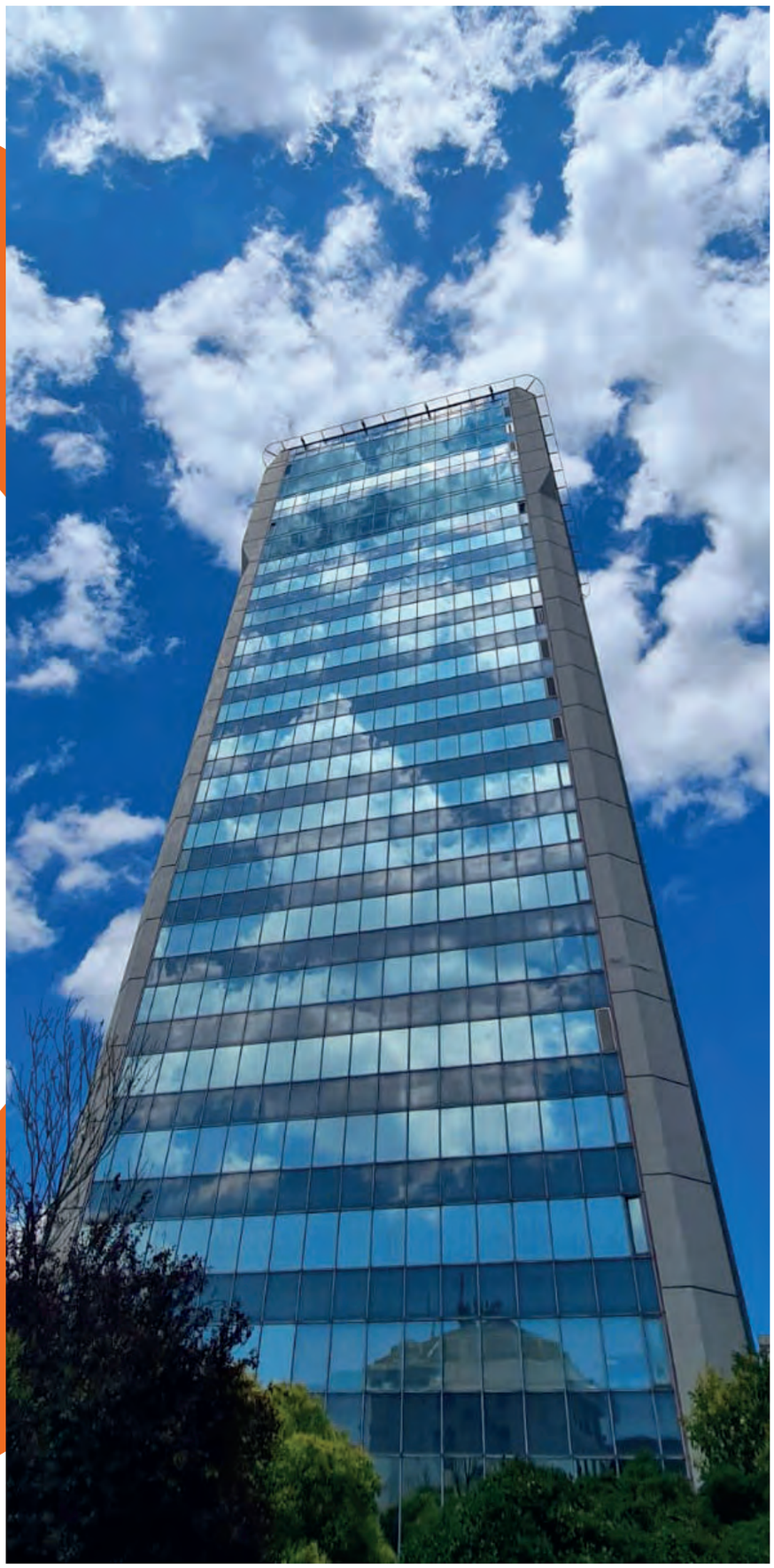
At ATP GreenX, we shape our sustainability strategies for the defense industry not only to fulfill environmental responsibilities, but also to provide innovative and lasting solutions in this sector. The sustainability solutions we target focus on critical areas such as increasing energy efficiency, reducing carbon emissions and more effective use of renewable energy sources. Particularly carbon footprint management and renewable energy integration will enable defense companies to make their operations more sustainable by minimizing their environmental impact. In this context, investments in carbon footprint management and low carbon technologies in our projects for the defense industry will provide a major transformation in operational processes. We believe that this integration will not only increase the environmental sensitivity of companies, but also contribute significantly to gaining competitive advantage by strengthening their compliance with international regulations. Especially considering the European Union's environment-oriented policies such as the "Green Deal", companies' achieving this compliance will enable them to take a step forward in the sector.

Considering your long years of experience in the energy sector, what recommendations can you offer to companies operating in the defense industry on energy efficiency and carbon footprint management?

Our experience in the energy sector will enable us to make significant contributions to defense industry companies in terms of carbon footprint management and energy efficiency. First of all, it is of great importance to develop strategic solutions to minimize energy consumption in defense facilities. In this context, we recommend the integration of smart energy management systems and the implementation of technologies that monitor and optimize energy consumption in order to increase energy efficiency. In terms of reducing the carbon footprint, the introduction of renewable energy resources and using existing energy resources more efficiently will provide companies with significant cost advantages in the long term. Furthermore, investing in energy-saving infrastructure not only reduces operational costs, but also contributes to compliance with international regulations by fulfilling environmental obligations. We recommend that companies operating in the defense industry invest in technologies that will increase energy efficiency and reduce carbon emissions. In this context, the use of advanced energy-saving technologies will not only make companies more sensitive to the environment, but also increase their competitiveness. At the same time, integrating sustainable energy solutions to increase energy efficiency will contribute to the sector becoming more sustainable in the long term.

How can your experience in renewable energy projects provide a strategic advantage for the defense industry? Especially what are your thoughts on the role of renewable energy in meeting the energy needs of defense facilities?

Our experience in renewable energy projects offers important strategic advantages for the defense industry. We are developing innovative energy management methods through digitalization and local solutions to meet the energy needs of defense facilities and increase their energy security. Particularly the integration of indigenous technologies such as solar energy, wind energy and energy storage systems can strengthen the energy security of defense companies while significantly reducing foreign dependency. The defense industry needs reliable and sustainable energy sources due to its high energy demand and the need for uninterrupted energy. The use of renewable energy sources not only pro-



vides environmental benefits, but also creates a long-term competitive advantage by reducing energy costs. Integrating renewable energy sources such as solar and wind with energy storage systems increases the stability of the energy supply of defense facilities and provides a secure infrastructure against potential power outages. Renewable energy solutions also contribute to more sustainable operational processes in the defense industry by increasing energy efficiency. In this context, diversifying energy sources and using solutions based on indigenous technologies in defense facilities will play a critical role in achieving energy independence in the long term.

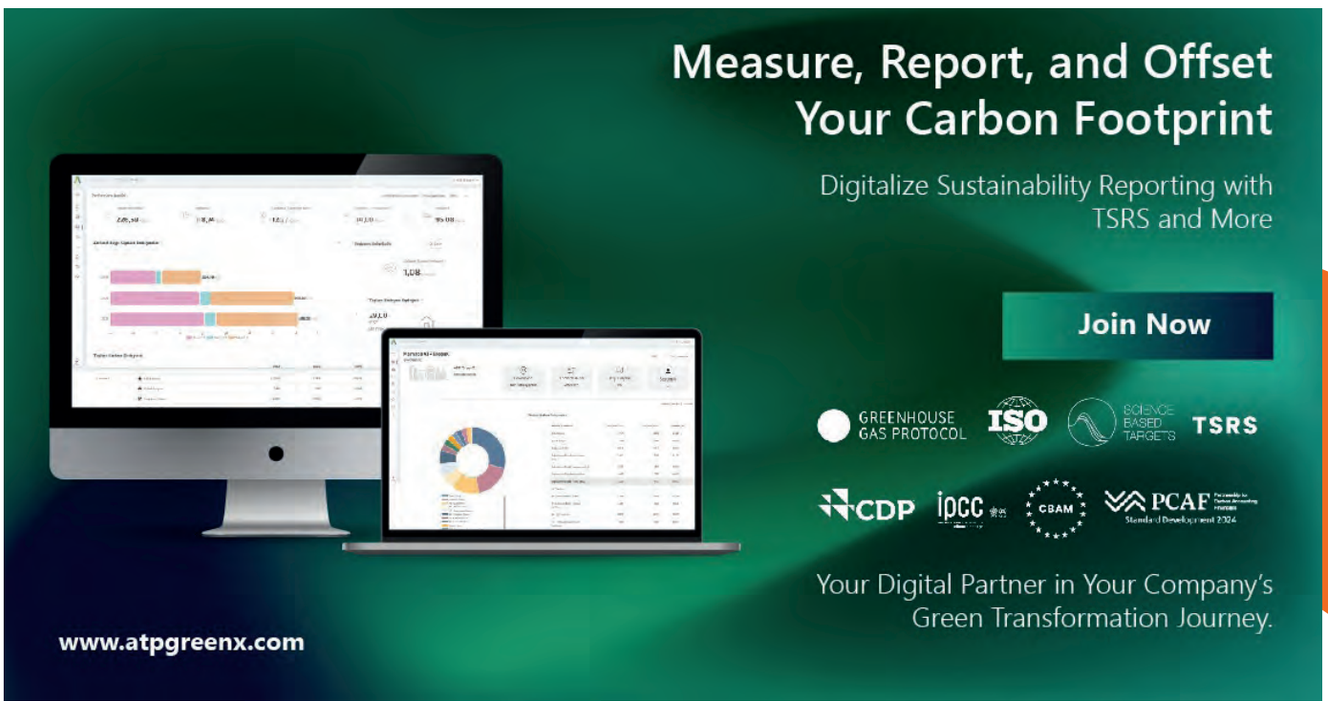
What is the importance of carbon footprint calculations and sustainability scores for companies in the defense industry? How can ATP GreenX help these companies reduce their environmental impact and gain a competitive advantage in the international arena?

The calculation of carbon footprints is critical for defense industry companies to understand and effectively manage their operational environmental impact. These calculations enable companies to comply with international sustainability standards and improve their environmental performance. Especially carbon footprint management helps companies conduct environmentally friendly operations and comply with legal regulations. As ATP GreenX, we support defense companies in reducing their carbon emissions and increasing their sustainability scores. The solutions we develop enable these companies to minimize their environmental impact while at the same time gaining a competitive advantage in the international arena. In this way, defense industry cam-

panies not only fulfill their environmental responsibilities, but also achieve cost advantages and sustainable growth in the long term. In summary, as in all other sectors, sustainability is the main agenda item for the defense industry, and our work on sustainability will continue at full speed.

What are the strategic advantages of green certificates for defense industry companies? What role do you think these certificates can play in participating to international defense tenders? Also, what role can the blockchain-based certificate trading platform offered by ATP GreenX play in helping these companies achieve their sustainability goals?
Green certificates provide defense industry companies with significant strategic advantages in international tenders. Certificates attest that companies fulfill their environmental responsibilities and invest in sustainable energy sources. This is an effective tool to demonstrate a company's environmental performance and compliance when participating in international defense tenders. ATP GreenX's blockchain-based certificate trading platform allows for the secure, transparent and efficient management of these certificates. Blockchain technology guarantees the accuracy and validity of certificates, reduces the risk of fraud and speeds up transaction processes. The platform supports defense industry companies in achieving their sustainability goals, while ensuring that certificates are obtained in accordance with international standards and in a reliable manner. This makes it easier for companies to achieve their environmental goals and gain a competitive advantage in the global market.

Are there any defense industry companies that ATP GreenX is currently working with or planning to cooperate with? If yes, in which areas do you carry out sustainability and energy efficiency projects with these companies? Are there any special solutions you have developed for defense industry companies and how do these solutions meet their environmental sustainability and energy management needs?
As ATP GreenX, we aim to develop various collaborations with defense industry companies in the field of energy efficiency and carbon management. Our targeted solutions include the integration of smart systems that increase energy efficiency, strategic planning to reduce carbon emissions and the use of sustainable energy sources. These solutions help companies reduce their carbon footprint while optimizing energy consumption. These special solutions we offer to defense industry companies both ensure their environmental sustainability and provide effective answers to their energy management needs. In this context, ATP GreenX aims to establish strategic partnerships with companies within the sector to support them in minimizing their environmental impact and increasing their energy efficiency.



What kind of incentives or financing solutions do you offer to defense industry companies to increase their investments in terms of energy efficiency? How do the supports provided in this regard affect the operational costs of companies?

We offer various financing solutions and incentives to defense industry companies regarding their investments in energy efficiency. As ATP GreenX, we offer solutions to help companies reduce their energy costs and carbon emissions within the framework of the stakeholders and goodwill agreements we cooperate with in this field. We also provide companies with easier access to these projects through national and international incentive programs. ATP GreenX facilitates the financing process of projects by providing consultancy services to companies on how to benefit from these incentives. These incentives and financing solutions significantly reduce the operational costs of defense industry companies and support them in meeting their sustainability objectives. Energy efficiency investments provide not only cost savings but also minimize environmental impacts, thus providing long-term advantages for companies.

Based on your experience in the energy market, what kind of strategy would you recommend to defense industry companies regarding energy transition (transition to renewable energy)? What are the long-term benefits of this transition for the defense industry?

We recommend long-term strategies for defense industry companies regarding the transition to renewable energy. First of all, it is important to implement the energy transition gradually and in a planned process. In this process, it is necessary to analyze energy needs, identify suitable renewable energy sources and integrate existing infrastructure with these sources. The transition to renewable energy offers several long-term benefits to defense industry companies. It increases energy security, provides access to independent energy sources and reduces energy costs. Moreover, the significant reduction of carbon footprints supports faster achievement of environmental sustainability objectives. This gives companies a competitive advantage in the international arena. Consequently, the transition to renewable energy not only provides environmental and financial advantages, but also helps defense industry companies to achieve their sustainability objectives and establish a stronger position in the global market.

What do you think about the use of green technologies in defense industry projects? How does the integration of these technologies make a difference in the evaluation of projects in terms of sustainability?

The integration of green technologies into defense industry projects makes a significant difference in terms of environmental sustainability. These technologies improve environmental performance and increase energy efficiency by supporting project digitalization. Domestic and national green technology solutions reduce energy consumption and minimize carbon emissions in the projects. The integration of green technologies has a positive impact on sustainability assessments of the projects. By reducing environmental impact, these technologies demonstrate that projects are eco-friendly and sustainable, which creates a positive image both domestically and internationally. As ATP GreenX, we offer customized solutions for the integration of green technologies into defense industry projects, thereby improving the environmental performance and operational efficiency of the projects.

The defense industry needs reliable and sustainable energy sources due to its high energy demand and the need for uninterrupted energy. The use of renewable energy sources does not only bring environmental benefits. It also creates a long-term competitive advantage by reducing energy costs.


BAYRAKTAR TB2


18

BAYRAKTAR TB2 IHA, THE FIRST ONE TO SERVE IS RETIRED

The S5 tail numbered member of the Bayraktar TB2 fleet, which flew close to 1 million hours in the sky and entered the inventory in 2014, successfully completed 10 thousand hours of flight time and became the first UAV to complete its airframe life.

● *Source: Ilker Akgungor*
Baykar Press Spokesperson

The Bayraktar TB2 UAV, nationally and indigenously developed by Baykar, has reached another important milestone. In 2014, Bayraktar TB2 UAV with tail number S5, which passed the acceptance tests and was the first system to enter the inventory of the Land Forces Command, became the first UAV to complete its airframe life cycle after 10 thousand hours of service. The Bayraktar TB2 S5 UAV, which bids farewell to its mission, will be used as a aiframe life cycle research aircraft in training and test flights within Baykar from now on. In place of the Bayraktar TB2 UAV, which was removed from the Turkish Armed Forces inventory after completing its service life, Baykar presented to the Turkish Land Forces Command the Bayraktar TB2 UCAV with the tail number T510, which had just been delivered from the production line.

10 THOUSAND HOURS IN OUR SKIES

Bayraktar TB2 S5 UAV, which has been successfully serving in our skies for 10 thousand hours, successfully passed the acceptance tests in 2014 and entered the inventory. Afterwards, it carried out important missions in the Hendek Operations, Fırat Kalkanı, Zeytin Dalı, Barış Pınarı, Bahar Kalkanı operations and the ongoing Pençe operation. She performed more than 750 sorties during her mission.

A CEREMONY WAS HELD

A ceremony was held at the Özdemir Bayraktar National Technology Center in Istanbul to mark the farewell of the Bayraktar TB2 S5 UAV. The ceremony was attended by Four Star General Selçuk Bayraktaroğlu, Commander of the Turkish Land Forces; Four Star General Metin Tokel, Commander of the 1st Army; Major General Zeynel Abidin Erginbaş, Commander of Land Aviation; Brigadier General Sertaç Öztürk, Commander of the IHAS Brigade; Selçuk Bayraktar, Chairman of the Board of Directors of Baykar; Haluk Bayraktar, General Manager of Baykar; and Baykar employees. At the end of the ceremony, after a cake was cut and plaques and gifts were presented, the Bayraktar TB2 S5 UAV was sent off to her new duty station, where she will be used as a training and test aircraft.

ONE STEP CLOSER TO 1 MILLION HOURS

Bayraktar TB2 UCAVs, which entered the inventory in 2014, were produced with a 93 percent indigenous production rate and served all over the world, successfully completed 900 thousand hours of flight time as of September 2024. Thus, Bayraktar TB2 became the national aircraft that remained in the sky for the longest time in our aviation history. Bayraktar TB2 UCAVs are in service with the Turkish Armed Forces, the National Intelligence Organization, the Gendarmerie General Command, the General Directorate of Security, the Coast Guard Command and the General Directorate of Forestry to fight forest fires.

RECORD HOLDERS

Bayraktar TB2, the holder of important records in our aviation history, broke Türkiye's altitude record in her class by flying at 27 thousand 30 feet. In the demo flight she participated in Kuwait on July 16, 2019, the National UCAV broke another record by flying for 27 hours and 3 minutes continuously in challenging geographical and climatic conditions such as high temperatures and sandstorms.

Ferdi Güçyetmez
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US Arctic Strategy 2024: Security Concerns in the North

Strategic Changes in the Arctic

The beginning of this century resulted in major shifts in the security strategies of the United States of America (USA). The 11 September 2001 terrorist attacks led the US to focus primarily on the Middle East. The Middle East has occupied an important place in US foreign policy with issues such as counter-terrorism, energy security and stabilisation. In recent years, however, the focus of US security concerns has shifted from the Middle East to the Arctic region. Especially the increasing activities of Russia and China in this region have moved the Arctic to a central position for the US in global security dynamics. The Arctic is no longer seen as a geographically isolated region, but rather as a new geopolitical competition area of strategic importance.

The Arctic offers significant opportunities in terms of natural resources, new sea routes and global trade. In particular, new sea routes emerging with the melting of glaciers make the Arctic region an area of competition for great powers. In addition, the region is rich in underground resources, harbouring oil, natural gas and rare minerals. US interests in this region are not only economic, but also military and strategic.

The Arctic region also plays a vital role in geopolitical security. Recent statements by the US Department of Defence (DoD) emphasise that the Arctic is a critical region for the defence of the American homeland. The fact that the region hosts intercontinental ballistic mis-

sile routes that could threaten US national security, provides favourable routes for strategic bombers, and provides stealth for submarine operations makes it clear why the region is so important militarily.

Deputy Secretary of Defence Kathleen Hicks stressed the importance of the Arctic to US national security and defence commitments, saying that it is vital to US strategic interests that the region remains stable and secure . Hicks' statements show that the US steps to increase its military presence in the Arctic are not only aimed at protecting energy resources, but also at managing competition with great powers such as China and Russia.

While Arctic ice melt is facilitating access to natural resources in the region, it is also changing the security dynamics of the Arctic, which has become a militarily strategic region. It is based on this background that Deputy Secretary of Defence Kathleen Hicks stated that climate change is fundamentally transforming the geopolitical structure of the Arctic, and that the US needs to rethink its defence missions . Climate change is making military operations in the Arctic more complex and triggering increased international competition for the region.

In this context, the US Arctic strategy aims to adapt to changing climatic conditions and adapt its military capacity in the region. Hicks emphasised that ensuring that US forces in the Arctic can cope with environmental changes has been an enduring policy throughout the Democratic and Republican administrations. In particular, steps such as equipment suitable for cold weather conditions, infrastructure development and improvement of communication systems stand out as the main elements to strengthen the US operational capacity in the Arctic.

Increasing Competition with China and Russia

The Arctic region has become a region that triggers security concerns for the United States, especially due to the increasing activities of Russia and China. Russia is one of the biggest players in the Arctic region with a large coastline and is militarily strengthening the region. Moscow is establishing new military bases in the Arctic and expanding its fleet of icebreaking ships in the region. Russia's military presence in the region has led to the militarisation of the region, which is perceived as a major threat by the US.

On the other hand, although China is a non-Arctic country, it defines itself as a 'near-Arctic state'. China has been investing heavily in the 'Northern Sea Route' in order to utilise economic and commercial opportunities in the region . China's economic activities in this region are closely monitored by the US as they may have military and strategic implications. The US considers China's growing influence in the Arctic as a development that may lead to a disruption of the global strategic balance.

China, although not an Arctic state, has intensified its efforts to gain access to energy resources and sea routes in the region. Russia, as the country with the largest military presence in the Arctic, has the capacity to threaten the United States and its allies. Hicks emphasised that Russia has strengthened its military presence in the region by reactivating its Soviet-era military facilities in the Arctic, which poses a major threat to the security and stability of the region. Moreover, Russia's strategic co-operation with China further complicates US geopolitical calculations in the Arctic.

The US steps to strengthen its military presence in Alaska can be seen as a direct response to the growing activities of Russia and China in the Arctic. Russia is the largest Arctic nation in the region and is increasing its military presence in the Arctic by reactivating Soviet-era bases and building new military infrastructure. The US Department of Defence considers Russia's excessive claims and military presence in the region as a serious threat to security and stability in the Arctic. As Russia's military operations become more

active in the Arctic Circle, it has become inevitable for the United States to increase its military preparedness in the region .

China operates three icebreakers in the Arctic and, together with Russia, participates in military exercises in the region. China's presence in the Arctic is causing growing concern in Washington. US Deputy Secretary of Defence Kathleen Hicks sees China's interest in the region as a strategic attempt to change the international order. The combined military operations of Russia and China near the Alaskan coast make it imperative for the United States to reconsider its defence policies in the Arctic.

Another pillar of the US Arctic strategy is the strengthening of cooperation with NATO and other allies. Joint exercises with Canada, Norway and other Arctic countries, the modernisation of military assets and the development of joint defence infrastructures are elements that reinforce the US presence in the region. Canada's investments, particularly in Arctic security, are increasing its commitment to the North American Aerospace Defence Command (NORAD), which is jointly operated with the United States. New equipment, such as Lockheed Martin F-35s and Airbus A330 tanker aircraft, provide an important defence capability against potential air threats in the region .

US Arctic Strategy: A Three-Dimensional Approach

For the US, the Arctic is not only an area of economic competition, but also a region of great importance in terms of national security. Possible threats from the Arctic region have moved to the top of the US strategic priorities. This situation has increased the possibility of potential military and strategic threats rapidly reaching the US territory. The US Department of Defence's 2024 Arctic Strategy sets out a comprehensive and multi-dimensional US strategy for the Arctic region. It details how the United States plans to use its military, economic and diplomatic power to secure its interests in the Arctic.

The US Arctic Strategy 2024 includes important steps to strengthen its military presence

and readiness in the region. The new Arctic Aviation Command in Alaska is one of the latest examples of the growing US strategic interest in the Arctic. This move to increase operational capacity in the region can be seen as part of a comprehensive US strategy to not only ensure regional security, but also to counterbalance the growing influence of rival countries such as China and Russia.

The US Department of Defence's 2024 Arctic Strategy envisages action in three main areas to protect US interests in the Arctic : enhancing joint force capabilities, strengthening co-operation with allies and partners, and making effective use of the US presence in the Arctic.

1. Enhancing Common Force Capabilities: The US aims to develop its military operations in the Arctic to be agile, flexible and adaptable to changing conditions. In this context, operational elements such as cold weather equipment and infrastructure improvements are prioritised. Increasing awareness and improving intelligence, surveillance and reconnaissance capabilities also stand out as one of the key elements of the strategy.

2. Co-operation with Allies and Partners: Co-operation with NATO allies is critical to US strategy in the Arctic. Since seven of the eight Arctic countries are NATO members, the US plans to use these partnerships to increase its presence in the region and ensure security. This cooperation will be reflected in areas such as joint exercises, military capacity building and intelligence sharing in the region.

3. Utilisation of US Presence: Calibrating the US military presence in the Arctic and maintaining a balanced presence in the region is another focus of the strategy. The US aims to increase its military presence in the region to maintain stability and deter potential threats. This will be organised through exercises, war games and simulations in the Arctic.

Conclusion: Deepening Power Struggle in the Arctic

The US Arctic Strategy 2024 shapes the Arctic region as a new stage for the international power struggle. As the US seeks to balance the influence of China and Russia by increasing its presence in the region, the growing geopolitical importance of the Arctic is further intensifying global competition. These geopolitical shifts, accelerated by climate change, show that the Arctic will become an area of great competition in the future, both in terms of resource control and military strategies.

Another important step in the US Arctic strategy is international co-operation in the region. The US is strengthening cooperation with Canada, Norway and other Arctic countries and organising joint exercises to ensure security in the region. However, infrastructure investments are also needed for the US to further increase its presence in the Arctic. In particular, the expansion of the icebreaker fleet and the modernisation of military bases in the region are among the priorities in the US Arctic strategy.

On the other hand, the establishment of the Arctic Aviation Command is a reflection of the US efforts to increase its military readiness against its regional rivals and to strengthen cooperation with its allies as part of its Arctic policies. The increasing Arctic activities of Russia and China reveal how fierce the competition in this region has become.

This situation shows that the US and its allies will conduct more military exercises, defence investments and strategic planning in the Arctic in the coming years. As the United States seeks to gain the upper hand in the geopolitical competition in the Arctic, maintaining the security balance and stability in the region will continue to be of critical importance for both global peace and regional powers.

In order to protect the Arctic region and maintain its strategic advantages, the United States plans to strengthen cooperation with its NATO allies while increasing its military capacity. This strategy is a reflection of a multidimensional competition that affects not only economic interests in the region, but also national security and global order. The future of the Arctic will be shaped by how the great powers balance their influence in the region and how cooperation and competition are balanced.

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DİZE KANDU

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Depth Silent, Impact Loud: Turkish Submarines Forge a Naval Powerhouse

No matter where you go in the world, when the subject turns to submarines, one phrase echoes above all: *Silently and deeply*. Submarines, the silent assassins of the deep, hide in the shadowy blue, waiting for their moment to strike. Yet, it's not just the platform that operates in secrecy—those who serve aboard them carry their stories like classified documents, seldom shared and always shrouded in mystery.

In this article, we'll dive into the enigmatic world of submarines, exploring not only their tactical brilliance but also Türkiye's position in this high-stakes arena. Fear not—this isn't a deep dive into technical minutiae. Instead, we'll navigate the currents of strategic importance.

The Hunt Below: Wartime Tactics and Peaceful Missions

We often hear the saying, "There are two types of ships at sea: submarines and their prey." While this might sound exaggerated, it holds a grain of truth. In wartime, the primary mission of a submarine is to hunt and sink enemy vessels, both military and commercial. But their role isn't limited to conflict. As you know, war platforms also have peace missions, which are just as valuable as the others. The peacetime tasks of submarines are actually a bit complicated because of their possibilities and capabilities. Once a submarine dives, it is impossible

to communicate with it unless it wants to. Operating in an environment where the unknowns outnumber the knowns, submarines are perfect platforms for special operations and intelligence gathering. Their ability to remain undetected allows them to eavesdrop on the world above, listening to the sounds of ships with powerful sonar, conducting surveillance with sophisticated sensors. For example, North Korea has landed agents on the coast of South Korea many times with its Sang-O and Yugo-class submarines. In fact, entering another country's territorial waters without permission during peacetime is considered to be a violation of that country's sovereign rights. As a result, such situations can sometimes even be considered an 'act of war'. These critical missions often fall to submarines. In this respect, they are more than just war machines; they are silent tools of statecraft. Submarines are the nightmare of those giant aircraft carriers that you think no one can approach with their huge size. The moral of the story is, having submarines means having a strategic weapon both in war and peace. So, what has Türkiye done in such a strategic area, what does our current situation look like and what is our roadmap for the near future? Let us first start with understanding the challenges of this journey.

Submerged Challenges Causing Better Innovations

Traditionally, submarines cruise the seas on diesel engines above water and switch to electric motors when they dive. Like any electric gadget, they rely on batteries, and once those run out, the sub has to surface—raising the risk of being spotted and sunk. To solve this, engineers invented the snorkel: a clever pipe that lets diesel engines recharge batteries without fully surfacing. It's a smart fix, but not a magic cloak of invisibility. When a submarine is snorkeling, it surfaces just enough to extend its masts or snorkel, which are essential for air intake to run the diesel engines and recharge the batteries. However, this shallow depth, referred to as a "shallow umka" in naval terminology, presents significant risks. The masts and snorkel become visible above the waterline, making the submarine more detectable by enemy forces. Moreover, the operation of the snorkel creates thermal signatures—plumes of hot exhaust gases—that can be easily picked up by thermal imaging cameras. This increases the submarine's vulnerability to detection by aircraft or surface vessels equipped with infrared sensors. Submarines are particularly vulnerable during snorkeling because they are forced to remain at shallow depths, limiting their maneuverability and making it difficult to evade sudden attacks. A well-timed strike by an air vehicle, such as an anti-submarine warfare helicopter or aircraft, can be highly effective. The confined space and reduced speed during snorkeling leave the submarine with few options to escape or counteract the attack, significantly increasing the chances of a successful hit.

A touch of solution comes with the air-independent propulsion (AIP) systems, which generate their own oxygen, letting submarines stay submerged longer. Here's the catch: diesel subs are whisper-quiet but can't stay underwater as long as their nuclear cousins, which stay submerged longer but are noisier thanks to reactor cooling pumps.

Türkiye's Submarine Odyssey: From History to Mastery

Türkiye's submarine history dates back to the Ottoman era,

but let's skip ahead to a more recent milestone: 1975. This was the year Türkiye decided to purchase six Type 209 submarines from Germany. The significance of this decision was twofold—not only did Türkiye acquire cutting-edge technology, but it also began building its own submarines at the Gölcük Shipyard. This marked a turning point, proving that Türkiye could construct advanced submarines domestically. Following the Ay-class came the Preveze-class, then the Gür-class—all built in Türkiye. Over the past 50 years, Türkiye has become one of only 14 nations capable of building its own submarines, a remarkable achievement that has positioned the country as a significant player in naval defense.

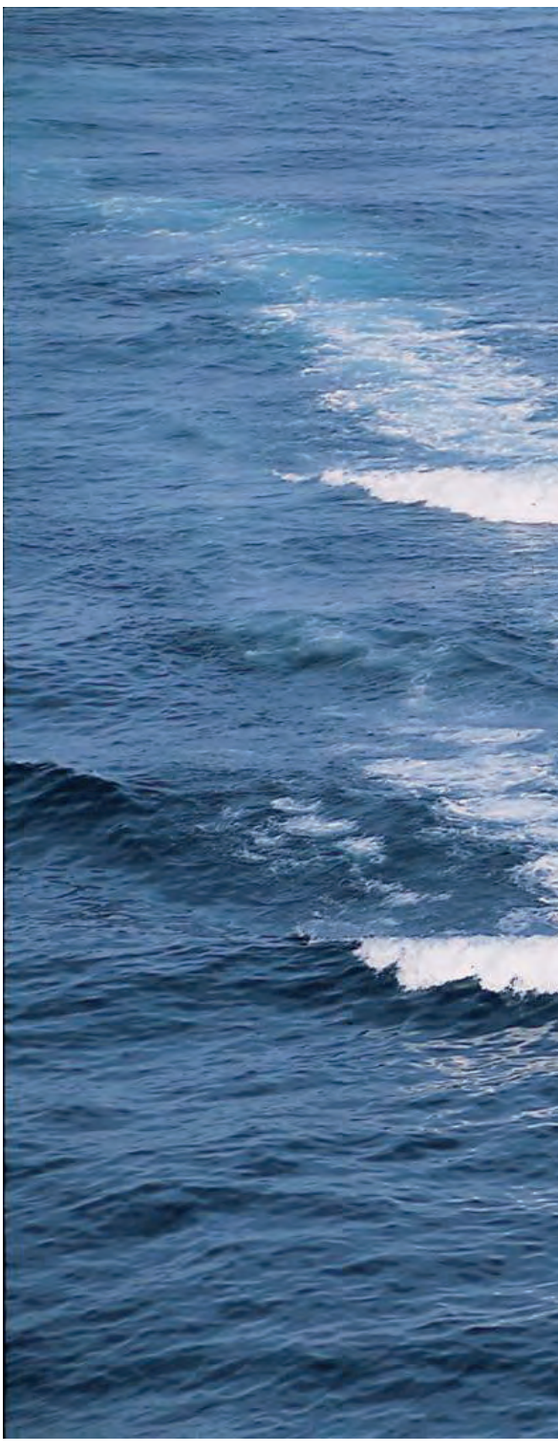
Today, the focus is on the Reis-class submarines, based on the German Type-214 design but with a crucial difference: Türkiye's Reis-class submarines change the game by staying underwater for weeks without sacrificing silence, thanks to their advanced AIP technology. It's the best of both worlds that provides a critical advantage in modern naval warfare. With the ability to stay underwater for over three weeks, Reis-class submarines can patrol undetected for nearly three months. Armed with eight 533 mm torpedo tubes, including four capable of launching Sub Harpoon missiles, these submarines are a formidable addition to our naval fleet.

Türkiye's journey in submarine construction has been transitioning from merely assembling submarines to developing and integrating key systems. While the construction of submarines is indeed a milestone, the modernization of Pakistani Agosta-90B class submarines by STM and other Turkish companies marks an even more critical achievement. STM's role in the project involved major upgrades to enhance the operational capabilities of the submarines.

This modernization effort included the integration of advanced technologies such as sonar systems, command and control systems, and weaponry, which have significantly improved the submarines' combat readiness. A key achievement in this project was demonstrated when the first modernized submarine, PNS/M Hamza (S-139), successfully participated in the SEASPARK-2022 Tactical Exercise. During this exercise, the submarine fired a torpedo and accurately sank a decommissioned frigate, showcasing the precision and effectiveness of the upgrades carried out by STM. This success has not only demonstrated Türkiye's growing capabilities in submarine technology but also established the foundation for future indigenous developments.

The MÜREN-Ay and MÜREN-Preveze modifications are particularly significant because they pave the way for Türkiye to break free from reliance on German ISUS series command control systems. By replacing the German ISUS systems with the indigenous MÜREN (Domestically Produced Integrated Combat Management System), Türkiye is not just updating its submarines but also asserting control over the critical command and control functionalities that define modern undersea warfare. The brilliance of the MÜREN system lies in its ability to integrate various subsystems, such as sonar, fire control, and weapons management, into a unified platform that enhances situational awareness and decision- making. This integration is particularly significant in the context of the MÜREN-Ay project, where older Ay class submarines, once reliant on outdated technology, have been revitalized to meet contemporary operational demands. The MÜREN-Preveze project takes this innovation a step further by applying these advancements to the more modern Preveze class submarines. This not only extends the operational lifespan of these vessels but also enhances their combat effectiveness, particularly in anti-submarine warfare scenarios.

Furthermore, the MÜREN system's modular design allows for continuous updates and integration of new technologies, ensuring that the submarines remain at the forefront of naval warfare technology. This flex-



ibility is crucial for adapting to the rapidly evolving nature of undersea combat, where technological superiority can determine the outcome of engagements.

Breaking Waves: Türkiye's Latest Submarine Developments

Here is the proud news: On August 24, 2024, the Turkish Navy commissioned its first Reis-class (Type-214TN) AIP submarine, TCG Piri Reis (S-330), during a ceremony at Aksaz Naval Base. At this point, we've localized the software and electronics on the ship, using our own submarine warfare system software. This shift represents a substantial leap forward, a remarkable achievement by any measure. This allows us to integrate our indigenous heavy torpedo AKYA, the national anti-ship missile ATMACA, and the national cruise missile GEZGİN into the Reis-class submarines. However, challenges remain, in integration into the existing command control systems. Initially, these weapons will be fired manually from the hive head rather than being integrated into the ISUS systems onboard. This limitation highlights the complexity of transitioning fully to domestically developed systems, yet it also underscores Türkiye's determination to achieve full operational independence in its submarine fleet. The experiences gained from the Reis class, particularly in the development of critical systems like Section 50 (DBDS- Submarine Data Distribution System), have also laid the groundwork for the indigenous MİLDEN submarine project.

Let's not forget that at the same event that marked a milestone, official sea trials for the second Reis-class submarine, TCG Hızır Reis (S-331), commenced and the third submarine TCG Murat Reis (S-332) was docked for fitting. The Reis-class submarines are more than just a strategic asset for the Turkish Navy; they're a leap forward for Türkiye's technological and industrial base. The expertise cultivated through this project will lay a robust foundation for the upcoming National Submarine (MİLDEN) initiative, poised to shape Türkiye's naval capabilities in the 2030s. With key players like ASELSAN, HAVELSAN, MilSOFT, STM, Koç Information and Defense, TÜBİTAK, and AYESAŞ, the Reis-class project is a collaborative powerhouse. These firms are crafting cutting-edge subsystems—from navigation and data management to torpedo countermeasures.

While we're on the topic, I want to mention two other exciting projects: the STM 500 class submarine by STM and the L-SUB 33 by DEARSAN shipyard. STM 500 is a submarine that can carry out missions of bigger boats with a cost slightly higher than a midget. It can carry out submarine warfare ISR missions, special ops, mine warfare and more. The L-SUB 33 is DEARSAN's first submarine design as a civilian enterprise. It is designed for special operations, capable of carrying commandos and infiltrating enemy ports with a draft of just 3 meters. These are projects that highlight Türkiye's ability to meet specific strategic needs, whether for its own navy or potential export.

Guardians of Türkiye's Blue Homeland

Submarines are often underestimated because they don't flaunt their power like aircraft carriers or destroyers. Yet, they are the nightmare lurking in the deep, capable of altering the course of conflicts and maintaining peace through silent deterrence. Türkiye's journey from acquiring submarines to becoming a leading producer of advanced, stealthy submersibles is a testament to the nation's strategic foresight and engineering prowess. As Türkiye continues to develop and deploy these silent warriors, it strengthens its position in the Blue Homeland—a force to be reckoned with, whether in times of war or peace. Let's hope that an issue as significant as submarines doesn't surface in our region or in areas concerning our interests. But if it does, you can be certain that Türkiye will assert its presence and proudly raise its flag with unwavering strength.

TCG Pirireis during sea trials
(Source: Oğuz Eroğuz, used with permission.)

KAZAKHSTAN AND THE DEFENSE INDUSTRY

Kazakhstan has been taking important steps to develop its defense industry since gaining its state independence. Increasing its domestic production capacity, the country aims for technological modernization through international cooperation. Strong relations with Türkiye have been strengthened through military training and joint projects, and Kazakhstan is strengthening its role in regional security. This dynamic process reinforces the country's national identity and defense power as part of the Kazakh people's struggle for freedom.

Kazakhstan is one of the most important countries in Central Asia due to its strategic location and rich natural resources. Since its declaration of independence in 1991, Kazakhstan has taken important steps to develop its defense industry. The country aims to modernize its defense industry both to ensure its internal security and to establish regional cooperation. Kazakhstan has undertaken various projects in the defense industry and developed international cooperation to increase its domestic production capabilities. Significant progress has been made especially in the field of air defense systems, armored vehicles and military training. In addition, Kazakhstan is trying to attract both domestic and foreign investors through the "Kazakh Defense Industry" company. Kazakhstan's defense industry is a strategic post-independence sector. The country is undertaking important projects to increase domestic production capacity and reduce foreign dependency.

Domestic production and modernization

Developing its defense industry sector day by day, Kazakhstan encourages the domestic production of military equipment and weapon systems. The "Kazakh Defense Industry" company carries out various projects such as the production of armored vehicles, small arms and ammunition. It is also working on the modernization of the old Soviet-made inventory. Through domestic production and modernization, Kazakhstan is increasing its defense industry power.

International cooperation

Kazakhstan, which is trying to increase its domestic production and overhauling its old military equipment, also attaches importance to international cooperation in the defense industry. Joint projects are developed in cooperation with countries such as Türkiye, Russia and China, and technological transfer is ensured. Particularly Türkiye's experience in the field of defense technologies contributes to Kazakhstan's modernization efforts.

Military training and capacity building

Kazakhstan, one of the largest countries in Central Asia in terms of surface size, is not only working on domestic production and modernization. It is also taking important steps in the field of military training. For, trained soldiers, as much as military equipment, are of great importance in the development of the defense industry. Therefore, various exercises and training programs are carried out to increase the capacity of the national army. During this process, military training cooperation conducted with Türkiye is also noteworthy. Consequently, Kazakhstan's defense industry aims to grow in the defense industry through domestic production, international cooperation and training programs, and is doing important work in ensuring the security of the country. Kazakhstan continues to strengthen its defense industry and become an effective country of the future thanks to its cooperation with Türkiye.

Kazakhstan Independence Day

Kazakhstan declared its independence on December 16, 1991 after separating from the Soviet

Union. This date is a turning point for the country and every year December 16 is celebrated as “Independence Day”. “Independence Day” has become a symbol of the Kazakh people’s struggle for freedom and is of great importance in terms of commemorating the acquisitions obtained after independence. A number of events are organized in Kazakhstan within the framework of “Independence Day”. These events are full of cultural and social activities. On Independence Day, the Kazakh government organizes events aiming to consolidate national solidarity by emphasizing its economic and military achievements. The progress achieved in the defense industry is also an important part of these celebrations. Security and defense are the cornerstones of an independent state. Developments in the defense industry are presented to the public on December 16, demonstrating Kazakhstan’s strength to the public once again and reinforcing the concept of nationhood.

Relations of Türkiye and Kazakhstan

Türkiye and Kazakhstan have developed an important partnership based on the bilateral relations they established after the declaration of Kazakhstan’s independence. The two countries have established a deep friendship thanks to their linguistic, cultural and historical ties. Türkiye was one of the first countries to recognize Kazakhstan’s independence and has carried out cooperations in various areas since then. The relations of Türkiye and Kazakhstan have also been strengthening in the field of defense industry. Türkiye is taking part in various projects regarding Kazakhstan’s military needs and supports the increase of domestic production capacities. Cooperation between the two countries is increasing in terms of military training, technology transfer and joint projects. Particularly, the increasing presence of Turkish defense industry companies in the Kazakh market further strengthens the relations between the two countries.

Kazakhstan will continue to strengthen in the defense industry

Kazakhstan’s defense industry activities continue steam ahead. The development that Kazakhstan has proven following its activities in the defense industry, the “Independence Day” celebrations and its relations with Türkiye stand out as factors reinforcing the country’s national identity and support its objective in terms of becoming a more effective actor in the international arena. Kazakhstan aims to contribute to regional security by taking even more important steps in the defense industry in the future.

Kazakhstan has undertaken various projects in the field of defense industry and has developed international collaborations to increase its domestic production capabilities. Significant progress has been made, especially in the field of air defense systems, armored vehicles and military training.

IMA ACADEMY
IMA Academy Education and Consultancy Inc.

IMA Academy is proceeding towards becoming a distinguished and global educational institution that provides training and consultancy services to the personnel of military/civilian organizations of our country and friendly and allied countries in the region where our country is located with its expert trainers

What is the purpose of the foundation of IMA Academy? Who are the founders of the academy?

IMA Academy Training and Consultancy Inc. is an educational institution established to provide personnel training (academic, individual and team training) and consultancy services to the navies of our country and friendly and allied countries located in our region. The founders of the company are retired distinguished personnel from the Turkish Navy.

Why was there a need for the foundation of IMA Academy?

In 2019, the Turkish Navy assigned a group of retired personnel as trainers in the team training of navy ships. This group provided approximately 2300 hours of selected refresher trainings and team trainings to various ships of various classes

of our navy in 2019-2020. During the same period, our shipyards, which had been building ships only for the Turkish Navy until then, also started to build frigate-sized military ships to serve in the navies of friendly and allied countries. Following the construction of a ship, it is important to provide her crew with operator, maintenance and on-duty training of the systems and devices installed on her, as well as individual and team trainings as required in order for her to navigate and operate safely. For a ship to be able to sail safely to his country/mission area following her construction, operator, maintenance and on-duty training of systems and devices alone are not sufficient. In order to be able to navigate and operate safely, in addition to these trainings, the missing individual trainings of the ship's crew should be completed and all personnel should be subjected to team training to ensure that they can act correctly and together during any emergency situation. In the ships built for the Turkish Navy at civilian shipyards, this requirement is completed within the Turkish Navy's own organization. However, for the ships built for the navies of friendly and allied countries, this requirement emerges as a need. Our civilian shipyards carry out the operator, maintenance and on-duty training of ship crew for systems and devices in coordination with the manufacturers of the systems and devices. However, for the navies of the countries in need, the missing individual and team trainings of the crew remain a great and indispensable need.

IMA Academy is founded to meet this need of our civilian shipyards and the navies of friendly and allied countries.

What are the activity fields and objectives of IMA Academy?

As IMA Academy, we can list our goals as follows:

- To convey to the personnel still on duty the insights and experiences of the retired personnel who have served for many years in academic, individual and team training institutions under the Turkish Naval Forces Command,

• To carry out academic, individual and team trainings in a way to help the crew who will serve in domestic and foreign military ships being built in civilian shipyards,
- To improve their familiarity with their ship,
- To enable them to steer and manage their ships effectively by prioritizing the safety of the crew and material,
- To enable them to use all the equipment of their ship safely and accurately,
- To enable them to react correctly to all kinds of emergencies,
- To enable them to perform all kinds of operational tasks that may be assigned to their ship,
• To provide solution partnership/consultancy services by utilizing the knowledge and experience of distinguished retired Turkish Naval Forces personnel in the design and construction phases of military ships built especially for foreign countries,
• To prepare guiding documents on various tactical/technical issues to be used in military ships built for foreign countries,
• Especially for the naval forces of friendly and allied countries located in our region;
- To help establish the necessary training and education organization in order to provide academic, individual and team trainings in a standard, highest level and sustainable manner for all ships in their own countries,
- To prepare some auxiliary documents, which are also available in the ships of countries with advanced navies such as the Turkish Navy, the US and the UK, in order to provide the ships with "User Friendly" features, in order to help the ships to exhibit error-free actions against all kinds of emergencies in terms of the safety of both personnel and systems and
devices.

What does IMA Academy aim for in its training programs?
The main objective of the naval training programs provided by IMA Academy is; first of all, to complete the academic and individual trainings that will bring the ship's personnel to the level of being able to conduct team training, and then to provide the personnel with immediate, supportive and complementary actions and behavioral changes in line with the ship commander's goals and priorities in the most difficult conditions that may be experienced for the survival of the ship. In order to better explain the scale and scope of the implemented training programs, we can say that our naval training programs are similar to the FOST (Flag Officer Sea Trainig) training programs provided by the United Kingdom to its own naval units and the navies of NATO member countries.

What is the role of trainers during trainings? What are your trainer selection criteria?
The naval ship training system is highly complex. It involves complex processes that require coordination in preparation for training, delivery of training and evaluation of training. Instructors constitute the most fundamental link in the training chain. IMA Academy instructor personnel are currently retired distinguished personnel of the Turkish Naval Forces who have provided academic, individual and team trainings for many years during their duty periods within the Turkish Naval Forces Command.

Our main criterion in the selection of instructors is that the instructor should have served on platforms similar/equivalent to the ship on which the training will be provided and using similar/equivalent systems, and s/he should have received the necessary training on these platforms and systems, and should have provided training on these platforms and systems in academic, individual or team training institutions.

What are the projects your

trainers have been assigned to so far?

IMA Academy instructor staff;

- Provided approximately 2300 hours of Team and Selected Refresher Training to the following surface ship classes of the Turkish Navy in 2019-2020,

-GABYA Class Frigates,
-YAVUZ Class Frigates,
-BARBAROS Class Frigates,
-MILGEM (ADA) Class Corvettes,
-BURAK Class Corvettes,
-KILIÇ I and KILIÇ II Class Attack Boats,
-DOĞAN and -WIND Class Attack Boats,
-Mine-hunting ships,
-Auxiliary Class vessels of various types (fuel oil, tugboats, etc.)

- Prepared training documents to be used in the individual and team trainings of the personnel who will take part in the corvette built for the Turkmenistan Navy by one of the leading civilian shipyards in our country,
- Worked in the marking and identification of the systems and spaces of the corvette built by the same shipyard for the Turkmenistan Navy,
- They also have been involved in the preparation of training documents to be used in the individual and team trainings of the personnel who will serve in two school ships built by a distinguished civilian shipyard for the Navy of the Emirate of Qatar, and in the individual trainings of the first personnel of the ship.

In addition to the above, within the scope of Integrated Logistics Support (ILS), which is also one of our founding objectives, IMA Academy has also fulfilled the below procedures for 2 school

ships and 4 landing ships built for the Qatar Emirate Navy;
- Main System/Device List,
- System/Device Technical Documents,
- Overhauling Instructions,
- Planned Maintenance System (PMS) Documents,
- Care Concept,
- Spare Parts Catalog (SPC),
- Product Configuration Management,
- Operating Instructions,
- Subcontractor Coordination.

How does IMA Academy convey its training and consultancy services to shipyards and stakeholders in the sector?

Although we are a very young company, IMA Academy participated in the 16th International Defense Industry Fair (IDEF'23) held in TÜYAP/Istanbul between July 25-28, 2023, one of the most important fairs of the Turkish defense industry. Within the scope of the fair, meetings were held with TAF executives, SSB vice presidents, military representatives of foreign countries, company representatives of foreign countries, leading organizations in the domestic defense industry, representatives of domestic shipyards and sector stakeholders. As a result of these meetings, a number of meetings were held after the exhibition.

What are your priorities at IMA Academy?

We are successfully progressing on the path we have targeted through our trainings and instructor staff. As retired naval officers and petty officers, we have obtained the Ministry of National Defense Personal Security and Facility Security Certificates to certify that we are completely ready for the support we can provide to the Turkish Naval Forces, which we consider to be the foremost and most important of the founding objectives of the İMA Academy. Serving the Turkish Navy has always been our first priority.

The Best Defense Industry Practices of the World :

Türkiye's Place

The defense industry is a critical sector for countries to ensure their security and increase their strategic independence. It has become the main agenda item of every country in the last few years and domestic production in the defense industry has gained momentum. Today, the defense industry worldwide is shaped by technological developments, innovative production techniques and international cooperation. Türkiye has become an important player in this field and has attracted attention due to its unique practices.

Defense Industry Vision of Türkiye

Türkiye's defense industry strategy gained momentum in the early 2000s, and the targets set in this period laid an important foundation for the transformation of the sector. The cooperation between the public and private sectors was strengthened to increase domestic production, reduce foreign dependency and achieve a globally competitive position. During this period, leading companies such as TAI, ASELSAN and ROKETSAN expanded their strategic product portfolios by focusing on the development of indigenous technologies. By offering innovative solutions in areas such as military aviation, electronic systems, rocket technologies and unmanned aerial vehicles, these aforementioned companies have not only made a name for themselves in the global market but have also established a solid foothold for themselves.

Domestic Production and Innovation

Türkiye has made great progress in terms of domestic production. In this respect, it has become one of the countries that have a say in the world's defense industry. One of the most remarkable achievements in domestic production is the results obtained in the field of unmanned aerial vehicles (UAVs). Particularly models such as Bayraktar TB2 have achieved remarkable success globally, contributing to the recognition of Türkiye's defense industry in the international arena. The UAVs were frequently mentioned favorably in international publications. They received full marks from industry representatives. The Bayraktar TB2 stands out with its high maneuverability, long endurance and advanced imaging systems.

International Cooperations

One of the factors enabling Türkiye's breakthrough in the defense industry is international cooperation. We may say that international cooperations play an important role in Türkiye's success. By developing joint projects together with various countries, Türkiye shares its know-how and technology, and thus has the opportunity to open up to broader markets. These collaborations both reduce costs and ensure that products comply with international standards. Hence, the defense industry is evolving to an advanced stage. Cooperation, especially with NATO countries and other allied countries, allows Türkiye to modernize and improve its defense technologies.

Strategic Products and Exports

In recent years, Türkiye has started to export defense industry products abroad. The exports figures, have increased each year, reaching over $5 billion by 2023. Particularly military vehicles, rocket systems and electronic warfare systems are the strong points of the Turkish defense industry.

These products also ensure that Türkiye occupies an important place in the international security policies and the volume of the exported products is increasing day by day. Apart from the exported products, Türkiye's technology transfers also reinforce strategic cooperation with other countries and contribute positively to regional security dynamics.

Vision for the Future

Türkiye's defense industry has the potential for growth and innovation in the future as it has today. Research on the development of the defense industry shows that the sector will represent Türkiye's strength in the future too. Investments in areas such as artificial intelligence, cyber security and advanced material technologies will further strengthen Türkiye in this field. These technologies improve both the quality of products and the effectiveness of defense systems. Furthermore, defense industry projects will continue to be an important driving force for economic development. Domestic and national projects not only increase strategic independence, but also provide opportunities for the young population by creating jobs in high-tech industries.

Education and Research

One of the most important problems of today is the problem of qualified personnel. Türkiye is strengthening its engineering and technology programs in cooperation with universities to train qualified human resources in the defense industry and to avoid problems in the future in terms of qualified personnel. These collaborations provide students with opportunities to take part in internships and projects, allowing them to apply their theoretical knowledge in practice. Research and development activities on the defense industry play a major role in producing innovative solutions. Moreover, this process contributes to the acceleration of technological developments through the collaboration of academic institutions and industry, and increases the country's international competitiveness.

Indigenous Goals and Independence

Türkiye aims to reduce external dependency by developing its own defense systems in line with its strategic goals. Along with the increase in the number of domestic production companies and new products, the aim is to reduce foreign dependency to zero. Through domestic production, it is aimed to manage national security policies more effectively and to move Türkiye forward in the defense industry. In this context, the domestic defense industry increases both technological independence and ensures the control of critical systems. In addition, Türkiye's indigenous defense projects increase its competitiveness in the global market by developing products that comply with international standards.

Sustainability and Green Technologies

Türkiye is investing in environmentally friendly technologies in line with its sustainability goals in the defense industry. The use of renewable energy sources is gaining importance in terms of reducing environmental impacts. In this context, clean energy sources such as solar and wind energy are being integrated to meet the energy needs of defense facilities. Additionally, the use of environmentally friendly materials and the development of waste management systems aim to minimize the environmental impact of defense projects. While these efforts in all aspects help Türkiye to develop sustainable defense systems in line with international standards, they also enable Türkiye display a sensitive approach to global environmental issues.

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SYS GROUP

SİBEL İLHAN

Teacher / High-altitude mountaineer

Teacher Sibel Ilhan believes that the defense industry is not only about weapons and military power, but also about the independence and territorial integrity of a country. She tries to convey this awareness to children through different educational projects.

You have extensive experience in the field of education and have taught in various institutions. How did your involvement in projects such as "Water Ambassadors" and "Digital Content Creation" shape your perspective on defense education and awareness? What have these experiences contributed to you in fields such as national defense and sovereignty?

The "Water Ambassadors" project was a project aiming to raise public awareness about the proper use of natural water resources in the world and in our country. As the closest professional group to society and children, who are the most basic elements of society, we, teachers, were assigned to this project. My classroom teaching experience, especially my work on the "Water Ambassadors" and "Digital Content Creation" projects, raised my awareness about the fact that the foundations of national defense are laid in childhood. I believe that environmental awareness and citizenship sensitivity which is acquired at a young age plays a critical role in bringing up the defenders of the future. A child who understands the importance of water will better comprehend how important it is to protect the resources of his/her country in the future and will have a strong environmental awareness in all areas of his/her life. A student who produces digital content will become more resistant to manipulation by improving his/her ability to access and distinguish the right information. These skills are of great importance not only for individuals, but also for national security. By strengthening the sense of national unity and solidarity in children's minds, classroom teachers

are laying the groundwork for future defense industry employees and decision-makers. It is evident that access to water, food and energy will become a global problem in the not-so-distant future. It is predictable that those who manage to protect these resources will also be under threat. Every threat makes defense a must. This shows the importance of the defense industry. Raising the defenders of the future is the duty of us, the teachers.

You state that you come from a family involved in the defense industry and that you believe in the necessity of privatizing the sector. How has your family's background in the defense industry influenced your perspective on national security issues? What are the biggest challenges in this field today?

To be honest, this question is not related to my reality. Because there is no connection to the defense industry in my family's background. I have encouraged my son to work in the defense industry because I believe that the defense sector is not only about weapons and military power, but it is also a vital structure to protect a country's independence, territorial integrity and the well-being of its people. I would be proud to have my son play an active role in such a structure.

You are aware of the importance of domestic and national production in the defense industry. What steps do you think Türkiye should take to increase domestic production and technological progress in the defense industry?

I believe that countries that are self-sufficient in every field will be more powerful. The importance of the domestic and national defense industry is an indisputable fact in terms of our country's independence, economic power and technological development. In this respect, I think it is critical for Türkiye to take some steps to increase domestic production and technological progress in the defense sector. R&D and innovation investments should be increased. I think it is necessary to integrate the R&D activities of universities with the defense industry, develop new technologies and train qualified human resources. I believe that instead of buying technology, it is a long-term solution to promote master's and doctoral programs and invest in the brains that will produce it.

You are interested in outdoor sports and have experience in leading outdoor activities. What skills do you think such physical and nature-based activities contribute to the development of in the defense and military fields?

I think there are actually interesting connections between mountaineering and the defense industry. Both mountaineering and military missions are carried out in environments that challenge individuals physically and mentally. Resilience against challenges such as cold, hunger, fatigue and high altitude is vital in both fields. Mountaineers, like soldiers, are constantly pushing themselves to their physical and mental limits. In both fields, the team must work in perfect coordination to succeed. It takes strong leadership to make the right decisions and motivate the team in challenging conditions. Leadership skills are crucial in both mountaineering teams and military units. It is inevitable to encounter unexpected situations during both mountaineering and military missions. The capability to generate quick and effective solutions and crisis management are critical for survival. Weather conditions can change rapidly in the mountains and plans can change suddenly during military missions. To adapt to these situations, it is necessary to be flexible and creative. Both mountain mountaineers and soldiers may have to spend long periods of time in the wild. It is important to make use of what nature has to offer to ensure survival. Skills such as map reading, using a compass and interpreting natural signs are essential for both mountaineering and military missions. Because these missions can create high levels of stress. The ability to manage this stress and stay psychologically strong is important for success. Naturally, these similarities suggest that mountaineering can be a valuable tool for military training and improvement.

As a woman who supports your family's contributions to the defense industry, what do you think about the growing role of women in the defense industry? How can the defense industry better promote gender equality and encourage more women to join the industry?

For many years, the defense industry has been considered a male-dominated field, but nowadays the influence of women in this field is increasing. But is it enough? I think not. Women's different perspectives, problem-solving skills and their attention to details add a new dynamism to the defense industry.

Every threat makes defence a must. This shows the importance of the defense industry. Raising the defenders of the future is the duty of us, the teachers.

In this way, more innovative and effective solutions can be developed. At the same time, this can be a concrete example of taking important steps towards gender equality. Women's participation in the sector is a gain not only for the defense industry, but also for the whole society. Women can produce different solutions for problems. They pay more attention to details, which results in higher quality products. In order to ensure that more women are involved in the defense industry, steps should be taken to encourage them and overcome prejudices. Moreover, efforts should be made to ensure that female students get to know the defense industry more closely and prefer to work in it. I would like to share a beautiful memory about this, if I may. In 2017, I took my class on a field trip to the Coast Guard Regional Command. On that trip, my students, who boarded the ship also met female officers, and after that day, all my female students said that they wanted to be an officer. To summarize, women should be given more opportunities to get acquainted with this sector.

Can you tell us about your ongoing or future projects, especially in defense and national security? How do you plan to integrate your expertise in education into these projects?

I am not qualified to produce projects on this subject. But as a teacher and citizen, I can share my ideas that can be transformed into projects. Defense industry projects should focus on future technologies such as artificial intelligence, bionic technologies and nanotechnology. Searches can be carried out about platforms such as Unmanned Aerial Vehicles (UAVs), autonomous naval systems and space systems. Projects can be developed in areas such as cyber security and the psychological resilience of soldiers. As I have always advocated, in order to become the producer of the technology rather than the one who purchases it, investments should be made in this direction, starting with people.

We see your interest in knowledge-based competitions. How important are innovation and critical thinking in solving defense-related problems? What role do you think education plays in teaching these skills?

I think knowledge-based competitions require knowledge in different disciplines, as well as skills such as quick decision-making, coping with stress, multidimensional thinking, courage and risk-taking. This is something that can be achieved by an innovative, critical thinking, inquisitive and curious personality. Especially a field that is constantly developing and renewing, such as the defense industry, needs innovative and critical thinking brains. The defense industry faces ever-changing threats such as cyber-attacks and new generation warfare tools. Innovation, critical thinking and questioning are essential to produce effective solutions against these threats. Problems in the defense industry are often multidimensional and complex. In order to solve these problems, it is necessary to bring together the know-how from different disciplines and find new solutions with critical thinking skills. Education has a very important role in fostering innovation and critical thinking skills. Especially for individuals working in a specific field such as the defense industry, studies should be carried out to increase their competencies in this direction. In conclusion, innovation and critical thinking skills are vital in a rapidly changing and developing field such as the defense industry. The education system should create the necessary infrastructure to provide these skills and prepare students for the challenges of the future.

Considering your involvement in projects such as "Water Ambassadors" and "Digital Content Production" and your interest in nature, what role do you think sustainability and environmental awareness should play in defense strategies? What kind of strategies can be developed for the protection of resources, especially during military operations?

Military operations cause the consumption of a large number of natural resources. Using resources such as water, energy and materials more efficiently, not only reduces operational costs but also reduces negative environmental impacts. Environmentally friendly practices can increase operational secrecy by making it harder to be detected by the enemy. For example, noise-reducing technologies and natural camouflage reduce the risk of being detected. Defense awareness is a situation that requires protection not only against enemies but also against the environment. Military operations bring along the risk of consumption of natural resources and environmental destruction. Therefore, defense strategies should be aimed at minimizing environmental impacts. Practices such as renewable energy sources, water conservation and waste management both increase operational efficiency and protect the natural environment. Military personnel can be trained in environmental awareness and adopt sustainability principles, and may leave a livable world for future generations as a consequence.

Sport

45th season starts in women's basketball league

The 45th season of the ING Women's Basketball Super League started by exciting matches. This year's league offers a great opportunity to further the development of women's basketball in Türkiye.

● *Source: Anadolu Agency*

Türkiye is one of the countries where the sport is followed with enthusiasm and while the Women's Basketball Super League, which is one of the most popular leagues in Türkiye, says "Hello" to its 45th season, it points to a significant turning point in terms of the growth and advancement of Turkish women's basketball. Fenerbahçe holds the title of the most championship-winning team in the league, by winning the league championship 18 times. The players of the yellow-blue team have become one of the most powerful teams in the league by winning 8 straight championships between 2005 and 2013 since their first championship in the 1998-1999 season. Fenerbahçe's success in recent years has been reinforced by the 6 championships they have won in the 2017-2024 period. This process is a rare success story in the history of the club.

The competition between the two teams increases the popularity of the league

Galatasaray, the fiercest rival of Fenerbahçe, had an important place in women's basketball in the past and set a record by winning 9 straight championships between the seasons of 1989-1990 and 1997-1998. They won the championship trophy in 1987-1988, 1999-2000, 2013-2014 and 2014-2015 seasons and made great contributions to the advancement of women's basketball. However, Galatasaray has found it challenging to hold onto its lead in this area because to Fenerbahçe's recent surge in success. The fans of both clubs contribute to the growing popularity of women's basketball, during exciting derby matches and season-long competition.

Fenerbahçe is the champion of the last 6 completed seasons

Fenerbahçe finished the last 6 seasons winning a championship. The yellow-blue team enjoyed 6 straight championship in the 2017-2018, 2018-2019, 2020-2021, 2021-2022, 2022-2023 and 2023-2024 seasons and bringing its total number of trophies to 18.

The 2019-2020 season could not be completed

However, the league experienced an important interruption when the COVID-19 pandemic prevented the 2019–2020 season from being completed. In order to emphasize that future league organizations should likewise be conducted responsibly, the Turkish Basketball Federation chose to conclude this season without announcing a winner. Teams and players in the league were less motivated as a result of this process, but after 2020, there was a significant uptick in motivation.

Beşiktaş and METU have 3 championships each

Galatasaray and Fenerbahçe are not the only teams to win titles in the extensive history of women's basketball. METU and Beşiktaş have each enjoyed the pride of winning the title three times. While Istanbul University and Near East University have each won one championship, MTA and BOTAS have each won three. The league's competitive structure and the rise in interest in women's sports in Türkiye are guaranteed by this diversity.

5 Turkish teams to compete in European cups

Five women's basketball teams will compete in the European Cup on behalf of Türkiye this season. Although Fenerbahçe has been the champion of the FIBA Women's Europa League for the past two years, ÇBK Mersin also participates in this elite league's groups. Galatasaray Çağdaş Faktoring and YTR Gayrimenkul Bodrum Basketball are also participating in the same event as Beşiktaş, which is represented in the FIBA European Cup. The league's reputation will rise steadily as Turkish teams have the chance to become more well-known and successful on the global stage.

Promises of Unforgettable moments for the spectators

The 45th season of the Women's Basketball Super League is not only a championship challenge, but also a platform where young talents shine, coaches display their strategies and teams' dynamics are tested. While fans fill the stadiums to support their teams for every match, they also contribute to the excitement by making comments and analyzes about the league on social media. As a result, this season stands out as a promising period for the future of Turkish women's basketball. Both teams and athletes are struggling to increase their success and break new records on this exciting journey. This season offers a great opportunity for women's basketball to reach a wider audience and for more young athletes to realize their dreams of a career in this field. Spectators are expected to witness unforgettable moments throughout this season!

RECEP ALİ ERDOĞAN
General Manager of Aselsannet

ASELSANNET, a subsidiary of ASELSAN, the Turkish Armed Forces Strengthening Foundation, which offers global solutions in the fields of communication, security systems and information technologies under the motto "Wherever Technology Is" in Türkiye, has proved great breakthroughs due to its "Domestic, National and Reliable Technology" moves, which it has accelerated during last year. It has become one of the most important players in the defense industry. ASELSALNET has become one of the most talked about defense industry brands due to this breakthrough.

President Erdoğan, General Manager of ASELSANNET, exceeded his growth targets in his first year

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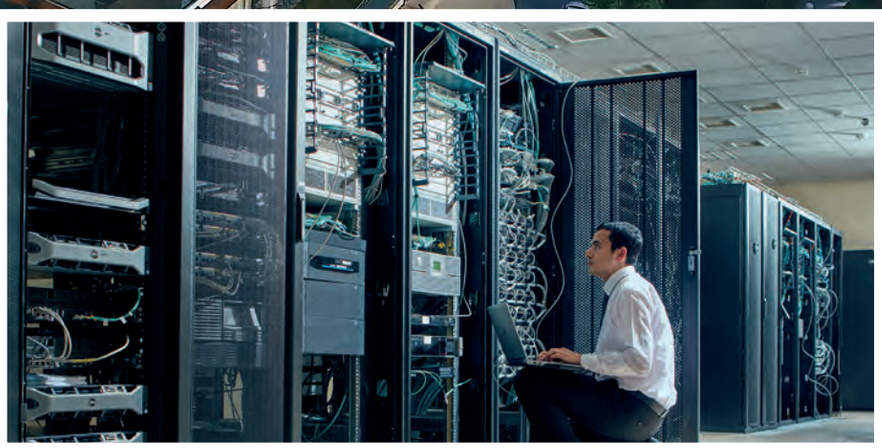
ASELSANNET contributes to Türkiye's digital transformation process thanks to its strong infrastructure and technological know-how. ASELSANNET, which plays an important role in strategic projects and provides global solutions for corporate customers, also provides reliable digital infrastructures to the public sector by benefiting from ASELSAN's know-how and experience in the field of defense industry. ASELSANNET, which has carried out important projects in cyber security and data security in recent years and increased its competitiveness in the national and international market, has achieved significant successes, especially by achieving further growth in the last year.

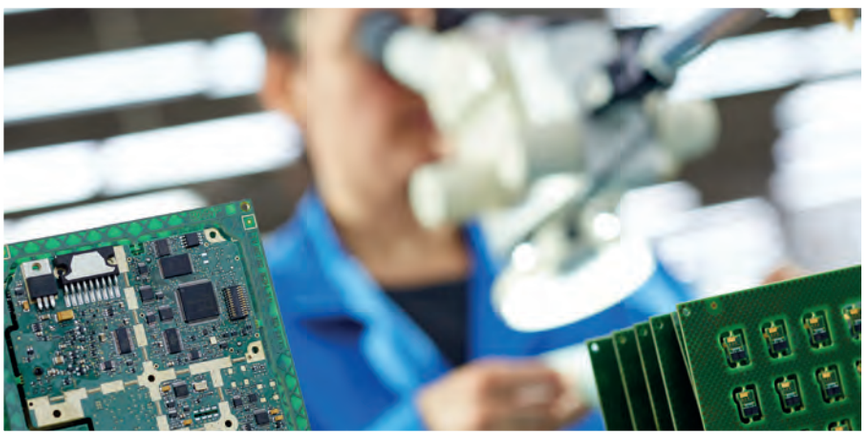
Got into the List of the Biggest IT Companies

IT 500 list, evaluating Türkiye's largest IT companies revealed the important players of the sector in 2023 too. ASELSANNET, which provides global solutions in the field of communication, security systems and information technologies in Türkiye, which is included in the IT 500 list of 2023, has achieved significant successes supporting its strong position in the sector and its future goals.

The second largest company in Türkiye's field

ASELSANNET, the second largest company in Türkiye as an Installation, Maintenance and Support Service provider, successfully maintains its principle of quality and trust. The company, which ranked 2nd due to its pioneering role in IoT and M2M technologies, was also among the top 4 largest companies in the subcategories of security cameras, information security equipment, servers and PCs, network equipment, video and audio systems, and Telecom infrastructures. ASELSANNET, which ranked 3rd in the service and hardware main categories, ranked 4th in the system integrator and business partner categories. Among Türkiye's 500 largest IT companies, ASELSANNET ranked 23rd according to its sales revenues and ranked as the 4th largest company in Ankara.





ASELSANNET Signs New Projects with Local and Global Collaborations

ASELSANNET, which meets the computer and hardware needs of the companies affiliated to the Turkish Armed Forces Development Foundation, implements digital archive, information systems, information infrastructure maintenance-repair, closed circuit camera projects, Electronic Concrete Monitoring Project (EBIS), Secure Electronic Earring Tracking System, Soil Investigation and Monitoring Systems together with global and local collaborations. Manufacturing of high-tech computer motherboards is also carried out along with Gorevsayar, Backpack Jammer, HERKUL, Ethernet Switch, AKKOR, Vehicle Power Supply, Laser Guidance Kit.

ASELSANNET has also implemented many projects such as Urban Security Management System, Plate Recognition System Gendarmerie Integrated Communications and Information System (JEMUS), Gendarmerie Integrated Communication and Information System, Plate Recognition Systems (JEMUS PTS), Digital Communication Network (SHŞ) System Installation, Niger Border Security Systems Installation, Face Recognition System Installation, UAV Threats Neutralization Systems in Urban and Rural Environment (IHTAR) installations, Communication System GAMUS, and KALKAN.

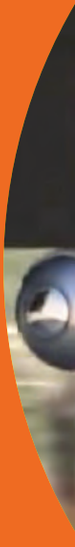
Recep Ali Erdoğan, General Manager of ASELSANNET: We succeeded in advancing ASELSANNET further

Recep Ali Erdoğan, General Manager of ASELSANNET, said that the defence industry has achieved great success under the leadership of President Recep Tayyip Erdoğan, and that they are advancing the institution through constant innovation and targeting excellence. Recep Ali Erdoğan, General Manager of ASELSANNET, said “I am happy and proud to have completed one year in my position at ASELSANNET. First of all, I would like to express my sincere thanks to all my colleagues, business partners and stakeholders who contributed to this process. The steps we took and the successes we achieved during this year were possible thanks to the joint effort of all of us. During this time, ASELSANNET has carried out important projects in both the local and global arena. As ASELSANNET, we will continue to contribute to our country in the field of secure communication, defense technologies and digital solutions through innovative solutions in the coming period.”

ANKA III, developed by TAI, hit the white

ANKA III, which has a delta wing structure developed by Turkish Aerospace Industries (TAI) indigenously, has achieved a new success and successfully launched its first ammunition.

● *Source: Anadolu Agency*



According to a statement made by TAI, ANKA III, which performed her maiden flight on December 28, 2023, keeps on test flights. Ammunition assembly operations were initiated in order to provide ANKA III with the ability to carry weapons within the scope of its military use. The TEBER-82 guidance kit developed by ROKETSAN was installed under the wing.

Successfully completed the shooting test

ANKA III, which is equipped with the Aselflir 500 Electro Optical Camera produced by ASELSAN, started to perform shooting operations after the ammunition-filled taxi and ammunition-filled flight test operations. Continuing its tests swiftly after her maiden flight, the ANKA III Unmanned Aerial Vehicle took off once again after the flight test she performed armed with ammunition. Taking off from Mürted Air Base at 08.30, ANKA III reached the Acıkır Shooting Range. ANKA III, which shot at the target, successfully completed the shooting test.

Mission at 40 thousand feet altitude

According to the details in the statement, ANKA III, which is powered by a turbofan engine and having a take-off weight of approximately 7 tons, will be able to operate at an altitude of 40 thousand feet and reach a speed of 0.7 Mach after the completion of the test operations. ANKA III will be used for reconnaissance, surveillance and intelligence as well as offensive purposes. In the configuration armed with ammunition, the ANKA III system will be able to carry 650 kilograms of ammunition in each of the two stations in the fuselage, 650 kilograms in each of the inner wing stations and 100 kilograms in each of the outer stations.

DR. CENGİZ TATAR
Retired Airforce Staff Colonel

The Republic on its 101st anniversary

When Mustafa Kemal Atatürk landed in Samsun on May 19, 1919, he had planned to establish a new fully independent Turkish state based on national sovereignty. With the decisions taken at the Sivas Congress, the foundations of the future regime were laid, and Atatürk expressed this process with the words "I had to carry the great development ability that I felt in the conscience and future of the nation in my conscience like a national secret and gradually implement it to the society". In Erzurum, he dictated to Mazhar Müfit Kansu that the form of the state would be a "republic" and after the victory of the National Struggle, the time had come to realize this goal. The Republic was proclaimed 16 days after Ankara was chosen as the capital, marking the biggest revolution in Turkish history.

"My greatest creation is the Republic"

Mustafa Kemal Atatürk proceeded step by step to the proclamation of the republic and described this process in a simple way in his Nutuk (Speech), "My greatest creation is the Republic". On August 9, 1923, at the opening congress of the People's Party, negotiations began under the chairmanship of Atatürk. On August 11, Atatürk was elected as the president of the 2nd Parliament. During the period when Fethi Okyar was forming the government as prime minister, Atatürk stated that the time had come for the proclamation of the Republic. On October 26, he convened the cabinet in Çankaya and asked the government to resign, and the government resigned on October 27. While describing this

process in the Nutuk, Atatürk stated that he knew that his efforts to form a government would be fruitless and that he thought to solve the problem once and for all with the proclamation of the republic. On October 28, 1923, the party executive board invited Atatürk to a meeting to get his opinion, and after reviewing the proposed list of the Council of Ministers, Atatürk stated that this list was appropriate, but that they needed to determine a definite list and left the meeting.

"Gentlemen, tomorrow we will proclaim the Republic."

On his way from the Parliament to Çankaya on the evening of October 28, Mustafa Kemal Atatürk shared his idea by saying "Tomorrow we will proclaim the Republic" at a dinner with the pashas and deputies beside him, and all his friends accepted this idea. He then made a short plan on how to act and assigned tasks to his friends. Atatürk did not need to meet with his other friends in Ankara for the proclamation of the Republic because he was sure that they thought like him. However, some people who were not in Ankara considered not being included in the process of proclaiming the Republic as a reason to leave.

"The form of government of the State of Türkiye is a Republic"

İsmet Inonu stated that he was invited to Çankaya by Atatürk on the evening of October 28, that Atatürk told him to stay after dinner and that they started working together. Atatürk dictated the text of the Law on the Constitutional Organization and Inonu wrote it down. After completing the text, they reviewed it together and went to Parliament. Atatürk added the sentence "The form of government of the State of Türkiye is a republic" to Article 1 of the 1921 Constitution and amended Article 3 in accordance with the way the parliament governs the government. Atatürk finalized the preparations for the proclamation of the republic by stating that the president would be elected by the Parliament. On Monday, October 29, 1923, the People's Party Group convened under the chairmanship of Fethi Okyar and failed to reach a consensus on the proposed list of the Council of Ministers. Atatürk's opinion was asked for a solution and Kemalettin Sami Pasha's motion was accepted and Atatürk was invited to the meeting. Atatürk stated that the difficulty in the formation of the government stemmed from the fact that the deputies had to choose the ministers one by one and that the Constitution should be amended. Accordingly, Atatürk presented a 5-point bill that he had prepared 4 months earlier, stating that the true form of the state was a "republic".

Long live the Republic!

The Parliament convened at 18.00 on October 29 and the bill prepared by the members of the Constitutional Commission was presented by İsmet Inonu, the Speaker of the Parliament. According to this bill, "Sovereignty rests unconditionally with the nation and the form of government of the State of Turkey is the Republic. The religion of the State of Türkiye is Islam and the official language is Turkish. The President of the Republic is the head of the State of Türkiye and presides over the Assembly and the Council of Ministers when deemed necessary. The Prime Minister shall be elected by the President from among the members of the Parliament." Upon the adoption of the bill, Rasih Kaplan, deputy of Antalya, said, "Republic is the most appropriate form of government. Long live the Republic!", while Abdurrahman Şeref, deputy of Istanbul, said, "Sovereignty rests unconditionally with the nation, which points to the Republic. The name of the child being born is the Republic. Although some may not like it, this is the truth." İsmet Inonu stated that the nation had actually taken its supremacy and future into its own hands, and emphasized that it was pointless to hesitate to express this legally and that Gazi Pasha's proposal should be enacted into law. The Constitutional Commission stated that sovereignty unconditionally rests with the nation and that the form of government is based on the nation's direct and actual governance of its future, which means a republic, and that this phrase, which rejects the sultanate based on a person, should be added to the constitutional article. It was explained that the establishment of a presidential office as the representative of the Republic after its establishment was a matter of course and that the appointment of a prime minister by the president was necessary for the determination of responsibility. The bill, which also included an article stating that the religion of the State of Türkiye was Islam and the official language was Turkish, was accepted with the applause of the deputies who shouted "Long live the Republic!". İsmet Inonu put the bill to a vote and all 158 deputies voted yes and the bill was adopted unanimously.

"Long live Gazi. Long live Mustafa Kemal Pasha"

The proclamation of the Republic was announced on October 29, 1923 at 20.30 with 101 pare cannon shots and this excitement overflowed into the streets of Ankara and the Turkish people started celebrating with great enthusiasm. The Turkish Nation attained the form of government it deserved and became a Republican State by taking its place among the most modern countries. As Mustafa Kemal Atatürk said, "The most appropriate form of government for the character and customs of the Turkish Nation is the Republic", with the proclamation of the republic, sovereignty passed to the Turkish Nation after centuries. The Republic, as a form of government based on moral values, has given the Turkish Nation the right to elect the people who will govern the state, allowing it to take its own will into its own hands. For the election of the first president of the Republic of Türkiye on October 29, 1923, deputy Dr. Fikret Onuralp submitted a motion for the immediate election of the president. Eyüp Sabri Hayırlıoglu, deputy of Konya, on the other hand, proposed that a 101-gun salute be fired after the presidential election. In the voting for the presidential election, İsmet Inonu announced the result at 20.45, stating that Mustafa Kemal Pasha, deputy of Ankara, had been elected president with 158 votes in a vote attended by 159 deputies. Ataturk, at the age of 42, abstained from voting and was greeted with the chants of "Long live Gazi. Long live Mustafa Kemal Pasha" and became the first President of the Republic of Türkiye.

Atatürk as president, Ismet Inonu as prime minister

In his speech to the Parliament after his election as President, Mustafa Kemal Atatürk stated that it was a natural consequence of the international name of the State

of Türkiye as a "republic" and thanked the high delegation by reiterating the love, trust and support shown to him. Atatürk emphasized that the talent and success demonstrated by the Turkish nation in recent years would make it easier to prove the qualities of the nation to the whole world and that the Republic of Türkiye would prove its deserved place among the states of the world through its accomplishments. Stating that greater victories would be achieved with the support of the nation, Atatürk expressed that the republic was the symbol of enlightenment, science, modern life and civilization. Turgut Ozakman interpreted this transformation with the words "A brand new, independent people's state, the Republic of Türkiye, was established out of a collapsed state." İsmet Inonu was appointed prime minister after Mustafa Kemal Atatürk's election as president and formed the first government of the republic, receiving a vote of confidence from the Parliament on October 30. Fethi Okyar was elected as the Speaker of the Parliament. The Republic of Türkiye, rising from the ashes of the fire, began to progress towards becoming a civilized and modern state and the state's system of government was officially designated as a "republic". The revolutions that would follow would radically change the political, administrative and cultural structure of Turkish society. However, Rauf Orbay and some people in the upper echelons of the state were uncomfortable with the republican regime. Regarding this situation, Atatürk remarked, "Future generations will see that those who attacked the Republic the most on the day it was proclaimed were those who said 'I am a Republican', but they will not be surprised by this situation". Participating in İsmet Inonu's first Council of Ministers meeting, Atatürk emphasized that the republic was a newborn child, that there was a thousand years of experience preceded the middle age and that to protect the republic, one had to be very careful and vigilant. Stating that civil servants should be carefully selected, Atatürk said that the indifferent, lazy and unexcited administrators in the last periods of the Ottoman Empire caused the collapse of the state. Atatürk said that they carried out the National Struggle together as a nation and that the republic would be governed by this understanding and that they would not allow this unity to be disrupted. He stated that the main purpose of the state was to enlighten, educate, protect the health and security of the people and that the ideal was to create a civilized society based on national sovereignty. In his speech in 1925, he emphasized that the republic was a system of government that the nation itself had created and that there was no longer any separation between the government and the nation. In 1927, he stated that the republic was based on high moral values and qualities, that the republic was the most appropriate form of government for the Turkish nation and that the republic was gained as a result of an anti-imperialist struggle. Atatürk emphasized that the republic was not gained easily, that a lot of blood was shed for the republic and that the republic was based on a strong foundation.

The real ruler is the nation

Mustafa Kemal Ataturk's political opinions were based on national sovereignty and he handed over the government to the nation, the real ruler. "National sovereignty is such a force that all dictatorial regimes are doomed to collapse against it," Ataturk said, emphasizing that the republic is a government that is not based on fear and oppression like the sultanate, and that allows virtuous and courageous people to grow up. Political parties and free elections are the most important criteria in regimes based on national sovereignty. He founded the Cumhuriyet Halk Partisi (Republican People's Party) on September 9, 1923 to put these ideas into practice more clearly. He defined political parties as organizations established by people who share common views in order to seize political power and therefore encouraged the establishment of parties. Accordingly, on November 17, 1924, Türkiye's first opposition party, the Terakkiperver Cumhuriyet Fırkası (Progressive Republican Party) was founded. Among the founders of the party were Atatürk's close friends Kazım Karabekir, Rauf Orbay, Ali Fuat Cebesoy, Refet Bele and Adnan Adıvar. However, the Terakkiperver Cumhuriyet Fırkası, which Atatürk criticized by saying "Our first party that used religion as a tool for politics", was closed down on June 5, 1925 due to reasons such as Rauf Orbay's criticism of the Republic, the gathering of regime opponents within the party and the outbreak of the Sheikh Said rebellion. President Mustafa Kemal Atatürk asked Ali Fethi Okyar to establish a party committed to republicanism and secularism, as the presence of a single party in the parliament made it difficult to control the government. Upon this, Fethi Okyar founded the Serbest Cumhuriyet Fırkası (Free Republican Party) on August 12, 1930 and this was an attempt to transition to multi-party political life. Among the founders of the party were Makbule Atadan, Nuri Conker, Mehmet Emin Yurdakul, Ahmet Ağaoğlu, İbrahim Süreyya Pasha and Adnan Menderes. In the local elections held in October, the Serbest Cumhuriyet Fırkası won 31 of the 502 municipalities, but the elections created tension in the country. Despite Atatürk's insistence on democratic struggle, Ali Fethi Okyar dissolved the party on November 17, 1930. Although the party was freely organized, it remained under the influence of counter-revolutionaries, sultanists and sects and was considered a threat to the republic. Multi-party life was tried twice during Atatürk's presidency, but both times the parties were shut down due to the focus of reactionary and counter-revolutionary groups. Turkish democracy has had to struggle against groups that use politics as a means of enrichment by using religion.

The Republic of Türkiye is the greatest achievement

In his speech on the 10th anniversary of the Republic of Türkiye, Mustafa Kemal Atatürk emphasized that the Turkish nation had accomplished great achievements since the War of Independence and that the greatest achievement was the Republic of Türkiye. He stated that the foundation of the Republic was based on the heroism and culture of the Turkish nation and that in the future the country should be raised to the most civilized and prosperous level. Atatürk stated that the Turkish nation was hardworking, intelligent and able to overcome difficulties with national unity, and that positive sciences and fine arts were the torches illuminating the path to the rise of the nation.

He stated that his promises had been successfully fulfilled in the past 15 years and that the nation

would soon consolidate its deserved place among the civilized world. Mustafa Kemal Atatürk stated that the republican regime is a democratic form of government and emphasized that the requirements of democracy should be implemented in time. On the 10th anniversary of the Republic, a great development was achieved without borrowing from abroad and this accomplishment was celebrated. The last verse of the "Tenth Year Anthem" written by Faruk Nafiz Çamlıbel and Kemal Çaglar and composed by Cemal Reşit Rey was changed upon Atatürk's suggestion. In 1927, Atatürk stated that some of those who attacked the republic were "Republicans" and that they would be easily recognized in the future. In 1933, addressing young people in Bursa, Atatürk emphasized that Turkish youth were the guardians of the revolutions and the Republic, and that they would take action to defend these values when necessary. In 1937, Mustafa Kemal Atatürk stated that the Turkish nation was born democratic in spirit, but the Ottoman administration had tried to blunt these democratic traits. In his book "Civilized Knowledge", he stated that the republic was the perfect form of government for democracy and underlined that the republic was based on democracy.

"Peace at home, peace in the world"

By adopting the principle of "Peace at Home, Peace in the World", Atatürk expressed the importance of considering the peace and welfare of the nations of the world. He fought for full independence against imperialism and realized that peace was incompatible with imperialism. Atatürk stated that peace is the best way for nations to prosper and that humanity should achieve a civilized, peaceful future. The Republic started with the struggle for "Full Independence" and "National Sovereignty" against imperialism through the national struggle and ended the 700-year-old sultanate order. The Republic is the path of virtue, freedom, independence and modernization. It is the most advanced form of state and government, the primary goal of democracy. The Republic is an "Enlightenment Revolution" and is based on secularism. Sovereignty has been shifted from the religious authority to the nation, creating an individual from a servant and a nation from an ummah. Through secular revolutions, a modern and civilized state based on rationality and science was established. Mustafa Kemal Atatürk entrusted the Republic to young people, saying, "We founded the Republic, you are the ones who will raise it and keep it alive." The proclamation of the Republic was celebrated with 101 gun salutes and events, and it was declared a "National Holiday" on October 29, 1925. Ataturk legated the values and philosophy of the Republic to the youth by saying "One day my mortal body will turn to dust, but the Republic of Türkiye will stand forever". The Republic of Türkiye has grown, developed and progressed in 101 years.

Happy 101st Anniversary of the Republic of Türkiye, with which we look to the future in hope.

Turkish companies impress at ADEX, the defense and technology products fair in Azerbaijan

While 55 Turkish companies participated in the Azerbaijan International Defense Industry Fair (ADEX) held in Baku, the capital of Azerbaijan, between September 24-26, domestic and national products from HÜRKUŞ to Bayraktar TB2, AKINCI to ŞAHİN were showcased.

● *Source: Anadolu Agency*

According to the information compiled by the AA correspondent, the heart of the defense industry sector beat at the 5th ADEX Fair, where defense and communication technologies were exhibited. The fair, which took place at the Baku Expo Center in Baku between September 24-26, hosted 270 companies from 40 countries, including Azerbaijan and Türkiye, as well as the USA, Germany, Great Britain, China and Russia. From Türkiye, 55 companies, including ASELSAN, HAVELSAN, TAI, ROKETSAN, ASFAT, BAYKAR, ULAK Communication Inc. and especially the Presidency of Defence Industries, participated in the exhibition. Türkiye surpassed Azerbaijan, which hosted the exhibition, by 44 companies, and became the country with the largest number of companies exhibiting at ADEX. HÜRKUŞ, Bayraktar TB2 and AKINCI, which are among the leading projects of the Turkish defense industry, as well as the products of ROKETSAN and ASELSAN were exhibited in the garden of the fairground. Participants showed great interest in the exhibited technologies and took souvenir photos in front of the products while getting information.

HÜRKUŞ opens the door to national platforms

Visitors to the fair were given the following information about the products of the Turkish defense industry:
-The New Generation Basic Train-

er Aircraft HÜRKUŞ, developed by Turkish Aerospace Industries, performed her maiden flight 11 years ago. Named after Vecihi Hürkuş, one of the pioneering figures in the history of Turkish aviation, HÜRKUŞ opened the door to the national platforms that were developed subsequently.

-The steps taken with manned and unmanned aerial vehicles in the adventure that started with HÜRKUŞ reached its peak with the National Combat Aircraft KAAN.

-The development and production process of the tactical UAV project for Bayraktar TB2 started in 2012. Bayraktar TB2 performed her first fully automatic flight test in 2014, and it was taken into inventory in the same year. The Bayraktar TB2 unmanned combat aerial vehicle (UCAV), which has attracted the attention of many countries around the world due to her success in the field, has become Türkiye's flag bearer in this field as the UCAV sold to the largest number of countries in the world.

Systems from rockets to missiles were on display

ROKETSAN, one of the Turkish companies exhibiting at the fair, showcased its Mini Smart Munition family members MAM-L, MAM-T and MAM-T IIR, which constitute the striking power of UCAVs, as well as its products such as TEBER and LAÇİN guidance kits and SOM. From the UAV-122 and UAV-230 air-to-surface ballistic supersonic missiles to the KARAOK short-range anti-tank weapon, from the CİRİT laser-guided missile to the OMTAS medium-range anti-tank weapon system, dozens of products produced by ROKETSAN were displayed at the exhibition.

ŞAHİN and TASMUS are displayed abroad for the first time

The HERİKKS 600-T system developed by ASELSAN against mini-micro UAV, helicopter and airplane threats, and the KALKAN-100G and AURA-100G radars were also exhibited at the fair. These systems have been used by the Turkish Armed Forces for many years, as well as by the countries to which they are exported. ŞAHİN, ASELSAN's physical destruction system developed to intercept mini/micro UAVs, was exhibited abroad for the first time at ADEX 2024. ŞAHİN, which locks onto the target through the engagement data it receives from İHTAR, destroys the target by programming ATOM 40 millimeter ammunition. TASMUS, a multi-band mobile communication vehicle designed by the company to meet the high-bandwidth communication needs of mobile command vehicles on the move, was also exhibited at ADEX 2024 for the first time abroad. TASMUS received full marks from visitors to the exhibition. Türkiye was the most striking country at the exhibition for its defense industry products.

Dr. HUSEYİN FAZLA

Retired Airforce Pilot Brigadier General, Founder and Director of STRASAM

Perspectives on Turkish Air Power and Aviation Industry in the New Century of the Republic

Dating back to June 1, 1911, the Turkish Air Force Command, with its glorious history dating back to the past, is a command headquartered in Ankara, which is at the center of the Turkish air power and operates together with the other elements of the Turkish Armed Forces in order to protect Türkiye's rights and interests, to defend the country's territory from past to present, and to prevent all kinds of threats and dangers that may threaten the Turkish homeland and the Turkish nation from the air. The "Combat Air Force Command" deployed in Eskişehir, which gathers the main combat elements of the Air Force Command under the roof of a single command, essentially constitutes the striking force of the Turkish air power. The "Air Training Command", which consists of schools, bases, squadrons, and equivalent unit commands and institutional headquarters to provide the highest level of personnel training required for all missions of the Air Force and to fulfill operational missions, is located in Izmir while the "Air Logistics Command", which fulfills the duties of supply, maintenance, transportation, engineering and other logistics activities of the Air Force, calculating, procuring and maintaining operational the maintenance and operation needs of all weapon systems used by the Air Force, and meeting the infrastructure and facility needs, is deployed in Ankara and provides the Air Force with training and logistics support in accordance with the requirements of the time. The main duty of the Turkish Air Force Command as a whole with its headquarters, operation centers, striking force elements and support units is to deter the aggressive intentions of the possible enemy using its superior speed and destructive power, to prevent enemy aircraft as soon as they enter the Turkish airspace when our country is attacked, and to break the determination and power of the enemy/threatening country to

continue the war by destroying vital military targets, and to win the war as soon as possible, causing the least casualties. The Air Force Command, which carries out this main duty by performing various activities and functions in peace and war, acting in line with Atatürk's "future is in the skies" vision and goal, after being re-established in 1944, thas always sought to renew and modernize itself in order to rise to the level of military aviation of the contemporary world and to take its place more effectively in the defense of the homeland. As a result of these endeavours and efforts, the Turkish air force has been able to always maintain its respectable level in the military aviation field of the world.

Modernization of Air Power

The Turkish Air Force has acted with an understanding that aims to always include the most modern aircraft in its inventory, and in this direction, strategic target plans and procurement plans have been made and the country's resources have been spent to build a strong air force. The traditional intention of the command is in this direction. For example, it can be said that the air power that was tried to be created during the War of Independence served as an important starting point in the establishment of the infrastructure of Turkish Aviation. With the establishment of the Republic of Türkiye, aircraft such as Junkers A-20, Junkers F-13, Caudron C-27 and C-59, Spad 21 and 61, Morane Saulnier, Dewoitine, Rohrbrach, Savoia S-16, Potez 25A-2 and similar aircraft were purchased from abroad in order to create a strong air force that would adapt to modern aviation. While the number of aircraft increased, the aviation companies were also increased in the army. Since 1924, personnel have been sent to France, the United Kingdom, the USA and Italy for flight training, and in 1925, the Aviation School in Eskişehir was reactivated. Seeing that the future was in the skies, Atatürk established the Turkish Aircraft Society in 1925. He said to the Turkish Nation, which regained its independence as a result of the Great Offensive, "We have to take our place in the skies which is waiting for us. Otherwise, others will invade that place and then this country and nation will be lost. "and emphasized that the sovereignty in the future depends on our power in the skies.

According to most sources, the Turkish Air Force, which had about 500 aircraft in its inventory in 1940, became the strongest air force in the Balkans during this period. With aircraft such Curtiss Fledling, Supermarine, Vultee V, Curtiss Hawk, Curtiss Falcon, Focke Wulf FW44, FW-58 and FW-190, Gotha, P.Z.L P-24, Heinkel HE 111K, Martin 139 W, Henriot 182, Spitfire, Fairey Battle, Avro Anson, Hawker Hurricane, Curtiss Tomahawk, Miles Magister, Westland Lysander, Curtiss Kittyhawk, Librator, Bristol, Martin Baltimore, the Turkish Army was always kept ready for battle during World War II. Within the scope of the Truman Doctrine, improvements were made in the Air Force base, radar and air defense infrastructures with the American military aids. Thunderbolt P-47D (180 pcs), T-6 Harward (196 pcs), Beechcraft AT-11 (128 pcs), C-47 A/B Dakotaa
(102) aircraft were included in the inventory, and all the facilities and capabilities of the Turkish Air Force were almost renewed from the beginning. Later, the transition to the jet age in military aviation led to the fighter planes to acquire new capabilities over the years and to be classified with the concept of 'generation' according to their capabilities. In this context, the introduction of new generation fighter jets to the Turkish Air Force ensured that it was a force competing with the era, while guaranteeing that the actual force would always be modernized according to the needs of modern warfare.

Recruitment of first-generation fighter jets to the Turkish Air Force

Literatürde, genellikle AmeriIn the literature, early jet aircraft such as the American P-80, F-84, F-86, Russian MiG-15, MiG-17, Chinese-made J-6 are generally considered as the first generation. These were aircraft that flew at subsonic speeds while being armed with unguided classical bombs, rockets, and machine guns. From the mid-1940s to the mid-1950s, it was observed that first-generation fighter jets were included in the inventories of the air forces of countries advanced in aviation. In those years, the Turkish Air Force also deemed it necessary, making an appropriate decision, to keep up with this remarkable change in military aviation. After becoming a member of NATO on February 15, by switching to jet aircraft, 1952, T-33 (166), F-84G (479), F-84 Q/F (93), F-86E (107), T-34a (24), RF-84F (52) aircraft were purchased from the USA. Initial training was provided to Turkish pilot candidates on MKE-4 Uğur (57) aircraft built by Machinery and Chemical Industry.

Recruitment of second-generation fighter jets to the Turkish Air Force

The second generation of fighter jets entered the inventories in the 1950s and 1960s. Aircraft such as F-100, F-102, F-104, F-5, MiG-19, MiG-21, J-7 are considered in this category. Flying at supersonic speeds, radar-guided missiles came to the fore on board of aircraft of this generation. Air-to-air combat, on the other hand, was still not quite supported by infra-red seeker systems yet on these aircraft. Nevertheless, first-generation aircraft radars and air-to-air missiles entered the combat arenas on these aircraft. The Turkish Air Force added to its inventory F-100 (130) aircraft from the second generation aircraft in 1958, F-104 G (175) fighter aircraft since 1962 and F-102 aircraft (44) in 1968. In 1972, F-100C (92) aircraft and in 1974, F-104S (40) aircraft were purchased from Italy.

Recruitment of third-generation fighter jets to the Turkish Air Force

The 1960s and the first half of the 1970s witnessed the capabilities of third-generation fighter jets. The first F-4 variants and MiG-23 were included in this category. Multi-roll, laser-guided bombs, advanced avionics were among the main features of these aircraft. With Anglo-American military aviation terminology, the ability to look down / shoot down was acquired by the generation in question, while in air-air combat, infra-red seeker systems were in use. The Turkish Air Force was able to add the F-4 fighter aircraft, which is considered the pioneer of this generation, to its inventory in 1974 after the Cyprus Peace Operation.

F-16 Block 50

Recruitment of fourth-generation fighter jets to the Turkish Air Force

In the period from the 1970s to the end of the 1980s, 4th generation fighter jets were widely used in the world. Figther jets such as Mig-29, Su-27, Su-30, Su-35, F-14, F-15, F-16, F-18, Eurofighter Typhoon,
Saab JAS 39, Dassault Rafale, Chinese-made J-10, J-16 were included in this category. Some of these aircraft had switched to the Fly-by-Wire flight control system in a technological sense. Multi-rolling had become a common feature of almost all of these aircraft. The same aircraft was successfully used in air-land & air-air missions. Modern avionics, high maneuverability, guided modern ammunition and missiles, advanced radars, advanced simulators in pilot training have always been brought to the use of world armies by these aircraft. Starting from 1986, the Turkish Air Force has rapidly switched to fourth-generation aircraft with F-16s. Before mentioning the fifth generation fighter jets and the Turkish Air Force and aviation industry in the new century of the Republic of Türkiye, it is necessary to explain more the transition process to the F-16.

Turkish Aerospace Industry is established followingn the decision of producing the fourth generation F-16

In 1972, steps were taken towards the modernization of the Air Force within the framework of the Turkish Army's Re-Organization and Modernization Program. The Air Force Commanders of the period, General Muhsin Batur (1920-1999), launched the "Build Your Own Aircraft" campaign. The Turkish people embraced the campaign so that Türkiye could build its own plane, and the donations started to flow to the Turkish Air Force Strengthening Foundation. Thus, within the scope of the foundation of a national military aircraft factory under the leadership of the Foundation, the Turkish Aircraft Industry Corporation (TUSAŞ) was established within the Ministry of Industry and Technology in order to reduce Türkiye's foreign dependence in the defense industry with the law numbered 1784 adopted in the Turkish Grand National Assembly on June 28, 1973.

The purpose of the establishment of TUSAŞ was stated as follows in the law: "It is to establish and operate an aircraft industry that contributes to the national product that will increase Türkiye's technological level, alleviates dependence on foreign economies, can compete with the foreign market, and is oriented towards national security and civilian needs." In the same period, as of February 5, 1975, using the 1974 Cyprus Operation as an excuse, the United States stopped its military aid which it had been continuing for 30 years. During these embargo years, which lasted for 3 years until 1978, Türkiye understood how much it needed to get rid of foreign dependency. The importance of building a strong army based on the use of national weapons, equipment and materials in Turkish politics and the armed forces was better understood. In November 1983, with the decision of the Turkish Air Force to use F-16 aircraft to meet the need for fighter aircraft; TAI (Turkish Aerospace Industry) was established in 1984 as a Turkish-US joint investment company for 25 years in the context of the production of the F-16 aircraft, the integration of the systems on the aircraft and the flight tests and the subsequent delivery of the aircraft to the Air Force. Until 1999, a total of 280 F-16 aircraft were produced at TAI, as 240 for Türkiye and 40 for Egypt. In 1994, 161st Squadron, equipped with LANTIRN pods capable of low-altitude attack at night, became the backbone of the Air Force's strike force in the west of the country, and 181st Squadron, equipped with sim-

ilar capability in 2000, became the backbone of the Air Force's strike force in the east of the country. In the meantime, a total of 7 KC-135R tanker aircraft were included into the inventory between 1995-1997 and the air-to-air refueling capability was provided as well. As a result of the modernization treaties with Israel, 54 F-4 and 48 F-5 aircraft were modernized towards the end of the 1990s. With the procurement of 4 Boeing Airborne Early Warning Control (AWACS) aircraft received in 2015, the Turkish Air Force's eyes on the air, which is integrated with fixed and mobile radars on the ground, came into play. In addition, with a total of 270 F-16 fighter jets, including 30 F-16 Block 50+ aircraft procured directly from the United States between 2007 and 2012, the Turkish Air Force has become the world's second largest air force in terms of an F-16 fleet. After these years, Türkiye would often have its name mentioned due to its power in the defense industry.

Products that are the pride of the Turkish nation

With the merger of TAI-TUSAŞ in 2005, the company turned into a real aviation and space industry company with the "nationalization" step taken under the roof of TUSAŞ with 100 percent Turkish capital (45 percent owned by PDI and 55 percent owned by TAFF). In the hands of the fine workmanship of the engineering talent matured in the factory during the process of F-16 that was produced under license, new and original fascinating air platforms began to emerge one by one, to be talked by people and to become the pride of the Turkish nation. TAI has become Türkiye's technology center in the field of aerospace in the development, modernization, production, system integration and life cycle support processes of aerospace industry systems.

In these years, TAI produced ANKA, the unmanned aerial vehicle (December 30, 2010), T-129 ATAK attack helicopter (August 17, 2011) and HÜRKUŞ, the new generation basic training aircraft (August 29, 2013). It carried out the avionic modernization of the evolutionary training aircraft T-38Ms and C-130 transport aircraft. The National Combat Aircraft (MMU) program has been launched starting 2010. All F-16s (except Block-30s) were modernized between 2011-2014. In 2013, development project for GÖKBEY helicopter was signed. A joint production program was initiated with Skorsky for the production of 109 helicopters of T-70i model in Türkiye. Arms have been rolled up for the development project of Regional Passenger Aircraft. A joint participation in the development projec of American T-X (T-7 which is developed to replace the T-38s) with SNC was carried out. With satellite development projects, a serious step has been taken in the field of space. TAI, which was almost closed in the early 2000s, became a giant aerospace company that could implement large projects in the mid-2010s. In 2017, the program of advanced training aircraft HÜRJET was started. Again, with the encouragement of T-129 ATAK, the T-929 Heavy Attack Helicopter program was activated. With AKSUNGUR, the dual-engine and more payload-capable version of the ANKA, a modern unmanned combat fighter aircraft ANKA-3 programs were activated. GÖKBEY made her maiden flight on September 6, 2018, AKSUNGUR on March 20, 2019, T-70i on September 2021, HÜRJET on April 25, 2023, T-929 on April 28, 2023, ANKA-3 on December 28, 2023, and MMU Kaan on February 21, 2024.

Efforts to include fifth-generation fighter jets to the Turkish Air Force

While fifth-generation aircraft have been on the agenda since the mid-1990s, a fast start has been made with the F-22 raptor, which has been in service since 2005. Later, aircraft such as the F-35, Su-57, J-20, J-31 were produced, and there were many air forces using aircraft from this class. Features such as invisibility, high performance and maneuverability, super (supersonic) cruising speed without the use of afterburners, internal load carrying, network-centered operation, sensor fusion, highly advanced avionics, advanced data link capabilities, swarm UAVs, global support, global operation were among the common features of this type of aircraft. Fifth-generation fighter jets brought with them a new air warfare paradigm. Having the ability to adapt and connectivity between different platforms, weapons and sensors has brought a mechanism related to battle networks to the center of air operations, rather than a platform-oriented approach. The main functions of this combat network are to create a sphere of influence beyond the detached intelligence-surveillance-target detection capabilities of the weapon systems; to enable command and control centers to deploy and manage a wide range of combat capabilities and, ultimately, to establish information superiority to the enemy in the battlefield thanks to the sensor capacity. In the 5th generation air warfare paradigm, sensor fusion is required for the flow of battlefield data between all command-control elements, platforms and combat systems in real-time, at high speed and with the highest possible accuracy. Therefore, it can be said that the essence of the 5th generation air warfare paradigm is combat network warfare based on sensor fusion. When low visibility and artificial intelligence-based capabilities are added to this equation, fifth-generation aircraft turn into a great ability beyond classical fighter planes. Türkiye, which sees this great change in air warfare and considers that the Turkish air force should have fifth-generation aircraft and the air warfare capabilities that acquired with these aircraft, has been included in the F-35 program led by the USA since 1999. Turkish defense industry companies also received work packages from the program in return for the 100 aircraft anticipated to be supplied by Türkiye within the scope of the program, and thus more than 900 parts of the F-35 were started to be produced in Türkiye. Türkiye's inclusion in the program and its ability to produce many parts of the aircraft contributed positively to the development of the Turkish defense industry. However, the deployment of the S-400 missile defense system, which was purchased from Russia as of July 12, 2019, to Türkiye resulted in the decision of the United States to remove Türkiye from the F-35 program on July 17, 2019.

A Turkish F-16 Fighting Falcon disconnects from a U.S. Air Force KC-135 Stratotanker during Exercise Trident Juncture 18 near Kallax Air Base, Sweden, Oct. 29, 2018.

As of September 23, 2021, the production processes of Turkish defense industry companies in the F-35 program were also terminated. On the other hand, the development and production process of MMU Kaan, which was launched as a national combat aircraft project as of 2010, aimed to pave the way for Türkiye to have a fifth-generation fighter aircraft by challenging its national aerospace industry production capabilities. MMU KAAN performed its maiden flight on February 21, 2024. TAI strives to produce at least 20 MMU KAANs that will have better features and capabilities than F-16 aircraft and deliver them to the Air Force by 2028. Due to be excluded from the F-35 program, the MMU KAAN production process has become the main factor that will shape the future of Turkish air power.

Fourth generation renewed

In the meantime, as an intermediate solution to some fourth-generation F/A-18, Rafale, Eurofighter Typhoon, JAS 39, F-16 fighter aircraft, in addition to add-ons such as AESA radar (active electronically scanned array radar) and superior electronic warfare capability, these aircraft went beyond the 4th generation aircraft and were called 4.5 generations (4+ +). Thus, these platforms acquired superior data fusion, advanced algorithms, and high-level sensor capacity. As a result of the developments endured regarding the F-35, the Turkish Air Force has been continuing its search for intermediate fighter aircraft since 2019, until the National Combat Aircraft (MMU) KAAN is put into service. Using the new version/modernized F-16s and Eurofighter Typhoons, if possible, together with MMU KAAN, and switching to a mixed force structure points to a self-optimized way out for the Turkish Air Force.

Efforts to include sixth-generation fighter jets to the Turkish Air Force

Sixth-generation aircraft, which are expected to be an indispensable skill for an advanced air force as by the 2040s, are expected to be able to fly manned and unmanned, to operate with accompanying drones in accordance with the swarm drone concept, to rely on high-level artificial intelligence, to serve as cyber warfare execution platforms, and to carry weapons systems such as directed energy weapons. The Turkish aerospace industry, which is still in the process of solving the fifth-generation problem, undoubtedly carries out research and development activities for sixth-generation aircraft. But in a wide range, gaining sixth-generation capabilities, which is more than an effort to modernize fourth-generation aircraft, such as upgrading to the F-16 Viper level, than to transition to fifth-generation with the MMU Kaan, requires greater effort and probably points to 2050 and beyond for Türkiye. In this context, in parallel with the political and international conjuncture, Türkiye is obliged to remain within multinational partnerships and alliance structures, to keep the developments in the field of fifth and sixth generation fighter aircraft as much as possible, and to develop its own national, ruling and original solutions from this point of view

Conclusion

The need for 4th and 4.5th generation fighter aircraft, the roles expected from them have not yet come to an end. On the other hand, with the 5th generation, a new platform such as communication networks, which was previously known but changed the nature of air warfare in a completely different dimension, has taken its place on the agenda. Since 1952, with the introduction of first-generation fighter aircraft such as F-84 and F-86, the Turkish Air Force has added these aircraft into its inventory and ensured that the Turkish air force has the necessary deterrence in the defense of the

country. Similarly, over time, developments have been kept up with, and second, third and fourth generation aircraft have been supplied. Likewise, it was included in the field of fifth-generation aircraft, and even participated in the multinational F-35 program led by the USA in 1999. However, as a result of a unilateral decision taken by the USA in 2019, based on some political and military problems encountered with the USA, Türkiye was removed from the F-35 program. MMU Kaan fifth generation Turkish fighter aircraft program, which was launched in 2010 before this incident, continues successfully despite all difficulties. The Turkish Air Force's force structure plan was to create a force equipped with 5th generation platforms in the 2020s and 2030s, numerically expressed in hundreds, with at least 100 F-35A Joint Strike Aircraft and a large number of MMUs while modernizing the F-16s. In this context, it can be argued that Türkiye faces a serious problem in the context of air power. This is true in a way point of view. For, the air forces of many states within NATO have added fifth-generation fighter jets to their inventory. In this sense, Türkiye looks like a country that is a little bit in the dust. According to estimations, the Turkish Air Force has around 20 of F-4/2020 and around 230-240 of F-16 variants in various blocks (Block 30, Block 40, Block 50 and Block 50+) in its inventory. Ankara is also aware of this vulnerability and does not hide that it is seeking to figure out a solution. The Turkish Air Force is an actor that should always include multifaceted scenarios that exist on many geopolitical axes in its planning. The combat establishment and deterrence capacity of the Turkish Air Force to date has traditionally been shaped around US-made fighter aircraft. Soviet, Chinese and even European platforms have always been out of Türkiye's agenda. Türkiye, which had a weakness in air defense systems in the past, has purchased the Russian-made S-400 system as a partial solution as forced by existing circumstances. Although this situation brings some developments that affect the future of the Turkish air force, Türkiye has not changed its strategy of cooperating with the West in the supply of air platforms, for example, it has not shifted ground to purchase Russian fighter aircraft. As a result, Türkiye, which is aware that 5th generation platforms will have a capability multiplier effect for 4th and 4.5th generation fighter aircraft, continues its efforts to keep its F-16s in the inventory and, if possible, to add to its inventory Eurofighter Typhoon aircraft with similar capabilities, taking into account the efforts to modernize Turkish air power, especially in terms of digital technological infrastructure developments. Türkiye's current defense economy and options in the international arms market do not allow the possibility of another solution to be considered for its agenda. In any case, I believe that Turkish policymakers should take seriously the risk that the Turkish Air Force will not be able to maintain a capacity as modern as the inventories of its regional competitors over the next 20 years. Until the arrival of MMU Kaans, the 4th generation F-16s have to continue to constitute the center of Türkiye's air power. The momentum gained by the Turkish aerospace industry in unmanned fighter aircraft, such as the Kızılelma and Anka 3, is pleasing, however these are still prototype platforms. There is a need for time in this area. Moreover, intensive production and use of UCAVs, delaying the withdrawal of F-4 2020s, and utilizing platforms developed for military training purposes such as HÜRJET and HÜRKUŞ as light attack aircraft are proposals that go beyond making the Turkish Air Force stronger. They are nothing more than palliative solutions. The era of the F-16s, the deterrence center of the Turkish Air Force, is over. Supplying F-35s, which should take its place in the center, is out of the question for the time being. I foresee that MMU Kaans will be able to take part in the inventory after 2035 as fighter aircraft with the desired competence and capability. The platform, which will be at the center of a modern air force and the backbone of the Turkish Air Force, needs to achieve information superiority in complex and highly contested battlefields, and outmaneuver the enemy with an intense network-centric warfare approach.

The target must be the 2040

Traditionally, I consider that the Turkish Air Force needs to keep 400 fighter aircraft in its inventory and add another 400 UCAVs to its inventory. I also believe that we need to reach the level of combat readiness that can produce 7-8 sorties instead of 3 sorties per day, and the logistics infrastructure to support this performance. Likewise, while parallel efforts are being carried out to make the F-16 Block 30/40s and, if an agreement cannot be reached with the Americans, all the remaining F-16s truly FREE, we need to move forward by transferring all the UNIQUE capability gains to the ÖZGÜRs in a coordinated manner. eventually, to take the year 2040 as the target year, and accordingly;

- 220 of F-16 Özgür II
- 40-80 of F-16 Vipers or EF Typhoon
- 100-140 of fifth generation MMUs Kaan
- 180-220 of Kızılelma Advanced Versions
- 180-220 of Anka III Advanced Versions,
- Manned fighter aircraft to be able to operate in the battle arena according to the swarm UAV concept,
- Acquisition of modern combat support capabilities, including aerospace support,

I would like to express that I consider the reconstruction of the Turkish Air Force in accordance with the requirements of the modern era as well as Türkiye's survival and defense as priority objectives.

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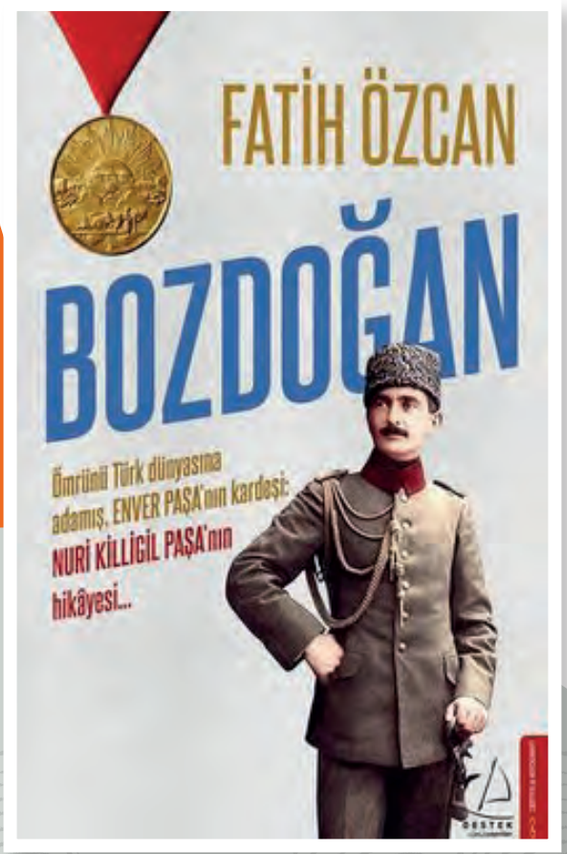

BOZDOĞAN
Fatih Özcan

The Story of Nuri Killigil Pasha, Enver Pasha's Brother, who dedicated his life to the Turkish World... He was an Ottoman officer who fought to keep the Turkish flag flying on three continents during the last days of the empire... A commander who crossed the Ganja Desert to the gates of Baku and played a major role in the establishment of the Republic of Azerbaijan. A Turkish civilian who negotiated with the Hitler regime during the Second World War to protect the Turkic people in the Caucasus and to create opportunities for the establishment of new Turkic republics... An industrial weapons designer who revolutionized Turkish industry with the tile and arms factories he founded after the proclamation of the Republic, and pioneered the country's potential to export weapons... However, his death was full of pain, betrayal, darkness, secrets and intrigue...The day his factory was blown up by a treacherous sabotage, he was inside. His body was found in the Golden Horn 20 days after the explosion. The Mufti of Istanbul did not find it allowed to perform the funeral prayer of this patriot. His funeral was carried out without ceremony by his workers. The perpetrators of the incident are still unknown... The secrecy over the minutes of the TBMM (Grand National Assembly of Türkiye) session on the explosion has not yet been lifted, although 70 years have passed since the incident. Written by investigative writer Fatih Özcan, "Bozdoğan" is the novel of how and why a patriotic general's efforts in the enlightenment and development process of the country were terminated by dark hands. Published by Destek Yayınları, the 434-page book is a page-turner.

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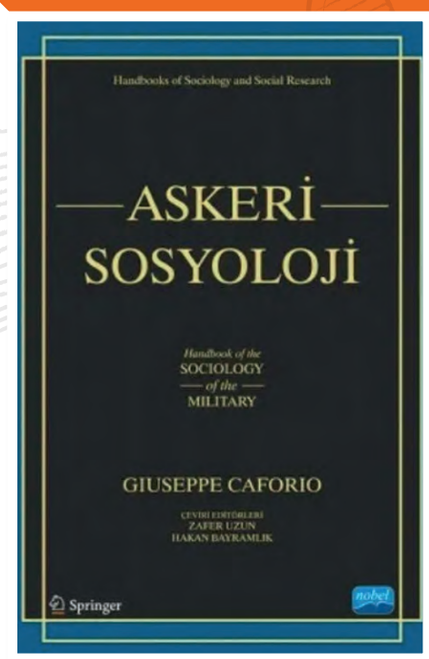


ASKERİ SOSYOLOJİ (Military Sociology)

Giuseppe Caforio

This book is a comprehensive and precious reference book that aims to introduce the fields of study of researchers (23 scholars from 13 different countries) who have made significant contributions to the field of military sociology from a cross-cultural perspective to undergraduate and graduate students of sociology, researchers in different disciplines interested in the military institution, and enthusiasts.

Publisher:
Nobel Akademik Yayıncılık
Number of Pages:
504
Price:
405 TL

THE MILITARY SITUATION OF THE OTTOMAN EMPIRE

Luigi Ferdinand Marsigli

Publisher:
Turkuvaz Kitap
Number of Pages:
352
Price:
407,40 TL

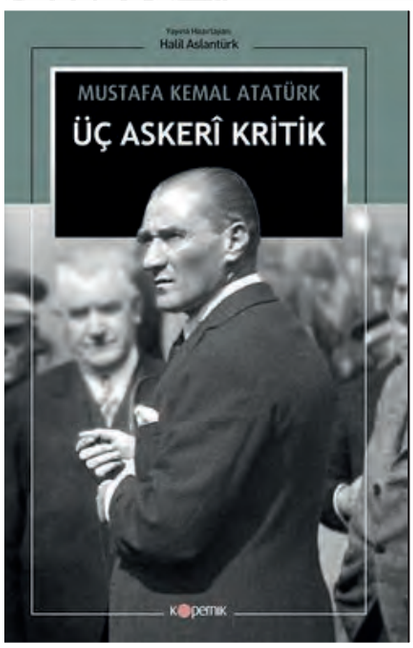
The important work of Marsigli, who spent his entire life researching and publishing in almost every field, is at this point, his book titled “The Military Situation of the Ottoman Empire”, published two years after his death. This book is a valuable work of research in which he, as both a soldier and a good observer, describes various events he witnessed at various times about the Ottoman Empire and draws a portrait of the Ottoman world during a certain period.

2

3

ÜÇ ASKERİ KRİTİK

Mustafa Kemal Atatürk



Publisher:
Kopernik Kitap
Number of Pages:
88
Price:
70 TL

“Three Military Critiques” consists of three pamphlets written by the young Mustafa Kemal Atatürk between 1911 and 1916. The reasons for presenting the work under this title are that the word critical comes from the root of drawing boundaries, that the military pamphlets are close to each other both chronologically and in terms of content, and most importantly, that the explanations are skillfully narrated by Atatürk himself. Published by Kopernik Kitap, “Three Military Critiques” is a bedside book in every sense of the word.

ASELSAN's low-altitude radar "ALP 100-G" will strengthen Türkiye's "eye in the air"

The low-altitude radar "ALP 100-G", produced by ASELSAN to strengthen the observation capability of the Turkish Air Force, was exhibited at the Aviation, Space and Technology Festival (TEKNOFEST) held in Adana.

Adana TEKNOFEST, organized by the Turkish Technology Team Foundation and the Ministry of Industry and Technology as the "Global Communication Partner" of Anadolu Agency, was held at Adana Airport between October 2-6. Domestic production vehicles of ASELSAN, one of Türkiye's leading technology companies, are also introduced at various different locations within the festival area. Aselsan's low-altitude radar vehicle "ALP100-G", which will strengthen Türkiye's "eye in the air", is among the products exhibited at the festival. The special abilities of ALP 100-G attracted the attention of the visitors at the festival. The radar vehicle, which can detect and track combat aircraft, helicopters, unmanned aerial vehicles (UAVs) and cruise missiles in 3D, offers high freedom of movement thanks to the 8x8 tactical wheeled vehicle. ALP 100-G can also identify targets through "MOD-5 IFF", which is one of its technical features.

Ballistic test firing of the KUZGUN missile from an unmanned naval vehicle was successfully carried out

President of the Presidency of Defense Industry Haluk Görgün stated that a ballistic test firing was carried out with KUZGUN cruise missile from the unmanned naval vehicle MARLIN

President of the Presidency of Defense Industry Haluk Görgün stated on his social media account that the Turkish defense industry has strengthened in line with national goals and is taking firm steps towards technological independence. Emphasizing that the ballistic test firing carried out with the KUZGUN cruise missile from the unmanned marine vehicle MARLIN is one of the most concrete examples of the capabilities achieved in the field of technology and defense, Haluk Görgün said, "This critical success clearly demonstrates that we are producing game-changing technologies in the field through domestic and national projects. With this unique talent in the world, Türkiye has proven once again that it has become a technology-producing power by increasing its competencies in the defense industry. " Görgün also stated that this success achieved with the cooperation of ASELSAN, SEFINE Shipyard and TÜBİTAK SAGE is only a milestone.

Turkish defense industry company Assan to build aircraft bomb plant in Azerbaijan

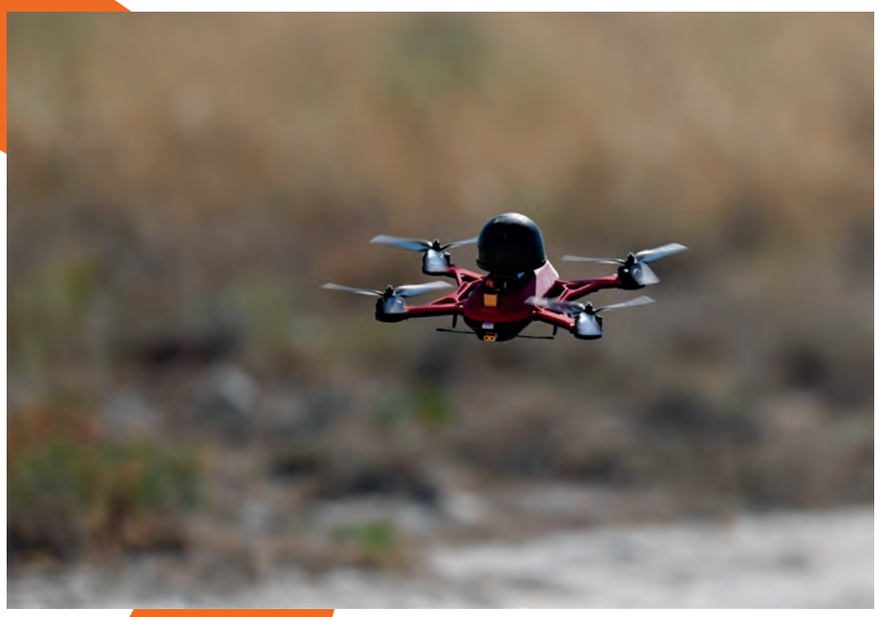
Gürcan Okumuş, General Manager of Assan Grup Savunma Sanayi Inc., said, "Our efforts to establish a facility for the mass production of aircraft bombs in Azerbaijan, where we sell various ammunition, are ongoing."

Gürcan Okumuş, General Manager of Assan Group Defense Industry Inc., stated that they are working to establish a facility where mass production of aircraft bombs will be carried out in Azerbaijan, where they sell various ammunitions, and said, "The agreement for the establishment of the said facility has been largely completed, various permission processes are ongoing." Gürcan Okumuş made evaluations to the AA correspondent at the ADEX Fair, where developments in defense and communication technologies stand out, held in Baku, the capital of Azerbaijan. Reminding that many Turkish companies are performing very serious work in the sister country Azerbaijan, Okumuş said that cooperation in the military field has been carried to an advanced level. Gürcan Okumuş noted that they sold MK series aircraft bombs to different countries, especially the United Arab Emirates, Brazil, Romania, and Bulgaria.

ROKETSAN's ALKA laser gun shields against drone threats

With the ALKA Directed Energy Weapon System (YESS) developed by ROKETSAN, drone threats will be prevented.

ALKA YESS plays an important role in protecting critical military facilities and government agencies from asymmetric threats that are very difficult to target with conventional small arms, the company explained in a statement. In the statement, which indicated that the types of threats have changed due to the developing technology and this change makes the use of new types of defense systems necessary, it was reported that ALKA YESS can detect and destroy drone threats with a laser gun. In the statement, which indicates that ALKA can track 100 targets at the same time thanks to its drone detection radar, it was stated that the product in question can provide close air defense at a range from 750 meters to 1500 meters. The statement, reported that ALKA, which has the ability to operate day and night, can also play a role in the destruction of bomb traps that can be used in residential areas, handmade explosive (EYP) assemblies placed on the roadside and unexploded ordnance.



Kamikaze drone AZAT ready for duty

FPV kamikaze drone AZAT, which was developed within the Turkish defense industry and has reached the mass production stage, is exhibited by a field test in front of delegations from 4 countries

FPV (First Person View) drones, which have recently been used in different battlefields, allow the pilot to guide the aircraft by watching the image taken from the drone's camera in real time through a virtual reality goggle or monitor. FPV drones allow the pilot to experience flying and operating as if they were inside the drone. In this way, pilots can make precise maneuvers with the drone and easily move through obstacles. Robit Teknoloji, one of the manufacturers of unmanned aerial vehicles, has been working on drones with kamikaze capability for a while. At the end of these studies, AZAT FPV kamikaze drone was ready for mass production. Robit Teknoloji, taking into account the demands, held a technology demonstration with the participation of delegations from 4 countries. The AZZAT, which was controlled by the operator waering goggle, successfully completed its mission by reaching the specified targets and activating the explosives on it.

ASELSAN increases communication security through national solutions

While the pager explosions in Lebanon reveal the importance of communication security, ASELSAN reduces foreign dependency, increases security and provides operational advantage to its users in the field through its domestic and national communication systems.

Türkiye develops various countermeasures to ensure the security of critical infrastructure such as communication, strengthens existing measures and aims to keep communication security at the highest level based on national solutions. ASELSAN, Türkiye's leading technology company, plays an important role in these efforts. ASELSAN plays a critical role in protecting the communication infrastructure of both the country and security forces through the domestic and national communication systems it develops. ASELSAN develops and launches a series of innovative communication systems in order to reduce foreign dependency in communication technologies and increase security. These systems provide secure and uninterrupted communication infrastructure in the provision of various services, especially the operations of security forces. The high-level security measures of these systems also prevent the communication channels from being manipulated.

Türkiye becomes the world's largest supplier of UAVs-UCAVs

According to the report of the US-based organization CNAS, Türkiye has become the world's largest supplier of UAVs-UCAVs due to its successful performance in recent years.

The New American Security Center (CNAS) has released a report on the global market for military UAVs and UCAVs. According to a report by Molly Campbell, Israel and the United States' dominance of the drone market has ended after China, Türkiye and Iran developed low-cost military drones. Since 2018, China, Türkiye and the United States have sold 69 military UCAVs to 40 different countries. While Türkiye realized 65 percent of these sales, China was able to sell 26 percent, and the United States was able to sell only 8 percent. While China's UAV-UCAV sales reached their peak in 2014, Türkiye surpassed China to become the world's largest supplier in 2021.

Bayraktar AKINCI TIHA successfully completed the shooting test with TOLUN IIR

Bayraktar AKINCI TIHA hit the target with full accuracy in the firing test with the indigenously developed infrared seeker guided munition TOLUN IIR

Bayraktar AKINCI successfully completed the firing test with the TOLUN Full Shot Guided Munition, developed indigenously by Aselsan. Bayraktar AKINCI, which took off from the AKINCI Flight Training and Test Center in Tekirdağ's Çorlu district on September 17 with three TOLUN IIR munitions (guided munitions with infrared seeker heads), headed to Karapınar Fire Test and Evaluation Center in Konya, Türkiye to conduct a firing test. Here, the domestic and national ammunition TOLUN, fired by Bayraktar AKINCI from an altitude of 22 thousand feet, hit the target armored personnel carrier (ZPT) from 20 kilometers due to its imaging infrared guidance (IIR). TOLUN IIR, developed by ASELSAN, which is integrated into Bayraktar AKINCI, has a firing range of 80 kilometers. It can provide image transfer to the center with bidirectional data link.

DR. BARIN KAYAOĞLU
Academician

From Zero to One to 42,000: Israel's use of artificial intelligence in the Gaza war

After Hamas' "Aqsa Flood" attack on October 7, 2023, Israel's "Iron Swords" operation against Gaza turned into a genocide. Israel has avenged and is avenging the death of some 1,200 of its citizens (some of whom died at the hands of Israeli forces under the infamous "Hannibal order"), by killing more than 42,000 Palestinians — many of whom were civilians and some of whom were Hamas militants. Albeit short-lived, Lebanon also witnessed Israel's excesses. In this context, we have not heard much about the artificial intelligence programs "Lavender" and "Besorah" (Bible), which Israel utilized when choosing its targets.

When looking at Israel's apparent indifference to the serious margin of error and civilian casualties, especially when using Lavender, it gives us an idea of what artificial intelligence can cause even when it is under human control as a "large language model" and a "self-learning machine" that predicts probabilities. The impact of such systems on future wars will be even more profound and long-lasting than the aftermath of the Gaza massacre and the generational trauma that Palestinians will face. One cannot stop imagining terrible scenarios. What we need to do at this stage is to understand how we got here and to explore the choices of humanity — especially the artificial intelligence-based auxiliary systems and legal norms that exist and need to be developed.

Why artificial intelligence?

The stated purpose of Lavender and Bible is to create "target intelligence packages" within Unit 8200, Israel's signals intelligence agency, which is the counterpart of the National Security Agency in the United States, and the Government Communications Headquarters in the United Kingdom, and deliver them to the respective units.

In fact, the US has been using artificial intelligence in intelligence gathering and evaluation

for decades. It was reported in news outlets that the Americans used artificial intelligence systems against different insurgent groups after the invasion of Iraq in 2003, and similarly in the fight against the Taliban and Al-Qaeda in Afghanistan and Pakistan. Israel had also put such systems in place long before October 7. In an 11-day clash with Hamas in May 2021, the Israeli side made a huge leap in targeting by using artificial intelligence programs, according to a report in the British newspaper The Guardian. Former Israeli Chief of General Staff Aviv Kochavi's statement reveals the leap as follows: "We used to set 50 targets per year in Gaza. Now this machine sets 100 goals per day. 50 percent of them are attacked." In the past, creating "target intelligence packages" for many armies, encompassing an inventory of targets to attack, was a time- and energy-consuming and largely "analog" job. The aim was to conduct intelligence work in advance against the enemy's nodes such as command and control, power generation and transmission lines, transportation and logistics facilities and supply routes, as well as combat and support elements, and to attack these targets at the appropriate time.

Similarly, human and signals intelligence (HUMINT & SIGINT) was used to study who was where and when, and to prepare target packages for the individuals on the opposite side. It would be even more difficult to establish and update such targets in irregular / asymmetrical warfare — there wouldn't be many installations and human targets would be constantly moving. However, with the developing technology (especially electronic devices and aerial imagery), this problem has decreased significantly. The unresolved problem was to reduce the time lapse between the creation of the first core of target packages on the battlefield, which was extremely dynamic, high-paced, and where actors moved very quickly and sometimes needing to get into action within minutes. All this led to the development of Lavender and Bible.

How does Lavender work, what does it do?

After October 7, Lavender and Bible came into play at this point. According to reports by the Israeli-Palestinian news sites +972 and Sikha Mekomit (Local Call) author Yuval Abraham, who conducted the most serious research on the use of artificial intelligence by the Israeli military, large data sets were created based on information gathered from various sources, especially phone calls produced by SIGINT, satellite and drone images, electronic traces and HUMINT. Then, like ChatGPT, which can give one-page summaries to a student who does not want to read a 10,000-word article, Lavender and Bible presented their targets to the human controllers. However, there is a much more comprehensive transformation here than classical methods being replaced by technology. Artificial intelligence, which was used in the past only to target senior executives and critical facilities of Hamas and

the Palestinian Islamic Jihad (PIJ), has been used to destroy the rank and file and all kinds of facilities and buildings after October 7. At the beginning of the war, when senior Hamas and PIJ officials descended into the tunnels under Gaza, only lower cadres remained as targets in Israel's hands. In this context, the limits for "acceptable" civilian casualties were increased, especially to avenge October 7. In the past, the "acceptable number of civilian casualties" for killing a senior Hamas commander was 5, but this number rose to 100 at the beginning of the Gaza operation. For the lower cadres, this number was between 15 and 20. Although it was a political and technical choice rather than Lavender/artificial intelligence, another issue that increased civilian casualties was that the rank and file were attacked not with "smart" ammunition with guidance kits or laser pointers, but with free-fall ammunition, also known as "dumb bombs." The real problem here was that, beyond the nature of the ammunition or the number of dead and wounded, Lavender's objectives were treated like a human decision. What Abraham wrote, based on six Israeli soldiers who took part in the Gaza war and witnessed the use of artificial intelligence, are noteworthy: "The output of the artificial intelligence machine was so effective for the military that it was treated almost like a human decision."

Continuing from Abraham's work:

In the early stages of the war, the military gave extensive approval for officers to accept Lavender's "kill lists." There was no obligation to thoroughly check why the machine was making these choices or to examine the raw intelligence data on which they were based. One source noted that staff often acted only as a "seal of approval" for the machine's decisions, normally allocating about "20 seconds" to each target before authorizing a bombing, only ensuring that the target flagged by Lavender was male. Although

the system does things that are considered "mistakes" in about 10 per cent of cases and occasionally marks people with only a loose connection to militant groups or no connection at all.

A few more critical points emerge from Abraham's report:

As Kochavi emphasized, the Israeli military, which in the past had a shortage of targets, now wanted as many targets as possible, and there was pressure from the combat units and higher echelons on Unit 8200 to keep the pace. For example, the current positions of the phones used by the Hamas senior executives and militants in the past were located. However, there was no verification of whether those devices were still being used by those people. In other words, the Israeli side was creating new targets with old intelligence. Lavender gave 2.3 million residents of Gaza a rating that attributed "importance" from 1 to 100. A high score was indicative of whether the person was a member of Hamas or PIJ and his seniority within the organization. Israel assigned these points in a manner similar to the "signature strikes" that the United States often conducted in Iraq, Afghanistan and Pakistan when it believed they bore the "signature" of terrorists (meeting in large groups, firing in the air, etc.). Such attacks also resulted in a high number of civilian casualties, just as the US attacked events such as weddings, celebrations or mourning in those countries.

False objectivity attributed to machines

The Israeli military's frequent attacks against targeted individuals while they were at home further increased civilian casualties. (It is worth noting that Hamas and PIJ suspects who visit buildings believed to be their homes are tracked by a sub-program called "Where is Daddy?" [Hebrew: "Eyfo Aba?"]). Moreover, the principle of canceling an attack when Hamas elements were near civilians in the past has completely been abandoned after October 7. After all, there is no distinction between "civilian" and "military" targets for Israel, as noted in statements by President Yitzhak Herzog saying that "there is no distinction between civilians and

soldiers in Gaza", Defense Minister Yoav Gallant calling the Palestinians "animals", and Finance Minister Bezazel Smotrich's idea of "condemning Gazans to starvation" since October 7. According to Sebastian Daniel, another Sikha Mekomit writer and computer engineer who specializes in algorithms, artificial intelligence programs make mistakes, but if these mistakes are not found by other machines or humans, they can become a normal element of the process. "The objectivity we attribute to machines is false. They just make automatically the mistakes we make. Plus, mistakes that are very different from those of humans are added on it." In another article on the same website, the reasons for Israeli attacks on journalists, who are considered "suspicious" by artificial intelligence due to their occasional face-to-face interactions with Hamas and PIJ elements, as well as Israeli attacks on aid organization workers, aid distribution points and convoys, are cited as the imprecise data provided by the cameras and electro-optical systems used in automation and drones. According to a report published by Yuval Abraham in Sikha Mekomit in August, the number of intelligence collected by Israel and user soldiers after October 7 increased so much that their own servers were not enough. In response, the Israeli military purchased "cloud" and artificial intelligence services from companies such as Amazon Web Services, Google Cloud and Microsoft Azure, similar to the $1.2 billion "Nimbus" project it had previously signed. Although hundreds of employees at the aforementioned companies have objected, and some have been laid off, the situation has not changed.

When we look at the sum of all these factors, we can see more clearly how this process took place, although it is not possible to conscientiously accept the horrific death of more than 42,000 Gazans. (Let us also underline that some international organizations stated that there may be bodies that could not be found yet or those who died due to hunger and epidemic and may not have been counted. Thus, the number of deaths in the Gaza war, most of them children and women, may be more than 180,000.)

In the process leading up to and after October 7, at the intersection of

October 7 and Lavender, stands Brigadier General Yossi Sariel, commander of Unit 8200. Born in 1978, Sariel joined the Israeli army in 1997, specializing in military intelligence and cyber-environment, and quickly rose through the ranks and was awarded the "Israel Defense Award", one of his country's most prestigious honors, in 2018. In 2021, he was promoted to brigadier general and appointed as the commander of Unit 8200. It was in May 2021 that Sariel became more widely known. In his book The Human-Machine Team: How to Create Synergy Between Human and Artificial Intelligence That Will Revolutionize Our World, published under the pseudonym "Brigadier General YS," Sariel examined how the interaction between human and artificial intelligence can affect military operations — especially in terms of decision-making, efficiency and human-machine interaction — thanks to technological innovations. The main idea was that the machine will not replace humans but these two elements will act together by forming a "team" and the harmony between these teams will determine the results of future wars. Thanks to the personal e-mail address in the electronic tag of the book, an ironic situation emerged where Sariel's identity was revealed. But the real tragedy-irony occurred on October 7, 2023. Unit 8200, under the command of Sariel, fell asleep on watch because of their excessive trust in the machines and programs they created during the process leading up to the October 7 attacks. Many of us have heard October 7 being labelled "Israel's 9/11"; the main similarity between the two events was that SIGINT (and artificial intelligence) took precedence over HUMINT in the 2023 attack, just like the US disaster in 2001. Of course, Sariel was not the only one responsible for this erroneous transformation in the Israeli military. But he was one of its most important practitioners. In February 2024, Sariel's name was the subject of a lengthy article by Maariv and Al-Monitor columnist Ben Caspit, a respected journalist in the country who was still under strict censorship by the Israeli military at the time. Caspit assessed the problem with generating intelligence through artificial intelligence, and Sariel's role on October 7, as follows: 8200's main problem was a process of addiction; dependence on new, modern sources of intelligence. The machine shocked top rankers and decision-makers by giving the unit an unprecedented wealth of information. "When you have a

source like that, you forget classical, traditional intelligence," says one of the Unit's past commanders. "Like Sisyphus, you begin to despise the never-ending task of listening, translating, nuancing, entering the enemy's mind, and smelling him, not just hearing him. You think the enemy can't move without you knowing. You know even the smallest thing he says or even thinks in his bedroom. But then you realize you're wrong." Of course, this illusion had begun long before Sariel. As the dependence on technology increased in Unit 8200, the number of experienced experts, especially on Arabic knowledge and Palestinian and Islamic history and culture, decreased. The importance of dynamics such as context, nuance, and interpretation, which AI cannot understand, diminished. According to Caspit, "In a sense, it was what digital did to analog, video did to cinema, and the internet did to journalism. It didn't start with [Sariel], but it reached the peak point with him." At the root of this spiral of violence that sacrificed the people of Palestine (and Israel, albeit in fewer numbers) on and after October 7 is a story similar to that of "keyboard professors" on social media, who nowadays think they do not need deep philosophical, historical, and technical reading.

Surahs of the Qur'an in Hamas communication

When a female soldier from Unit 8200, whom Caspit referred to as "V" in his profile in Maariv, was working on the so-called "Walls of Jericho" dossier, which began to be created in 2022 and which contained serious indications that Hamas was planning a major attack against Israel, it became clear what the Palestinian orga-

nization's goal was. But two fundamental mistakes were made at this point: the subdivision of world-wide Arabic linguists and Qur'an experts, who would assess the emerging signs of the October 7 attack, had been severely weakened over the years. This point is important because Hamas used the method of confusion by sprinkling its communications with surahs from the Qur'an. This did not alarm the artificial intelligence because it could not understand the difference between the messages referring to the historical Uhud or Badr wars with a more innocent one wishing the recipient "Jummah Mubarak" (Blessed Friday). V nevertheless discovered the coming attack, but in the Israeli military, where the subordinate-superior relationship is not in a strict hierarchy and the lower ranking soldiers are expected to speak more openly with their commanders in accordance with their "duty to warn and object," V could not convey her findings to her commanders in a timely manner, especially Sariel. (Let us recall that this "duty to warn and object" principle was created after the 1973 Arab-Israeli war, another conflict that started in October.) Of course, per the principles of objectivity and fairness, even someone like Sariel should be given credit. According to Caspit's report in Maariv, the Israeli cyber warrior invited to the unit headquarters his predecessors, i.e. previous Unit 8200 commanders on October 8 and asked them to prepare a detailed report on the mistakes made. Sariel took full responsibility for the mistakes made by his unit in the Aqsa Flood, devoted his work to correcting mistakes and deficiencies, did not go home for a long time to hold meetings with soldiers of all backgrounds and ranks. At the beginning of September 2024, Sariel was again in the news: the Israeli brigadier resigned from the commander of Unit 8200 due to his responsibility on October 7, 2023. It must be acknowledged that he has taken a much more principled stance on this issue than Israeli politicians, including Prime Minister Benjamin Netanyahu, who have yet to launch thorough investigations into the October 7 attack, since the 600- to 800-page report Sariel requested from his predecessors on October 8 was largely "shelved" when it was completed in early 2024. Looking at the situation in the occupied Palestinian territories, it is not difficult to predict that Lavender and Bible are still in operation.

So, what happens next and what should happen?

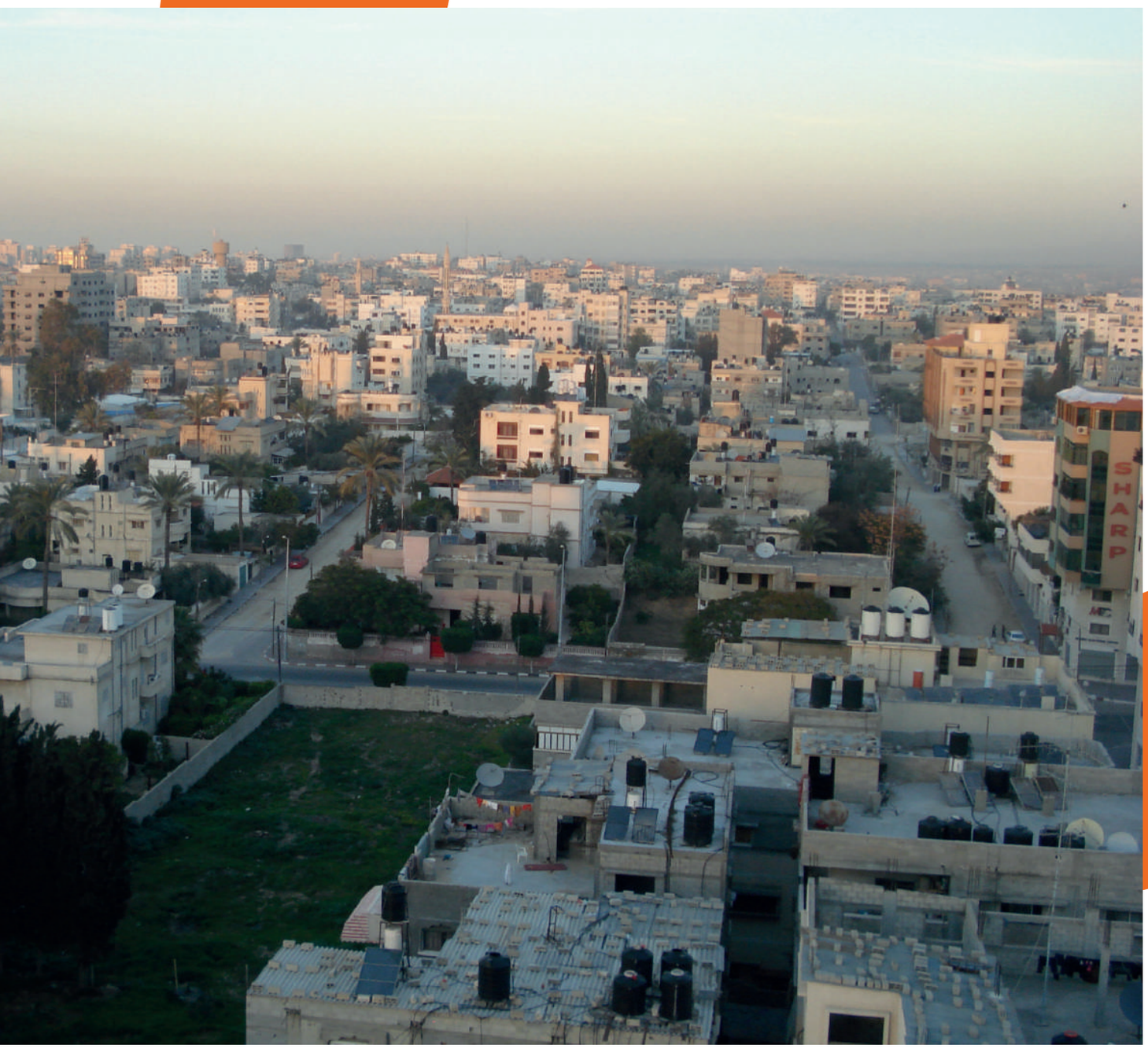
Balancing and controlling artificial intelligence within the framework of the law of war

What happens if AI modules, whose processing capacity is further strengthened by graphics processing unit (GPU) chips, create usable intelligence and target packets even faster, generating far more data than a person or a group of people can process? It is obvious that when decision-makers will not even have those 20 seconds to decide whetherto attack each of the individual targets, as Yuval Abraham's sources state —especially when conducting a "swarm" attack with unmanned systems on the battlefield — the human factor in between will be completely eliminated. Thus, in the future (as now), armies and security forces will have to balance these two dynamics:

- Very fast decision-making and implementation on the battlefield in accordance with military necessities,
- Separate combatants and civilians within the framework of humanitarian principles and minimize civilian casualties and preferably not cause any civilian damage. This ideal, in accordance with the notion of "winning hearts & minds," is also related to practical and logical needs such as "at least not breaking hearts" and not creating collateral damage and new enemies, especially due to the targets hit in the irregular warfare environment.

To establish this balance, which is easier to write than practice, we can put forward a draft solution that combines the motto "old is good" and innovation. The first thing that comes to mind is an artificial intelligence program that will evaluate the target packages of armies using systems such as Lavender and Bible based on the principle of "jus in bello" (right / law / justice in war) in the law of war through a similar algorithm on another server. This should be a module to understand, evaluate, oppose and even reject what

Lavender-Bible and its peers are doing. Of course, such a "veto program" will also require a human element to control what it does, so let's admit that such measures will slow down the de-cision-making and implementation process, and there is no easy answer to the question of how the military and political will to accept and control this measure will emerge. Second, military and political will is needed to establish an international regime. The first thing that comes to mind here is a mechanism similar to the Missile Technology Control Regime (MTCR), to which Türkiye is also a member, but this would have serious practical difficulties. It is possible to track missile components through international logistics lines and intelligence agencies. But it will be much



more difficult to carry out this audit in the field of artificial intelligence with software and hardware that come with “dual-use” civilian technologies. However, since there are few countries in the world that can add artificial intelligence and big data sets to high-paced military operations (not unlike MTCR) and considering that the companies selling such systems are the largest in the world — Amazon, Google and Microsoft — implementing a proposal similar to MTCR may not be as difficult as we think.

Finally, states using AI programs in war will have to ask themselves a very basic philosophical/moral question: Who is responsible for the errors that arise in the use of such programs-especially when they cost human lives? At what level does the moral and legal responsibility of the armed forces, law enforcement agencies and political authorities that intentionally or accidentally attack civilian targets while using artificial intelligence begin and end? As with the veto program and the technology transfer regime, there are no easy answers to this question. In fact, contrary to the first two questions, humanity may never reach a definite solution on this issue. However, it is also possible that countries that use artificial intelligence and autonomous systems on the battlefield without even bothering to ask the question will unwittingly lead humanity to a world similar to the Terminator movies. Although it is an exaggerated idea for today, it is the duty of everyone who spends time on defense and security issues to ask these questions and discuss their answers in an age where the number and quality of quantum computers, biotechnology, unmanned “swarm” systems have improved, where new generation nuclear and ballistic weapons have emerged, and both humans and machine have gained new abilities thanks to the chips placed on the human brain and body. If humanity is to learn a lesson from the October 7 and Gaza disasters, it should be to not make warfare more unpredictable and not normalize civilian deaths. Otherwise, we will continue to discuss the deaths that could rapidly go from 0 to 42,000 or more (just like in Gaza) as binary computers go from 0 to 1.

CAHİT UTKU ARAL

General Manager of SYS Group – CANİK

We met and talked with Cahit Utku Aral, General Manager of SYS Group-CANİK, at the SAHA EXPO Defense & Aviation Fair held between October 22-26.

Innovative solutions and superior technological products in the defense industry continue to increase operational power in the field day by day. Developed in Türkiye, TRAKON 30 attracts attention with its features which it offers in the field of combat. In an interview with SYS General Manager Cahit Utku Aral at SAHA Expo, we talked in detail about the durability, operational versatility and advantages of the TRAKON 30 which they developed for military units. Cahit Utku Aral told that this system not only offers high technology, but also stands out as a cost-effective solution. TRAKON 30 is designed to operate on both land and sea platforms with the integration of the world's lowest recoil and adjustable firing rate 30x113 mm VENOM LR cannon and the CANİK M2 QCB 12.7 mm machine gun. This system, which also offers an advantage in terms of export permits, is expected to provide operational efficiency in Türkiye's friendly and allied countries for many years. This interview with Cahit Utku Aral offered us the opportunity to learn first hand the reflections of technological developments in the defense industry on the field.

Can you tell us about the features of TRAKON 30? What kind of durability does it provide on the battlefield?

TRAKON 30 is a system specially designed for 30x113 mm VENOM LR medium caliber cannon having the world's lowest recoil and adjustable firing rate. It was developed taking into consideration today's combat conditions. It has a structure that

can perform superiorly even in the most challenging environmental conditions. It does not compromise its reliability even in challenging environments such as temperature, high humidity, and desert. This durability provides a significant advantage to our personnel in the field, especially in long-term operations. Thanks to innovative engineering solutions, our soldiers can carry out their duties uninterruptedly under all circumstances. TRAKON is a reflection of our expertise in the fields of mechanics, electronics and software, and the knowledge we have gained through our R&D studies.

What can you say about the operational versatility of the TRAKON 30?

TRAKON 30's electro-optical and thermal systems offer superior performance in the field, day or night. These unique equipment of TRAKON 30 are especially valuable in reconnaissance and surveillance operations. Our high-precision systems provide a great operational advantage to our troops in the field by facilitating target detection and tracking. TRAKON 30 significantly increases operational efficiency thanks to its structure that can adapt to different combat conditions. This is one of the most remarkable features of the innovative solutions provided by our technology.

What are the other advantages of TRAKON 30 for soldiers in the field?

TRAKON 30 is a system developed to increase the operational efficiency of soldiers in the field. It minimizes time and energy loss thanks to high-precision target detection and targeting processes. This feature makes it possible to decide faster and more effectively in the field. Furthermore, our integrated technological infrastructure contributes to the safer and faster execution of tasks by reducing the workload of operators. The TRAKON product family offers a solution that will be effective in the field thanks to its high technology and does so in a cost-effective way. The CANİK M2 QCB 12.7 mm heavy machine gun and 30x113 mm cannon which we have integrated into our towers are weapons that will not face any problems in terms of export permits. We anticipate that our TRAKON towers will serve successfully on land and sea platforms for many years, both in Türkiye and in friendly and allied countries. We appreciate the interest in TRAKON 30, in which we realize our security strategies more effectively.

Assoc. Prof. Dr. İHSAN BAŞTÜRK

President of the Penal Chamber of the Supreme Court of Appeals

We talked with Assoc. Prof. Dr. İhsan Baştürk, who started his professional life as a candidate for judge in Gaziantep, served as Selim, Çamlıyayla, Iskenderun, Şişli Public Prosecutor and Public Prosecutor of the Supreme Court of Appeals, and who later became the President of the Criminal Chamber of the Supreme Court of Appeals, about his interest in aviation.

Can you tell us about your passion for aviation, which started with model aircraft and parachutes during your high school years? Can you tell us how this passion shaped your career path and influenced you to pursue law?

As you said, aviation is a passion for me, and since my early childhood years, aviation has become an even greater passion for me day by day during my middle school years. First of all, thanks to the Turkish Aeronautical Association, my interest in aviation started with the model aircraft course. Then I enrolled on a parachute course in Eskişehir İnönü. These experiences intensified my love for aviation. However, during the high school years and the university exam period, due to the exam system in force at the time, I opted for law school and had to postpone my aviation dream for a while.

Can you elaborate on your transition from your dreams of becoming a pilot to becoming a jurist?

As I said, I had dreams of becoming a pilot, but due to the exam system, I became a lawyer by concentrating on exams in the senior year of high school. When I started to study for my law degree, I wanted to carry on my parachute training. However, as a result of a friend's injury, I decided to opt for another field instead of parachuting. In this process, I realized the importance of working meticulously and this meticulousness has been influential in my professional life.

What is your motivation in contributing to the establishment of the Defense Aviation and Aerospace Association (DASA)? How would you describe the mission of this institute and what strategies do you implement to accomplish this mission?

We established DASA in order to ensure Türkiye's national security in the fields of aviation, defense and aerospace and to promote these fields to young people. DASA operates as a three-component structure: military personnel, technology and law. Our aim is to raise awareness in these areas and to encourage young people. To accomplish this mission, we conduct symposiums, trainings and awareness-raising activities. We believe that with trainings in these fields, we can lead our young people to aviation and aerospace fields and further consolidate our strength in these fields.

Can you give detailed information about the "Defense and Space Symposium in terms of its Technical and Legal Aspects" organized in cooperation with the Ankara Bar Association? How do you think the technical and legal perspectives discussed in this symposium have improved the defense and aviation sectors?

Of course, we think that such symposiums are of great importance in terms of informing people. In this sense, at the symposium that we organized in June 2023 in cooperation with the Ankara Bar Association, we discussed issues such as intellectual property rights in the defense industry, Türkiye's aerospace activities and the competencies needed by defense employees. The symposium contributed to the evaluation of these areas both legally and technically and to the understanding of their importance from national security perspective. Together with the stakeholders of the sector, we reached important consensus on the issue.

What are the discussions and results obtained in the symposium on "Intellectual Property Rights and Protection in the Defense Industry"? What are the key trends and challenges highlighted at the symposium on the future of Türkiye's aerospace activities?

The symposium emphasized the importance of protecting defense industry and aerospace activities in terms of intellectual property rights. It has come to the fore that young people should participate more in Türkiye's aerospace activities and R&D activities should be increased in this field. As you know, young people are our future and we believe that it is important to prevent the problem of qualified personnel in this field by orienting our young people to the defense industry sector, in which Türkiye is gaining strength day by day. Challenges included protection of intellectual property rights and cybersecurity.

How do you evaluate the role of intellectual property rights in Türkiye's defense industry? What are the main legal challenges faced by companies in the defense sector regarding intellectual property?

Intellectual property rights are vital for the protection of investments and R&D studies in the defense industry. The main challenges faced by companies include the length of registration processes and the protection of these rights internationally. We think that the knowledge should increase in these areas, and we try to draw attention to the importance of this issue through the symposiums we organize.

How do technological developments and digital transformation affect the responsibilities and capabilities of defense industry employees?

Intellectual property rights in the Defense Industry

- **Copyright:** Sounds, computer programs
- **Trademark:** Aselsan, Kaan, etc.
- **Patent:** Defense, targeting, detection and other systems.
- **Utility Model:** Cameras, etc.
- **Industrial Design:** External and internal appearance
- **Integrated Circuit Topographies:** Connection patterns on integrated circuits
- **Business Name**
- **Commercial Title**
- **Know-how**
- **Internet Domain Name:** www.aselsan.com.tr
- **Unfair Competition**
- **Trade Secrets**

Technological developments and digital transformation directly affect the defense industry as in every sector. The importance of cyber security and digital competencies in the context of national defense is indisputable. Technological developments require defense industry employees to constantly update themselves and gain new competencies. Cybersecurity and digital competencies are critical to national defense. Information security and protection of personal data are considered part of national security. Therefore, we need to follow the latest developments in technology and apply it to the system. At the same time, we know that it is our duty to convey these technological developments to employees. All these are issues that increase our power.

How do you plan to promote DASA's collaboration among jurists, technologists and industry professionals? What are your future goals for DASA and you, personally, for defense and aerospace fields?

As DASA, we plan to promote cooperation between experts in the fields of law, technology and defense through symposiums, trainings and projects. In the future, we aim to attract more young professionals to these areas and to carry out important projects in terms of national security.

As an influential figure in both the fields of law and aerospace, what advice would you give to young professionals who want to be influential in these fields? Can you share a favorite inspirational quote or motto that has guided you throughout your career?

My advice to young professionals is to believe in themselves and be open to continuous learning. My favorite inspirational quote that has guided me throughout my career has been Atatürk's addressing to the youth: "The strength you shall need exists in the noble blood flowing through your veins.

Can you give more information about the works and projects you carry out in the field of defense industry and aviation? How do you contribute to the defense industry through the events and symposiums organized by DASA?

As DASA, we organize various events and symposiums to increase the interest of young people in aviation and aerospace. Through these events, we raise awareness about the sector and encourage young people to pursue careers in these fields.

What are your activities in this field as a member of the Executive Board of the Academy of Intellectual Property Rights?

As a Member of the Executive Board of the Academy of Intellectual Property Rights, we work to raise awareness among researchers, investors and producers and to ensure that rights in this field are protected.

What are your future projects and goals in the defense and aerospace industry? How do you see Türkiye's future in defense industry and aerospace activities?

In the future, we aim to invest more in R&D activities in the defense industry and aerospace sectors and focus on projects that will increase national security. Because in line with these goals, we aim to place Türkiye in a world-class position in the defense industry and aerospace activities.

What are the important developments and innovations in the defense industry this year? What position do you think Türkiye has in the international arena in defense industry and aerospace activities?

This year, there have been sig-

nificant developments in the defense industry and aerospace activities. Particularly important steps have been taken, such as the flight of Alper Gezer Avcı into space. I think that Türkiye has an important position in the international arena in defense industry and aerospace activities.

Now, let's talk about your special interests. We know that you admire Aşık Veysel. Why do you love Aşık Veysel so much?

My admiration for Aşık Veysel is really on a different level. The depth of his art and lyrics is truly impressive. Aşık Veysel, despite being a primary school graduate, is a folk poet who created works with great wisdom and emotional depth. In his folk songs and poems, we can find universal themes such as the meaning of life, love of nature, human relations and love of country. Aşık Veysel is one of the most important names in folk literature. His works have, not only in a musical sense, deep philosophical and emotional meanings. Aşık Veysel, who wrote on universal themes such as the meaning of life, love of nature, human relations and love for one's homeland, has enshrined himself in people's hearts with his music and lyrics. The song "Sarı Saçlım Mavi Gözlüm", which describes Atatürk, is a piece of art sung with great longing and love and expresses the loyalty and respect of the people to Atatürk. The vocalization of this song by artists such as Selçuk Balcı and Niyazi Koyuncu conveys the feeling and message of this work to a wider audience. The emotional depth and message of the folk song touches the heart of every person who listens to it. It is really nice to see that values such as Aşık Veysel and Atatürk have an important place in the hearts and memories of the people. Sustaining these values through art and transferring them to future generations is of great importance for the continuity of our cultural heritage. Art is an important tool in keeping such values alive and transferring them to future generations. Therefore, we should do our best to keep these values alive through art and pass them on to future generations.

ÖZLEM UZUNKAYA

Chairman of Başarı Global Yönetim (Başarı Global Management)

Özlem Uzunkaya, Chairman of Başarı Global Yönetim explained to A5 Defense Industry magazine the importance of innovation and a strong vision in the defense industry and their new investments in Türkiye.

What is your position in the sector as Başar Global Savunma Sanayi Teknolojileri A.Ş.? Can you tell us about the establishment process of your company?

Başar Global Savunma Sanayi Teknolojileri A.Ş. has a leading position in the sector by providing high quality and reliable solutions in the defense industry. Our company was first established in the People's Republic of China under the name of Global Success (Shanghai) Ltd. and started to operate in the field of defense industry. In 2015, a new structure was established as Başar Global Savunma Sanayi Teknolojileri A.Ş. in order to expand our activities in Türkiye and to contribute to our defense industry.

Currently, we operate in our factory, which has two production areas of 35 thousand square meters in China, having 4000 employees and 26 production lines. Our production facilities are equipped with high-tech machines that meet international military standards, so that our products meet international quality standards. We plan to open four new production lines in line with the increasing demand.

With our expansion process in Türkiye, we continue to represent our defense industry in the best way as a reliable business partner in both the local and global market based on our vision of adapting to developing technology and producing innovative solutions.

How is your approach to defense industry fairs organized in Türkiye? What is the importance of SAHA Expo to you?

Defense industry fairs organized in Türkiye are of great importance for our company. This year, we are participating in the SAHA Expo for the first time and this fair has a special importance for us. Our company currently owns 160 patents and we

will bring 120 of these patents to Türkiye through technology transfer and register them in Türkiye. Particularly, our gun-top sight systems made of titanium, which we have developed using the high technology and which can also work with solar energy, are noteworthy. Another remarkable product we produce with high technology is the combat optical gunsight. Thanks to this gunsight, the user can switch from daytime vision mode to thermal mode tnaks to a single button and instantly see all the elements in the dark environment. While this feature plays a critical role in the user's life safety, it also saves time during operation. In addition, thanks to this system, the need for equipment replacement is eliminated. The lightweight, durable and high impact protection structure of the product also increases its usability in the field. SAHA Expo offers us an important platform to promote these achievements and our innovative solutions.

We also held a signing ceremony to realize the R&D studies and production line of our weapon-mounted gunsights in Türkiye through technology transfer within the scope of SAHA Expo 2024. This project has been a dream of mine for many years. I have been living in China for 17 years and I aim to realize the same investment in Türkiye by the factory we established there. This investment will be one of the important steps we have taken towards technological independence in Türkiye's defense industry.

Thanks to this cooperation, we aim to increase Türkiye's domestic production capacity in the defense industry and to achieve a stronger position in the international market. We consider participating in SAHA Expo as an important step towards realizing these goals and we plan to carry Türkiye's position in the defense industry further with similar projects in the future.

Can you tell us about your new investments in Türkiye?

We will start our investments in Türkiye by establishing an R&D center in the first place. After completing the production and testing processes, we will obtain patents for the developed products. The data obtained at this stage will be of great importance for both product development and the progress of our R&D activities.

We also plan to establish a factory in Türkiye within two years. This factory will have a wider production capacity and will play an important role in Türkiye's defense industry based on its technological infrastructure. Through the production to be carried out here, we aim to both support domestic production and contribute to technological independence.

How has your investment process in China evolved?

Our investments in China have been shaped by a three-year feasibility study. As a first step, we focused on our R&D studies. During this process, I directly participated in the production process by working as a factory worker for a year in order to get a better understanding of the factory floor. There are many different technologies and production methods in areas such as gunsight systems. For this reason, I determined, by experiencing the operation in person, in which field I should invest. When I bought the share of the factory, the number of employees was 1200, and 600 of these employees were senior engineers. Initially, when we had a more limited production capacity in the military field, I decided to direct the potential of the factory to the defense industry. In this direction, we received our first large order from the Chinese army and started to produce gun reflexes for the Chinese army and the law enforcement organization. In order to sell these products to

Türkiye and NATO countries, we continued our investments by benefiting from the incentives offered by the Chinese government. We have adapted the allocated factory to NATO standards; we have obtained NATO security documents by bringing international consultants and established test centers in accordance with NATO standards. As a result of these efforts, our first international customers were the American and Canadian armies. We brought our products to Türkiye in 2018 by including the Turkish army in this adventure, which we started in 2015. This cooperation contributed to the establishment of a strong technology bridge between Türkiye and China while improving our production processes. Our investment process in China has progressed in this way, focusing on cooperation and technology development, and has offered a great opportunity for learning and development at every stage.

How do you evaluate your company's goal of being domestic and national?

Our company continues its journey by combining the goal of being domestic and national with the mission of achieving superior success. Domestic and national production is of strategic importance not only in terms of economic independence, but also in terms of the security of the country and its ability to look to the future with confidence. No matter how much success is achieved in other areas, countries that are independent in the defense industry can look to the future with more confidence. Türkiye has become one of the successful examples in this field by developing its technologies with the great breakthroughs it has performed in the defense industry in recent years.

As Başarı Global Savunma Sanayi Teknolojileri Inc.we continue to contribute to the defense industry in line with this goal. We aim to increase the domestic and national production capacity of our country with the solutions we have developed by using current production technologies. We aim to increase our competitiveness in both domestic and international markets, and to further promote our national technologies in the defense industry.

As a company, we aim to offer innovative solutions by continuously increasing our R&D investments and to represent our country on a global scale in this field. Our goal of domestic and national production not only strengthens Türkiye's independence, but also contributes to its having a say in world markets. In this direction, we aim to create a domestic and national structure that is developed by Türkiye through its own resources and has the power to compete worldwide in every project, every product and every technology.

How do you define the relationship you build with your customers and the contribution you provide to them?

As Başar Global Savunma Sanayi Teknolojileri A.Ş., we consider contributing to the goal of full independence in our country's defense industry as one of our most important tasks. We are proud to be a reliable solution partner in the sector through the high-quality and innovative products we have developed in this direction. The trust and support of our customers is our most valuable source of power on this path.

We aim not only to provide quality products to our customers, but also to produce solutions that will make long-term contributions to the development of the defense industry. We aim to meet their expectations at the highest level with our products that have high safety standards, are durable and equipped with advanced technology. While continuing our work without compromising the principles of innovation and reliability, we continuously improve our solutions by adapting to the developments in the sector. We sincerely thank all our customers who continue to contribute to the defense industry with reliable and innovative solutions. With your support, we will continue to work with all our strength to bring our country to a stronger and independent position in the defense industry.

MEHMET AKIF KURT
Chairman of Anadolu Robotik

Mehmet Akif Kurt, Chairman of Anadolu Robotik, states that the Asian and African markets are among the target regions. He states that they aim to offer effective solutions against security and asymmetric threats in these markets.

What are the fields of activity of Anadolu Robotik?
As Anadolu Robotik, we carry out robotic activities in underwater and surface technologies with our expert engineer staff. We produce Unmanned Underwater Vehicle (ARGON), Unmanned Duty Boat (ARIDA) and the control equipment of these vehicles.

Can you tell us about your unmanned vehicle projects?
We have developed projects such as the Unmanned Underwater Vehicle (JESUS) and the Unmanned Duty and Patrol Boat (IGDET). We have put both of these vehicles into use. By developing a multidisciplinary engineering infrastructure in our projects, we have specialized in areas such as finite element methods, manufacturing and design, robotic software, communication systems and electronic card design.

Can you provide us details about your technical infrastructure and the services you provide in these projects?
Our company provides services to related companies in finite element analysis, manufacturing and design processes, robotic software development, communication systems and electronic card design. We aim to carry out more complex projects by strengthening our engineering infrastructure day by day.

What are your primary goals when developing your system?
Our primary goal, together with our stakeholders in the system, is to eliminate asymmetric audits. We aim to carry out low-cost and high-efficiency studies as much as possible. Particularly, we work to prevent asymmetric threats. Protecting LHD and LSR-style ships with large and bulky structures, as well as ensuring the security of ports and similar facilities are among our important goals.

Can you give us details about the operational capabilities of your turret system?
Thanks to our turret system, we ensure that threats within a diameter of 15 kilometers are detected and distinguished. We can classify threats within 6 kilometers. Our high-performance turret system is sufficient to provide the necessary security, even if it is over 10,000 meters.

How does the feedback you receive from your customers contribute to your company?
The feedback from our customers offers us a great opportunity to continuously improve our products. Thanks to this feedback, we aim to further improve our products and become one of the leading companies in the sector.

What are Anadolu Robotik's long-term goals?
By following a sustainable development process, we aim to be both a leader in existing sectors and to have a presence in new ones. Our goal is to become a leading company in the sector through the tools we produce.

Which regions are the target market of Anadolu Robotik?
Asian and African markets are among our target regions. In these markets, we aim to provide effective solutions, especially against security and asymmetric threats.

AHMED MUSAB YILDIZ

CEO of Anadolu Robotik

We talked about Anadolu Robotik with Ahmed Musab Yıldız, the CEO of Anadolu Robotik, which produces industrial ROVs to be used in many areas ranging from underwater observation activities to search and rescue activities.

Mr. Ahmed, which areas do you work in as Anadolu Robotik?

As Anadolu Robotik, we are especially working on unmanned underwater vehicles and unmanned surface vehicles. We have been working in this field since 2018 and now we are here with our vehicle, which we first introduced at SAHA Expo.

Can you give us details about this vehicle that you introduced for the very first time?

Our vehicle, which we introduce and call “Arıda M”, is an unmanned maritime vehicle developed against new generation threats. This vehicle was designed as a defense system against asymmetric elements. One of the most remarkable features of the Arıda M is that it is equipped with an advanced surveillance and detection system. Equipped with electro-optical sensors, radar and sonar systems, this vehicle has the ability to quickly detect and prevent enemy elements.

Can you tell us about the solutions offered by Arıda M?

Our vehicle consists of two main elements: Preventive system and detection system. Our detection systems are installed on motherships and, like ship-borne radar systems, they can be used continuously and are indestructible. Thanks to the detection system, ships can constantly track asymmetric elements. But our preventive systems can be thought of as ammunition - they act as ammunition, not boats on water.

We try to keep the cost of these munitions much lower than a smart cruise missile or conventional guidance kits in particular. In this way, as continuously usable products, they do not create an additional cost burden for our armies.

Have you cooperated with another company during the development process of Arıda M?
We have developed Arıda M product in partnership with the company titled Sekiz.Altmış. Sekiz.Altmış is a highly qualified company especially in the field of communication and explosives. They are highly experienced in communications products and explosive drones used in the field in Ukraine. In this sense, we carried out the explosive and communication systems of our product together with Sekiz.Altmış. I can say that we have a good partnership in this field.

Although the Arıda M is a defensive system, do you also work on attack elements?
Our navy and our ability to withstand attacks are very important to us. However, it is also strategically important to develop our own asymmetric attack elements. While we are developing a defensive element such as Arıda M, we are also working to provide our navy with offensive elements that can create a symmetrical threat. We also have some research and development activities on product lines that cannot be completely detected by electro-optical or sonar systems. We aim to strengthen our navy through such elements.

Can you tell us a little more about the general characteristics of Arıda M?
The Arıda M is equipped with a high-speed precision guidance and tracking system. Thanks to its autonomous mobility, it can serve as a single or as a swarm. While carrying out a silent attack due to its low radar and infrared cross-sectional area, it offers rapid intervention thanks to its high speed and maneuverability above 50 knots. Since it is equipped with an explosive warhead, it has the capacity to completely and precisely

destroy its target. It can be deployed from ports or ships to the duty area and conducted by a mobile portable ground control station.

What does Arıda M offer in terms of technical features?
Technically, Arıda M has a length of 4.5 meters, a width of 1.3 meters, and a displacement of 1 ton. The highest speed can exceed 50 knots and the operationtime is over 70 hours. We use a diesel engine and a water jet as the propulsion system. It also has a payload capacity of 50 kg and has the endurance to operate in conditions up to sea state 4.

How is the market interest in Arıda M?
There is a huge demand in the east and west at the moment. Especially in the east, there is a great need for merchant ships that want to be protected against pirate attacks. Precious cargo ships, NMG tankers (ships carrying natural gas, oil) and especially civilian ships carrying minerals want to be protected against such threats. There is a great demand for these products in regions where piracy attacks are frequent, such as Nigeria. Countries that have just developed their navies, such as Malaysia, are also opting for such products to be protected against pirate attacks or small attack boats.

ONUR YILDIRIM

Unmanned Systems Manager of ARES Shipyard

First export of ULAQ, Türkiye's first unmanned surface vehicle, to Qatar

Mr. Onur, when and how did you start working on unmanned surface vehicles as ARES Shipyard?

As ARES Shipyard, we have been working on unmanned surface vehicles since 2018. Our platforms include various unmanned marine vehicles ranging from 4 meters to 50 meters. Our goal is to provide solutions to various operational requirements.

How have the recent developments affected your activities?

Developments in the world and some incidents we observed in the Ukraine-Russia war caused changes in our production planning. In this context, we decided to bring forward our kamikaze version unmanned surface vehicle studies. The offensive and defensive tactics used during the war clearly proved the necessity of different platforms. We see that the products used in the battlefield have diversified with the developing technology. Formerly, military forces were opting for large platforms that could multitask and carry large payloads. But that changed in the Ukraine-Russia war. In the Russian war, we saw that these large platforms could be taken out of the game with small and cost-effective solutions such as kamikaze.

Which unmanned vessels have you developed as ARES Shipyard?

As ARES Shipyard and Meteksan Defense, we have already completed the sea tests of 3 different platforms. Immediately after our ULAQ 11 PSV Reconnaissance Surveillance and Intelligence boat, which we produced as a prototype, we pro-

duced our ULAQ 12 AsuW/ ASW boat to be offered to the service of our Naval Forces Command. Most recently, we produced our kamikaze boat. The fact that our kamikaze boats are produced cost-effectively and can be used in different geographies allows large platforms to be neutralized with more cost-effective methods in the field of warfare. This kind of development has spurred our search for smaller but effective solutions in modern war scenarios.

Can you tell us more about the kamikaze unmanned surface vehicle? What are the advantages of this platform in terms of design and specifications?

ULAQ KAMA, our kamikaze boat, has a hull that we developed entirely in accordance with this concept. The hull has a smaller structure compared to manned or other unmanned vehicles. A platform with reduced width, shortened length and lower height above the water level. Technically speaking, our boat is 1.25 meters wide and 6.37 meters long. One of its most important features is that it can reach a speed of 50 knots. Since its height above the waterline is about 0.7 meters, its high speed and low silhouette make it very difficult to be detected by sensors when it engages the target at this speed.

The technical specifications are as follows:

Material: Composite
Dimensions: 6.37 m x 1.25 m
Draft: 0.30 m
Speed: 50+ knots
Range: 200+ Nautical Miles
Main Drive System: High Performance Inboard Machine & Water Jet
Load Carrying Capacity: 200 kg

Navigation Systems: AI-GNSS System Differential GNSS Receiver Day Navigation Camera Thermal Navigation Camera (Optional)
Stabilized Pan-Tilt Camera
Satellite Communication
Navigation Modes: Remote Command Semi-Autonomous Fully Autonomous (Visual Navigation)

Do you provide special protection against the threats this platform may face in the field?

We are taking some precautions in the field. In the Ukraine-Russia war, we observed that similar platforms exploded when hit by 12.7 or 7.62 mm stabilized turrets from the mother ship. Against this situation, we use a special ammunition that we have developed with MKE. This ammunition prevents uncontrolled detonation in cases when any cannon or shrapnel hits the ammunition. The ULAQ KAMA is capable of carrying 200 kilos of explosives and offers a low-cost solution. In addition to ammunition, the boat's stabilization and high-speed maneuverability also make it effective on the battlefield.

What other features of the boat make it different?

In the ULAQ KAMA Expendable Unmanned Surface Vessel, we use a water jet system, a special propulsion system, to overcome the obstacles on the sea surface. In this way, it can pass over the obstacles on the surface without getting stuck and reach a speed of 50 knots. In addition, we have integrated a domestic stabilizer under the antenna in order to ensure uninterrupted satellite connection. This stabilization system ensures uninterrupted communication between the ULAQ KAMA and the user by keeping the satellite antenna stable regardless of the movement of the platform on the water.

Can you provide information about the domestic production rate?

Expendable Unmanned Surface Vessel ULAQ Kama is fully engineered and designed by Turkish engineers. The hull is produced with domestic facilities and the camera systems on it are supplied by domestic suppliers. Most importantly, the ammunition used has a structure developed specifically for this product by MKE. When we look at the domestic production rate, I can say that all other systems except the propulsion and satellite system are domestic and national.

Can we say that kamikaze boats have also attracted attention in foreign markets?

As the ULAQ family, we carry out business development activities with friendly and allied countries at home and abroad. The fact that unmanned surface vehicles and technology are new and the military forces are investing in this issue by gaining new awareness motivates us. ULAQ KAMA offers a more economical solution compared to other unmanned surface vehicles with its low cost and expendable structure, and the kamikaze version is a very effective alternative for forces that meet unmanned surface vehicles at the initial stage.


5 6 7
ARES
SHIPYARD
ARES
SHIPYARD
ARES 85 BOLD
ARES 51 OPV
ULAQ KAMA
ULAQ KAMA
Expendable Unmanned Surface Vessel

DR. MÜNİR CANSIN ÖZDEN

Chairman of DATUM Denizaltı Teknolojileri Uygulama ve Muhendislik A.S.

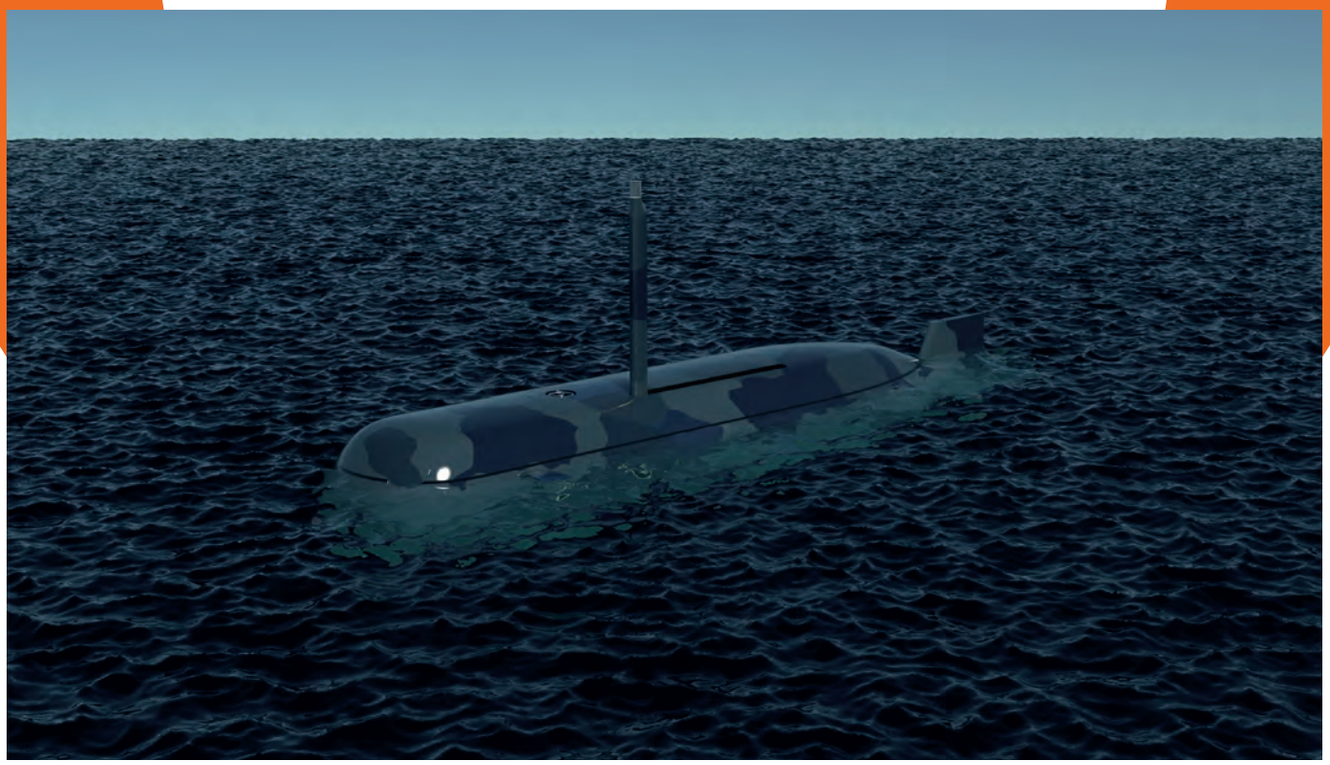
From the academy to the industry: The unique advantage of Datum in designing and developing submarines

DADatum was found in 2013 in order to design manned and unmanned mini submarines both for military and commercial use. In 2018, Istanbul Technical University became a shareholder to strengthen the company both strategically and financially.

Datum has an interdisciplinary engineering team of 16 engineers, consisting naval architects, mechanical engineers, electric-electronic engineers and industrial engineers, almost all of them are either PhD or Msc level. Datum's (corporate) office and manufacturing facilities are located in the European side of Istanbul at the Istanbul Technical University Campus.

Datum is already eleven years old and a well-known company amongst Turkish Naval Industry. Although the main focus of Datum is mini submarine design and development, company took part in three projects with Presidency of Defence since 2014. Datum designed and built hydrodynamic testing systems in order to improve manoeuvrability and acoustic properties of new vessels built for Turkish and Pakistani navies including MILGEM and I ClassFrigate. Also Datum designed the test system for the hydrodynamic improvement of Akya Torpedo of Roketsan and MILDEN Project of Turkish Navy.

Datum has an engineering project with Presidency of Defence Industries namely "Multipurpose Mini Submarine Development Project-as known with



its Turkish synonym: ÇAMD – ÇokAmaçlı Mini Denizaltı"
ÇAMD is a 12m mini submarine for two operators and two passengers. It can be carried by a cargo aircraft and standard truck thanks to its dimensions which are selected to fit in a standard shipping container.
Many firsts have already been achieved with the project. ÇAMD had became the first indigenous submarine project whose concept, critical and detail design was examined and accepted by Presidency of Defence.
ÇAMD is also the first submarine project whose plan approval and systems certification phases completed by Turkish Lloyd. She is most likely be the first submarine project which will complete classification by Turkish Lloyd.
Datum also has a contract with Turkish Lloyd for improving the submarine rules.
ÇAMD will be integrated with Aselsan's sonar systems, Havelsan's combat management systems and it will be able to deliver two lightweight torpedoes. Because it is a full electric and composite covered submarine, it is very silent and can sneak into enemy naval bases and get close to military activities without being detected.
With its academical background, Datum has comprehensive knowledge of the theory of naval vessels but its experience in the industry gives Datum a unique perspective.Datum knows the theory and how to apply it to solve problems of the customers.Datum being a highly motivated small company, it gives company the flexibility and unmatched speed in order to adapt to customer requirements.Datum is responsible solely to Presidency of Defence of Turkey and has no licence obligations for its designs to any other third parties.
Also Datum can contribute to any kind of submarine project from small unmanned vessels to large military submarines as a designer, builder or advisor.
Datum's ÇAMDMulti Purpose Mini Submarine, which is under construction now and planning to be ready for harbour tests in the first quarter of 2025. ÇAMD is a base model of a vast variety of manned and unmanned mini submarines including special operation combat swimmer delivery vehicles, unmanned submarines, submarine rescue vehicles and tourist submarines.

DATUM MULTI PURPOSE MINI SUBMARINE

The project to develop a multipurpose mini submarine (or ÇokAmaçlı Mini Denizalti – ÇAMD) is being carried out by Sefine Shipyard and Datum Submarine Engineering Inc, a subsidiary of Istanbul Technical University. Within the scope of the project, the design, construction, equipping and testing of a multi-purpose mini submarine that can dive to a depth of 300 meters, has a crew of four and can be easily transported by land thanks to its length of 12 meters will be carried out.
With ÇAMD, Turkiye will contribute to some extent to the accumulation of knowledge and development for all submarine design/production/integration processes. In this context, the ÇAMD development R&D Project to be delivered has three main objectives;
Enabling the theoretical studies of commercial/military submarine design and verification/improvement activities to be applied on a vehicle that can be manufactured and tested in a short time
Providing Türk Loydu with experience in submarine plan approval, material certification and classification activities for national military submarine projects,
Bringing the systems developed by Turkish defence industry companies for submarines into inventory as a platform that can be integrated for testing purposes or as a test aid in its entirety.
The detailed design phase of ÇAMD, which has already gone through the requirements, preliminary design and critical design activities, was completed in October 2023. This is the first time Turk Loydu has carried out plan approval for an indigenous submarine design.

The configuration of ÇAMD includes a seven-blade submarine propeller and hydraulically controlled steering gear arranged in a plus shape. The submarine is equipped with main diving, trim and tuning cistern systems and associated pumps and compressed air circuits. There is a specially designed electrical and control system and type approved control systems connected to this system, as well as pressure, various gas, level and fire systems, especially sensor groups. The navigation of the mini-submarine, which has forward-looking sonar, altimeter and radar systems, is ensured by a special inertial navigation system with integrated GPS on the surface and Dopler speedometer underwater. ÇAMD has two collapsible masts with antennas for various communication and navigation systems and an electro-optical camera with a 360-degree view. There are emergency rescue systems, a life buoy and an anchor winch.

Within the scope of the project, a water-cooled electric motor, which will also be used in manned/unmanned submarine studies to be developed indigenously in Turkey, was developed indigenously and nationally by Femsan DC motor factory and certified by Türk Loydu. Preliminary studies have been carried out for the integration of submarine sonars developed by Aselsan, light torpedoes developed by Roketsan and hydrogen fuel cell developed by Aspilsan into the Multi-Purpose Mini Submarine.

Before the fabrication of the 2 m diameter and 8 m long pressure hull of the Mini Submarine, a 2 m long and 1.5 m diameter strong hull test piece was fabricated under the control of Türk Loydu surveyors, where the production methods on the ÇAMD were tested. The test piece, which was completed in July 2023, was lowered to a depth of 400 m off the Island of Democracy and Freedom and completed the test. During the test, flanges, fairings, portholes, cable connectors and various sensors of the mini submarine were also tested.

As a result of the successful performance of the strength hull test piece test, the production of the strength hull of the ÇAMD has started and the production of the strength hull has been completed in October 2023. On the other hand, the tank systems and compressed air systems of the ÇAMD are being manufactured. The Harbour Acceptance Tests (HAT) is projected to start in the end of 2024.

TRANÇA MULTI PURPOSE MINI ATTACK SUBMARINE

Trança is a 20m, approximately 80-ton vehicle with a 2000-mile snorkelling and 400-mile underwater range. It uses almost every mature technology developed in Turkey regarding submarines. It will be able to have PRS, FAS, CHA, IDRA and BTA sonars produced by our local defence industry companies. With these, it will be able to detect targets thanks to domestic Combat Management Systems. It will be able to launch Roketsan's2 AKYA Torpedoes or Sub-ATMACA with the Tubitak'sMuren combat management system. It is able to deliver 10 Malamanmines which is developed by MKE-Koç-SAGE. Thanks to the diver lockout chamber inside, it can dry transport 6 combat swimmers and carry up to four wet type swimmer delivery vehicles. Native electric motors and diesel generators for submarines will be tested primarily on Trança and later utilise for larger submarine projects. Thanks to its X rudder, it is planned to be able to perform Seabed operations up to 250m.

Thanks to the fact its small dimensions, it will be possible for the Turkish Naval Forces to have submarines ready to be transported by low-bed trailers,launch into the water by crane at any time in hangars on land, without constantly hiring submariner personnel in bases such as TRNC, Somalia, Libya or Albania.

Thanks to being as effective as large submarines, but much more economical and highly mobile, Trançascan be quickly transported by land to points that need to be reached urgently. Trançacan be delivered inside TCG Anadolu. The export potential is also very high for countries that cannot establish submarine fleets.

DATUM DRY COMBAT SUBMARINE

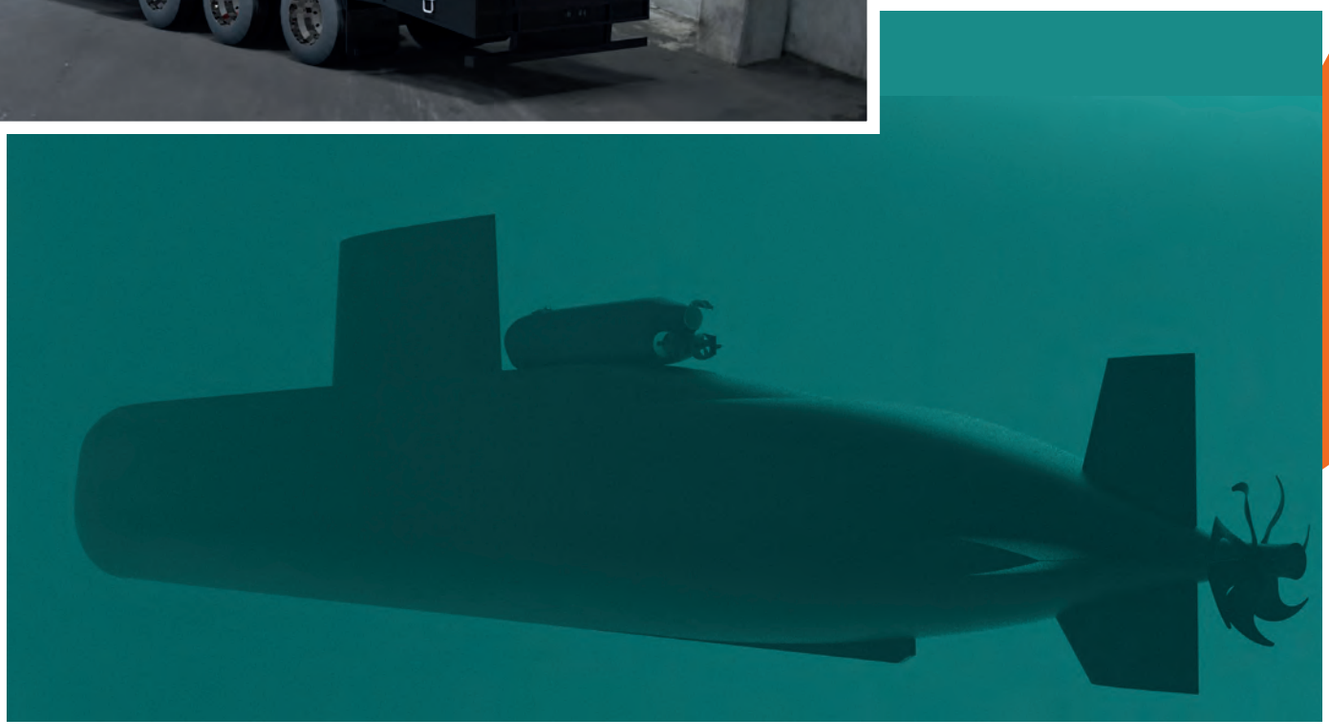
Datum Dry Combat Submersible is a dry swimmer delivery vehicle, which can be transported inside a standard 40 foot container. This allows a transport inside a ship container via sea, air or land transportation covertly. Vehicle can carry up to 8 combat swimmers while two of them are enough for the operation of the craft. Thanks to the diver lockout chamber inside, it can dry transport combat swimmers and carry up to two wet type swimmer delivery vehicles.

Vehicle can be operated in very shallow waters where large submarines can not manoeuver. Its size allows it to get closer to ports, offshore platforms and other critical infrastructures. Dry Combat Submersiblecan be delivered inside TCG Anadolu of similar Platform Docks.

GURNARD DEEP DIVING WET & DRY SEABED WARFARE SUBMARINE

Gurnard is a Deep Diving Wet & Dry Seabed Warfare Submarine is designed to conduct seabed warfare to damage underwater communication/electric cables via its manipulator and it can deliver 2 Malaman Mines.

Gurnard is designed to be carried on the back of larger submarines. Exterior structure of Gurnard can withstand a diving depth of 600m while inside is water resistant down to 50m. As



a result, Gurnard can be carried without a need for a dry deck shelter on a submarine. Its water proof interior allows combat swimmers wet entry into the vehicle and conduct operation without need of mother submarine to surface.

Gurnard can be transported inside a standard 40 foot container. This allows a transport inside a ship container via sea, air or land transportation covertly. Two combat swimmers can operate vehicle. Gurnard can be operated in very shallow waters where large submarines can not manoeuver. Also can be operated in very deep waters where largers submarines can not resist. Its size allows it to get closer to ports, offshore platforms and other critical infrastructures. Gurnard Deep Diving Wet & Dry Seabed Warfare Submarine can be delivered inside TCG Anadolu or similar Platform Docks.

DATUM SUBMARINE RESCUE VEHICLE

Turkish Navy built TCG Alemdar, TCG IŞIN and TCG AKIN MOSHIP and RATSHIP Projects which can detect submarines that have grounded and cannot reach the surface by their own means. TCG Alemdar can carry submarine rescue vehicles to rescue the personnel inside disabled submarines.
Since these submarines (DSRV or NSRV) are not included in our Navy's inventory, this vehicle can be used by renting at very high costs if necessary. This rental and logistics process can cause serious delays in a rescue operation in a race against time. During this operation, rescue can be done by the help of the rescue bells. The majority of the navies of countries with more than four submarines in the world also have rescue submarines.

Datum is familiar with mini submarine design due to successful detailed design and manufacturing project of a 300m diving Multi Purpose Mini Submarine Project and can quickly design and manufacture a deep diving submarine rescue vehicle tailored for Navy's rescue requirements directed by Submarine Fleet and Rescue and Underwater Command.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