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TURKISH DEFENCE REVIEW

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Nurol Makina Boosts Presence in International Market:

Uzbekistan Also Opts for the EJDER YALÇIN

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Alp Aviation and Nurol Makina Set the Agenda

The month of October was a period of important developments for the Turkish Defence and Aerospace Industry. Foremost among these developments was the inauguration of Alp Aviation's Helicopter Business Centre Facility, established with a $90 million investment, and Nurol Makina's contract with Uzbekistan covering the provision of more than 1,000 EJDER YALÇIN and the founding of a joint venture for the local production of the vehicle.

Let us begin with the inauguration of Alp Aviation's Helicopter Business Centre Facility, which was attended by Prime Minister Binali Yıldırım.

Figures are important for showing where things have come from, and where things are heading. With this facility, which was opened with new investments, the currently 800-strong Alp Aviation will create employment opportunities for 400 more people. This increase of 50 percent in employees – taking place in the field of aviation, a high added value area – will bring the number of Alp Aviation's personnel to more than 1,000. According to the information provided by Tuncer Alpata, Chairman of Alp Aviation, the company's exports will reach $500 million by the year 2023.

These figures stand as evidence of the solid foundations that the late Necdet Alpata, the father of Tuncer Alpata, had laid when founding Alp Aviation in 1998.

We would like to take this opportunity to respectfully honour the memory of Necdet Alpata, who passed away in 2008.

Necdet Alpata's contributions to the Turkish industry was also recalled in the speeches given at the ceremony, and these contributions will continue to be remembered for many years...

When the ceremony ended, the following phrase Ekber Amca once shared with us resonated in our minds: "Every mortal lives on until the moment when their name, memory and works are recollected for one last time..."

Nurol Makina Continues to Raise the Bar

Let's now go back to the second outstanding development in October and continue with Nurol Makina...

After Tunisia, Uzbekistan has opted for the EJDER YALÇIN as well, bringing once again the vehicle and Nurol Makina under the spotlight. According to the deal, Uzbekistan will receive over 1,000 EJDER YALÇIN over a 10-year period, and a joint venture will be established in the country for the local production of the vehicle. The large numbers being ordered, as well as the procurement model being followed, can be considered as indications of the level of trust placed on both Nurol Makina and the EJDER YALÇIN.

The high performance, demonstrated by the vehicle during its tests, has played a large role in both the EJDER YALÇIN and Nurol Makina's success. According to information we received from Engin Aykol, General Manager of Nurol Makina, in some of the tests the EJDER YALÇIN underwent, it was the vehicle capable of completing the testing process without having to make what could be described as a "pit stop."

There are reports that the EJDER YALÇIN will also be the main actor in the soon to be heard export-related news. This quick succession of export news and achievements is indeed significant. But what we consider even more important is the fact these export news reports will be followed by the establishment of new joint venture companies.

This and similar developments are expected to take Nurol Makina to even higher positions in the market.

Notable Increase in the Defence and Aerospace Industry's Overseas Presence

In recent years, we have started to see frequent examples of Turkish land vehicle companies establishing new companies overseas. The rise in the number of such examples is significant in that it illustrates both the current situation as well as the possible future of the Turkish land vehicles industry.

At this point, foreign companies play a notable role when it comes to certain subsystems and components required by the industry.

These companies have an important position in the development of the Turkish defence and aerospace industry, especially in the rolling out of platform-level products. Thanks to these companies that assume the task of solution partners, many products, which are not yet being developed in Turkey, can still be included in the Turkish defence and aerospace system and are playing an important role in the creation of platforms.

However, we have also frequently observed in recent times how, in the event that the relation between Turkey and the countries of origin of the companies producing the subsystems or components deteriorate, this cooperative situation can also become a threat. This is valid not only for the products Turkey exports, but also fore the ones it directly needs.

However, certain foreign companies are aware of this situation, and are assuming a solution-oriented approach. The DIMO Day event held on September 26 helps confirm this view. At the event, in the presentations from and contacts with companies for which DIMO Corporation is the Turkey distributor – which included EATON Aerospace Systems, TRAKKA Sytems, Cranfield Aerospace, AMETEK PDS, AMETEK SFMS, Cobham Mission Systems, MOOG Components Group, Sensata Technologies, Marshall Aerospace and ARNOLD Defense – we observed that they are very aware and constructive with regards to ITAR and export restrictions. We should also add that the companies taking part in the event reflected a more contemporary approach based on business partnerships, rather than the older approach based on a seller-purchaser perspective. This and similar events can also be viewed as indications of the industry's continued development.

And as you may already know, the month of November is made all the more important by the fact that it coincides with the anniversary of the Undersecretariat for Defence Industries' (SSM's) foundation. On this occasion, we would like to conclude our remarks by celebrating the 32th anniversary of the SSM's formation.

We hope to see you again in our December issue, in which we will share with our readers the most important and noteworthy developments from the month of November, along with our special dossier for the 8th Naval Systems Seminar.

Ümit Bayraktar
Executive Editor

BLACK HAWK helicopters have successfully carried out a broad variety of missions in the Turkish Armed Forces' inventory for many years. These helicopters' gearboxes, including the main transmission module, gears, flight critical components, the tail rotor drive systems (TRDS), main rotor and tail rotor assemblies, flight control systems and landing gear assemblies will all be manufactured by Alp Aviation.

New 90 Million Dollar Helicopter Investment in Eskişehir by Alp Aviation

Alp Aviation's Helicopter Business Centre Facility, established with a $90 million investment in the company's current Eskişehir facilities, was inaugurated with a ceremony held on October 3. At this ceremony, which was also attended by Prime Minister Binali Yıldırım, speakers gave important messages concerning the facility's place within the Turkish defence and aerospace industry. The ceremony was also the setting for the announcement of two new projects, the 10-ton utility helicopter programme and the new ATAK helicopter.

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The newly launched facility will initially be used to conduct activities relating to Alp Aviation's obligations under the Turkish Utility Helicopter Program. This programme, for which the Undersecretariat for Defence Industries (SSM) is the procuring authority, involves the joint production of 109 T-70 BLACK HAWK helicopters in two configurations. These are required by a total of six users, including the Land Forces Command, Air Force Command, General Command of Gendarmerie, Turkish National Police, General Staff Special Forces Command and the General Directorate of Forestry.

With this new 11,000-square metre facility, which offers production, assembly, testing and support services, all under a single roof, the total enclosed area of the facilities owned by Alp Aviation will reach 50,000 square metres. Moreover, the company will create new employment opportunities for 400 people, in addition to its 800 qualified personnel, 180 of whom are engineers. As a result, the number of workers at Alp Aviation will increase to more than 1,000.

Alp Aviation: Global Supplier of the BLACK HAWK

In parallel with parts production for the Turkish Utility Helicopter Program, the facility will concurrently manufacture these same parts for helicopters in the inventories of other countries, including the US. It is planned that the capabilities acquired in this process will be utilised in future national and indigenous aviation projects, as well as in national and international military and civilian programmes.

As part of the Turkish Utility Helicopter Program, Alp Aviation enjoys a business volume of $500 million. The products and systems, for which the company is responsible within the scope of the programme, comprise all the gearboxes (including the main transmission module), gears, flight critical components, tail rotor drive systems (TRDS), main rotor and tail rotor assemblies, flight control systems and landing gear assemblies. The company is the world's sole supplier of TRDSs.

Left to Right: Kemal Erçelik, Board Member at Alp Aviation; Dan Schultz, President of Sikorsky Aircraft; Prime Minister Binali Yıldırım; Ülkü Alpata, Honorary Chairwoman of Alp Aviation; Tuncer Alpata, Chairman of Alp Aviation; and Şenay İdil, General Manager of Alp Aviation.

© Alp Aviation

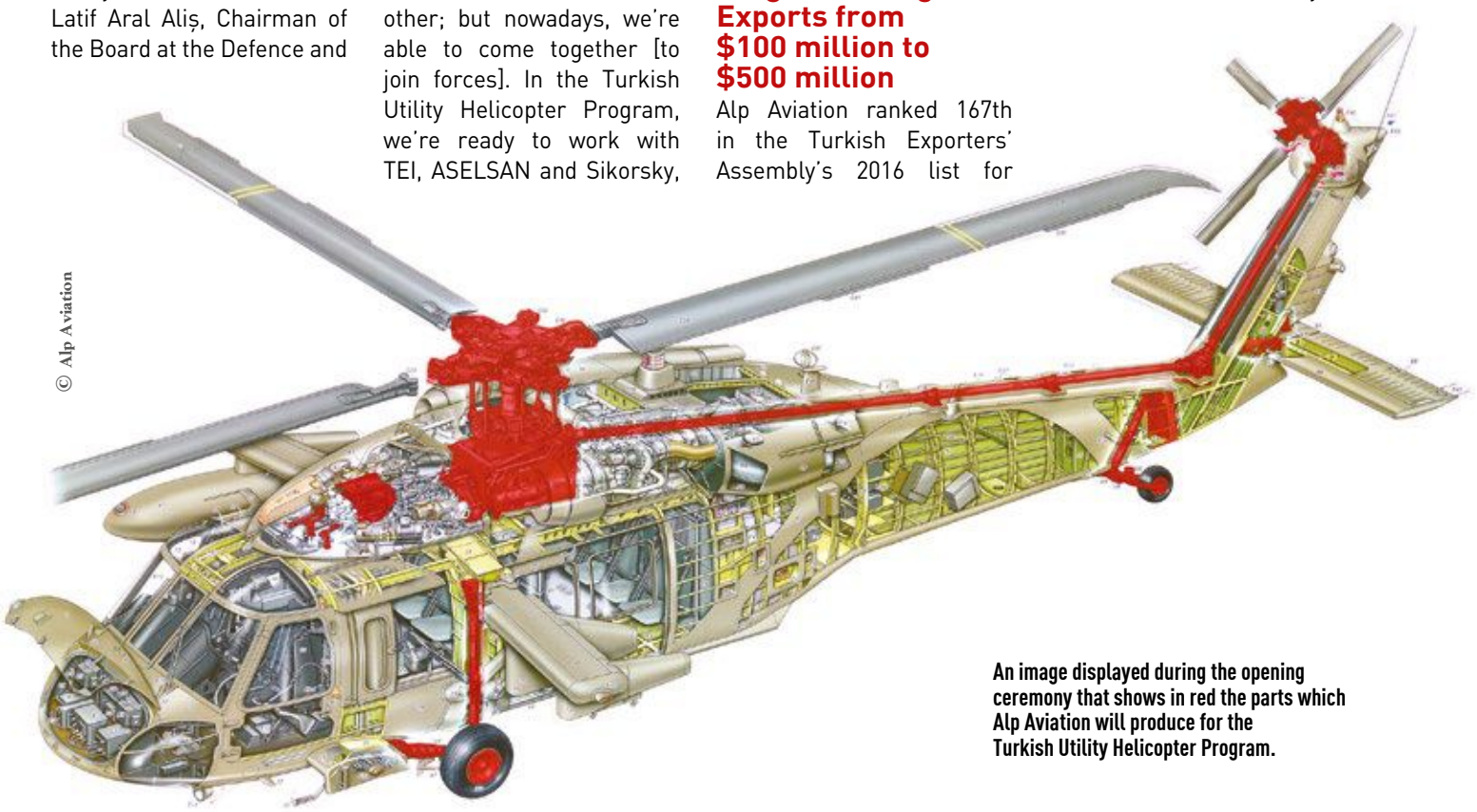
Alp Aviation: Ready for its Role in the Industry's Future

The inauguration ceremony for the facility was attended by Prime Minister Binali Yıldırım; Dr. Faruk Özlü, Minister of Science, Industry and Technology; General Atilla Gülan, Commander of the Combatant Air Force; Prof. Dr. İsmail Demir, Undersecretary for Defence Industries; Latif Aral Aliş, Chairman of the Board at the Defence and Aerospace Industry Exporters' Association, as well as many other guests.

Giving the ceremony's first speech, Tuncer Alpata, Chairman at Alp Aviation, began by describing the company's past, and then outlined its future: "There are some who describe Turkey as a non-achiever. In the past, this used to be the case, for one reason or another; but nowadays, we're able to come together [to join forces]. In the Turkish Utility Helicopter Program, we're ready to work with TEI, ASELSAN and Sikorsky, under the SSM's coordination and TAI's leadership. We'll press forward with the motivation we gain from the support and confidence our leaders, friends and executive are giving us. TAI will construct many helicopters and aircraft, while we'll be constructing their gearboxes and landing gear."

Target: Raising Exports from $100 million to $500 million

Alp Aviation ranked 167th in the Turkish Exporters' Assembly's 2016 list for Turkey's Top 500 Exporter Companies. Speaking about the company's future targets concerning the company's exports, which currently hover around $100 million per year, Alpata highlighted the importance of their cooperation with Sikorsky: "If you are competing globally in the field of aviation and have a partner like Sikorsky by your side, there is no obstacle you



© Alp Aviation

An image displayed during the opening ceremony that shows in red the parts which Alp Aviation will produce for the Turkish Utility Helicopter Program.


Tuncer Alpata


Dan Schultz

can't overcome. [Sikorsky] is the world's largest helicopter company, producing the most reliable and technologically advanced products. It's a company that's hungry for technology, open to the future and for further growth; and we're very fortunate to be its partner. We are very compatible and with the energy they've helped to create here, the small changes they've made here and there, and the technologies they've shared with us, they've helped us to cover significant ground. Even today, we calculate that our exports will reach almost $500 million by 2023. And this will be no small feat."

Two Surprises from Prof. Dr. Demir:
The 10-Ton Turkish Utility Helicopter and Heavy ATAK

During the ceremony, Prof. Dr. İsmail Demir, Undersecretary for Defence Industries, announced the launch of two new helicopter projects with the following words: "Turkey is heading towards producing its own helicopters. As you may already know, we've renamed the A129 as T129 when coming up with the ATAK helicopter, and the S-70 as T-70 when coming up with the Turkish Utility Helicopter. These are akin to the steps on a stair – steps on a path leading to Turkey's very own, indigenously designed helicopter. I would also like to take this opportunity to say that the Helicopter Development Programme is also progressing rather successfully. Furthermore, I would like to add that we've started another design project for a utility helicopter – once again in the 10-ton class – and that Sikorsky and other partners may also take part in this project. Last but not least, I would like to announce that we've launched the design works for a heavier, more aggressive helicopter that will, in a way, serve as the ATAK helicopter's stronger brother."

A Facility that Meets International Standards

Taking the stage after Alpata, Dan Schultz, President of Sikorsky Aircraft, said the following concerning Alp Aviation's newly-established facility: "In terms of standards this is truly a world-class facility and the best I've seen anywhere in the world. Combined with the processes, manufacturing technologies and superior workforce we have here, this facility will continue to produce helicopters and jet components in the future."
Schultz also said the following, concerning their cooperation with Alp Aviation as part of the programme: "At Sikorsky, we take the Turkish


Prof. Dr. İsmail Demir


Dr. Faruk Özlü

Utility Helicopter Program very seriously. Our sense of responsibility towards the SSM and TAI clearly manifests itself here, today, at this facility. We'll complete this task on time and within budget. We've dedicated ourselves to this programme and the Republic of Turkey, to make sure we produce and launch the world's best helicopter."

1.4 Billion Dollar Work Share for Turkish Industry

The last speaker of the ceremony was Prof. Dr. İsmail Demir, the Undersecretary for Defence Industries. Sharing information about the Turkish Utility Helicopter Program, which has been the scene of many firsts and ground-breaking achievements in the Turkish defence and aerospace industry, while also mentioning Alp Aviation's share in all these achievements, Prof. Dr. Demir commented on the programme as follows: "This programme is the first time a Turkish company will design a cockpit for a foreign company. Apart from the United States, marketing and sales will be carried out across the world for these helicopters and the BLACK HAWKS. For the first time, six users will make a common acquisition by consolidating a diverse range of mission requirements. Within the scope of the programme, the production of gears and dynamic systems will be carried out for the first time in the facility we're inaugurating here today. This programme will also see the production of General Electric's T700 engine, for the first time in Turkey."

Prof. Dr. Demir informed that the programme model foresees a 63 percent local industry contribution, and expressed his expectations from the programme schedule with the following words: "While the [helicopters'] date of entry into service has been set as 2021, both the SSM and TAI, as well as all other relevant subcontractors, will do their best to take this date to an earlier time."

Prof. Dr. Demir also touched on the work share Sikorsky will be providing to the Turkish industry, as part of its programme offset obligations: "For the first time with this programme, Sikorsky has committed to making use of the Turkish domestic industry's capabilities in its international sales. The sum of this commitment is about $1.4 billion, to be spent over a period of 30 years. TAI and Sikorsky will work in collaboration for the worldwide sales and marketing of the helicopters."


© Sikorsky

The S-70 helicopter manufactured in Sikorsky's facilities in Poland, and which will be used as a testing platform for the avionic suit developed by ASELSAN and Sikorsky, had arrived at Ankara on February 25 after a 9-hour flight.

Dreams from 20 Years Ago Becoming Today's Reality

Also delivering a speech at the ceremony, Dr. Faruk Özlü, Minister of Science, Industry and Technology shared the following points: "[Turkey's] companies, engineers and qualified human resources are one of our most significant [assets] for the Turkish industrial revolution. We have reached the capacity where we can manufacture the most advanced technologies in our own country. Targets that seemed unimaginable 15 or 20 years ago are now within our reach. With every passing year, we see more Turkish firms making it into the world's top defence industry companies. The Turkish

defence industry's superior quality products are drawing a great deal of attention and praise at international exhibitions and in projects. We will continue to support the rapid and sustainable development of the Turkish defence industry. The defence industry will remain one of the strategic areas we most value. The centre we will inaugurate today is one of the most important symbols of the Turkish industry and its production capability."

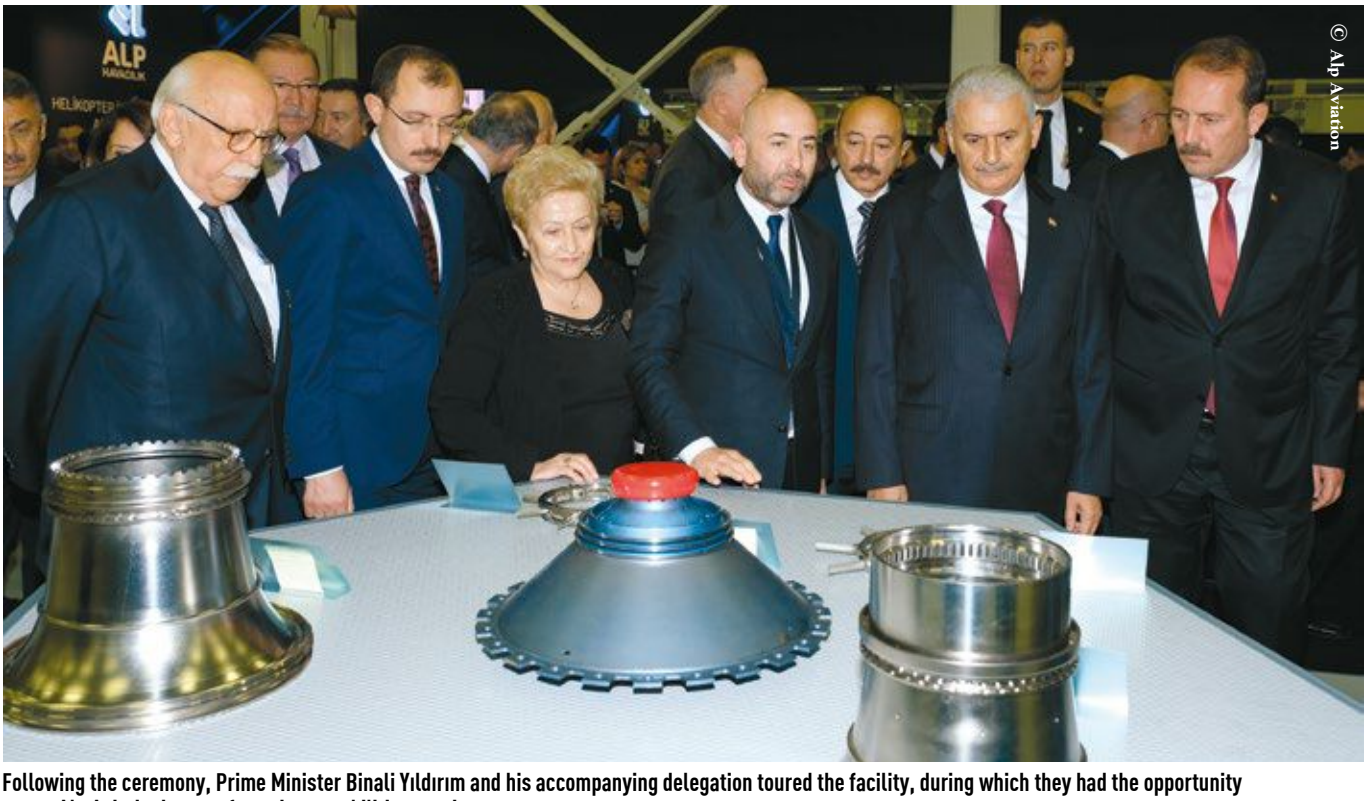
Growing Brand Value

Giving the final speech at the ceremony, Prime Minister Binali Yıldırım described the Turkish defence and aerospace industry's leap forward with the following words: "Along with an increasing depth in technology, we're also allocating significant shares to R&D in the defence and aerospace industry. As of 2016, our defence and aerospace budget has exceeded $1 billion. Fifteen years ago, our defence and aerospace exports were $250 million, while today it has reached $2 billion. While [the industry's] turnover was once $1 billion, it is now over $6 billion. In 2002, there were only 66 ongoing projects on the defence industry, while today we're working on 543 projects, the total budget of which is $60 billion."

Prime Minister Yıldırım also shared information on the draft law regulating the establishment of a Turkish Space Agency, which was presented to the Turkish Grand National Assembly in February: "We decided to establish the Turkish Space Agency as a means to ensuring the country's development and national security, identifying natural resources, and using these for the prosperity of the people. This decision was submitted to the parliament in the form of a draft law. Insh'Allah, the Turkish Space Agency will be founded during the current legislative year."

Prime Minister Yıldırım also said the following concerning the inaugurated facility: "The products manufactured here will not be produced solely to meet our own institutions' needs. These products will, at the same time, meet requirements of many other countries in our region and the rest of the world. We can proudly state that these facilities are the first of their kind in the world. There are no other facilities, anywhere, that combines so many elements in such an integrated fashion. While Eskişehir already enjoys a high brand value, this facility will grant the city a new brand and new value. SMEs and the subsidiary industry will also benefit from this location. It's not just the personnel working here who will benefit from this facility, but also tens of subsidiary industry companies of different sizes."

Following his speech, Prime Minister Yıldırım proceeded to officially inaugurate the facility. The event's guests were then given a tour of the facility, in which they were briefed, on-site, about Alp Aviation's manufacturing capabilities. ◆



Following the ceremony, Prime Minister Binali Yıldırım and his accompanying delegation toured the facility, during which they had the opportunity to see Alp Aviation's manufacturing capabilities on-site.

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Our Goal: Becoming the Best

As the Defence and Aerospace Industry Exporters' Association (SSI), we are working effectively and dedicatedly in the promotion of our industry. We are well aware that the sustainability and growing strength of the industry reli es on exports, and are working to enhance our recognition and visibility in every platform and environment.
In this context, together with the Undersecretariat for Defence Industries (SSM), we took part at a national level in the Defence and Security Equipment International (DSEI) 2017 Exhibition, held in London.
Just like IDEF, the DSEI is a biennial exhibition. We participated in the previous DSEI under the status of an International Partner. Two years ago we took part with 14 companies, while this year we appeared with 28 companies.
I am sharing these figures to highlight the momentum our defence industry has gained, and to show that we have moved far beyond the levels to which we previously aimed for and deemed prestigious.
The defence industry is a harsh and competitive industry, where even a single mistake can undo many good achievements.
To become the best, you have to go through long, costly and difficult processes. A product you produce may have effective offensive capabilities or reliable defensive features; it can be faster than your competitor's products; it can even possess a longer range or have greater robustness. But on the other hand, all these accomplishments may, in the end, prove to be very short-lived. This is because your competitors are also eagerly working, developing and producing, with the same level of dedication and for the same goals.
Our goal is to become the best, since the defence and aerospace industry is an area where only the best is in demand. Obviously, the cost of a product is as important as its capabilities and features. Delivery times are also essential, as are product support and logistic services. In all these areas and parameters, we are engaged in a constant and relentless race. But an indication of our success in this race is how products, made by the Turkish defence and aerospace industry, are successfully passing international tests.
The right policies, followed in the past 15 years, as well as the right practices being implemented and the joint activities being conducted during this period, have begun to bear their fruits. Turkish companies are beginning to make it into the list of the world's top 100 defence companies, ranking higher and higher with each passing year. Such indications are important, since accidental and short-lived successes can be dangerously deceptive for the future. For sustainable success, we have embraced a road map that envisages balanced growth and an emphasis on R&D works. Our association conducts joint activities with the SSM, as well as the Ministry of National Defence, the Ministry of Economy, the Ministry of Finance, and the Ministry of Science, Industry and Technology. We are sharing the requests and recommendations of our member companies, with a view to developing joint solutions for the problems they are encountering. We are continuing our work to ensure a stable and steady industry, one that foreign investors trust.
Everything is not always perfect and rosy. The field in which we work is one full of challenges; one that witnesses crises between countries, sudden changes in global economic figures, and regional disputes... But regardless of what these challenges and conditions may be, we are duty bound to work, produce, and achieve our target of becoming the best.

Latif Aral ALİŞ
Chairman of the Board, Defence and Aerospace Industry Exporters' Association

Nurol Makina Boosts Presence in International Market:

Uzbekistan Also Opts for the EJDER YALÇIN

Developed by Nurol Makina, the EJDER YALÇIN continues to capture worldwide attention as a vehicle that has created its own class. Following Tunisia's own decision – after Turkey – to include the vehicle in its inventory in recent months, Uzbekistan becomes the most recent buyer of the EJDER YALÇIN, with a programme involving more than 1,000 vehicles. In late October, news that Uzbekistan had opted for the EJDER YALÇIN to meet its long-term needs spread rapidly, particularly in social media. Combining the information we have obtained from different sources with first-hand data from Engin Aykol, CEO of Nurol Makina, we have put together a detailed and fresh story of EJDER YALÇIN's adventure in Uzbekistan for our readers.

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Having received the thumbs up from its users in Turkey, thanks to its operational efficiency, particularly in anti-terrorism operations, the 360-degree protection it offers; EJDER YALÇIN has created its own class, based on its protection level, tactical capabilities and payload capacity. It has also passed testing in different geographical locations and become a popular platform on the international market in terms of confirmed orders, with countries starting to opt in, one after the other. In March, Tunisia became the first international customer of the vehicle. In October, Uzbekistan has been the latest user of EJDER YALÇIN. Nurol Makina had inked a deal with Uzbekistan for the production of 1,000 EJDER YALÇIN III vehicles over the next 10 years in a joint venture with a local firm, and for the direct purchase of 24 EJDER YALÇIN III vehicles.

Matching Needs with Capabilities: EJDER YALÇIN

The process that resulted in Uzbekistan's selection of the EJDER YALÇIN as a 4x4 tactical wheeled armoured vehicle began with a visit paid by then Uzbek Defence Minister Lieutenant General Kabul Raimovich Berdiyev and an accompanying delegation to Turkey in February. Nurol Makina was among companies visited by the delegation, which had voiced its interest in examin-

Unless otherwise stated, all photographs: © Nurol Makina

ing solutions proposed by Turkish companies through the Undersecretariat for Defence Industries (SSM). This was followed by further contacts after the Minister and the accompanying delegation had seen and appreciated EJDER YALÇIN during on-site examinations, and a technical team was sent to Turkey to make more detailed examinations following fruitful meetings among the involved parties. After making its examinations, the team put together a report citing EJDER YALÇIN as the best choice to meet Uzbekistan's needs. In the following days, an SSM delegation visited Uzbekistan and a letter of intent was signed between Uzmaxsusimpex (UMSI), the SSM's counterpart in Uzbekistan, and the SSM for the direct purchase of 12 EJDER YALÇIN vehicles and the production of 1,000 vehicles in Uzbekistan through a joint venture that would be established for the purpose.

In-depth negotiations began between UMSI and Nurol Makina, during which the parties agreed that:

- Nurol Makina would send a vehicle to Uzbekistan for testing purposes;
- Vehicles in the quantities specified in the letter of intent would be supplied if the tests were completed successfully;
- Technical teams from both sides would be instructed to take action towards the formation of a joint venture and the production of vehicles in Uzbekistan.

An agreement taking these decisions into consideration was signed between UMSI and Nurol Makina, with the SSM acting as witness. In the following stage, a test team from Nurol Makina conducted examinations in Uzbekistan and test plans were outlined, and the Uzbek team conducted examinations of the EJDER YALÇIN platform and the necessary production processes.

A challenging test programme began after the arrival of the EJDER YALÇIN in Uzbekistan. The vehicle was first subjected to tests on a special test range for two weeks, after which it was driven for approximately 5,000 kilometres across the country in very different geographical conditions by the personnel of both Nurol Makina and the Uzbek party. The EJDER YALÇIN passed the tests with great success.

Engin Aykol draws attention to geographical challenges in Uzbekistan: "Uzbekistan is like Turkey in terms of its geographical diversity. You can travel on a mountain road with green scenery for six or seven hours, and end up in a region with the characteristics of a desert or steppe. This requires the vehicle to perform efficiently in different circumstances."

Uzbek officials were highly satisfied with the EJDER YALÇIN following the tests, lasted for one month, and this led them to increase the number of vehicles to be purchased directly to 24. Uzbekistan designated UzAuto for the formation of a joint venture company and its production of 1,000 EJDER YALÇIN vehicles, and Nurol Makina and UzAuto opened negotiations shortly afterwards.

Commenting on the EJDER YALÇIN's success in Uzbekistan, Aykol said: "The EJDER YALÇIN was definitely ahead of all the other vehicles that Uzbekistan was considering, by a wide margin. Some countries attempted to improve their bids by putting forward financial proposals and offering their respective vehicles to Uzbekistan based on loans at very low rates of interest. It was no surprise for us that we won the contract because our customer was perfectly aware of what it wanted, based on the success of the EJDER YALÇIN during testing."

Uzbekistan and Turkey Lend Full Support

The decision that the final agreement should be signed during Uzbekistan President Shavkat Mirziyoyev's visit to Turkey late in Turkey accelerated the preparation phase. The final signatures for:

- The agreement between UMSI and Nurol Makina for the directly supply of 24 EJDER YALÇIN III vehicles, and
- The memorandum between UzAuto and Nurol Makina for the formation of a joint venture company to manufacture 1,000 vehicles,

were both put in Istanbul on October 27, in the presence of Uzbekistan President Shavkat Mirziyoyev and Turkish Prime Minister Binali Yıldırım.

The contract related to the vehicles marked for direct purchase entered into effect and the process of manufacturing the vehicles has already begun, with deliveries expected in the first quarter of 2018. Currently, the final details related to the formation of the joint venture

Our Vehicles Did Not Return Empty Handed from Any Bid Involving Tests

The EJDER YALÇIN won the tender in Uzbekistan after seeing success in Tunisia, and new international achievements are in the offing, which begs the question, "What are the factors behind this success?" Aykol first shares his opinions of the success of the EJDER YALÇIN: "I can say the following for all members of our product family. We have never returned empty-handed from any bid in which tests were conducted before a decision was made. We have always said that the EJDER YALÇIN created its own class, and so there is currently nothing else on the market that can provide the performance, protection and payload carrying capacity that we are offering with the EJDER YALÇIN. When you look at other vehicles, we see a V-shape at the bottom and angled corners at the top, as the aim is to eliminate threats coming from the direction by creating additional thickness through the use of angles. What if the threat comes at an angle? This is why the EJDER YALÇIN has no such configuration. The vehicle provides 360degrees of protection, without compromise, and we have seen the results of this approach in all of the tenders in which we partake. If risks are taken and the 360-degree protection is compromised, you can develop a design with a lighter suspension or an engine with a lower output, because of the decrease in weight resulting from weaker armour protection. As such, it is possible to lower the overall cost by simplifying the components that constitute approximately 70 percent of the vehicle's total cost. This, however, would result in a vehicle that cannot function under all conditions, or protect lives against all kinds of threats. Such a vehicle may be preferred by some customers when focus is on price. Meanwhile, countries that are seeking higher performance and want to put a vehicle through testing before making a decision can understand the value of the EJDER YALÇIN. We had the opportunity to observe this during tests in a Middle Eastern country that involved a total of 15 vehicles. The EJDER YALÇIN was not the only vehicle to complete successfully the 4,000-km test, as there were a couple of other vehicles that accompanied it. The EJDER YALÇIN was, however, the only vehicle that did not require maintenance, or even a pause, during the tests. People entered the vehicle at the beginning of the tests and left it when they were completed. The EJDER YALÇIN can complete these test while carrying a roughly four-ton payload. In other words, it does not compromise mission requirements for the sake of performance or protection."

Aykol explains the driving force behind this vehicle as follows: "Developing a vehicle such as the EJDER YALÇIN relies mainly on design capabilities; however, when it comes to sales, there are multiple disciplines and factors, such as manufacturability and supportability, that come inevitably into play. In this respect, the EJDER YALÇIN can be considered a total engineering success in every aspect. We have a very efficient and dynamic engineering team, with an average age below 30, and we try to provide the best environment for them. The training that we offer to our employees is above the industry average, and we are confident that we can achieve more through this team."

The business development team takes centre stage after the development of a product like the EJDER YALÇIN, and Aykol describes their task as follows: "We highlight our ethical guidelines at the beginning of our presentations. In brief, we only refer to capabilities and data demonstrated and proven through tests, and focus only on our own vehicle rather than attempting to market our vehicle by making comments about our competitors. We maintain our cooperation with our users throughout the life-cycle of the vehicles, and establish all contacts with a view to establishing long-term cooperation. Our team is in close contact with our customers. You can clearly see this as you also follow diplomatic receptions through AMAC Magazine, your sister publication. Our business development team is always in touch with the Turkish branches of our potential users during such events."

company are being sorted out. While timing depends on official processes, the formation of the company is expected to be completed early in 2018 at the latest. The joint venture company will make use of one of the existing plants of UzAuto, and will be run by UzAuto. In this scenario, the first vehicles are planned to come off the local production in 2018, barring any delays in the formation of the joint venture.

UzAuto and Nurol Makina will have equal shares in the joint venture company, and Aykol outlines the advantages of the arrangement as follows: "There is full trust between UzAuto and Nurol Makina. We demonstrate this trust by having equal shares in our joint venture. These shares will lead us to a complete consensus when making decisions."

> The EJDER YALÇIN is the first Turkish platform to be exported to Uzbekistan in the defence field. This places great responsibility on us, as we are representing the entire Turkish defence and aerospace sector with everything that we do or do not do. We hope to set a very good example and to further cooperation between our two countries.

Aykol gave his impressions on the entire process and their Uzbek customer: "We met a very knowledgeable and experienced customer that knew what it wanted and how it could get it in Uzbekistan. They listened to our side and make a perfect analysis of their needs. Our negotiations covered not only the sale of

Nurol Makina Targets $100 Million Export Revenue in 2023

It is undoubtedly the EJDER YALÇIN's year in the international arena. While its impressive performance has seemingly left the other members of the Nurol Makina product family i.e. the EJDER TOMA, ILGAZ II, EJDER KUNTER and NMS in the background, there are actually important developments taking place also in those vehicle programmes. Aykol said that they are going through hectic days, but are not ready to share details of the latest developments: "We have never had a product that could not register a sale in the international arena after production. We started promoting some of our products around the world a relatively short time ago, and the more visible they become, the higher the number of users there will be. We expect to conclude another international agreement before the end of this year, and we will also hog the limelight through joint venture companies in countries other than Uzbekistan."

Nurol Makina aims to make a difference also in terms of its participation at international exhibitions in the future, and Aykol outlines their strategy in this field as follows: "What is important to us is to show our vehicles to high-ranking delegations, and we plan out exhibition participation accordingly. After IDEF-2017, we participated at DSEI 2017 with a specially designed stand and took along the EJDER YALÇIN and NMS. We have seen how judicious our choices were, as we were able to welcome important delegations accompanied by their British guides to our stand where we were able to present our vehicles, although not part of their programme. Our participation in test campaigns and exhibitions in other countries will continue at full speed in the coming period."

Nurol Makina has set itself ambitious export goals for the future, taking advantage of its current momentum. Speaking about the future of the company, Aykol says: "We recently held an internal meeting within the company and reviewed our strategies, and came to the conclusion that almost 70 percent of our turnover will result from exports in the coming period. Our turnover was around $97 million last year, and we have already surpassed the $100 million mark this year. We aim to bring our exports to $100 million in 2023, and will keep developing vehicles creating their own classes, as we have demonstrated with the EJDER YALÇIN and NMS. If the necessary support is continued by the government, which we appreciate and rely on, we will grow even further in the coming period and will reach our goals faster.

a vehicle, but also joint production and technology transfer. Irrespective of the product or the country, such issues may raise questions on both sides, as there are many uncertainties. We have seen during the process that the UMSI executives are thoroughly familiar with those issues and can foresee the potential challenges as much as we can. UzAuto, our local partner, is a leading industrial enterprise that has the capabilities and experience needed for the manufacture of an automobile from scratch, including all of its main components, particularly in the civilian area. In conclusion, we have witnessed a satisfactory process in which the competencies of all parties in their respective fields have been shown. I can even say that we took great pleasure from what we did. I visited Uzbekistan five times during the negotiations, and I was impressed by what I saw."

A Bright Future

The production of 1,000 EJDER YALÇIN vehicles, a project that laid the foundations for the UzAuto-Nurol Makina joint venture, has become a firm order and all vehicles will meet Uzbekistan's requirements. The plant will manufacture 100 vehicles per year, on average, and the Uzbek local contribution to the vehicles will rise gradually rise under a plan covering the first five years to reach the targeted quantity.

The vehicles to be manufactured in Uzbekistan will have approximately 20 different configurations, including different weapon carriers. Aykol underlined that each of the vehicle configurations that they will develop for Uzbekistan would be a design ready for production to meet Turkey's needs in the future.

There are also various plans on the table concerning the future of the joint venture company, one of which could see the sale of the EJDER YALÇIN from this plant to other regional countries. Shorter-term goals include the production of other vehicles manufactured by Nurol Makina and those manufactured by FNSS, its sister company, for Uzbekistan as well as for third countries, while a medium- and long-term goal would see the joint-venture company develop its own designs.

Aykol draws the following picture regarding their cooperation with Uzbekistan: "The EJDER YALÇIN is the first Turkish platform to be exported to Uzbekistan in the defence field. This places great responsibility on us, as we are representing the entire Turkish defence and aerospace sector with everything that we do or do not do. We hope to set a very good example and to further cooperation between our two countries. We will continue to support our customer in Uzbekistan throughout the useful life of our vehicles, and we are ready to meet other requirements of Uzbekistan and other countries in the region. We and our Uzbek partners share the same vision: to establish a long-term cooperation that deepens over time. Our perception of our Uzbek customers is no different to that of our Turkish customers. ◆

Nurol Makina continues to produce and deliver platforms to customers both at home and abroad at a fast pace.

Turkish Defence and Aerospace Industry Carries Momentum Gained at IDEF into DSEI

DSEI, one of Europe's prominent defence and aerospace exhibitions, was held this year in London between September 12 and 15. As was the case in the previous exhibition organised in 2015, Turkey participated in the event at a national level, under the cooperation of the Undersecretariat for Defence Industries (SSM) and the Defence and Aerospace Industry Exporters' Association (SSI), and with a total of 28 institutions and organisations.

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At the exhibition, Rheinmetall showcased its Boxer 8x8 vehicle painted in the colours of the British flag, and with the slogan "British by Birth".

During the event, Öner Tekin, General Manager of AYESAŞ, held meetings with high-ranking officials of L3 Technologies, one of AYESAŞ' partners. Aiming to discuss the development of new generation propulsion systems, and to engage in mutual technology transfer in this regard, Tekin met with L3 Technologies officials, as well as Turkish platform producers that are competent in this area.

The exhibition saw the launch of the Saab Gripen platform's aggressor version.

The exhibition was visited by 35,008 visitors from 110 countries, and saw 1,600 companies open their stands. The number of visitors showed a three percent increase compared to 2015. The visitors of the exhibition were met by a large variety of land, naval and air platforms. Interested in the United Kingdom's tender for a wheeled armoured vehicle, Rheinmetall showcased its Boxer 8x8 vehicle painted in the colours of the British flag, and with the slogan "British by Birth", to remind that the United Kingdom was involved in the vehicle's initial design works. On the naval side, seven vessels from different countries opened their doors to visitors. Furthermore, small surface vessels also performed various demonstrations during the exhibition to display their abilities. On the air vehicles front, Saab drew attention with the launch of its Gripen platform that will assume the role of aggressor in air defence training. Another notable feature of the exhibition was its emphasis on developments in the field of medical aid. Solutions in this area were presented and showcased in a different section of the event.

At the exhibition, Turkey was represented by a delegation headed by Şuay Alpay, Deputy Minister of National Defence. The delegation consisted of many high-ranking officials, such as Ali Fidan, Undersecretary of the Ministry of National Defence. Companies and organisations participating from Turkey were listed as follows: 3EEOS, Altınay, ARES Shipyard, ASELSAN, AVS, BMC, FİGES, Garanti Apparel, Grup İmpeks, HAVELSAN, Katmerciler, MAKEL, Medyacity, MKEK, Nero Industries, Nurol Makina, Nurol Technologies, OSSA, Otokar, Öztek, REPKON, ROKETSAN, Sarsılmaz, TAIS, T-Kalıp, TRANSVARO, Unifo and Yakupoğlu.

In the following pages, we have compiled for our readers the outstanding news from DSEI concerning Turkish companies, and foreign companies that have close relations with Turkey. ◆

At the exhibition, Turkey was represented by a delegation that included Şuay Alpay, Deputy Minister of National Defence, and Ali Fidan, Undersecretary of the Ministry of National Defence.

ARES 150 HERCULES: Set to Break Records

One of the companies that had an intense schedule at the exhibition was ARES Shipyard. Despite his busy agenda, Kerim Kalafatoğlu, Chairman and Executive Director at ARES Shipyard, was kind enough to take the time to answer our questions.

MSI TDR: There are several recent topics we certainly would like to discuss with you; but first of all, could you tell us about ARES' agenda at DSEI?

Kerim KALAFATOĞLU: The DSEI exhibition is one of the most prestigious defence industry events organised globally, and it has always been a source of excitement for ARES. We prepared for this year's event with the same level of enthusiasm as before. Sure enough, our agenda focuses on military and semi-military ships across the world, and also on [users] which require these ships. However, there is one thing I particularly would like to emphasise: We've come here with a set of goals that isn't just limited to promoting the features of our products and what we're capable of doing. In fact, our products are already serving commendably in various countries around the world and in different locations. We're in constant contact with each one of our customers; we never end our relationship with any of them, or interrupt our support. We've come to this exhibition not only to promote our products, but also to meet with our strategic partners, and to exchange ideas and draw road maps for the projects waiting for us in the coming period, which will be rather busy.

As ARES doesn't have a static design portfolio, we never present our customers a standard catalogue that lists off-the-shelf products. Our product and business development strategy is entirely built on customer-orientation. So rather than offering our customer an "off-the-peg jacket", and forcefully try to make it fit, we tailor one for our customer that is made-to-measure, so it fits perfectly. In this respect, I can say, with a certain pride, that we always have an endless range of solutions we can offer them.

MSI TDR: How does the exhibition affect your customer relations?

Kerim KALAFATOĞLU: We all know that contracts valued in the millions of liras aren't just concluded in the limited three- or four-day time period of exhibitions. But it is at these events that we reinforce invaluable friendships and partnerships, create awareness and recognition, and turn friendships into partnerships. That was our goal at DSEI; and it is with great pleasure that I can say that we've been, in this respect, successful beyond our expectations. We greeted old and new friends at our stands, with an ever-prevailing cordial atmosphere. On the other hand, the working hours set by the organisers of the exhibition are such that we won't have the time to carry out all the meetings we had hoped to. But we're returning from London to Antalya with a heavy dossier filled to the brim, and it is clear that there is a very busy schedule waiting for us.

MSI TDR: With which delegations and companies do you plan to meet during the exhibition?

Kerim KALAFATOĞLU: We've a busy meeting programme with our strategic partners, as well as our current and potential project stakeholders. We're meeting with companies such as ASELSAN, BMT Nigel Gee, MBDA, MTU and Rolls-Royce, with a view of ensuring team work in the projects we'll be conducting in the coming period. In addition, we'll also hold a number of separate meetings [with other organisations].

MSI TDR: What can you tell us about the projects or tenders you're currently following?

Kerim KALAFATOĞLU: There are more than 10 tenders which we're either actively following and preparing for, or for which we've already submitted our bids and are now waiting for the outcome. I won't be able to mention some of these tenders due to military and commercial confidentiality concerns. On the other hand, I can proudly say that we've qualified for the tenders opened by the Royal Oman Police and Coast Guard Agency for high speed patrol boats, and that we've been officially invited by the Sultanate of Oman to take part in them. We're preparing rapidly and effectively for these tenders. It's my hope and wish that in 2017, we'll continue to bring new projects to our country, as well as new employment opportunities and foreign currency revenues. I cannot provide any more detailed explanations at the moment; however, if we manage to receive the necessary permissions, which I hope will happen very soon, we'll first share these new developments with MSI TDR.

On the other hand, the needs of the Turkish Naval Forces Command and Coast Guard Command always remain our main priority. Beyond meeting our financial targets, and in addition to earning foreign currency for Turkey, our biggest goal is to continue and increase the services we provide to the highly esteemed armed forces of our country. We're always ready to support all projects of the Turkish Armed Forces, as far as our capacity allows us to. I also would like to take this opportunity to underline that we're the strongest candidate for the Turkish Fast Patrol Boat Project, conducted by the Undersecretariat for Defence Industries to meet the Turkish Naval Forces Command's needs.

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MSI TDR: Since IDEF 2017, have there been any new developments concerning your projects and products that you would like to share with our readers?

Kerim KALAFATOĞLU: Although its product portfolio focuses on military and semi-military boats, ARES is also a company that has also gained a foothold in the market with commercial product solutions, built platforms, and performed successful deliveries. On the commercial side, it continues to produce competitive and indigenous solutions. We've eight luxury passenger ferries serving successfully in Qatar, which we had produced for a state-owned enterprise providing services in the tourism industry. In a similar segment, we're also commencing the construction of a VIP Protocol Boat for Qatar's Ministry of Transportation. This boat, which will have very advanced design characteristics and a high-quality built, is still at the design stage; however, it will begin receiving state dignitaries and high-ranking hosts in the waters of Doha starting from the summer of 2018.

MSI TDR: Could you tell us about the latest situation with the boats you're constructing for Qatar's Coast Guard Command?

Kerim KALAFATOĞLU: As you may already know, this project, which we won by competing against nearly 20 companies, involves the construction of 17 fast patrol boats, some of which we've already delivered. The 17 boats in question consist of five 24-metre ARES 75 HERCULES, ten 34-metre ARES 110 HERCULES, and two 48-metre ARES 150 HERCULES class boats. To date, we've completed the delivery of all ARES 75 HERCULES boats and of five ARES 110 HERCULES boats, which are now serving commendably.

By the end of 2017, we plan to deliver two more ARES 110 HERCULES and the first ARES 150 HERCULES. In what can be considered a rare occurrence in the shipbuilding industry, we're currently moving one year ahead of the project schedule, and we expect to complete the whole project one-and-a-half year before the delivery deadline defined in the contract schedule.

Furthermore, upon our proposal and the request of the Qatar's Coast Guard Command, we're planning, in 2018, to equip all the HERCULES series ARES 24 HARPOON interceptor boats with ASELSAN's 30 mm SMASH and 12.7 mm STAMP remote-controlled weapon stations and various electro-optic systems, in order to further enhance the capabilities of these platforms.

MSI TDR: Are there any members in your ship family that you've particularly highlighted in this exhibition?

Kerim KALAFATOĞLU: Although we've separately worked on each one of our solutions in a labour-intensive manner; any project we complete, as well as any ARES platform that we build and that serves successfully, is an infinite source of pride and delight for us. The ARES 110 HERCULES fast patrol boats we're constructing for the Qatar Coast Guard Command were selected as the world's best patrol boat in 2016. That's why our platforms also tend to stand out just with their names. Moreover, the 48 metres long ARES 150 HERCULES, the largest member of the HERCULES family that we're constructing for the Qatar Coast Guard Command, is also set to break two important records. First of all, this ship will become the largest composite hull military ship to have ever been built in Turkey. Secondly, with its

The ARES 150 HERCULES will become the largest composite hull military ship to have ever been built in Turkey.

The 48-metre ARES 150 HERCULES offshore patrol vessel (OPV).

speed of 37 nautical miles per hour, it is likely to become the world's fastest offshore patrol vessel (OPV). We're thinking about highlighting and crowning these achievements with a special hand-over ceremony.

MSI TDR: Is there anything you would like to add?

Kerim KALAFATOĞLU: I believe that at ARES, we've brought a new approach to the shipbuilding industry. We're not just building ships with the most original designs, but also offer our users a vision. After we produce and deliver a product and complete our works, we don't just turn our backs and forget about everything. We also stand as guarantors for the platforms we produce. We make contracts for maintenance and repair. In case there is any problem, we intervene within 24 hours to ensure it is resolved in the shortest time possible. We even supply materials to users with which we've signed maintenance contracts. In brief, ARES signifies a problem-free ship with a seamless life cycle. Until now we've delivered over 100 ships.

None of them have been returned within the scope of their guarantee, or for any other reason. Engaging in production to meet the country's needs, and working to represent Turkey in the best way possible around the world, ARES Shipyard also stands as a shipbuilder – and perhaps the only one in the world – capable of giving 20-year hull warranty for the ships it manufactures. With its young, dynamic and inquisitive team, as well as its innovative, different and creative solutions, ARES continues to build trust as it moves forward on the path to becoming the rising star of the Turkish and global shipbuilding industry.

I also would like to sincerely thank MSI TDR for your coverage of ARES, and for all the ways in which you're contributing to raising our awareness and knowledge of the industry.

On behalf of our readers, we would like to thank Kerim Kalafatoğlu, Chairman and Executive Director at ARES Shipyard, for taking the time to answer our questions and providing us with valuable information.

ASELSAN Focuses on Collaborations

Taking part in the exhibition with the goal of holding one-to-one talks that will increase its number of collaborations, ASELSAN largely succeeded in achieving this goal by hosting numerous guests at its stand. Amid his busy schedule at the event, we had the opportunity to ask questions to Prof. Dr. Haluk Görgün, Rector of Gebze Technical University (GTÜ) and Member of the Board of Directors at ASELSAN.

MSI TDR: From what we can see, you're not showcasing any products at this exhibition. How should we interpret this picture?

Prof. Dr. Haluk GÖRGÜN: As ASELSAN, we deliberately chose not to bring any products this year. Our products have already gained worldwide recognition. Instead of showcasing products, we are, in this year's exhibition, holding planned visits in which we discuss cooperation-related issues, and performing highly important international meetings. We've welcomed many delegations at our stand. In fact, I have to admit that because of these meetings, we had little time and opportunity to tour the exhibition itself.

MSI TDR: What are your observations concerning the exhibition?

Prof. Dr. Haluk GÖRGÜN: As all participants here will also agree, DSEI is one of the world's most prestigious defence exhibitions. It's an event where all leading actors of the industry make an appearance, and to which Turkey participates at a national level. Up until 10 years ago, if we had said that our country will one day be able to appear at this event with so many participants, most would have thought: "That's surely a nice dream to have; something to hope for in the future..." However, Turkey has a very large presence here today. Looking at the level of participation of other countries, this is certainly something that makes us proud. I also would like to thank both the SSM and the SSI for arranging this participation at a national level. The participation of Şuay Alpay, the Deputy Minister of National Defence, and Ali Fidan, Undersecretary at the Ministry of National Defence, as well as their support for our companies, has been another source of pride for us.

MSI TDR: What can you say about the Turkish companies participating in this exhibition?

Prof. Dr. Haluk GÖRGÜN: I am visiting each and every one of them. We're meeting not just with the companies affiliated with Turkish Armed Forces Foundation, but with all companies of different sizes within the industry. I am certain that other [Turkish] companies such as HAVELSAN and ROKETSAN will also be taking important initiatives here, at this exhibition. They will likely build new partnerships and create new opportunities for collaboration. There is one point which I consider the most important: Our companies are all onboard the same ship, and we're not each other's rivals. We're a coherently growing ecosystem, consisting of pieces that complement in each other. I was greatly pleased to see this same atmosphere and mindset in all of the Turkish teams present here. I believe that our country's technological capabilities, production, exports, recognition and visibility in this field will increase further over time.

There is also one other thing I particularly want to mention: HAVELSAN has a product on display here, a Holographic Situational Awareness System, which is a type of augmented reality application. HAVELSAN developed this system with the support of faculty members at the GTÜ. It thus constitutes a brilliant example of the university-industry cooperation. Our faculty members also provide consultancy services to many companies in Turkey willing to work in this field.

MSI TDR: In July, ASELSAN announced establishing a new company in Malaysia. Could you tell us about this company's activities?

Prof. Dr. Haluk GÖRGÜN: First of all, I want to point out that this company's region of operations isn't limited to Malaysia. That is because Southeast Asia is a very important market for us, one in which we're already very strong. There are very significant opportunities and venues for cooperation in the region. And this isn't just valid from a defence industry standpoint; we also have important targets there with respect to civilian applications. And this newly-established company will help us keep close track of the developments in the Southeast Asian market, where we already enjoy a strong presence.

On behalf of our readers, we would like to thank Prof. Dr. Haluk Görgün, Rector of GTÜ and Member of the Board of Directors at ASELSAN, for taking the time to answer our questions and providing us with valuable information.

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Competition Development

BMC Presents Its Expanding Product Family

Taking part in the exhibition to maintain warm relations with its current customers and to establish contact with potential ones, BMC showcased scaled models of various vehicles in its product range. We were able to learn more about the company's recent activities from Osman Devrim Fidancı, International Business Development and Sales Director at BMC.

Showcasing in London the 2.5-ton, 5-ton and 10-ton members of its tactical wheeled vehicles (TWV) family as well as its KİRPİ mine-resistant ambush-protected (MRAP) vehicle, BMC plans to especially put the VURAN and AMAZON to the forefront in regional markets such as the Turkic Republics and Southeast Asia. Designed to carry less personnel compared to the KİRPİ, these vehicles are also lighter due to their smaller size, which increases their operational capabilities. Furthermore, instead of trying to have each vehicle carry a whole squad, the vehicles were designed based on a concept in which multiple vehicles each bear smaller fire teams. Emphasising that these features of the VURAN and AMAZON, which can carry nine and seven crew respectively, put them a step ahead of their competitors in the aforementioned regional markets, Fidancı said that they have received many requests from potential customers who want to have these platforms tested.

Having designed its product range as a large family of armoured vehicles, BMC is now working, after the KİRPİ, VURAN and AMAZON, to add a smaller and lighter new vehicle to this family. As the oldest member of this family that has proven itself on the battlefield, the KİRPİ continues to remain up-to-date thanks to the new capabilities it receives. The vehicle family can have a large variety of payloads integrated on them, and, owing to the weapons they field, all the members of this family have become as much a combat vehicle as they are a transport vehicle.

BMC is also continuing without pause to work on building its facility in the Karasu District of Sakarya Province. This facility has been designed as a R&D centre dedicated entirely to the defence industry, and will, at the same time, also serve as a production complex.

Working with numerous small and medium-sized enterprises (SMEs), BMC embraces a policy based on growing together with the ecosystem. In line with this policy, the company met with subcontractors at the 2nd Suppliers General Assembly held in May, during which it shared its vision for military and commercial vehicles with suppliers. The number of SMEs participating to the summit was over 400.

By adding logistic support activities to the list of services it offers to its customers, BMC aims to sustainably support, throughout their entire life cycle, the products it delivers to the end user. By this means, it seeks to offer many new business opportunities to subcontractors. ◆

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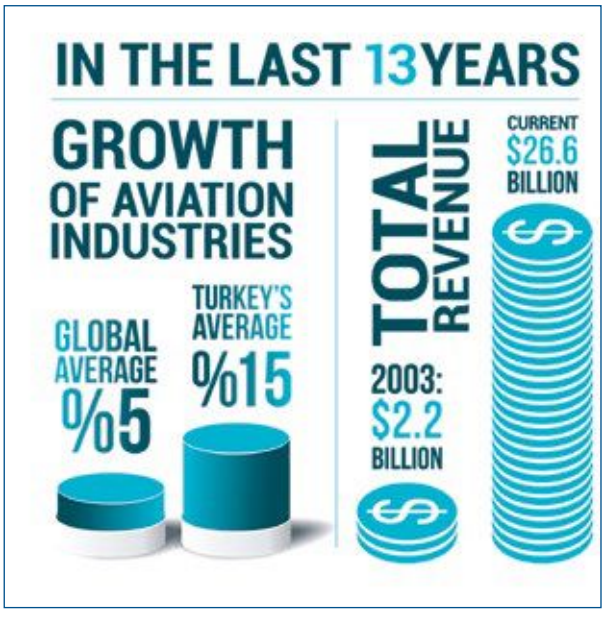
EURASIA Airshow on Fast Track

Promotional activities for the EURASIA Airshow, which will be held next year between 25 and 29 April at the Antalya International Airport, continued at the DSEI exhibition. We were able to obtain information from Ferhat Yenibertiz, CEO of EURASIA Airshow, about the latest situation in the works and preparations relating to this event, organised by Medyacity under the auspices of the Presidency of the Republic of Turkey.
Having already taken part in conferences, exhibitions and other similar events in 11 countries over the past 10 months to meet with aviation organisations, the EURASIA Airshow team used the DSEI exhibition as another opportunity to continue holding such talks. About 70 percent of the 550 organisations the team has met thus far in relation to the event consisted of foreign companies.

Ferhat Yenibertiz

Bringing Together the Giants of the West and East

Bearing great importance for Turkey also from a tourism standpoint, the EURASIA Airshow aims to have 30 countries participate at a national level. Meetings held with 10 of these countries have reached the stage where discussions are now focusing on the technical details of the chalets to be established at the event. Yenibertiz described the scope of the event and the participating countries as follows: "The EURASIA Airshow will become the meeting point of important aviation industry actors of the West and East. We have a total of 12 representatives across the world. As you may already know, participation at a national level is one of the main factors behind the success of any exhibition. Concerning their participation at a national level, we've agreed in principle with India, the UK, Italy, South Africa, France, Czech Republic, Pakistan and the People's Republic of China. All that's left is to sort out a few bureaucratic aspects. Our meetings with Iran, Russia, the Gulf Countries, the US, the Netherlands, Sweden and Ukraine are also progressing very well. Our goal is to reach 30 in terms of the number of countries participating with pavilions. Iran in particular is not a country we're used to see participating at national level in exhibitions; the EURASIA Airshow will thus witness a first in this respect."
Similarly, there are also works concerning the details of the agreements to be signed with certain large aviation companies, whose names have not yet been disclosed. Yenibertiz said that while they have made certain progress in their talks with various companies, there will have to be official correspondence between countries to clarify certain other aspects such as the participation of official delegations, describing their efforts in this regard as follows: "Through the Undersecretariat for Defence Industries, we've sent official letters to nearly 90 countries we've selected. We made our plans assuming that approximately 240 delegations will be visiting from these countries. We consider attendance by delegations to be very important."
For the event, which is planned to draw 350 to 400 companies, an area of 300,000 square metres has already been provided by the General Directorate Of State Airports Authority (DHMİ). About 30,000 square metres of this area consists of indoor areas, while the remaining area consists of parks and approximately 65 chalets. The total area allocated for the chalets is between 100,000 to 150,000 square metres. A flight management team of 11 is also working to ensure the safe execution of all aviation-related activities before, during and after the exhibition. This team is conducting comprehensive inspections on the exhibition grounds to guarantee both flight and ground safety.



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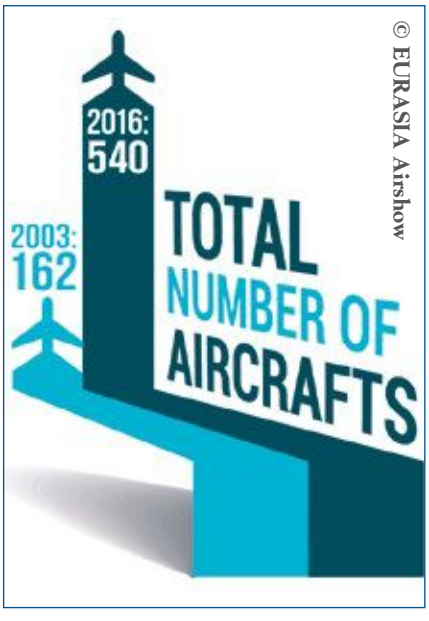

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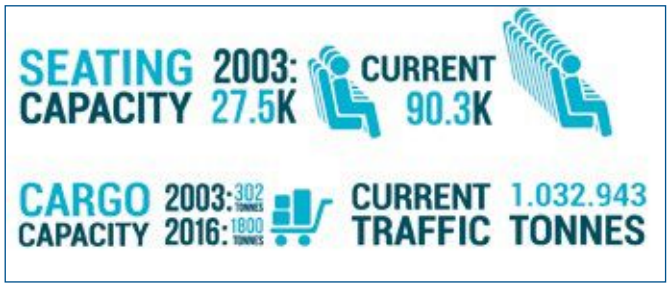
Aiming for 40 Million Dollar Business Volume

Yenibertiz also commented on the business volume they expect the event will generate: "With the EURASIA Airshow, we are holding the largest event in the history of the Republic of Turkey in terms of the added value it will provide our country. Taking into account the commercial and military aviation industry contracts to be drawn up during the event and over the course of the year; the potential aircraft purchases and orders; and the economic contributions for our country associated with the accommodation, transport and social expenses of thousands of foreign visitors, we expect the EURASIA Airshow to generate a business volume of about $40 billion. From all across the world, we're bringing together important players of the aerospace industry."

© EURASIA Airshow

Multi-National Airshows to Be Held for First Time in Turkey

The event will also involve a variety of airshows, and meetings are currently being held with aerobatic teams from eight countries. Yenibertiz commented on this subject as follows: Multi-national airshows will be another important type of event we'll be holding at the EURASIA Airshow. To head our Flight Management team, we've already reached an agreement with Perttu Karivalo from Ireland, who has vast experience in airshow management, and was even received an award from the European Airshow Council (EAC) in the best flight management category. Flight safety is of vital importance in the management of any airshow. Our 11-strong team, which we plan to expand in the coming period, continues to carry out all the necessary activities on this subject. We're corresponding with seven or eight countries which, according to our plans, will have teams performing in the airshow. The teams from these countries include Breitling, Redbull, Red Arrows, Baltic Bees, Frecce Tricolori, Pioneer Team and Aerobatic Tactics. We're also receiving support from the Turkish Air Force Command with regards to bringing military flight teams to the event. We're continuing to work on this. We're also communicating with the relevant parties on bringing to the event an F-35 aircraft, which hasn't yet entered the Turkish Air Force Command's inventory, and which we believe will cause quite a stir at the event."



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Airline CEO Summit

Yenibertiz said the following concerning the Airline CEO Summit they plan to hold as part of the event: "We're also thinking about an Airlines CEO Summit at the EURASIA Airshow. There are more than 25 airline companies which are Star Alliance members. We plan to invite these members to the event with the support of the Turkish Airlines (THY), and aim to bring at least 10 of their CEOs to this summit as speakers on out-of-the ordinary topics. In addition, through various events such as golf tournaments and concerts to be held under the umbrella of the EURASIA Airshow, we want to enhance the appeal of the exhibition's commercial advantages by adding an entertainment and leisure aspect. Concerning the golf tournament, we'll benefit from THY's experience in this area. We're also working together with the Ministry of Culture and Tourism on this subject. For example, we'll be organising cultural tours for high-ranking company representatives. Last two days of the event will be public days and very soon, we'll launch a tremendous campaign across Turkey to invite our people to these extraordinary shows. We're thinking about keeping the cost of the entrance tickets very low, and to use the associated revenues as donation for the Kartal Foundation."

Yenibertiz's concluding remarks on the EURASIA Airshow were as follows: "In fact, even the name of our event brings with it a great responsibility. Our name generates a positive response which even we hadn't anticipated. Europeans already take part in the exhibitions in Europe, and these people no longer want to keep seeing the same companies and the same faces. At this point where various airshows in other parts of the world have already reached their saturation point, the EURASIA Airshow stands out as an event that will bring together the European, American, Asian and Middle-Eastern markets, and be conducive for commercial agreements and for building new international collaborations." ◆

With the contract signed on the third day of the DSEI, Jane's by IHS Markit became the EURASIA Airshow's Show Daily publisher. The contract was signed by Blake Bartlett, Senior Vice President of Jane's by IHS Markit, and Ferhat Yenibertiz, CEO of EURASIA Airshow.

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FİGES: On the Path to Becoming a Community of Technology-Oriented Companies

FİGES appeared at the event in London with two members of its Telescopic Mast System (MAST) product family, which it had showcased for the first time during IDEF'17. Taking part in its first overseas exhibition after an intermission, the company arrived at DSEI with news of the domestic and foreign orders it has received for the MAST, and its efforts to establish new companies. We discussed the company's recent activities with Koray Gökalp, General Manager at FİGES.

MSI TDR: Nowadays, FİGES stands out as a company that manufactures products such as bionic hands, the MAST, and three-dimensional printers. Has this identity led to any changes in your activities related to international exhibitions?

Koray GÖKALP: DSEI is the first international exhibition in which we're taking part with our own products. At the time when we were just an engineering company, that is before we had our products, appearing in exhibitions abroad didn't have a discernible benefit for us. One reason for this, I believe, was the fact that adopting the "I can do everything" approach didn't have much value or meaning in the eyes of the customers. That's way having our own advanced technology products allowed us to attract attention at foreign exhibitions.

MSI TDR: What is the current stage of your works on the MAST?

Koray GÖKALP: Concerning the MAST's qualification, the system has successfully passed the most difficult tests, including the electromagnetic interference (EMI), electromagnetic compatibility (EMC) and vibration tests. The only thing we still have to do are the tests for operation under dusty environment tests, which we'll perform in October in a test centre in the UK. Therefore, within a very short period of time, the MAST family will start to consist of products that meet international standards. The finite elements analysis and field tests we performed have given our products the ability to be used in a fully-deployed position, even when the land platform to which it has been integrated moves at speeds of 80km/h. This is an advantage which many of our competitors still lack. Thanks to this feature, our product can make a tactical difference on the battlefield. We can see the best example of this in platforms that field the new generation, wireless version of the BGM-71 TOW antitank missile. As this missile functions based on the "command to line of sight" principle, the missile launcher needs to keep the target in its line of sight until the moment the missile strikes the target. On the other hand, a platform to which our MAST has been integrated can move behind cover after firing its missile.

MSI TDR: How will you integrate the MAST to the platforms in which it'll be used?

Koray GÖKALP: There is one important difference that sets FİGES apart from its competitors with similar products: The fact that we are an engineering company. From the very beginning, we set out with the intention of carrying out integration activities. That is why, from our point of view, integration constitutes the easiest part of our activities.

SD 35 series MAST

FİGES Achieves Growth with MAST Orders

MSI TDR: Have you received any orders for your MAST solutions?

Koray GÖKALP: Indeed we have. Recently, we've received an order from ASELSAN's Vice Presidencies of Defence System Technology (DST) and Radar and Electronic Warfare Systems

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(REWS), for a total of 110 MASTs of different dimensions. We'll be manufacturing and delivering 20 of them by the end of this year. We've also sold one MAST to LIG Nex1, a Republic of Korea-based company; this sale also represents our first export achievement. We've performed this sale as part of a project in which the prime contractor is LIG Nex1, and the end user is the United Arab Emirates (UAE). Our product is also currently being tested by the UAE. Once these tests are done, we'll receive an additional order for 100 more MASTs. The total value of the MAST-related offers we've made to various institutions and organisations currently stands at $21 million, while the total value of the orders we've received has reached $6 million. The number of offers we've made is now 13. And since there was so much demand for MAST, we've established a new company named FİGES Elevation Systems Technology Inc. (FİGES Technology), based in the Başkent Organised Industrial Zone in Ankara, that will focus only on producing the MAST. Right now, we're working to complete the qualification process for the four main production lines we've built within this company. Once our lines begin to operate at full capacity, our annual production rate will climb from 30 to 90. Certain other developments we were expecting concerning FİGES Technology are also entering their last stages. We'll soon be reaping their fruits as well.

MSI TDR: Why did you prefer to establish a new company for the production of the MAST?

Koray GÖKALP: FİGES is going through a period of transformation. From now on, FİGES will be a collection of companies in which, at the centre, there is an investment company which supports R&D-focused initiatives, and at the periphery, there are companies that each have their own products or their own specialised areas of services. Similar to what we've done in the example of FİGES Technology, we'll establish a different company for producing three-dimensional printers, and another one for producing bionic hands. Due to its current organisational structure, FİGES is active in many fields of engineering, services and industry areas. That's why we're now commercialising our products, and special services, under different companies, to establish a structure that will be sustainable from an organisational, administrative and commercial standpoint. The purpose of the investment company at the centre of this community is to first identify – together with entrepreneurs from within and outside the company – the strategic areas of service and the ideas for advanced technology products that are needed in different industries. This company will then develop and mature these ideas through R&D efforts, and then commercialise them within a sustainable corporate organisation, in a manner similar to what was done with FİGES Technology Inc. Under this structure, entrepreneurs will be able to benefit from FİGES' facilities, infrastructure and funding strength in every way, as they work to mature their ideas. Moreover, they will also own part of the rights pertaining to the product resulting from their ideas.

MSI TDR: On the products front, what can we expect next from FİGES?

Koray GÖKALP: We'll develop additional versions of the MAST that can respond to different requirements. Among these, we'll have a 20-metre system; a 2-2.5-metre system for use on tanks; and finally a backpack type system weighing 2 to 3 kg that can be carried by a single soldier. We'll thus be completing our family of composite products. I should also mention that when it comes to the analysis of composites, we're completely unrivalled in Turkey. FİGES is especially number one in the analysis of long-fibre components. We'll also start to showcase our three-dimensional printer in machine exhibitions. TAI has already purchased one of these products. We'll now be supplying it to Kale Aviation and Kale R&D as well. We also have a potential customer in Pakistan. Furthermore, we're also thinking about establishing a processing centre with this product family. In this centre, or facility, equipped with four three-dimensional printers, we'll be engaging in production both for ourselves and other companies.


HP 35 series MAST

MSI TDR: From now on, in which other events can we expect to see FİGES?

Koray GÖKALP: We're aiming to take part in all major events by taking our MAST solutions with us. In the coming period, we'll first take part in the 8th Naval Systems Seminar held in Ankara. We're also planning to participate in overseas exhibitions such as the GDA in Kuwait, DIMDEX in Qatar, DSA in Malaysia, and IDEX in the UAE. In brief; since we now have our own products, we'll be appearing more often in exhibitions.

On behalf of our readers, we would like to thank Koray Gökalp, General Manager of FİGES, for taking the time to answer our questions and for providing us with valuable information. ◆

Fujitsu Plans to Turn Turkey into Middle East's Defence and Aerospace Centre

As one of the global players of the defence and aerospace industry owing to its involvement in projects such as the F-35 Joint Strike Fighter Programme, Fujitsu intends to bring its capabilities in this area to Turkey, through technology transfers it will perform via joint ventures and collaborative efforts. We had the opportunity to learn more about the company's plans and targets for Turkey from Tim Gibson, Vice President of Defence and National Security at Fujitsu.

MSI TDR: Can you tell us about Fujitsu's perspective towards the defence and aerospace industry, as well as its solutions in this area?

Tim GIBSON: Fujitsu ranks 62nd worldwide in terms of defence and aerospace investments. Our largest presence is in Japan, where we have an annual turnover of $700 million. Ranking next is our operations in the United Kingdom, where we have an annual turnover of $400 million and 600 workers. And ranking third is our operations in the United States, with an annual turnover of $250 million. Fujitsu's activities in defence and aerospace concentrate primarily in Japan, the United Kingdom and Australia. With $1.6 billion in annual revenues, defence and aerospace is also the industry in which the company is seeing the fastest growth at a global level. In a dedicated fashion, we're continuing our growth in this area in Europe as well. In this broader context, we've decided to become involved in the field of defence and aerospace in Turkey. At Fujitsu, we made our plans, at the beginning of this year, about initiating defence and aerospace activities in 23 countries outside Europe and the United States. We have a different approach specific to each country. We don't have a single model for defence and aerospace. What sets us apart from other suppliers is that we make local human resources and local suppliers part of our business. In every country where we do business, we bring different models and solutions by taking local needs into account. For example, in Finland, we have a large business volume in the field of informatics. As we were already familiar with the needs and business habits over here, in Turkey, we found it easy to start working in the field of defence and aerospace. In the business model we've devised in

Visitors at Fujitsu's stand had the opportunity to try the company's virtual reality applications.

Visiting the Fujitsu stand during the exhibition, Şuay Alpay, Deputy Minister of National Defence, received information from Tim Gibson, Vice President of Fujitsu Defence and National Security, about the company's defence and aerospace-related targets for Turkey.

Turkey for the defence and aerospace industry, we envisage an organisation and strategy that is local. This business model can take the form of a partnership or joint venture. With the defence and aerospace organisation we plan to establish in Turkey, and the solutions we think about developing, we plan to offer services not just to Turkey, but also to the countries of the Middle East.

MSI TDR: Does your plans also include the transfer of technology?
Tim GIBSON: Yes, we will perform the transfer of technology and skills. The business model we're planning to form in Turkey involves products and solutions developed by Turkish suppliers, in facilities employing Turkish citizens. Taking into account the needs of the market, we'll mirror into Turkey the experience and technology we've gained from across the world. In US defence companies, the board of directors is fully independent, and consists of US citizens intent on protecting the US' interests. Moreover, the board members generally include US generals and senior managers who retired from larger companies. This organisational structure has the advantage of bringing an approach that adequately responds to the existing security gaps, as well as the US' military requirements. A similar model may also turn out to be the right approach for Turkey. Most of our solutions are NATO-compatible. The fact that Turkey is a NATO member is an advantage for us. We can readily sell to NATO countries any product and application produced in Turkey or in the United Kingdom.

At the exhibition, Fujitsu showcased its solutions for defence and aerospace.

MSI TDR: Do you not consider the transfer of technology as something negative from the standpoint of your company policies?
Tim GIBSON: Fujitsu invests $2 billion a year for R&D in the field of defence and aerospace technologies. Thanks to the important global investments we've made on R&D, we now hold more than 180,000 patents. What good are all these novelties and innovations if we don't use them for our customers?

MSI TDR: Does Fujitsu plan to reach the countries of the Middle East through Turkey?
Tim GIBSON: Yes, we see Turkey as a centre from which we can reach these countries. In contrast to offering US products and solutions, on which no modifications or localisation are generally made or permitted in the Middle East, our approach is to propose solutions that match local demands, and which are produced using domestic contribution. In our business model, which we've formed thanks to the presence we've had in Turkey for many years, we attach importance to Turkish system integrators. We're continuing to work with them to come up with new projects.

MSI TDR: Does Fujitsu have concerns about doing business in the field of defence with non-NATO countries?
Tim GIBSON: Not at all. At Fujitsu, we have a strong trade infrastructure with many non-NATO countries, such as China and Russia.

MSI TDR: What does your partners in the field of defence think about your idea of doing business in Turkey?
Tim GIBSON: We pay attention to keeping our intellectual property rights outside the US. That's why we have no issues with regards to utilising and applying our technologies in other countries.

MSI TDR: Why is it particularly in this period that you've begun to consider expanding into the defence and aerospace industry in Turkey?
Tim GIBSON: The timing of our growth and expansion in this market is largely the product of a natural flow. You don't always have the ability to utilise, at the same time, every opportunity that appears. We think that we now have the competent team that we needed to operate effectively in the field. In addition, the fact that Turkey has very special projects that are reaching maturity also prompted us to act now. We consider it important that Turkey is taking part in the F-35 project. That's because we are also one of this project's business partners. Similarly, Japan is also quite interested in this project.

MSI TDR: As a final question, and based on what you've said for the F-35, could we ask your thoughts about Fujitsu's potential involvement in the TF-X, one of Turkey's most important projects?
Tim GIBSON: In case we're given the chance, we would be delighted to take part in this project.

On behalf of our readers, we would like to thank Tim Gibson, Vice President of Defence and National Security at Fujitsu, for taking the time to answer our questions and providing us with valuable information.

HAVELSAN at London with Command and Control and Combat Management Systems

Having become one of the world's leading companies in the field of combat management systems and command and control systems, HAVELSAN focused during the exhibition on promoting the new capabilities it developed in these areas. One of the solutions the company highlighted at the exhibition was the latest member of its command and control system product family, the Holographic Situational Awareness System for C4ISR (HoSA-C4ISR). Thus, this system that was first showcased at IDEF now made its first appearance overseas.

Having previously assumed numerous projects in the field of combat management systems and command and control systems, HAVELSAN has, with this system, developed a masterpiece that takes the battlefield from the two-dimensional screen to a three-dimensional environment. The system has been designed for use in many areas, from the management of naval platforms during combat to homeland security. The demonstration of the system at the exhibition involved the recreation of a surface platform with various friendly and enemy units in its surrounding.

Developed jointly with the Gebze Technical University, the system is essentially an augmented reality application. Differently from virtual reality, augmented reality applications combine the real environments with artificially generated images and sounds. Users hence do not lose their interaction with objects and people in the real environment.

Under the rapidly changing conditions of the battlefield, the HoSA-C4ISR enables the processing of large quantities of external data that would otherwise be difficult for humans to efficiently perceive and process, such that this data can be presented in a three-dimensional and visual format. As the system allows the visual representation of data that are normally indicated in numbers – such as altitude, depth, distance, speed and direction – it becomes easier for users to make sense of such information more rapidly. Under normal circumstances, these data are presented to the receivers and operators through two-dimensional screens.

The HoSA-C4ISR also makes it easier for the ship's commanding officers to relay his decisions and orders. Regardless of the advances in technology, commanding officers still have to issue orders verbally, and under the stress of combat, operators may misunderstand them from time to time. However, owing to augmented reality, all operators can simultaneously see both the commanding officer and the tactical image in front of him. Thus, when the commanding officer takes a decision or issues a command, the operators can see exactly where he is looking or what is he referring to.

The HoSA-C4ISR displayed at the exhibition is essentially an augmented reality application for command and control purposes. Under the rapidly changing conditions of the battlefield, the HoSA-C4ISR enables, through its special glasses, the processing of large quantities of external data that would otherwise be difficult for humans to efficiently perceive and process, such that this data can be presented in a three-dimensional and visual format. When the special glasses of the system are not used, all that appears in an empty table (left). On the other hand, the screen outside containing the system shows the camera images of the room, overlaid with the images seen by the users wearing the special glasses. (right)

Ahmet Hamdi Atalay

We had the opportunity to discuss HAVELSAN's agenda at the DSEI with Ahmet Hamdi Atalay, General Manager and CEO of HAVELSAN.

MSI TDR: Can you briefly tell us about HAVELSAN's agenda at DSEI?

Ahmet Hamdi ATALAY: The DSEI exhibition is an event closely followed by the authorities in our target markets, which is why we attach considerable importance to it. We've held numerous meetings with delegations, and I hope that we'll see their positive outcomes in the coming period.

Here, the main priority in our agenda, in other words the primary theme/topic on which our participation revolved, was our command and control systems and combat management systems. At the same time, we've also presented our training and simulation systems to the relevant officials. Furthermore, we're also showcasing the Holographic Situational Awareness Systems for C4ISR, which was developed using augmented-reality based technologies. We've come up with this system by blending the experiences we've gained from our battle-proven combat management systems and command and control products. British officials from the Royal Navy and from homeland security agencies are visiting our stand to learn more about the system. Aside from this, the Joint Operations Command and Control System DOOB that we're also showcasing at this event has also drawn considerable attention.

MSI TDR: You've set up an office in Doha, the capital of Qatar, with the intention of tracking local projects. Could you tell us about how this office was opened, and about this office's importance with regards to HAVELSAN's presence in the region?

Ahmet Hamdi ATALAY: This office we've opened in Doha is our first centre in the Middle East. It is tasked with ensuring the continuity of our projects in Qatar, and assessing new business opportunities. We will perform the official inauguration of our office in the coming weeks. With the establishment of this office in Doha, we'll be conducting business development and offering project management services not only in Qatar, but also in countries such as Kuwait, Oman, Bahrain and Jordan.

On behalf of our readers, we would like to thank Ahmet Hamdi Atalay, General Manager and CEO of HAVELSAN, for taking the time to answer our questions and providing us with valuable information.

Katmerciler Arrives in London with News on the HIZIR Vehicle

The Italian Armed Forces delegation was also among the visitors at the Katmerciler stand.

Participating in the DSEI exhibition for the first time, Katermerciler continues to work nonstop on the development of its vehicles. Although it was unable to bring any of its vehicles to the exhibition due to a very busy event schedule, the company still used the event as an opportunity to meet with delegations from different parts of the world. We had the opportunity to converse with company officials, from whom we obtained various information about the latest situation with Katmerciler's operations.

For instance, Katmerciler will be supplying its HIZIR vehicles within the scope of the project titled Supply of Mobile Surveillance Units for Increasing Border Surveillance Capacity of Borders between Turkey and European Union (EU), in which ASELSAN is the prime contractor. This EU-funded project, which will be completed in 2018, is being conducted by the Central Finance and Contract Units (CFCU) of the Prime Ministry Undersecretariat of Treasury, the agency responsible for administering funds allocated to Turkey as part of the EU accession process.

Katmerciler also continues to work on a hybrid power pack version of the HIZIR, which it is developing with ASELSAN, and which it previously announced at IDEF 2017. The company intends to prepare the first vehicle for testing by the end of this year.

Katmerciler is also in the process of making improvements on the Remote-Controlled Weapon Platform (UKAP) it showcased for the first time at IDEF 2017, which will make the vehicle more capable of operating under challenging conditions, such as desert environments. Following these improvement-related works, the company plans to test the vehicle under different geographic conditions.

Meanwhile, Katmerciler also signed the contract for the New Generation Crime Scene Investigation Vehicles (KIRAÇ) Project with the Undersecretariat for Defence Industries (SSM). The said project covers the acquisition of 120 4x4 vehicles. Of these, 110 will serve as New Generation Crime Scene Investigation Vehicles, while 10 will serve as New Generation Laboratory Vehicles.

In line with requests from the General Command of Gendarmerie and the Turkish National Police, the company also works on equipping various vehicles with the NEFER hidden armour system.

Among the defence exhibitions organised towards the end of the year, Katmerciler has already participated in the Bahrain International Defence Exhibition and Conference (BIDEC) organised in Bahrain, and plans to take part in the Gulf Defense and Aerospace (GDA) exhibition in Kuwait. ◆

Leonardo and its Helicopters at the Forefront of DSEI


© Leonardo

A Turkish Naval Forces delegation receiving information about the AW101 Merlin helicopter.

Drawing attention with the large number of platforms it brought to the exhibition for display, Leonardo showcased an AW159 Wildcat helicopter at its stand located in the exhibitions indoor areas, in addition to the one AW101 Merlin Mark 3 and one AW101 Merlin Mark 4 helicopter it showcased in the exhibition's open area. Furthermore, an AW159 Wildcat helicopter was also displayed on the helipad of the Royal Navy's HMS ARGYLL (F231) frigate, which opened its doors to visitors as part of the exhibition. Leonardo's stand also featured many products and solutions from its broad portfolio, such as the 127 mm and 155m guided munitions from the VULCANO family, the HERO rotary-wing unmanned aerial vehicle (UAV), and various electronic warfare modules. Among the products showcased at the company's stand was the scaled mock-up of the Dragonfire laser weapon system, the development of which is supported by Leonardo, as part of a broader consortium.

Company officials noted that they were visited by a delegation from the Turkish Naval Forces, to receive information about the AW101 Merlin helicopter. This helicopter can be equipped with different mission systems, and execute a broad range of missions that fall within the area of responsibility of the naval forces, including antisubmarine warfare, intelligence, reconnaissance and surveillance. The helicopter has a maximum take-off weight of 15,600 kg, and is powered by three GE CT7-8E turboshaft engines that each generate 2,527 horsepower. In addition to its two-person crew, the utility version of the helicopter can carry 30 passengers, and reach a maximum speed of 277 km per hour at sea level. Without reserve fuel tanks, the helicopter can remain in flight for 6 hours 50 minutes, and boasts a maximum range of 1,500 km. The helicopter's version designed for naval forces can carry a variety of payloads, including a 360-degree surveillance radar mounted under the fuselage; a search and weather radar mounted under the nose; a dipping sonar; and sonobuoys. In addition to machine guns of various calibres, the helicopter can also be equipped with torpedoes and guided munitions against surface vessels. With its 2.49 metre cabin width and 1,83 metre cabin height, the helicopter is described as having the largest cabin compared with its competitors. The helicopter's rotor blades and tail can also be folded, to reduce the amount of space it takes on a ship's deck.

The first day of the exhibition was also scene to a cooperation agreement signed between Leonardo, Discovery Air Defence and Inzpire. Under this agreement, the three companies will submit a joint bid to the tender opened as part of the UK's Air Support to Defence Operational Training (ASDOT) programme. The programme covers the provision of aircraft that will assume the role of aggressor during the British Armed Forces' training activities against hostile air units, and also includes support for these aircraft throughout the programme period. The main platform which will be proposed by the three companies that signed the cooperation agreement has not yet been determined; however, it is believed that they may propose a solution based on Leonardo's M-346 aircraft.

Before the signing ceremony of the agreement, Norman Bone, Chairman and Managing Director at Leonardo UK, and John Ponsonby, Managing Director at Leonardo Helicopters UK, delivered speeches in which they shared information about the company's activities in recent times. ◆

AW101 Merlin Mk4

MKEK: Determined to Become a Platform Manufacturer

At the exhibition, the Mechanical and Chemical Industry Company (MKEK) featured at its stand many members of its broad product family. At the exhibition, the company showcased for the first time in the UK the scaled models of its YAVUZ 6x6 tactical truck-mounted 155 mm howitzer and Penetrator Bomb (NEB), which it launched for the first time during IDEF 2017, as well as its MPT-76 and MPT-55 assault rifles.

Ahmet Taşkın, Chairman of the Executive Board and General Manager at MKEK, and Dr. Akif Akgül, Deputy General Manager at MKEK, commented to MSI TDR about their participation in the exhibition. Commenting about the activities they initiated for the production of the MPT-55, Taşkın also signaled their intention to become a strong player in the platform manufacturers league.

MSI TDR: What can you say about the DSEI exhibition's importance for MKEK?
Ahmet TAŞKIN: Our target markets include Africa, the Asia-Pacific region, the Middle East, and particularly the Gulf Countries. However, you have defence exhibitions in almost every part of the world. So we laid down the rule that we should take part in one exhibition, at a minimum, in each one of the four important markets, which are the Asia-Pacific region, South America, Europe and the Gulf Countries. In line with this principle, we're taking part in the Eurosatory and DSEI exhibitions in Europe.

MSI TDR: What is the current stage of your activities concerning the YAVUZ? Have there been any developments which you can share with our readers?
Dr. Akif AKGÜL: The weapon of this platform, in other words the barrel and cradle group, is the same as the one used in the self-propelled FIRTINA and towed PANTER howitzers. This weapon is being used on these platforms without any problems, and has already proven itself. That's why integrating it onto a 6x6 tactical wheeled truck was relatively easy for us. So far, it has passed the firing tests successfully. There are only some minor improvements that still need to be made. After that, we'll become ready for the special firing tests domestic and foreign users may require. Actually, foreign users appear more interested in this system. During IDEF, some foreign users even asked us to modify and update the YAVUZ in a variety of ways based on their specific requirements. As a matter of fact, one of our skills is our ability to modify the configuration of our products in accordance with user requests. In other words, we don't settle on a final configuration and say: "that's my product". Right now, Saudi Arabia and Pakistan are highly interested in this weapon system; we're continuing to hold talks with them in this regard. Through official channels, they expressed their wish to see its firing tests. These platforms are more suitable for their operation principles/doctrines. Instead of towed howitzers, they prefer economic systems with greater mobility. And that's where the YAVUZ stands out. That's because, despite the fact that it's not as well-equipped as the FIRTINA, this system is much more economical.

MSI TDR: With regards to platform-based systems, what is next on MKEK's agenda?
Ahmet TAŞKIN: Until now, we were mostly asked to produce subsystems. However, we embraced the mission of becoming a full systems supplier – in other words, of becoming a prime contractor. For a producer of our scale, this is only a natural outcome of the processes we've been through. That's why we don't see platform development as a result, but rather as the starting

MKEK has already allocated two-thirds of its production capacity for the years 2018, 2019 and 2020 for the production of MPT-55.

Ahmet Taşkın, Chairman of the Board and General Manager of MKEK, emphasised that MKEK, which has acquired the identity of platform manufacturer with the YAVUZ, will reinforce this identity and the most substantial step towards this reinforcement will be in the field of gun turrets.

point of a long-term vision. We had a similar process with the FIRTINA. Although this system was produced jointly by three parties – namely the General Directorate of Military Factories, ASELSAN and the MKEK – it was the MKEK that was tasked by the Ministry of National Defence (MND) and the Turkish Land Forces Command (TLFC) with the responsibility of marketing the FIRTINA overseas. In fact, we were also tasked with carrying out production to meet additional domestic needs. Given how much capabilities we already possess, we need to work on developing and advancing them even further. In the coming period, the MKEK will undergo a significant change in vision, in line with the targets we've laid out in this direction. Our most concrete step in this regard will be in the field of weapon turrets.

MSI TDR: In the SSI General Assembly Meeting organised in April, you've received a third-place award for you export performance. What can you tell us about this achievement?

Ahmet TAŞKIN: With this achievement, we've even managed to surpass some of the Turkish defence and aerospace companies that have even made it into the world's top 100 list. This is tangible proof of the level our export performance has reached. And this is indeed a source of pride for us. As for the root causes of this success... We, at MKEK, don't limit ourselves to selling our own products; we also engage in trade. This is a task we've assumed ever since the MKEK was first founded; however, until now, there wasn't much emphasis on this aspect of our activities. All in all, this is partly the reason for our export success last year. Many companies engaging in production, both in Turkey and

overseas, come knocking at our door, asking us to market their products. There is something I would like to state, not without a sense of pride: MKEK has the full backing of the Republic of Turkey. All the actors we deal with see this as a guarantee. Our corporate identity has a long history, stretching almost 200 years into the past; I can even say that our culture and tradition are even more deeply-rooted, going back nearly 600 years ago. That's why the MKEK is not a company that can suddenly vanish from one day to the next. Recognition, continuity and reliability are notions deeply ingrained in our brand. When the MKEK makes a promise about anything, it's akin to having the Republic of Turkey make a promise. And we act with full awareness of this fact.

MSI TDR: What kind of a strategy are you following for exports? What are your plans in this area?

Ahmet TAŞKIN: In the coming period, we'll increase the production of our aircraft bomb family, which includes the Mk-82, Mk-83 and Mk-84 bombs and the NEB. The general trend with aircraft bombs is towards smaller and more sensitive bombs, so we'll also be working in the same direction.

Dr. Akif AKGÜL: For production; in addition to our own facilities, we also use those of our subcontractors overseas, without ever leaving our position of prime contractor. There are various cases where we benefit from the advantages this arrangement offers. At the MKEK, we market not only our products, but also our capabilities. An example of this are the turnkey facilities we've established overseas.

MSI TDR: How are these activities mirrored in MKEK's R&D efforts?

Ahmet TAŞKIN: We're especially focusing on turning the various types of munitions we produce into smart munitions. We plan to convert our aircraft bombs, rockets and large calibre gun munitions into guided munitions. There are companies both in Turkey and abroad with which we're cooperating in this regard. And concerning R&D studies, we've taken the radical decision to use exclusively our own resources. The Government in Turkey provides very large supports and substantial incentives to promote the development of the defence industry in Turkey; however, we believe that these supports are, most of the time, used rather inefficiently in several respects, such as costs and time. We've seen this first-hand, and experienced such difficulties in some of the projects we conducted. That's why we've decided to work on the products we believe we need to include into our product portfolio in light of the developments worldwide, and initiated R&D projects with our own resources, without waiting for anyone to notify us about what they require. There are about 10 projects of this type that we've initiated over the course of this year. We're determined to keep pursuing this strategy. We realised that when we carry out and manage the projects ourselves, we're able to complete them in one-fifth of the time and one-fifth of the cost it would take in the other projects. The MPT-55 is an example of a project we conducted based on this approach.

MSI TDR: What is the situation with your works on the MPT-76 and MPT-55?

Ahmet TAŞKIN: The MPT-76 is an assault rifle which the MKEK has, as the prime contractor, developed on behalf of the SSM. All rights pertaining to this weapon belong solely to the SSM. We consider that any achievement that will be made with this weapon will also represent a success for Turkey. On the other hand, the MPT-55 is a weapon developed indigenously by the MKEK with both short and long barrel versions. Until now, it has been tested by the TLFC, the General Command of Gendarmerie, the Turkish National Police and the National Intelligence Organisation (MİT). These users had tried weapons from several different producers before; however, the MPT-55 was the only weapon that successfully passed all of their tests. SSM has also held meetings with us concerning the procurement of this weapon. For the coming period, what we recommended was that the MKEK focuses on the production of the MPT-55, while the production of the MPT-76 is left to other companies. However, the SSM still wants us to assume a leading and pivotal role with the MPT-76. That's why while we're fulfilling this role, we'll have to decrease the production of the MPT-76 and concentrate more on the MPT-55. In this context, we're making plans about our production capacity for the coming two years, and aiming to increase it five-fold compared to 2015, and three-fold compared to 2016. We'll ensure this increase in capacity not only by developing our own production capabilities, but also by increasing our cooperation with weapon and part manufacturers in Turkey. All of 2018's, 2019's, and part of 2020's production capacity has already been allocated. We'll use two-thirds of this production capacity for the MPT-55, and the remaining capacity for both the MPT-76 and our other ongoing production activities.

Penetrator Bomb (Nüfuz Edici Bomba / NEB)

At the exhibition, MKEK also exhibited a scaled model of YAVUZ, which was launched at the IDEF.

On behalf of our readers, we would like to thank Ahmet Taşkın, Chairman of the Executive Board and General Manager at MKEK, and Dr. Akif Akgül, Deputy General Manager at MKEK, for taking the time to answer our questions and providing us with valuable information.

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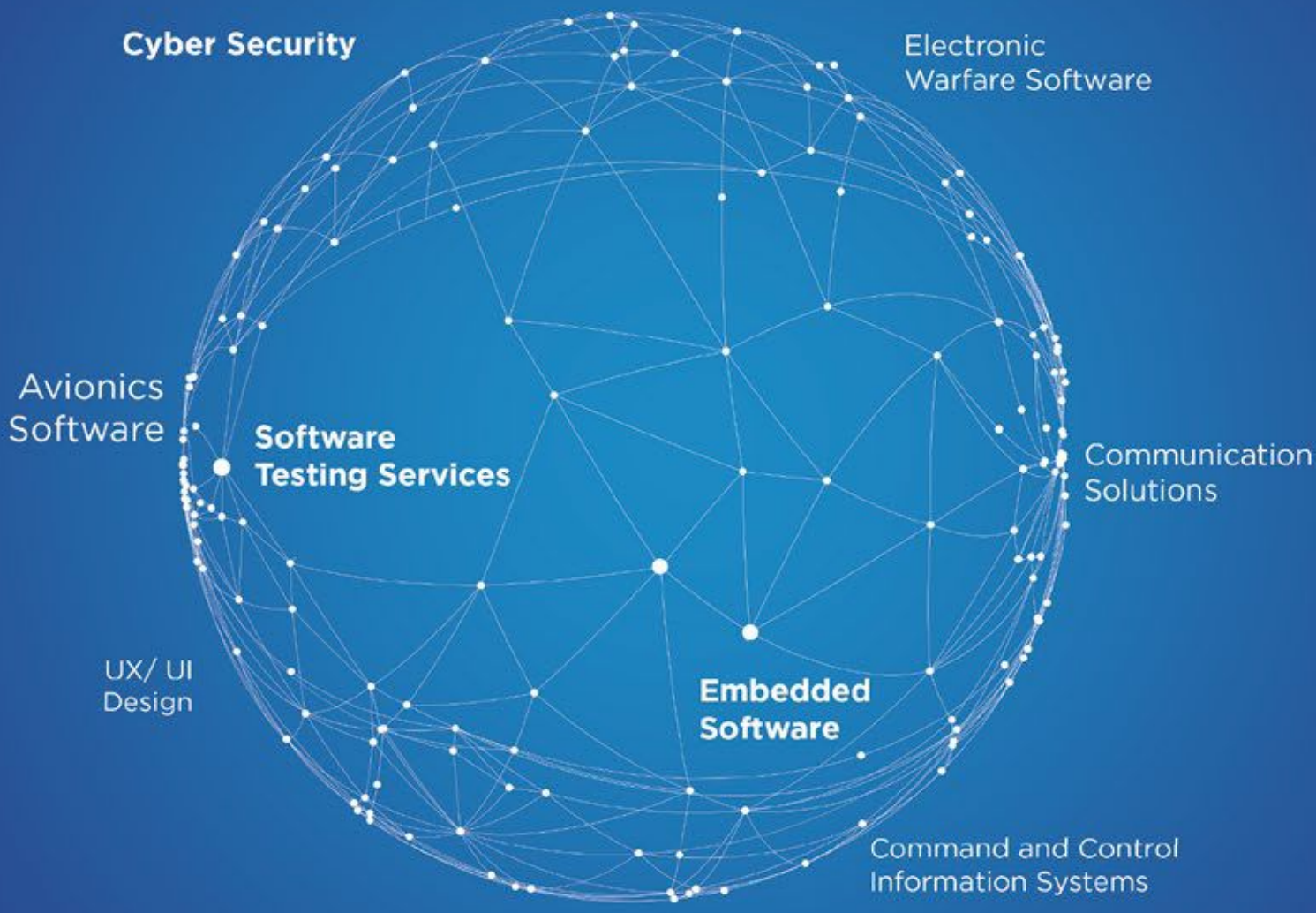

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CMMI DEV/3

Left to right: Eray Gökalp, General Manager of BNA; Cem Sapmaz, General Manager of Nurol Technology; K. Nail Kurt, General Manager and CEO of FNSS; Deputy Minister of National Defence Şuay Alpay; Engin Aykol, General Manager of Nurol Makina; Dr. Anıl Karel, Deputy General Manager of Nurol Makina; and Melih Kayaalp, International Business Development Director of FNSS.

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Nurol Makina Seeks New Users for the NMS 4x4 and EJDER YALÇIN

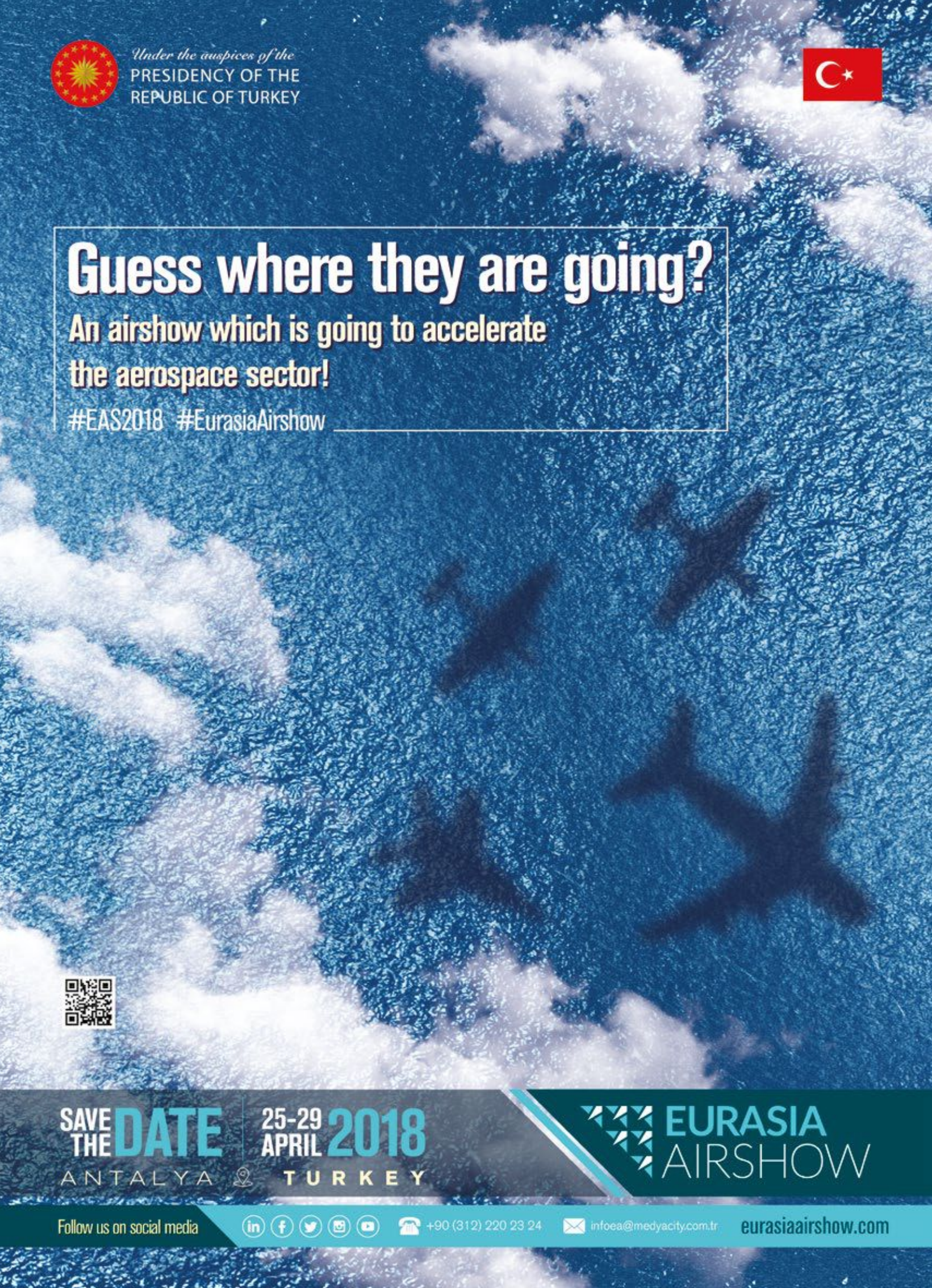
Nurol Makina, a company which has drawn considerable attention in recent times, showcased the EJDER YALÇIN and NMS 4x4 at the exhibition. We had the opportunity to obtain information about Nurol Makina's participation in the DSEI and its activities at the event from Dr. Anıl Karel, Deputy General Manager of Nurol Makina.

MSI TDR: You're showcasing the NMS 4x4 and EJDER YALÇIN at this exhibition. We'll have questions later about the EJDER YALÇIN; but first, could you tell us about the current situation with your works relating to the NMS 4x4?

Dr. Anıl KAREL: Owing to its modularity, the NMS 4x4 created a new class of its own. With features such as its high speed, adjustable protection level, changeable payload and rearrangeable seating configuration, the NMS 4x4 is a vehicle that can be used not only by the armed forces, but also by the security forces. If used by different users, the platform can provide many advantages from a logistics standpoint. Representatives from certain countries became highly interested in the vehicle even after just seeing it on brochure, and visited us to learn more. The vehicle is presently undergoing qualification tests. There is no doubt that they will be completed successfully; however, at Nurol Makina, we don't want to present the user any system which we haven't verified, and which we aren't completely certain of. Once the tests are concluded, we'll start meeting with potential users with more confidence.

MSI TDR: During IDEF 2017, we saw the EJDER YALÇIN not only at your own stand, but also at other stands, with various systems integrated on them. Are there any similar integration-related works being currently carried out on the EJDER YALÇIN, or another one of your vehicles?

Nurol Makina exhibited the EJDER YALÇIN and NMS 4x4 at the exhibition.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Dr. Anıl KAREL: One of our policies is actually to conduct joint development works on our vehicles together with different subsystem manufacturers. These subsystems can be a wide variety of different products, such as jammers, masts and gunfire locator. By working with different companies, we get to integrate various payloads on the vehicles by ourselves, before receiving any prior orders or requests. As a result, we ensure that we've all the interface information available beforehand, such that when a user has any needs/demands, we can respond rapidly. The reason we do this is because, once we sign a contract, any problems that may arise with the systems we integrate can disrupt the entire delivery plan. However, thanks to our approach, we first complete the system engineering studies to ascertain whether the systems we integrate can function compatibly with the vehicle. This, in turn, allows us to make offers with greater confidence. We can thus propose customers a broad range of solutions that can meet very different requirements. In this context, this general approach can lead to strategic collaborations with certain companies.

MSI TDR: Social media shares of various sources other than Nurol Makina revealed that the end user of the EJDER YALÇIN – which was the subject of much export-related news in recent months – was actually Tunisia. Which country do you think will be next in line?

Dr. Anıl KAREL: Presently, there are three countries with which we're holding meetings regarding the EJDER YALÇIN and ILGAZ II. The vehicles are tested under three different terrain and weather conditions. These highly detailed tests actually started a long time ago. According to the information we've received, our vehicles proved successful in areas where our competitors, both Turkish and foreign, performed poorly. All tests on the ILGAZ II have been completed. Critical tests for the EJDER YALÇIN have been completed as well; the only tests that are still ongoing are the performance and functionality tests, which are completely independent of weather and terrain conditions. We predict that these tests will be concluded very soon. However, doing business with certain countries can be very challenging. Even if you're successful, the processes can take too long, or administrative decisions can change suddenly. In fact, aside from your own capabilities and your vehicles' successes, political relations can, unfortunately, also have an impact in these countries. Other than this, we're also meeting with countries whose tests we've previously passed successfully. It is my hope that we'll soon be announcing a number of good news.

Our goal is to achieve with the ILGAZ II the same level of success we've seen with EJDER YALÇIN, our company's flagship. Similarly, the EJDER TOMA has also started to make inroads with exports; but we want to take this success even further. The EJDER KUNTER and NMS 4x4 will also pass through these same processes. But of course, there is a chance these vehicles might be subjected to different testing requirements. All of our vehicles have been tested before in Turkey, and are continuing to undergo tests. However, while some consider this as sufficient, others want to test the vehicles under their own conditions. We're ready for all of these possibilities.

NMS 4x4

MSI TDR: You have rolled out the third version of the EJDER YALÇIN and the second version of the ILGAZ. So, in terms of development studies, what's next on your agenda?

Dr. Anıl KAREL: With regards to the development of our vehicles, we blend – so to speak – the feedback we receive from users with our own observations regarding our test vehicles. We're constantly in an effort to find out how, by working on our vehicles, we can take them a step further. Hence, the development process of the EJDER YALÇIN isn't completed with the vehicle's

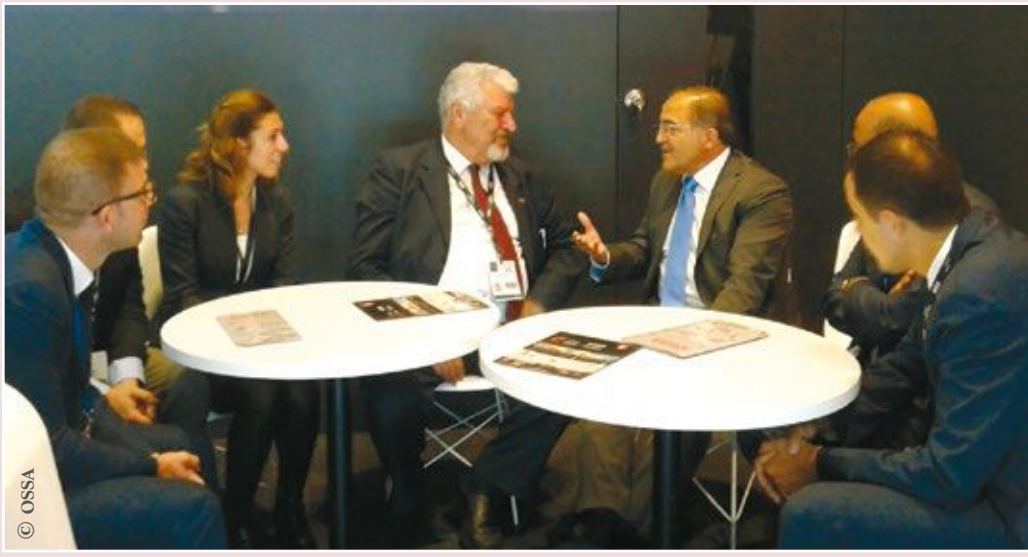
third version. However, going beyond just making improvements, we're in a search to find out how we can enhance its capabilities. Currently, the vehicle effectively responds to almost all user requirements; but we plan to make our vehicle capable of responding to additional requirements. To this end, rather than coming up with a standard vehicle, we're trying to create a platform which we can present to the user with various alternative equipment. We go even further by predicting the needs which the user itself cannot currently imagine, and make the vehicles ready for the battlefield of tomorrow. Yes, the EJDER YALÇIN is, within its own class, the vehicle with the highest level of protection and performance; however, we're also working to enhance the logistic supportability of our vehicle. We're continuing our studies to establish an integrated logistic support system that can predict the times when the vehicle will experience malfunctions. We're trying to make sure we can foresee this before the vehicle actually breaks down, and thereby present the user a vehicle with the highest level of safety possible.

MSI TDR: Is there anything you would like to add?

Dr. Anıl KAREL: As Nurol Makina, we wanted to show our abilities at DSEI, one of the world's leading defence exhibitions. This is because we're a company that develops and grows every day by creating innovations. One of the best indications of this how, in Capital Magazine's top 500 list, we've become the second company to experience the largest increase in turnover. We're one of the 12 defence and aerospace industry companies to have made it into this list. As a result of Nurol Makina's development, we're now standing out in foreign exhibitions.

There is another point I especially would like to mention: MSI TDR has taken defence publishing in Turkey to a whole new level. By following MSI TDR, we're able to reach up-to-date information concerning the industry. I would like to sincerely thank you for the added value you are contributing to the industry.

On behalf of our readers, we would like to thank Dr. Anıl Karel, Deputy General Manager at Nurol Makina, for taking the time to answer our questions and providing us with valuable information.



OSSA Represents Turkish SMEs at DSEI

Having previously made an appearance in DSEI 2013 and 2015, the OSTİM Defence and Aviation Cluster (OSSA) participated in this year's event as well. Among OSSA members; 3EEOS, FİGES, Femsan Electric Motors, MAKEL, Nero Industries, T-KALIP and Uygur Limited took part in the exhibition with their own stands, while other members such as DİGİTEST, EMGE, MEGE TEKNIK, MFK, Güvenli Yaşam and SADTEK had their representatives attend the exhibition as visitors.

We were able to gain an insight into OSSA's activities at the exhibition from Ahmet Mithat Ertuğ, Chairman of the Board at OSSA.

MSI TDR: Can you tell us about the OSSA's agenda for this exhibition?

Ahmet Mithat ERTUĞ: The first thing I would like to point out is that, by participating at prominent international exhibitions of the industry, we enable our companies to show themselves in these platforms. Taking part in these events under the OSSA's umbrella, our members not only reduce various expenses, but can also avoid the workforce losses that usually occurs during such events. By participating in this exhibition, we're also able to hold meetings with various institutions and organisations from Turkey that we often can't find the opportunity to meet in other settings. Furthermore, since we've participated in these types of events for a long time, I can say that we've created our own brand. Many say that our absence is felt when we don't participate in these exhibitions. That's why it would have been unimaginable for us not to participate.

MSI TDR: What goals did you have in mind as you arrived in this exhibition?

Ahmet Mithat ERTUĞ: One of the goals we've set for ourselves before we got here was to discuss with certain companies their potential participation to the International Cooperation Days in Defence and Aerospace (ICDDA) event, which we'll organise for the fourth time next year. All of the companies we've met with until now, and which have taken part in the previous ICDDA, said that they'll join the next event. This is very important news for us.

In addition to our current customers, we've also discussed various cooperation opportunities with many British companies, including BAE Systems. We've also held talks with official delegations from Pakistan and Jordan.

MSI TDR: Which other industry events do you plan to participate in the coming period?

Ahmet Mithat ERTUĞ: An event in which we must absolutely participate is the Eurosatory exhibition in France; we'll also definitely take part in the DSA exhibitions in Malaysia. Aside from these two, there will also be other exhibitions in which we'll participate.

On behalf of our readers, we would like to thank Ahmet Mithat Ertuğ, Chairman of the Board at OSSA, for taking the time to answer our questions and providing us with valuable information.

Otokar's DSEI Agenda Focuses on the ARMA 8x8 and ÜÇOK

At the exhibition, Otokar showcased its ARMA 8x8 wheeled armoured vehicle and its ÜÇOK remote-controlled stabilised weapon system integrated to this platform.

We had the opportunity to learn more about the company's current situation from Serdar Görgüç, General Manager and Executive Director of Otokar.

MSI TDR: First of all, could you share with us your general thoughts concerning the DSEI exhibition?

Serdar GÖRGÜÇ: As Turkey's largest land systems manufacturer, we took part in DSEI 2017 with the ARMA 8x8, our modular armoured combat vehicle designed entirely by our own engineers, and the ÜÇOK turret system, our stabilised machine gun platform on which three different main weapons can be used.

As Otokar, the area within the defence industry where we see ourselves as being the strongest is in military vehicles and turret systems, which we design and manufacture entirely on our own. We are proud of the innovative and groundbreaking achievements we are making in this area in Turkey. As one of the most experienced defence industry companies in land systems, we hold a large portfolio of different types and versions of vehicles, ranging from 4x4 vehicles to 8x8 and tracked armoured vehicles. With turret systems we design ourselves, we also stand as one of Turkey's largest land system suppliers.

As you already know, a defence industry cannot be sustainable or have long-term economic viability by relying on a single user. In this respect; by allowing Turkish defence industry companies to open up to global markets, international events contribute positively to the development of both these companies and the Turkish defence industry.

Taking part in different events organised in different parts of the world, such as the DSEI, Europe's largest defence and security exhibition, we introduce our vehicles and our solutions that address different requirements. Giving us the opportunity to meet with current and potential users, DSEI has been a very productive exhibition for us.

ARMA 8x8

MSI TDR: What is the current stage in the project concerning the 8x8 RABDAN vehicles, whose contract you signed during the IDEX'17 exhibition? Have you been working on selling this vehicles to other countries through the United Arab Emirates (UAE)?

Serdar GÖRGÜÇ: As Otokar, we draw our strength from our R&D works. We consistently invest on R&D, pursuing studies in this area without interruption. Every year, we allocate a four percent share of our turnover to R&D. Our total R&D expenditures over the past 10 years was ₺388 million. As result of the importance we attach to R&D, we have gained recognition as Turkey's most experienced and largest land systems producer. In February of this year, we have taken our position and claim in the defence industry a step further. With the contract signed to meet the UAE's need for an 8x8 armoured combat vehicle, we have started to stand out not only with our products, but also with our global knowledge, engineering strength, R&D and technology transfer capabilities. The contract we have drawn up with the UAE stands as Turkey's single largest defence industry export agreement signed to date, and our activities relating to this contract are progressing as planned. For the moment, the priority will be to use the vehicles covered by the project to meet the requirements of the UAE Armed Forces.

In addition to the UAE project, we also continue to have plans for the region. As you already know, in 2016, we established Otokar Land Systems in the UAE, with a view of strengthening our overseas collaborations, opening up to

Serdar Görgüç

ÜÇOK stabilized machine gun platform

new markets, and increasing our sales. The first fruit yielded by these efforts was the signing of the contract between Tawazun company and Al Jasoor, an Otokar Land System joint venture. The contract covers one of the largest ever acquisitions of 8x8 armoured vehicles in the world, with up to 700 vehicles expected to be procured in the coming period to meet the UAE Armed Forces' needs. With our new company as well as our experience in the industry, we seek to continue opening up to foreign markets in the defence industry, to strengthen our position in the world, and, at the same time, to accelerate the development of our country's defence industry.

MSI TDR: Otokar is a company that is quite active in the export market. Since IDEF 2017, what developments have taken place, other than your work in the UAE, that you might want to share with our readers?

Serdar GÖRGÜÇ: As of today, we have more than 30,000 military vehicles being used in different locations across the world, especially in United Nations missions, in NATO countries, and in countries from Eastern and Central Europe to Africa. With our defence industry products whose intellectual property rights belong solely to us, we are providing services in 5 continents and over 30 countries.

In the time since IDEF, we mostly focused on the purchase orders we have received so far. We are continuing to make deliveries for the orders we received both from Turkey and abroad, including from different regions such as Asia and Africa. Furthermore, in the various international events we take part, we continue to meet with users and promote our products.

The defence industry capabilities of our country are increasing and developing with each passing day, and we are proud to be part of this development, and to stand out not just with our products, but also with our global experience, engineering, R&D and technology transfer capabilities. And for the coming period, our goal is to open up to new markets, while continuing to gain strength in our current markets.

MSI TDR: Otokar is a company which can produce innovative solutions for changing needs. The most recent examples of this were the ALTAY AWT and the 4x4 URAL Single Cabin Pick-Up, which you showcased at IDEF 2017. Do you have any ongoing activities in similar areas?

Serdar GÖRGÜÇ: One of Otokar's strengths is its user-oriented approach. We constantly work to develop our products, in line with the expectations and needs of both current and potential users. With our R&D capabilities, as well as our testing centres that rank among the world's best, we are more than capable of offering the most suitable solutions to existing needs and expectations in the shortest time.

MSI TDR: We feel somewhat obliged to ask you this question... What kind of preparations is Otokar making for the serial production tender of the ALTAY tank?

Serdar GÖRGÜÇ: Otokar is a company which, with its more than 50 years of experience and capabilities, has commendably completed every task it has assumed to this day. As its prime contractor, we have successfully designed and developed ALTAY, the national main battle tank. The investments we have made, the experience we have gained, and the R&D capabilities we have strengthened during this process have granted a strategic momentum to Otokar's position in the defence industry. Turkey gaining its own tank is a matter of national importance for us all. We are continuing to make the necessary preparations for the serial production tender. Otokar has all the skills for ensuring the production and export of the ALTAY tank, and for enhancing the capabilities of our country's defence industry. As the sole indigenous military vehicle producer of our country, we are ready to carry out this national project. Our greatest hope is to see the ALTAY tank enter into service in the Turkish Armed Forces as soon as possible.

On behalf of our readers, we would like to thank Serdar Görgüç, General Manager and Executive Director of Otokar, for taking the time to answer our questions and providing us with valuable information.

ROKETSAN Makes Strong Appearance at DSEI'17 with a Broad Spectrum of Products

ROKETSAN took part in DSEI'17 with a large stand, in which it showcased a large portion of its product family. The following products were displayed by the company, either in full scale or as mock-ups:

- SOM-J Stand Off Missile for JSF F-35
- TEBER Laser Guidance Kit,
- HİSAR Air Defence Missile,
- TRG-300 TIGER Missile,
- TRG-122 Missile,
- Antisubmarine Warfare (ASW) Rocket,
- OMTAS Medium Range Anti-Tank Weapon System,
- L-UMTAS Laser Guided Long Range Anti-Tank Missile System,
- UMTAS Long Range Antitank Missile System,
- CİRİT 2.75'' Laser Guided Missile and Launcher,
- MAM-L Smart Micro Munition,
- MAM-C Smart Micro Munition,
- Pedestal-Mounted CİRİT,
- The CİRİT and UMTAS Weapon Platform, and
- Various fuses.

ROKETSAN also displayed scaled models of its T-107/122 Multi Barrel Rocket Launcher (MBRL) and T-122/300 MRL Systems. During the exhibition, we had the opportunity to learn more about the company's recent activities from Hüdai Özdamar, Market Development and PR Director at ROKETSAN.

Özdamar first commented on ROKETSAN's current position in the industry: "After embracing in 2012 the strategic target of becoming one of the world's largest defence companies, ROKETSAN succeeded, with its $363 million turnover in 2016, to enter in last July's Defence News top 100 defence companies list, which the magazine publishes annually. The company's next target will be to build on its previous successes to move even higher on this list."

The last day of the IDEF exhibition in May also coincided with the successful firing test of the KAAN missile. Özdamar also spoke about the latest situation regarding the development of the KAAN missile system: "We developed and produced the KAAN missile based on the knowledge and technological infrastructure we've gained in the field of ballistic missile technologies. By creating precise, timely and effective firepower, the missile can provide fire support to manoeuvring units. We're continuing our activities relating to this missile, with the intention of meeting the Turkish Armed Forces' needs in the best way possible. Furthermore, we're also meeting with end users from the armies of friendly and allied countries."

The company also continues, without interruption, to conduct integration-related works for its products. During IDEF'17, ROKETSAN's turret solution bearing the CİRİT Launcher was showcased with an EJDER YALÇIN 4x4 vehicle, while its turret bearing OMTAS Missiles was showcased on an ARMA 6x6 vehicle. Moreover, last April, the L-UMTAS Missile was fired for the first time from the armed C-variant of the HÜRKUŞ. It is also planned that the firing tests of the MAM-C Munition will be carried out this year, and that its qualification will be completed soon afterwards.

ROKETSAN's integration-related work is not limited to indigenous platforms. During the Farnborough International Airshow in 2016, the company signed two different contracts with Airbus Helicopters and Airbus Defence & Space covering the integration of ROKETSAN missile systems to various platforms. Under the first of these contracts, ROKETSAN is integrating the L-UMTAS Missile to the C295, and will later commence integration works for the CİRİT Laser-Guided Missile and the TEBER Laser Guidance Kit in 2018. Furthermore, one C295 has already been armed with ROKETSAN missiles, and will be launched during the Dubai Airshow. Under the second contract, the company continues to work on the integration of the CİRİT to the H135M and H145M helicopters. In addition, ROKETSAN is working together with the relevant companies on marketing the platforms covered by the contracts to third countries. ◆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Sarsılmaz Now Produces Ammunition

We had the opportunity to meet and speak with Latif Aral Aliş, Chairman of the Board at Sarsılmaz, to learn more about the latest situation with their submachine gun and assault rifle families, as well as the company's initiatives in the area of ammunition production.

MSI TDR: What does DSEI signify for Sarsılmaz?

Latif Aral ALİŞ: Among global defence industry exhibitions, DSEI enjoys a particularly privileged position. All large companies across the world operating in the field of defence make an appearance at this exhibition. Many countries participate to the exhibition at a national level, and there are visiting official delegations from many countries. In addition to being one of Turkey's leading organisations in terms of the technology and capacity of its production facilities, its R&D strength, and product quality and diversity, we're also taking part in this exhibition as one of the world's select brands.

MSI TDR: Which particular products are you emphasising at this event?

Latif Aral ALİŞ: Sarsılmaz exhibited many products at IDEF; however, three products have especially been at the forefront: The SAR 223T assault rifle, the SAR 109T submachine gun, and Sarsılmaz's new generation avantgarde SAR 9 handgun. Among these, the SAR 9, which is composed entirely of parts made in Turkey, attracted a lot of attention. Its superior features both surprised and drew praise from visitors. At DSEI, we once again highlighted these three products of ours.

MSI TDR: Sarsılmaz is one of the companies performing the serial production of the MPT-76. Could you tell us about the latest situation with your MPT-76 production activities? Based on your own experiences, are there any points where you further contribute to the production processes?

SAR 109T submachine gun

SAR 9

SAR 223T assault rifle

Latif Aral ALİŞ: The fact that Sarsılmaz has been assigned in the serial production of the MPT-76 – the output of the Modern Infantry Rifle project – is both a great honour and a great responsibility. We're doing our best to fulfill the requirements this responsibility places upon us. We produce each MPT-76 part by adding our own knowledge derived from Sarsılmaz-designed assault rifles, and the advanced manufacturing technologies we possess. In brief, Sarsılmaz's approach towards the production of these rifles relies on the manufacture of high-resistance parts, utilisation of high production capacity, and repeatable production technology. As a result of these dedicated works, we'll soon begin to offer the MPT-76s to the service of our security forces, with the quality that is characteristic of Sarsılmaz.

MSI TDR: What is the latest situation regarding the Sarsılmaz assault rifle family, which the company markets abroad? What can you say about the sales you've made so far?

Latif Aral ALİŞ: Sarsılmaz's 5.56X45 mm calibre assault rifles, the SAR 223T and SAR 223C, are seeing great demand in foreign markets. With these products, we take part in tenders opened by foreign state agencies. After these agencies get to known and try our products, we sometimes have the chance to perform direct sales, without any bidding process involved. There are even times when, after purchasing and using our products, they are so pleased and satisfied with them that we receive additional orders.

Meanwhile, the products also take part in the tests of our own security agencies. I can even boast that, during the tests our security agencies performed under the harshest conditions, the SAR 223T emerged flawless, not suffering a single malfunction in 9,630 rounds fired. And with the gas-operated SAR 223P model, which we're also developing to meet our security agencies' needs, we're now in the last stage of our development works.

MSI TDR: So what can you tell us about the latest situation with your submachine gun product family?

Latif Aral ALİŞ: Designed for use in urban settings, our SAR 109T and SAR 109C submachine guns have earned praise from all of their users thanks to their simple and original designs, thus making them a much-deserved source of pride for us, both in Turkey and abroad. The SAR 109 family uses handgun cartridges, and has important advantages such as lightweight and compact design. That's why it is seeing considerable demand.

Last year, we've made some ergonomic improvements on this product family based on user feedback. These improvements include polymer rail covers for easier grasp, and a new, modern-looking and compact tactical stock model.

MSI TDR: Could you give us your thoughts about the demand for Sarsılmaz products from the United States and European countries?

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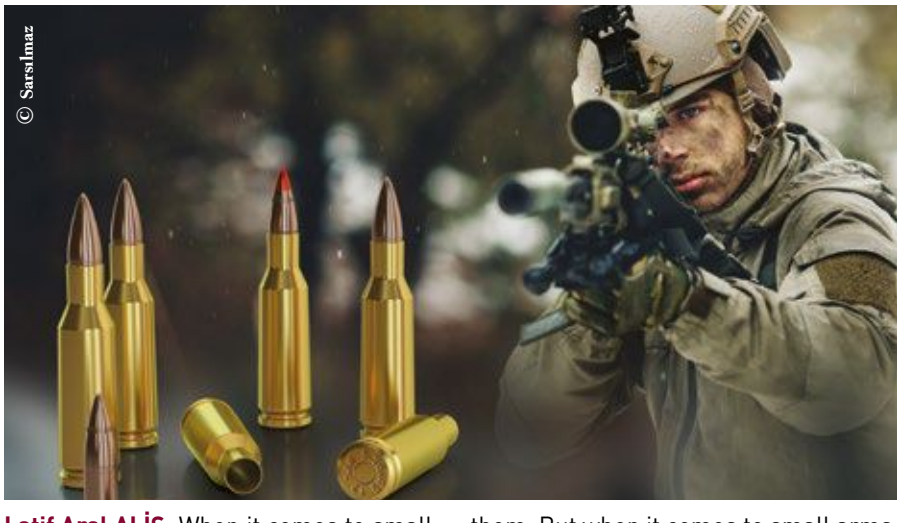


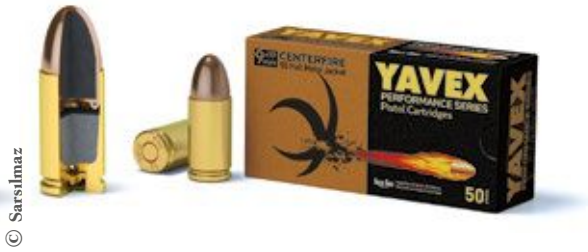
Latif Aral ALİŞ: When it comes to small arms, laws in European countries are quite restrictive and impose stringent conditions. That's why the export processes involved are quite complex, challenging and time-consuming. Moreover, nearly every state in Europe locally produces its own products. Just as we want to use our own national products, European countries also have a strong preference for their national products. But despite all this, we receive requests for different products from all countries in Europe, and we export our products to them. But when it comes to small arms, the world's largest market is inarguably the US. That's why the US is our primary target market. In line with this target, Sarsılmaz has launched new initiatives in the US over the course of 2017. In the coming days, we expect to see dramatic increases in our US sales.

MSI TDR: In recent times, Sarsılmaz has acquired a Turkish company that manufactures ammunition. Could you inform our readers about certain aspects such as how this acquisition took place, the current situation of the facility, and your manufacturing activities there?

Latif Aral ALİŞ: Yes, in 2014, we did indeed acquire the Balıkesir Explosive Industries (BPS) company situated in the Balıkesir Province, thereby making an entry into the ammunition industry. This company that has been quite recently incorporated into Sarsılmaz had initially started shotgun shell production in 1995; blank cartridge production in 2000; civilian-use explosive production in 2005; and ammunition production in 2014. In June 2016, it also began producing military grade cartridges. As of today, it continues its operations under the name of Sarsılmaz Patlayıcı Sanayi A.Ş.

The two ammunition companies of our group are established over a total of 800,000 square metres of open areas, and 55,000 square metres of indoor areas. In these facilities, we produce small arms ammunition for military and civilian use, as well as civilian use explosives; in addition, we also provide a variety of boring and blasting product services. Currently in the area of small arms ammunition, we are producing 9x19 mm handgun cartridges. As a result of new investments and efforts at increasing capacity, we're about to start the production of ammunition at other calibres. As the leader of the small arms industry, we have, owing to the large steps we've taken in recent years, become one of the preeminent manufacturers of the ammunition industry.

Closely following technological developments across the world, while also possessing the ability to put these technologies into practice, we, at Sarsılmaz Group, aim to join the league of world

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giants in the ammunition industry, just as we have in the area of small arms. To this end, we are continuing our investments without pause, while also expanding our production capacity and range of products. Our biggest goal is to produce the ammunition our country currently procures through imports, and to thereby significantly reduce the Turkish Armed Forces', the General Command of Gendarmerie's and the Turkish National Police's dependence on foreign suppliers.

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On behalf of our readers, we would like to thank Latif Aral Aliş, Chairman of the Board at Sarsılmaz, for taking the time to answer our questions and providing us with valuable information.

Industry Seeks to Increase Presence in United Kingdom Market

At the DSEI exhibition, the Defence and Aerospace Industry Exporters' Association (SSI) continued its efforts to support the industry's export-related activities. Amidst his busy schedule at the exhibition, we had the opportunity to hold a brief interview with Latif Aral Aliş, Chairman of the Board at SSI.

MSI TDR: It's nowadays inconceivable for Turkey to participate at a national level in any exhibition without including the SSI. So how does the DSEI and similar exhibitions affect SSI's activities?

Latif Aral ALİŞ: Just as IDEF, the DSEI is an biennial event that attracts considerable attention from companies. This year, 1,605 participating companies from 54 countries are making an appearance at the exhibition. This and other similar exhibitions create important opportunities for companies to describe their products and introduce them through interactive demonstrations. By enabling associations and organisations, such as ourselves, to meet with official or special delegations from countries we consider important, the exhibition gives us the opportunity to discuss and evaluate the joint activities that can be conducted in the short-, mid- and long-term, as well as the investments that are possible, the programmes which can be supported, and the projects being currently conducted. Looking from this angle, I can say that we had a pretty busy exhibition. Greeting our guests together with the Undersecretariat for Defence Industries (SSM), we discussed the main topics on our agenda with them. By taking part in different seminars and events, we not only learned about our customers' expectations at a global level, but also observed first-hand the products and targets of companies participating in them.

MSI TDR: The DSEI exhibition held in 2015 was attended by 16 Turkish companies. This year's exhibition, on the other hand, is seeing participation by more than 30 companies. How should we interpret this overall picture, in your view?

Latif Aral ALİŞ: In the previous DSEI exhibition held in 2015, Turkey took part under the status of an international partner country. At an organisation such as the DSEI, acquiring the status of an international partner was an indication of the level which the Turkish defence and aerospace industry achieved, as well as a declaration that it had now moved upwards to become player in an upper league. We have a larger participation in this exhibition, compared to the previous one. In the international exhibitions we'll participate in from now on, our minimum number of participants should remain at about this level. Some may think that having 20 to 30 companies among a total of 1,605 participating companies is rather underwhelming; but there are some details I would like to point out to clarify what this number actually represents: As I said earlier, the number of participating countries is 54. Among them, 42 countries that also include Turkey


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have a special, country-specific pavilion at the event. The United States and the United Kingdom are the two countries with the most participants – which is only natural for the United Kingdom, since it is the country hosting the exhibition. Following these two, the countries with the most participating companies are Australia, Canada, Germany, France and Turkey. As we've all noted in this exhibition, Turkey now enjoys the position of a major producer country, both in terms of technology and product diversity. In the next DSEI exhibition, I believe that we, as Turkey, will manage to rank among the first five countries with the most participants.

On behalf of our readers, we would like to thank Latif Aral Aliş, Chairman of the Board at SSI, for taking the time to answer our questions and providing us with valuable information.

Company officials gathered at the event in Ankara

DIMO Corporation Seeks Sustainable Growth and Long-Term Cooperation in Turkey

Cihan Mendi

The US-based DIMO Corporation held a promotion and business networking event entitled DIMO Day in Ankara on September 26, together alongside the companies for which it is the distributor in Turkey. Going beyond the usual distributorship model by taking a different approach that ensures added value to all parties involved, DIMO Corporation informed the participants at the event about its recipe for sustainable growth and long-term cooperation.

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Participating at the event were officials from the end-user and procurement authorities, as well as representatives from such prime contractor companies as ASELSAN, BMC, MKEK, Otokar and TAI. The event was also attended by officials from companies currently working with DIMO Corporation, such as Bora Aerospace, KLX Aerospace, Pegasus and Teknik Grup, and by executives of companies that provide services to the Turkish defence and aerospace industry, such as Andar, Ayyazılım, ERMAKSAN and MEGE Teknik. After the opening speeches of the event, the companies for which DIMO Corporation is the Turkey distributor – namely EATON Aerospace Systems, TRAKKA Systems, Cranfield Aerospace, AMETEK PDS, AMETEK SFMS, Cobham Mission Systems, MOOG Components Group, Sensata Technologies, Marshall Aerospace and ARNOLD Defense – described their capabilities and works to the participants. Afterwards, around 20 one-to-one meetings were held between company representatives and the participants, in which cooperation opportunities and the technical aspects of the products and services offered by these companies were discussed.


Sohrab Naghshineh

Goal is to Create Added Value

The opening speech of the event was delivered by Cihan Mendi, Turkey Business Development Director of DIMO Corporation. Commenting on the event, Mendi said: "Ever since we were first established in 1994, we at DIMO Corporation have been working to make a special contribution to the development of the Turkish defence and aerospace industry. We are working day and night to have the latest technology products and services of many global companies reach the Turkish defence and aerospace industry. Within this scope of all our activities, Sohrab Naghshineh, our company President, once asked 'How can we contribute even more to the valuable stakeholders of the industry?'. And it is with this thought in mind that we decided to organise the DIMO Day event. The main goals we strive to achieve at this event demonstrate how DIMO Corporation, and the companies for which we act as distributors, contribute to the Turkish defence and aerospace industry, and to discuss how we can contribute even more to this industry in the coming period."

Mendi had the following message for the companies for which they act as distributors: "All companies wishing to contribute to a large market, such as those in the Turkish defence and aerospace industry, need to think global and act local. It's precisely with the purpose of realising this goal that we, at DIMO Corporation, would like to share our President's call to all our solution partners and customers: 'If we work together, we'll grow together'."


Omid Naghshineh

We Want to Be Part of the Future

Taking the stage after Mendi, Sohrab Naghshineh, President of DIMO Corporation, said: "I have been coming and going to Turkey for the past 25 or 30 years, and what has impressed me the most in all this time is the pride Turkish people feel in the successes of their industry and their young engineers... In my view, Turkey is like a high-speed train; it is moving forward very fast, at a pace that no one can stop. It is with great admiration that I see the distance the Turkish defence and aerospace industry has covered for the past 25 years. I feel proud of what Turkey has achieved until now. We see important opportunities ahead for Turkey in the future; and at DIMO Corporation, we also want to play a little part in them."

Growing Together with the Market

The final speech of the opening session was given by Omid Naghshineh, Business Development Manager at DIMO Corporation, who shared information about the company with the assembled guests. DIMO Corporation's activities revolve around five main pillars, which are:

- Low lead times,
- Competitive pricing,
- 100 percent quality control,
- Industry experience, and
- Global presence.

Among these five pillars, Naghshineh dwelt especially on the 100 percent quality control aspect, emphasising that since the day it was founded, the company has carried out quality control checks on every product and component it has delivered.

Naghshineh also described DIMO Corporation's business philosophy: "We believe that the path to success lies in


Anthony Forester-Bennet


Ian Collins

long-term and sustainable growth. We achieve success by creating value for all our stakeholders, users and original equipment manufacturers. The days where one side won while the other side lost are long gone; as when we work together, we also grow together." Naghshineh had the following to say about their business philosophy: "We see ourselves as a company that grows together with the market. We aim for sustainable growth. We never look at our projects as a one-time job."

DIMO Corporation owes its competitiveness to its low general expenses, made possible by efficient processes and flexible teams.

The most important assets of the company are its databases and market forecast mechanisms, which have been formed over many years. Naghshineh summarised the contributions of these assets by saying: "Whenever you become aware of a certain need, the chances are we knew about it even before you did."

DIMO Corporations' achievements include an Excellence Award for Exports given by the US President in 2016.

DIMO Corporation has offices in various countries around the world, and two offices in Turkey. Different to its offices that oversee other regions, the two Turkish offices conduct activities solely related to Turkey. The main institutions, organisations and projects on which the company works with in Turkey are listed as follows:

- **TAI:** ANKA, HÜRKUŞ, TF-X
- **ASELSAN:** HİSAR Project (TADM), KORKUT Project (HSSR), CATS, ASELPOD, ASELFLIR and fire control system projects
- **ROKETSAN:** CİRİT and various missile projects
- Otokar: ALTAY, MIZRAK
- **Turkish Air Forces Command, Air Logistics Command:** MRO Projects

Panel prepared for the event provided a summary of DIMO Corporation's activities in Turkey.

Company Introductions

After the opening speeches, the companies taking part in the event under DIMO Corporation's umbrella each gave a presentation describing their products and capabilities:

- **EATON Aerospace Systems' presentation was given by Omid Naghshineh,** who described the company's works relating to the repair of such aircraft engine components as ducting and tubing, noting that they ensure nearly 50 percent cost-savings, and allow delivery times to be abridged significantly.
- **The presentation of TRAKKA Systems was made by Anthony Forester-Bennet, Business Development Director,** who said that despite its relatively low profile, TRAKKA Systems is one of the world's leading electro-optic companies. The company

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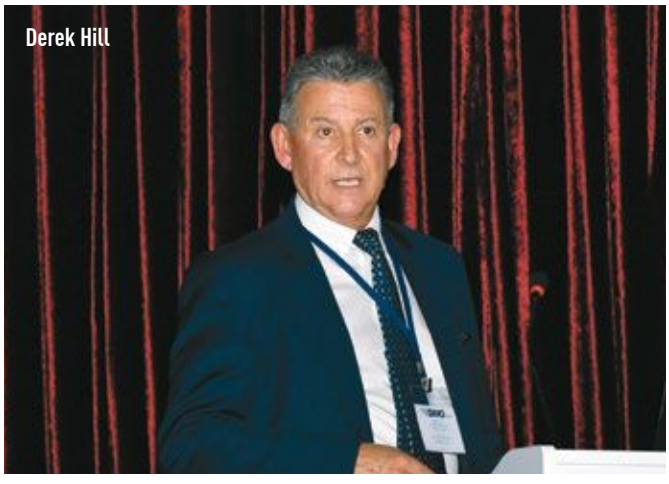
Derek Hill


Paul Bowen

also points out that its products are ITAR free.

- **Ian Collins, the Business Development Manager at Cranfield Aerospace Solutions,** described the company's skills and capabilities in the solutions it offers, as well as the infrastructure it possesses.
- **Fabrice David, Europe Sales Manager at AMETEK Power and Data Systems (PDS),** described his company's innovativeness and international reach. In 2016, the company obtained 24 percent of its sales revenues from new products, and carried out 50 percent of its sales overseas. He underlined that their products are not subject to ITAR restrictions. As an example of the activities in Turkey his company is conducting in its line of business, he cited the power distribution system of the ANKA unmanned aerial vehicle.
- **Sara Bustillo de Castro, EMEA Regional Sales Manager at AMETEK Sensors and Fluid Management Systems (SFMS),** explained the company's involvement in the temperature and speed sensors for T625 helicopters.
- **Cobham Mission Systems' activities were described by Steven Matthews, Vice President of Sales and Business Development, and Marty Hills, Director of International Business.** Carrying out its activities under the banner "Our products save lives!", the company has been working with DIMO Corporation for over 20 years, and is currently supplying the oxygen generation system for the HÜRKUŞ aircraft.
- **Derek Hill, Europe Business Manager of MOOG Components Group,** said that together with DIMO, they are working with ASELSAN, BMC, Meteksan Defence, Otokar, ROKETSAN and TAI in Turkey.
- **Paul Bowen, Europe Sales Manager at Sensata Technologies,** said that every year they deliver a total of 1 billion sensors to the civilian and military organisations. He emphasised that within large solution clusters there are always products that meet requirements, or which can be adapted to meet them.
- **Marshall Aerospace's solutions were described by Andrew Chilton, Sales Director for Special Missions Group, and Chris Walton, Programme Director for Special Missions Group.** The company stands out with its expertise in special mission aircraft, for which it assumes the role of structure integrator, carrying out the structural integration and installation of systems onto aircraft as required by the prime contractor.
- **ARNOLD Defense's presentation was given by Omid Naghshineh.** Nearly 95 percent of the rocket launchers installed on NATO country aircraft and helicopters bear this company's signature.

After the presentations, the event continued with one-to-one meetings. As part of their contacts and programme in Ankara, representatives from DIMO Corporation and from the companies for which it is the distributor visited the HAB aerospace organised industrial zone established in Kahramankazan, where they also met Bilal Aktaş, Head of the Industrialisation Department of the Undersecretariat for Defence Industries. ◆


Andre Chilton


Chris Walton

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Sohrab Naghshineh, President of DIMO Corporation:

"We can provide guarantees to our customers in many areas, such as timely delivery and the acquisition of the necessary licenses."

During the DIMO Day event, we had the opportunity to speak to Sohrab Naghshineh, President of DIMO Corporation.

MSI TDR: DIMO Corporation's business model has it assuming a distributorship role for more than one company, while also presenting itself as a solution provider – a model that's quite different from what we have in Turkey. What are the advantages this model brings?

Sohrab NAGHSHINEH: DIMO Corporation's main strategy is built on simplicity, efficiency and providing added value to our customers. We never wanted to act solely as sellers, or to pursue just a single sale or a single contract. We're actively operating in 35 countries, and in most of them, we're working to create added value to ensure the self-sufficiency of these countries.

We've been working in Turkey for nearly 30 years, and cooperate both with prime contractor companies and with such end users as the Air Force. Our customers actually have the option to go directly to original equipment manufacturers (OEMs); but when we're there as an intermediary, we can provide guarantees to our customers in many areas, such as timely delivery and the acquisition of the necessary licenses. For example, after a license in the ANKA programme was suspended by the US Department of State, the model we proposed allowed this license to the obtained once again and other companies soon adopted the same model. We also have significant experience in military equipment exports, and the Excellence in Exports award we received in 2016 from the US President is a clear indication of this, as it is given only to companies that adhere to the regulations and perform deliveries in a timely manner.

Due to my origins, Turkish is a country that has a very special place for me. I consider this place to be my second home. In our contacts with OEMs, we've worked a great deal to offer our technological solutions to Turkey.

MSI TDR: Can you tell us about DIMO Corporation's strategy for Turkey? What are you aiming to achieve here?

Sohrab NAGHSHINEH: One of our main goals is to establish a maintenance and repair centre for certain equipment in Turkey. We want to furnish this centre with certain repair and testing capabilities, meaning that for the equipment within the product range of the OEMs we represent, we are seeking to reduce external dependency for maintenance and repair by 50 percent.

MSI TDR: What targets did you have in mind when organising the DIMO Day event? Do you think these targets have been achieved?

Sohrab NAGHSHINEH: This was our first event organised in Turkey. We started out initially with a simple plan: To bring together all of the companies with which we work in Ankara so that they may have a dialogue with our customers. The event has already exceeded all our expectations. It attracted plenty of attention, and there were excellent presentations.

MSI TDR: Turkey has ambitious projects on the horizon, such as the TF-X aircraft, T625 helicopter and the TF-2000 frigate. How can DIMO Corporation support Turkey in these projects?

Sohrab NAGHSHINEH: We are already involved in these projects through the equipment provided by the OEMs we represent. At the same time, we're also continuing our promotional activities non-stop, based on the understanding that there may still be special and high technology solutions we offer that the Turkish defence and aerospace industry hasn't yet noticed. We also continue to give support to programmes such as the HÜRKUŞ and ANKA.

With the support of such institutions as the Ministry of National Defence and the Undersecretariat for Defence Industries, we can, as I mentioned earlier, establish a maintenance and repair facility in collaboration with the industry companies.

One of the things we aim to accomplish is have American companies understand the business environment in Turkey. Here, activities shouldn't be unidirectional, they should be bidirectional. They should create added value.

MSI TDR: In the defence and aerospace industry, Turkey expects foreign companies to engage in collaborations with local parties and to carry joint design and development works. How will DIMO Corporation meet Turkey's requests in this regard in the coming period?

Sohrab NAGHSHINEH: It is our sincere intention to bring together technologies and capabilities that will allow Turkey to become self-sufficient. But American companies have this concern about this issue: They think, if I share my intellectual property with a foreign company, I'll lose my competitiveness. We try to overcome these fears by saying that we have to approach this issue differently. This is what we tell them: "You have to bring technology to Turkey, because Turkey is a developed country that wants to establish centres of excellence. You have to bring your best technologies. If you work with business partners here, this cooperation will last for decades, and everyone will benefit."

Of course, there are also the restrictions imposed by regulations, and so many American companies have started to develop versions of their solutions that are ITAR free. At the end of the day, we have to comply with the regulations set by the U.S. Department of State or Department of Commerce, which is something we've always done. But these aren't obstacles to seeking and finding other legal and alternative ways of doing business.

MSI TDR: What do you have on your schedule for Turkey? Can you tell us about the activities you plan?

Sohrab NAGHSHINEH: To be frank, we don't have any short-term plans; so all of our plans are, in a sense, long-term. It's always been like this, since day one. We aim to continue working closely with the institutions and prime contractor companies in Turkey. This may seem like a simple plan, but simplicity and efficiency is our business style.

MSI TDR: Is there anything you would like to add?

Sohrab NAGHSHINEH: I would like to say that I am very impressed with the young engineers working in the Turkish defence and aerospace industry, and with their dedication to their work. In time, they're likely to run into various obstacles and difficulties; however, they should always press on with the motivation they have today. The picture I saw when I first came to Turkey 30 years ago is very different to the picture today, and the progress that has been made since then is almost beyond belief. I believe that Turkey is starting to become one of the most important powers in the industry, and it is my hope that we, too, can become a part of this success.

On behalf of our readers, we would like to thank Sohrab Naghshineh, President of DIMO Corporation, for taking the time to answer our questions and for the information he provided.


Muhammet Sami Ulukavak


Ömer Korkut


Dr. Emin İslam Tatlı

STM to Develop Cyber Security Ecosystem with Innovative Solutions

Organised by STM on October 5, in Ankara, the Workshop for Developing the Cyber Security Ecosystem with Innovative Solutions drew attention to two crucial points concerning the subject of cyber security. The first was the lack of cyber security clusters in Turkey, while the second was the use of innovative solutions to go beyond local and indigenous products, so as to pave the way for exports.

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Held in the METU Teknokent campus, nearly 100 attendees from 15 companies took part in the workshop, in addition to representatives from the Undersecretariat for Defence Industries (SSM). During the event, STM also announced and introduced its Capture the Flag (CTF) contest.

SSM's Industrialisation Strategy in Cyber Security

The event began with a speech by Muhammet Sami Ulukavak, Head of the SSM Department of Cyber Security and Electronic Warfare Systems. Stating that they are conducting various activities under two categories to increase cyber security awareness, Ulukavak described the first of these categories as follows: "We're thinking about what kind of an industrialisation plan we need in the design and conduct phases of Undersecretary-led projects, and how we can also contribute to the industry while conducting a project. For example, in the Turkish Armed Forces' Cyber Defence Centre (SİSAMER) project, while we're selecting

the prime contractor, we're also working at the same time on determining the subcontractors and suppliers... Through the decisions we make, our aim is to turn this system into a self-sufficient structure, or cycle."

Ulukavak also highlighted the following points concerning the second category of activities they conduct to create a cyber security ecosystem: "As you may know, there was the IDEF exhibition, held in Istanbul last May, at which we signed with TÜBİTAK the Cyber Security Ecosystem Development protocol. We believe that the activities we'll be conducting within the scope of this protocol will fall under the second category. We're considering organising these activities as a series of three consecutive and complementary workshops, which will be followed by an international conference, during which we'll declare their outputs."

Ulukavak said that during these workshops, they would be asking the participants the following questions about the cyber security cluster that will be established:

- How should such a cluster be organised?
- What kind of outputs do you expect from this cluster?
- What inputs can you provide to such a cluster?
- Would you like to be part of such a cluster?
- Should there be a physical clustering, or should it be digital?

Ulukavak concluded his speech by adding that they will be organising an international conference, called the International Cyber Warfare Conference, from November 27 to 28, and that they will be sharing the outcomes of all these events with the public.

Innovativeness and Ecosystem at STM

Taking the stage after Ulukavak, Ömer Korkut, the

Left to right: Kadir Murat Biçer, Mehmet Ali Ortayatırtmacı, Prof. Dr. Kemal Bıçakçı, Dr. Serdar Kozat and Ömer Özer.

Deputy General Manager of Technology at STM, started his speech by giving various figures that shed light on the future of the cyber security market: "In 2016, $3.387 trillion has been spent globally in the IT industry, and it's said that this figure will reach $3.5 trillion in 2017. The year 2016 saw a slight slowdown compared with 2015; but after 2021, international research organisations predict an average increase of two to two-and-a-half percent until 2021. This trend will most likely continue; it's estimated that the figure will reach $3.9 trillion by 2021... When you look at 'who is spending how much in cyber security at a global level,' you can see that until now, developed countries have spent on cyber security about three to four percent of the total sum they allocated for IT; however, they also have plans to substantially increase this ratio. For example, Canada wants to officially raise this to 12 percent..."

Noting that Turkey invests less on cyber security compared with the rest of the world, Korkut remarked: "Why is this so? Here in Turkey, the ratio is estimated to be about one percent. Actually, we still have a lot of ground to cover ahead of us. [Activities in this area] rest on three main pillars: the public sector, private sector, and the academia. We conduct R&D activities on the one hand, while working to launch products on the other. But we have to be innovative... Keeping things indigenous and national is a priority. As we always say, cyber security has become an integral part of national security."

Korkut also mentioned the following about the development of a cyber security ecosystem: "Given our business structure, we never claimed that we wanted to do 'everything on our own.' That also includes cyber security; however, since cyber security is a more specialised area, our control and initiative in niche areas could be rather different... [In the ecosystem], if we happen to come across a suitable organiser, as well as someone who can guide us a little along the way, and if we, as the industry, [can apply this] and fully utilise this potential, I assure you that no obstacles will be standing in our way."

Vertical Specialisation: A Must for R&D

After Korkut, the next to deliver a speech was Dr. Emin İslam Tatlı, Cyber Security and Big Data Manager at STM. Beginning his speech by describing the purpose of the workshop, Dr. Tatlı spoke about the R&D activities conducted in Turkey, emphasising that effective R&D requires specialisation in very specific areas.

Dr. Tatlı also described the contribution made to potential collaborations by specialising in sub-branches: "In the European Union, you have the HORIZON 2020 projects. Turkey pays a certain fee to take part in these projects; yet, it only manages to get back half of what it pays. So there is actually a very big potential here...

We keep talking about the ecosystem... In it, companies equipped with different capabilities will be able to come together to conduct R&D projects. If one is proficient in artificial intelligence, and another in cryptography, they will have to cooperate as part of an R&D project. This cooperation will not only contribute in terms of innovation, but will also create a stronger team at a global level."

Taking the floor after Tatlı, Dr. Murat Apohan, General Manager at Logo Cyber Security and Network Technologies, gave an overview of the trends in the cyber security market. Noting that cyber attacks have become capable of affecting daily life, with smaller enterprises in particular being more vulnerable to them, Dr. Apohan stated that the biggest security gaps actually stem from the misuse of cyber security products.

The next speaker, Kürşat Oğuzhan Akıncı, Cyber Security Specialist at STM, shared information about the various training programmes provided by the STM academy and the CTF contest.

The event continued with a panel moderated by Kadir Murat Biçer, Cyber Security Projects Group Leader at STM. During the panel, the participants discussed topics such as the benefits an ecosystem can gain from the formation of a cluster; the role of public institutions in clustering activities; specialisation in different areas of cyber security; and forming a supply chain in cyber security. The speakers of the panel were:

- Mehmet Ali Ortayatırtmacı, Director of TÜRKSAT Corporate Information and Cyber Security Administration,
- Prof. Dr. Kemal Bıçakçı, Faculty Member at the TOBB ETÜ Computer Engineering Department and Founding Member of Securify.
- Assoc. Prof. Dr. Serdar Kozat, Founding Member of DataBoss,
- Ömer Özer, CryptTech Business Development Director and Legal Expert.

The workshop finished following the panel. ◆

The KAPLAN MT went on display during a parade held on the occasion of the Indonesian National Armed Forces Day on 5 October. The vehicle was being driven by Indonesian Armed Forces personnel at the parade in the city of Cilegon.

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KAPLAN MT Poised to Become Force Multiplier for Indonesia

In the design and development project being conducted jointly by FNSS and PT Pindad of Indonesia, for which a contract was signed in 2014, the conceptual design of the Medium-Weight Class Tank KAPLAN MT was completed and the tank was introduced at the Indo Defence 2016 exhibition held in Jakarta between November 2 and 5. The ready-for-testing prototype was on display at IDEF 2017 and was shipped to Indonesia to begin testing in September. The KAPLAM MT took part in a parade held in the city of Cilegon on the occasion of Indonesia's National Armed Forces Day on October 5.

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Before talking about KAPLAN MT, let us briefly talk about tanks in general before going into more detail on the medium-weight class.

Tank Classification and Tanks of Medium Weight Class

Tanks are tracked armoured platforms that carry heavy weaponry with a flat trajectory. In other words, they are a combination of tracks, armour and weaponry; but if we remove any one of those three components, the vehicle is no longer a tank. A non-track armoured vehicle carrying heavy weaponry with a flat trajectory, for instance, is referred to as a mobile gun system (MGS). Similarly, it would be described as an armoured personnel carrier if it has no weapon, or a tank hunter if it had no armour. Furthermore, if the weapon system is converted from a flat trajectory (firing with a sight of the target) to high trajectory (firing without seeing the target) one, the vehicle would be a self-propelled howitzer rather than a tank (Figure 1).

Figure 1. Relationship between armour, main weapon and track (* APC: Armoured Personnel Carrier, ** MGS: Mobile Gun System, * means a gun with a heavy-caliber barrel and capable of firing with a flat trajectory)**

KAPLAN MT was launched at IDEF 2017.

While the differences between heavy- and medium-class tanks are more obvious, there is little to distinguish a light tank from a medium tank. The line between the two is quite blurred, so much so that one of two different vehicles with almost the same configuration may be described as a light tank, while the other may be characterised as a medium tank. Here, the target group of the manufacturer as well as the needs of the buyer affect the process. To make a clear distinction, vehicles weighing from 20 to 25 tons can be called light tanks, while those weighing 30 tons or more can be called medium tanks. Here, we do not consider the ballistic protection levels of vehicles because it has no clear effect on classification. According to NATO's STANAG 4569 document, which defines the protection levels of armoured vehicles, vehicles which have a tracked platform and relatively high fire power can be called:

- A light tank, if its ballistic and mine protection is in the level 2-3 range,
- A medium tank, if its ballistic and mine protection is equal to or above the level 2-3 range. It is useful to note that this document defines protection levels for light armoured vehicles and logistical vehicles.

There are also differences between these two types of vehicles also in terms of the main weapons used, although it would be wrong to make that distinction based solely on barrel diameter, in that factors such as muzzle velocity and the ratio of barrel length to barrel diameter play a significant role in the description of a warfare platform. A high velocity 105-mm weapon is used on the Argentina-manufactured TAM (Tanque Argentino Mediano) medium tank, and the same weapon has been mounted on an M1 Abrams main battle tank in the past, whereas a low velocity 152 mm weapon is used on the M551 Sheridan light tank manufactured in the United States. The main reason for using lighter weapons on light tanks is that the high recoil forces associated with powerful tank guns need to be supported by a powerful, and hence heavier, chassis. Stingray and M8 AGS may be given as examples of light tanks here, and similarly, the CV90120, with a weight close to 35 tons may be referred to as a medium tank, although it is classified by its manufacturer as a light tank.

Used by the US Army during the Vietnam War and equipped with a 152 mm main weapon with a low muzzle velocity, the M551 Sheridan light tank went on to serve during the first Gulf Operation, given its ability to be airdropped by parachute by transport planes.


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Capacity of Medium Class

Despite suggestions that there is no longer a need for medium-class tanks with the launch of the main battle tank (MBT), today's combat theatres require tanks to carry out a broad range of very different missions, such as:

- Delaying operations,
- Rear area security tasks against light mobile or airborne units,
- Mobile Screening operation,
- Escorting of light armour or soft-skinned vehicle convoys; and
- Counter penetration roles.

KAPLAN MT Demonstrates Maturity and the Confidence Placed on it in Indonesia

After the unveiling of the prototype at IDEF 2017, the medium-weight tank KAPLAN MT developed by FNSS in collaboration with PT Pindad of Indonesia took part in a parade in the city of Cilegon, held on the occasion of Indonesia National Armed Forces Day on October 5, driven by the personnel of the Indonesian Armed Forces. K. Nail Kurt, General Manager and CEO of FNSS, made the following comments about the presence of the KAPLAN MT at the parade: "The fact that the KAPLAN MT was displayed at a parade, while being driven by its operator, is the biggest indication of the maturity of the project and the confidence placed on it by the user. An unfortunate fire incident experienced by another newly-developed vehicle in another country is proof that [creating a new vehicle] is a very serious undertaking. Our product will be a highly effective solution in these times of asymmetric warfare. The KAPLAN MT meets all the requirements for easy and rapid deployment, high manoeuvrability, low visibility, high firepower and cost-effectiveness."
The KAPLAN MT's tests in Indonesia are continuing as part of the project.

The MBT is far from being the most ideal or cost-effective platform for such missions. In addition, improvements in the firepower of MBTs and in the efficiency of antitank missiles, as well as the increase in the utilisation of landmines and improvised explosive devices, have led to a rise in the protection levels of MBTs, and hence their weights. Modern MBTs perform much worse than their ancestors from World War II on soft ground, and face problems particularly in areas with insufficient infrastructure. They may also be too heavy to be supported by some bridges.

It is worth mentioning that today's medium-weight class tanks are no match for MBTs in face to face combat, but offer advantages over them in other areas. MBTs are designed for battle against equivalent vehicles, and therefore have their main armour on the front, while medium-weight class tanks have an even level of protection across the entire vehicle. The main reason for this design is that light or mechanised infantry, as the more likely enemy, may approach from any direction, in that medium-weight class tanks are mostly used in defensive roles rather than for direct attacks, like MBTs. In addition, they are much better protected against the 25-30 mm calibre main weapons of armoured combat vehicles, which they will single out as their primary targets, than light tanks in the 15-20 ton class.

Another advantage of the medium class to the heavy class is their high mobility. The importance of moving swiftly and changing position in a combat zone has been proven throughout the course of history. The Crescent or Turan manoeuvre, one of the oldest Turkish war tactics, or the German blitzkrieg doctrine from World War II are among the best known examples of such a strategy, both of which are built on units that can move rapidly and change position quickly in the field. Naturally, the strategic deployment capability of medium-class tanks is one of their main advantages. While this factor will never lose importance, shrinking defence budgets are forcing the armies of different countries to dominate larger areas with smaller forces. Peace support operations and similar missions that many countries are required to conduct in the international arena with various different political motivations increase the importance of the concept of strategic transportability, and as a result, air and naval transportation gains more importance with every passing day.

Equipped with a 105 mm main weapon, the M8 Armoured Gun System (AGS) can be described as a light tank, weighing up to 23 tons. Serial production of the M8 AGS, which was developed to replace the M551 Sheridan light tank, never began, as the US Army preferred the 8x8 Stryker vehicle family according to its new combat doctrine.

KAPLAN MT to Take Over the Flag

Taking into account all of the above, experts believe that the need for medium-class tanks that bridge the gap between light tanks and MBTs is increasing rather than diminishing under today's conditions. Currently under development by FNSS and Indonesian company PT Pindad, the KAPLAN MT Medium-Weight Tank is being showcased as the most viable response to this need of the modern battlefield, and its technical properties are meeting expectations.

Body: The tank weighs approximately 35 tons, and its power to weight ratio of 20 HP/ton, as the main factor determining a vehicle's movement capability, is sufficient for a vehicle in its category.

KAPLAN MT's double pin tracks is now a standard feature in modern tracked vehicles in this weight category. It is stated that the vehicle has a powerful cooling system equipped with a special software, which ensures that part of the heat generated by the engine of the vehicle can be dissipated. The vehicle has a torsion bar style suspension system. Considering the tropical climate of Southeast Asia, this vehicle will be one step ahead of those designed for more general climatic conditions in terms of performance. The reason for this is

Why KAPLAN MT?

It may be useful to analyse why Indonesia has opted this kind of combat platform.

INFRASTRUCTURE: Firstly, it is known that the transportation infrastructure in the country has various problems that may obstruct an MBT from functioning to its best ability, which can be explained using a mathematical expression: "the ratio of logistical cost to gross domestic product". This value goes some way to explaining the logistical costs, and thus the condition, of the infrastructure of a country. When this ratio is high, the transportation infrastructure in the country can be assumed to be costly and problematic. The average value for Asian countries is 15-20 percent, while this figure is 27 percent for Indonesia. Problems related to transportation infrastructure considerably restrict the strategic mobility of MBTs, which weigh over 60 tons. In short, you cannot drive a tank in your country if your bridges are weak. It is on this point that the advantage of medium-weight class tanks, which are lighter, emerges.

ECONOMICS/LOGISTICS: These two titles should be analysed at the same together. The country has a large number of light tanks and wheeled armoured vehicles with different configurations. Putting MBTs aside, the barrels of those with the heaviest weapons is 90 mm, while the Leopard 2 A4 tanks that they own have a 120 mm main gun. Thus, the acquisition of a weapon system that uses 105 mm ammunition by an army that is equipped mostly with 90 and 120 mm weapon systems means a very costly initial burden and a significant change in the army's logistical infrastructure. It, however, remains a fact that 105 mm ammunition is cheaper and more prevalent around the world than 120 mm ammunition. In addition to all these facts, 105 mm ammunition causes less collateral damage than 120 mm, and serves to lessen the number of unwanted casualties during firefights in residential areas. In addition, Indonesia's defence budget, which increased recently, should be mentioned. Indonesia's annual defence budget rose from $4 billion to approximately $8.5 billion from 2009 to 2016. When its advantages and disadvantages

that diesel or turbine engines in modern armoured vehicles are machines that convert the heat energy to movement , and these engines generate maximum output when operating at a specific temperature range. When the internal temperature of the engine goes over a certain level, its output falls and the engine may suffer damage. Cooling systems ensure that excess heat within the engine is removed, meaning that an effective cooling system will make a significant difference when air temperatures are high and it is more difficult to remove the heat from engine. In the light of this, it would be fair to say that the KAPLAN MT will ensure effective engine performance even in geographical areas with different operational environments, as can be found across Turkey.

This feature has the added advantage of reducing the heat signature of the vehicle, allowing it to hide from infrared surveillance. The reduction of the infrared signature is probably the most important factor for survival in armoured warfare, which is governed by the principle "see first, shoot first". The importance of spotting the enemy without being noticed was observed during the Gulf War in 1993, when US M1 Abrams tanks equipped with thermal imagers, two generations more advanced than those fitted on Iraqi T-72s, were able to fire at their enemies from much farther distances in Iraq's dusty climate. The US tanks were able to destroy a large number of enemy tanks in a short period, while suffering almost no loss.

Even while conducting a surveillance mission, tanks need to run their main or auxiliary engines for a certain period to generate electricity. The heat energy generated by the engines remains on the tank for a certain period, and slowly propagates through radiation particularly in the infrared wavelengths, and thermal imagers are able to detect this radiation. Thermal imaging systems are used on modern tanks not only for the detection of targets at night, but also in daylight, depending on conditions. Mostly made of metal, armoured vehicles tend to heat up and cool down at different rates to the surrounding environment, which leaves them vulnerable to detection by thermal monitors, even during daylight. It is, for instance, quite difficult to detect camouflage from a long distance using optical systems when there is a background

Developed to meet the requirements of the Argentinian Land Forces, the Tanque Argentino Mediano (TAM) medium tank is based on the German Marder armoured combat vehicle. Unlike Marder, this vehicle uses a turret equipped with a 105 mm main gun.

of forestry, but if a thermal imager is used, the temperature difference between the tank and the background will create a significant contrast in the image.

Medium-weight class tanks, which have a lower armour protection level and so a lower primary defence, need to conceal better than MBTs, and so the importance of an effective cooling system is clearly apparent. The faster the heat generated by the tank engine is removed from the tank, the harder it will be to detect it using thermal imagers.

The bottom of the vehicle's body has been designed to resist landmines, which is an unavoidable requirement of today's asymmetrical warfare conditions, and this also offers protection against mines of the Area Denial Artillery Munition (ADAM) type with area effect that are in the inventory of some countries in Southeast Asia and can be shot by howitzers.

The heaviest cargo plane in the inventory of the Indonesian Air Force is currently the C-130, which with an approximate payload capacity of 20 tons is insufficient for the transport of the 35-ton KAPLAN MT, and so it is no surprise that Indonesia plans to purchase the A400M, which are already in the inventory of the Turkish Air Forces, as can be seen in Table 2.

Another unique feature of the KAPLAN MT is that it was designed as a tank in the design phase, in that its modern competitors in other countries were initially designed

are evaluated alongside the country's economic condition, the selection of the 105 mm main weapon can be understood.

GEOGRAPHICAL: Indonesia is a country in the tropical belt, where temperatures are considerably high, and for this reason, the vehicle will be equipped with an advanced cooling system. All internal combustion engines are thermodynamic machines that can function efficiently only within specific temperature ranges. Indonesia is a country of volcanic islands that are very mountainous, and the average inclination is quite high. The significance of the +42 elevation angle of the turret can be understood from this fact.

In addition, Indonesia possesses thousands of islands, numbering somewhere in the region of 18,000, although the exact number differs depending on the source.

The KAPLAN MT is not an amphibious platform, although it would be much easier to transport a medium tank weighing around 35 tons than an MBT weighing in at 65 tons or more.

With a maximum weight of 35 tons, the KAPLAN MT has been developed to cross soft ground and bridges with a low load-bearing capacity, which tend to be highly inaccessible to main battle tanks.

The CV90120-T light tank (left) has been developed on the CV90 platform that is also used for the CV9035 (right) armoured combat vehicle. Thus, a platform with a design weight of 20 to 25 tons was converted into a vehicle operating under a load ranging from 30 to 35 tons. The KAPLAN MT is a more coherent and balanced system within itself, having been designed as a tank from the very outset.

Protection Levels Defined by NATO for Armoured Vehicles

The level of protection for armoured vehicles is defined in NATO STANAG 4569, and to meet these levels, the vehicle must be able to protect itself against kinetic energy ammunition, artillery ammunition and mine explosions to a certain level. Levels 4 and 5 shown in Table 1 can be outlined briefly under three different headings:

- **Protection against kinetic energy ammunition:**
  To meet Level 4 standard, an armoured vehicle must protect the personnel aboard against armour-piercing shells fired by 14.5 mm heavy machine guns from all directions (360 degrees). For Level 5, the vehicle should also provide protection against armour-piercing shells fired from within a frontal 60-degree arc of the vehicle by 25 mm auto-cannons.
- **Protection against artillery ammunition:**
  The vehicle must protect its personnel against highly explosive 155 mm ammunition bursting in the air at a distance of 25 meters at Levels 4 and 5.
- **Mine Protection:**
  The document defines mine protection up to Level 4. For Level 4, the vehicle must protect its personnel against anti-tank mines weighing 10 kg when they explode underneath the tank.

as armoured combat vehicles (ACV), but were eventually equipped with armour kits and heavier weapon systems later. The CV-90120 T light tank, developed on the CV-90 APC platform, or the Marder light tank manufactured, which is based on the Marder APC, can be cited as examples of such platforms. The main point here is that a vehicle with a design weight ranging between 20 to 25 tons supporting a load between 30 and 35 tons. Undoubtedly designers take the necessary actions to ensure the vehicle meets the necessary requirements, but we can say with some comfort that a vehicle that has been designed as a tank from the very beginning will be much more coherent and balanced.

Turret: The Cockerill 3105 turret built by Belgian CMI Defence, the heaviest member of Cockerill 3000 family, has been selected by the Indonesian Land Forces for mounting on the vehicle, integrated with a 105 mm rifled gun capable of firing standard NATO ammunition as its main weapon system.

KAPLAN MT can be transported by Airbus A400M, and is superior to main battle tanks in terms of its strategic transportability.

Table 1. Protection Levels According to STANAG 4569

Protection Level	Protection against kinetic energy ammunition			Protection against artillery ammunition		Mine Protection	
	Ammunition Type	Projectile Velocity (m/s)	Protection Direction	Ammunition Type	Burst Distance	Mine Type	Explosive Weight
4	14,5 x 114 mm API [1]	911	360 degrees	155 mm HE [4]	25 m	Exploding underneath the vehicle	10 kg
5	25 x 137 mm APFSDS-T [2]	1.336	60 degrees from the front	155 mm HE	25 m	-	
	25 x 137 mm APDS-T [3]	1.2580					

[1] API: Armor Piercing Incendiary [2] x 137 mm APFSDS-T 2 Armor Piercing Fin Stabilised Discarding Sabot-Tracer
[3] APDS-T: Armor Piercing Discarding Sabot-Tracer [4] HE: High Explosive

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Speaking at the parade, K. Nail Kurt, General Manager and CEO of FNSS, said, "The fact that the KAPLAN MT was displayed at a parade, while being driven by its operator, is the biggest indication of the maturity of the project and the confidence placed on it by the user. "

Table 2. KAPLAN MT's Weight and Dimensions and the Internal Dimensions of the A400M

	KAPLAN MT	A400M
Length	7 m	17.71 m
Width	3.2 m	4 m
Height	2.7 m	3.85 m
Weight	30,000 - 35,000 kg	37,000 kg

The gun is also able to fire Falarick 105 missiles designed by CMI Defence. Falarick is a kind of Gun-Launched Anti-Tank Guided Missile (GLATGM), and the manufacturer claims that this laser-guided missile with a tandem warhead is capable of penetrating 550 mm steel armour with additional explosive reactive armour (ERA) from a distance of 5,000 meters. The secondary weapon is a 7.62 mm machine gun for close quarters defence.

As it is fully stabilised, the turret can fire effectively when the vehicle is on the move. The turret is also equipped with day/night imaging systems and a fire control computer as standard. The commander will have his own monitoring periscope, independent of the gunner, and so while the gunner is firing at a target, the commander can be searching for the next target, saving time for the gunner. This makes the vehicle ideal for hunter-killer type missions, and allows the commander and the gunner to monitor different directions at the same time.

Reloading of the main weapon will be performed by an auto-loader located behind the turret, which has brought several advantages. Moving the auto-loader behind the turret has allowed the turret height to be slightly lowered and has resulted in a significant reduction in turret size, in that personnel in the turret can be reduced from three to two. Because auto-loaders don't need any ergonomic spaces around them. As a result, both the weight of the turret and the tank silhouette has been reduced and lowered. This brings to mind an old saying: "Space under the armour is equal to weight".

Developed by CMI Defence, the Falarick guided anti-tank missile can be fired from KAPLAN MT's 105 mm main weapon. The company claims that the missile can pierce 550 mm tank armour clad with explosive reactive armour, fired from a distance of 5 kilometres.

The turret's exceptional elevation angle is one of the most noteworthy features of the weapon system. The maximum elevation angle in this kind of weapon systems is generally around +20 degrees, whereas the Cockerill 3105 system boasts an elevation angle of +42 degrees. This is an important factor, and if evaluated together with the geographic features of the terrain of Indonesia, it acquires a different meaning (See box entitled "Why KAPLAN MT?). CMI Defence officers say that the system is capable of firing indirectly up to 10 km thanks to this elevation angle, meaning that the vehicle can also be used as a light-artillery system when necessary, although being a medium-weight tank. It is obvious that the artillery units accompanying tanks should be mounted on armoured and tracked chassis like tanks, due to the nature of mechanised warfare. Considering Indonesia possesses fewer self-propelled howitzers than tanks, it can be assumed that they want to assign a dual role to KAPLAN MT. It would, however, not be inaccurate to say that a weapon system manufactured as a tank should assume the functions of an artillery class vehicle only if this becomes unavoidably necessary.

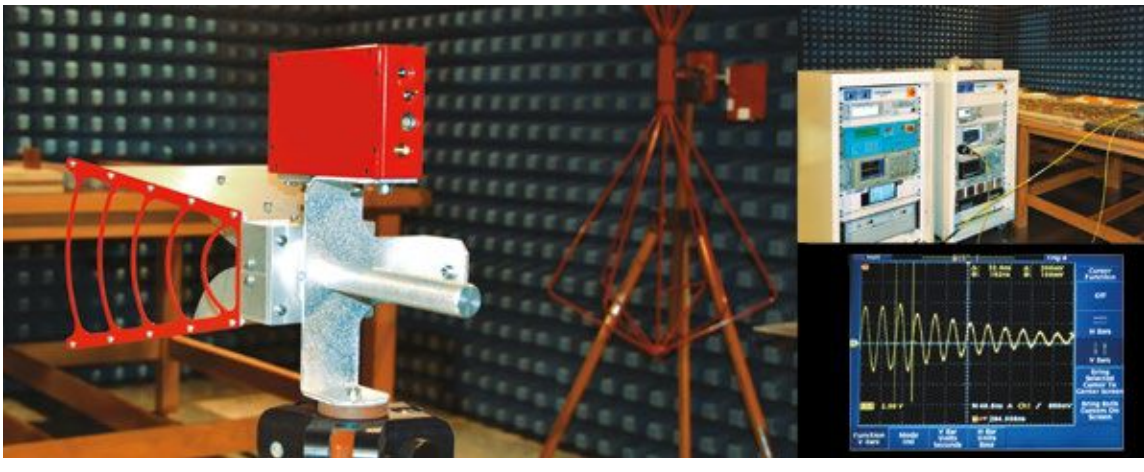
KAPLAN MT's main weapon will be a 105 mm rifled gun that is capable of using tank ammunition that meets NATO standards, and features an auto-loader and a high muzzle velocity.

Conclusion

The Medium-Weight Class Tank KAPLAN MT, manufactured jointly by FNSS and PT Pindad, will be the first vehicle to be exported in the tank class by the Turkish defence and aerospace industry. For FNSS, it will enhance its presence in the Asian market and will underline, once again, its status as a serious competitor. The vehicle is further proof that the Turkish defence and aerospace industry is not only striving to catch up with its competitors, but also to surpass them.

SDT Continues to Meet the Industry's Needs Through the EMI/EMC Laboratory at Its New Address

SDT has been meeting the needs of the industry, in addition to its own projects, since 2015 through its EMI/EMC Laboratory. To date, 10 Ankara-based companies have made use of the laboratory, which continues providing services for the industry at the SATGEB-2 building in METU Teknokent, where SDT has been located since July. A total of 400 tests have been carried out at the laboratory since it entered into service.



The laboratory includes an anechoic chamber measuring 5.92 m x 5.60 m x 3.50 m that is capable of RF shielding up to 40 GHz and meets the requirements of the MILSTD-461-E/F standard. Attenuation of up to 40 GHz can be achieved within the chamber, and tests are conducted in accordance with MILSTD-461-E/F for individual equipment. These include radiated susceptibility, radiated emission, conducted susceptibility and conducted emission. Furthermore, besides the MIL-STD-704 and MIL-STD-1275 tests for electrical power characteristics of aircraft and military ground platforms , ESD tests according to AECTP-500/Category 501 and RTCA/DO-160E are in the scope of the laboratory test capability.

The tests that fall within the capabilities of the SDT EMI/EMC Laboratory are shown in List 1.

SDT will continue providing services to meet the requirements of the defence and aerospace industry through its EMI/EMC laboratory.

List 1. Tests Conducted

MIL-STD-461E/F Tests

- CE101 Conducted Emissions, Power Leads, 30 Hz to 10 kHz
- CE102 Conducted Emissions, Power Leads, 10 kHz to 10 MHz
- CS101 Conducted Susceptibility, Power Leads, 30 Hz to 150 kHz
- CS106 Conducted Susceptibility, Transients, Power Leads
- CS114 Conducted Susceptibility, Bulk Cable Injection, 10 kHz to 200 MHz
- CS115 Conducted Susceptibility, Bulk Cable Injection, Impulse Excitation
- CS116 Conducted Susceptibility, Damped Sinusoidal Transients, Cables and Power
- Leads, 10 kHz to 100 MHz
- RE101 Radiated Emissions, Magnetic Field, 30 Hz to 100 kHz
- RE102 Radiated Emissions, Electric Field, 10 kHz to 18 GHz
- RS101 Radiated Susceptibility, Magnetic Field, 30 Hz to 100 kHz

MIL-STD-704 A/B/C/D/E/F

- MIL-HDBK-704-8, 28VDC
- MIL-HDBK-704-2, 115Vac, 400Hz, Single Phase
- MIL-HDBK-704-3, 115Vac, 400Hz, Three Phase

MIL-STD-1275D/E

- Emitted Voltage Spikes
- Emitted Voltage Surges
- Injected Voltage Spikes
- Injected Voltage Surges
- Operational Voltage Range
- Reverse Polarity
- Starting Operation
- Voltage Ripple

ESD

- RTCA/DO-160D/E
- AECTP-500/Category 501

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İSO and SAHA Istanbul: Ready to Provide Depth to the Industry

The Defence Industry summit, organised with contributions from the Istanbul Chamber of Industry (İSO) and the SAHA Istanbul Defence and Aerospace Cluster Association (SAHA Istanbul), was held on October 9 in Istanbul. The event brought industrialists from various provinces of Turkey, in particular the industry's largest players and enterprises from Istanbul. During the event, which was attended by 653 participants, officials from the Undersecretariat for Defence Industries (SSM) and the industry's prime contractors conducted one-to-one meetings with İSO members and SAHA Istanbul companies.

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Held chiefly with the aim of increasing the participating companies' contributions to defence and aerospace industry projects, the summit also served as a networking event which, during its long coffee breaks conducive for one-to-one talks, brought the ecosystem together. The daylong event also included two panels. Before the event commenced, participants received copies of State Supports and Incentives Available for Defence and Aerospace Investments, a booklet prepared by the SSM specifically for this event.

The event also put under the spotlight an issue that, despite being highly relevant for the industry, is not widely known or recognised. Şükrü Yıldız, Head of the Military Factories Production Planning Department at the Ministry of National Defence (MND), reminded attendants about the Council of Minister's decision number 10605. With this decision, announced in the Official Gazette numbered 30158 dated August 18, military factories and shipyards are now authorised to form supply chains in the same way as private sector companies, and to build cooperation strategies with approved suppliers. Furthermore, the Supplier Development Program defined under this regulation also envisages support for domestic part producers. Plus, it permits long-term agreements with suppliers, on condition that they are for a minimum of 3 years.

Importance of Subsidiary Industry in the Supply Chain

Delivering the first speech of the opening session, Erdal Bahçıvan, Chairman of the Board at İSO, highlighted the following points: "We shouldn't think about the defence industry solely as the production of weapons, ammunition and military vehicles. I believe that this industry should be thought of as an ecosystem that covers a much larger area, including:

- The commercial activities for meeting defence-related needs,
- R&D activities for defence systems,
- Construction activities, and
- Foodstuffs, clothing, health and logistics.

But perhaps most importantly, the defence industry has a multiplier effect on all other industries."

Bahçıvan went on to emphasise the importance of forming an effective supply chain in the defence and aerospace industry: "To increase the Turkish Armed Forces' (TAF's) ability to meet its requirements domestically, it's essential for the ecosystem to create and manage an effective and sustainable supply chain management. In this context, a subsidiary industry equipped with the necessary expertise to create its brands is one of the most critical links of this chain. We believe that Small and Medium Sized Enterprises (SMEs), which are the backbone of our subsidiary industry, will strengthen the industry thanks to their flexibility and dynamism, and contribute significantly to indigenisation targets by filling the gap... Moreover, with respect to joint projects with the defence industry, there are important roles which institutions such as the TÜBİTAK, universities, technoparks and technology transfer offices


Osman Okyay


Bilal Aktaş


İlhami Keleş

need to assume. It is within this general picture that SAHA Istanbul Defence and Aerospace Cluster Association aims to contribute to the development of the defence and aerospace industry, and we consider the clustering activities conducted by this association – together with 65,000 industrialists – to be very important for attaining a joint synergy."

SSM Helps Pave the Way for Industry

The next to take the stage after Bahçıvan was Dr. Celal Sami Tüfekçi, Deputy Undersecretary for Defence Industries. Dr. Tüfekçi began his speech by saying: "Once again we see the importance of technological independence, not only in the main industry but also in the defence industry... You're probably keeping track through the media of the industry's numerous products, from land vehicles to naval vehicles, various platforms, weapons systems and unmanned aerial vehicles. We all feel very proud of these products; but even so, we don't consider them to be sufficient. You may ask why. The reason is simply because we have to minimise the areas in which we're technologically dependent, and develop our own technologies indigenously."

As well as Dr. Tüfekçi's general comments on these topics, some of the topics he touched on during his speech were as follows:

- **Taxonomy of Technology:** "With a new programme we've launched, we've formed at our Undersecretariat the first version of a Taxonomy of Technology, which serves as the common language of technology. After sharing this with the industry and industrialists; we'll begin archiving/documenting who has which kind of technologies, as well as the level of technical readiness of these technologies and their level of readiness for production."
- **Industry Portal:** "We also have an industrialisation portal, which we've established as part of the SSM Department of Industrialisation's policies on industrialisation. Companies dealing with the defence industry are already registered there. I would advise other companies to register to this portal; it will actually allow them to do many things in the defence industry that until now they couldn't even imagine."

The booklet prepared by the SSM to provide information about the state support/incentive mechanisms available for SMEs shares details of the incentives offered by the SSM, the Ministry of Economy, KOSGEB, TÜBİTAK, the Ministry of Transport, Maritime Affairs and Communication, the Ministry of Science, Industry and Technology, the Ministry of Energy and Natural Resources, the Technology Development Foundation of Turkey, the Credit Guarantee Fund, the Turkish Employment Agency, various Development Agencies, and the Development Bank.


Mehmet Emin Alpman


Dr. Murat Üçüncü


Cenk Özen

- **Exports:** "Forming a defence and aerospace ecosystem requires much more than just delivering products to the TAF. The Turkish defence industry should also equip the armies of friendly and allied nations."
- **Istanbul's Industry:** "For one reason or another, the industry in Istanbul hasn't entered the field of defence and aerospace as much as we would've liked... I certainly realise that you're also anticipating certain steps and policies from us in this regard; however, we also want you to be more active in taking part in the race, either by forming clusters or acting together. We realise that everything [in the defence industry] shouldn't just be confined to Ankara."
- **Spare Part Procurement by the TAF:** "We are running into difficulties in the procurement of hard-to-manage spare parts for products in the TAF's inventory. But during meetings, we see that the domestic Turkish industry is more than capable of making these same products. But what's actually important here is putting in place a support mechanism. This is because industrialists can be unwilling to engage in these kinds of [spare part provision] activities, due to economic sustainability concerns, which is why we, at the Undersecretariat, are willing to support them in this case."

The Industry Seen from the Outside

Joel L. Johnson, Executive Director at Teal Group, made the final presentation of the opening session. The outstanding points and assessments in Johnson's presentation, entitled Future Trends in the Defence Industry, were as follows:

- Foreign prime contractors are looking for suppliers that produce at lower costs.
- Prime contractors tend to send their sales personnel to defence exhibitions, rather than their purchasers. That is why supplier companies need to reach out directly to the prime contractors' purchasing units, visiting them in their own countries.
- Offset requirements may prompt foreign prime contractors to seek suppliers that provide good quality production at competitive costs.
- It is difficult to perform direct sales to the armed forces of countries with well-developed industries, and so is investing directly in these countries. That is why it might prove easier to work together with local companies or to establish joint ventures. Due to high costs, prime contractors in these countries are more interested in other subcontractors [from other countries], rather than local suppliers.
- All of the Gulf Countries want to develop their own defence industry and have the funds to invest. There are also open to joint ventures. Since they possess more equipment than they can manage, they also need maintenance services and post-sales support.
- Central Asian and African countries also offer business opportunities for maintenance and management. Certain main platform producing companies have ceased to produce spare parts for these systems. The Turkish industry, on the other hand, is experienced in keeping older systems running. What needs to be done here is to carry out an effective market research to identify the countries with systems in the same situation.

What the Industry Requires: Mid- and Long-Term Goals

The event continued with a panel entitled the Pursuit of Indigenous and National Production in the Defence Industry, which was moderated by M. Serdar Kuzuoğlu, author and consultant. The panel took place in a conversational format, with Kuzuoğlu guiding the discussion by directing the questions to the speakers, who were Osman Okyay, Vice President at Kale Group, and Şeref Oğuz, Economy Director at Sabah Newspaper.

Describing Kale Group's activities in the field of defence and aerospace, Okyay said: "Starting from the 1990s, we developed Turkey's first multi-barrel rocket and missile launcher platforms. We now have more than 400 different parts being used on the F-35 aircraft. As its direct sub-manufacturer, we produce hundreds of parts for Boeing. Together with the Machine and Chemical Industry Corporation, we've also commenced the serial production of the national infantry rifle. We've established a joint company with Rolls-Royce, with the aim of developing the engine of the TF-X national combat aircraft. In the event that the project comes about and is contracted to us, we'll be working on the development of a fifth generation aircraft engine that will be produced in and exported from Turkey, and will involve in the region of 400 Turkish engineers.

Kuzuoğlu asked what the industry's present shortcomings are, to which Okyay replied:

Left to right: M. Serdar Kuzuoğlu, Author and Consultant; Osman Okyay, Vice President at Kale Group; and Şeref Oğuz, Economy Director at Sabah Newspaper.

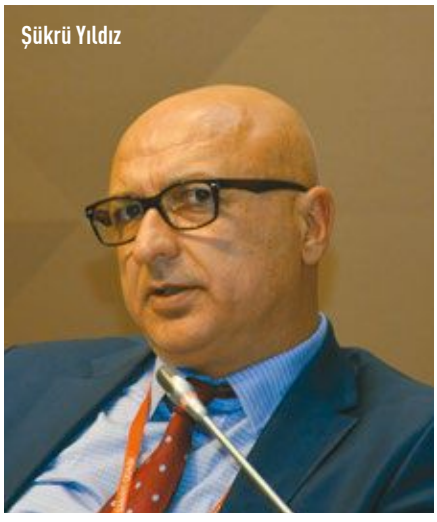
"In my view, what the industry definitely needs is to have a mid- and long-term perspective... This industry isn't one that you can just manage with day-to-day policies, impromptu changes, or ad hoc arrangements. That's because the industry requires massive investments, and there is no way you can make such investments for short-term programmes that can change from one day to the next, or for programmes whose futures are uncertain."

Emphasising that the responsibility of forming this mid- and long-term perspective primarily belongs to public agencies, Okyay continued as follows: "This industry is one where you only have a single customer. It essentially remains so, until you're able to get on your feet and start running on your own. Once you get to that point, you then start dealing with exports. But in the time it takes for a product to be conceived, to mature and be used by your own armed forces, and until the time you can point to your armed forces as a reference for this product, it's really just a one-customer industry. That's why, unless this single customer plays the right role, it would be impossible for the industry to become successful."

Observing that in Turkish the words for plan, strategy, vision and mission have all been


Orhan M. İkiz


Prof. Dr. Mahmut Faruk Akşit


Şükrü Yıldız

borrowed from foreign languages, Şeref Oğuz, Economy Director at Sabah Newspaper, stressed the need to make plans for the problems of the future, rather than coming up with daily solutions to daily problems.

SSM's Approach to Industrialisation

Bilal Aktaş, Head of the SSM Department of Industrialisation, gave the first speech of the event's afternoon session. Aktaş had this to say about SSM's activities for protecting the subsidiary industry: "In contrast to other institutions that have to follow the public procurement law, when the SSM signs a contract, it also has to sign an additional agreement. So, together with the main procurement contract, it also signs an industrial participation contract – in other words an offset contract – that corresponds to 70 percent of the contract value. In procurement projects, the project offices follow the cost, performance and schedule of the project, while the industrialisation department follows compliance with commitments concerning the level of involvement of the domestic industry, and regarding the share of the domestic industry in this 70 percent. Sometimes, due to the industry's own limitations, a project cannot be carried out with entirely domestic [products], in which case we place an obligation on the prime contractor to make exports, if it has the potential to do so. Investments beyond the scope of the project, made to the subsidiary industry instead of the prime contractor, are also considered under these commitments... Our main goal in these practices is to save on foreign currency, and to force prime contractors to procure mainly from within the country. At the same time, the intention is also to ensure that technology spreads on a wider base within the industry. We noticed that when you leave the prime contractor to itself, it tends to manage all types of investments within its own organisation. Because the [defence] industry has one only purchaser, and the requested items need to be delivered urgently, generally the prime contractor's approach is to say, 'I should take care of everything myself; it's very critical. I can't make this investment to the subsidiary industry.' We, on the other hand, try to spread these investments to a broader basis."

Part Manufacturers Should Become Subsystem Producers

The second panel of the event was entitled the Supply Chain for Defence Industry Products. Assuming the role of moderator for this panel, İlhami Keleş, General Secretary of SAHA Istanbul, said the following before leaving the floor open to the other panellists: "When discussing the defence industry, we are, first and foremost, talking about our country's independence. We are speaking about the infrastructure of our continued existence in these lands. We are speaking about economic strength. We are speaking about having a strong army. We are speaking about foreign policy, about being a leading player. We are speaking about devising our own national policies. And when discussing all of these, we should also talk about the confidence needed for doing them. As emphasised in the morning sessions, the local content ratio has risen over 65 percent, which is indeed very important. This figure gives us morale and confidence; but there are a number of questions which need to be asked here. To what extent does this 65 percent include critical products? And how many critical products are there in the remaining 35 percent? If the time comes when we are no longer able to purchase the products we once acquired from abroad, despite having the money for them, which of the products we are producing right now will we be forced to discontinue making? So, whenever we speak about

During the event, the SSM and various prime contractors from the industry held 505 one-to-one meetings with 142 İSO and SAHA İstanbul members.

Dündar Talazan

Long coffee breaks during the event served as an opportunity for ecosystem representatives to have bilateral exchanges.

the local content ratio, we also have to add a few footnotes to clarify such problems."

Keleș likewise highlighted that the main goal is to transform part and component manufacturers into subsystem and system producers, thereby shaping the defence and aerospace industry ecosystem in parallel with the SSM strategies.

Keleș then opened the floor to the panel speakers. These included senior managers and board members from companies affiliated with the Turkish Armed Forces Foundation and organisations associated with the Ministry of National Defence. The speakers answered Keleș' question in line with the panel format.

The participants first introduced the institutions or organisations they represent, describing their history, capabilities, product range and current projects. They then explained their industrialisation policies for SMEs, the supplier ecosystem they possess, and the support and incentives they provide to the subsidiary industry. At the end of the panel, participants discussed the measures prime contractors could take to ensure that the organisations, which are usually left outside the defence and aerospace industry projects in Ankara, can become more involved in them.

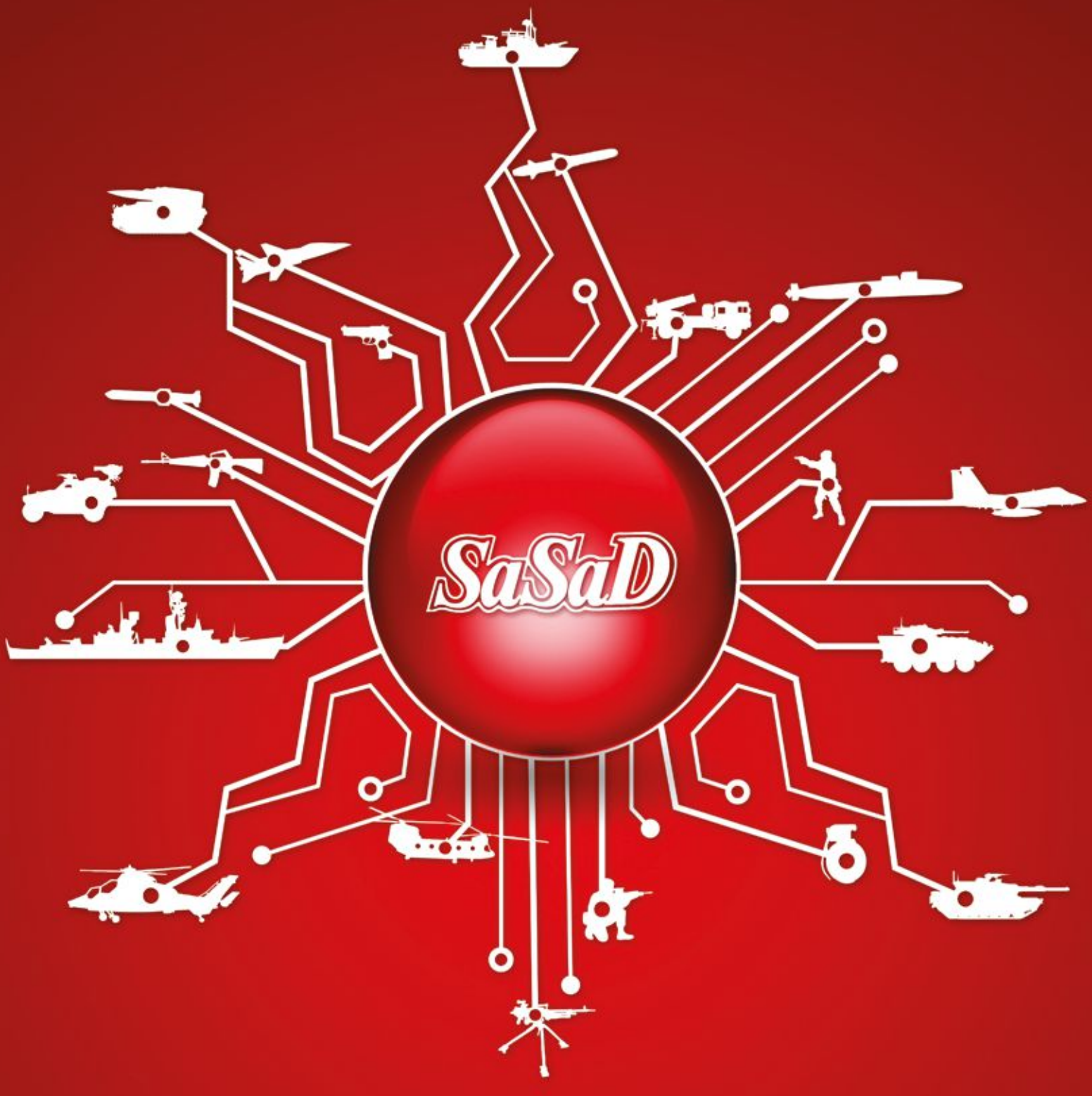
The participants who spoke during the panel, together

From left to right: İlhami Keleş, Dr. Murat Üçüncü, Cenk Özen, Mehmet Emin Alpman, Orhan M. İkiz, Prof. Dr. Mahmut Faruk Akşit, Şükrü Yıldız and Dündar Talazan.

with the important and noteworthy elements of their statements and their messages for the subsidiary industry and SMEs wishing to work in the industry, were as follows:

- **Mehmet Emin Alpman, Chairman of the Board at ROKETSAN:** "The ratio [of domestic and indigenous components in our products] is approximately 87 percent. While the ratio of domestic orders was 51 percent in 2015, in 2016 we have increased it to 77 percent. And as of today, August 2017, our ratio of domestic orders is 73 percent. Our expectation for the year end is about 80 percent."
- **Dr. Murat Üçüncü, Member of Board at ASELSAN:** "There are companies that are our solution partners, as well as companies with which we cooperate strategically. Of these, the number of large-scale companies is about 80, while the number of SMEs is about 600. During 2008, we outsourced work totalling around $62 million. By 2016, this figure had reached $410 million. We've the SARP weapon system, which consists of 11 subsystems. Eight of these are made by the subsidiary industry, meaning that the ratio [of work we share with them] is 72 percent. As for our ammunition transfer systems, there are 21 subsystems, 17 of which we've given to the subsidiary industry, which corresponds to [an allocated work share of] 80 percent."
- **Cenk Özen, Deputy General Manager at HAVELSAN:** "Our main rule here is that, if there is a stakeholder in HAVELSAN's ecosystem that is already working on a specific task, HAVELSAN will avoid working in this same area, and instead have the stakeholder work on it. Besides, HAVELSAN is a company that is the pride and jewel of the indigenisation and localisation strategy. When allocating and distributing the work we've been assigned with, it's unthinkable that wouldn't first prioritise domestic companies. But the type of work to which we give the most priority are the products for which being indigenous is vital, such as cyber security products. If a cyber security product isn't your own – in other words indigenous – then having and using one won't make much difference.
- **Orhan M. İkiz, President of Procurement and Industrialisation at TAI:** "As long as we [as the industry] remained confined to Ankara, Turkey won't get to know more about us, just as we won't get to know more Turkey. That's why we started out in Istanbul. We initially had our engineer colleagues start work in the Asian side of Istanbul, at the Teknopark Istanbul, in Sabiha Gökçen. We moved in there towards the end of the month. We'll also establish ourselves at a new teknopark on the European side of Istanbul. We consider using both of these locations for subsystem and component development."
- **Prof. Dr. Mahmut Faruk Akşit, President and CEO of TEI:** "[Subsidiary industry companies] should at least have some experience on the processing of alloys such as nickel and titanium alloys. This is essential, because these alloys are difficult to work with. If there is anyone from the subsidiary industry who wishes to enter our field, with at least a certain level of understanding of it, and who establishes a sound corporate structure by including certain alloy-related processes to their operations and building a quality system, we can then start handing out work to them... Another point is that, to carry out the kind of activities that actually generate income, they need to go a step further. Working only on machining processes isn't a very profitable type of work. But what exactly do we need? We need cables, connectors, fuel pumps. Those who produce and deliver us a complete system have a greater chance, and we'll support them along the way. They won't just be producing for us, but also carrying out sales around the world."
- **Şükrü Yıldız, Head of the Military Factories Production Planning Department at the MND,** shared information about the Council of Minister's decision number 10605, published in the Official Gazette numbered 30158 and dated August 18, 2017.
- **Dündar Talazan, General Director of Shipyards at the MND:** "Currently, materials are being supplied through the Inventory Control Centre (EKM). To reduce the foreign dependence and costs of the materials being used, materials that can be indigenised are identified, and their indigenisation is assigned to the [domestic] industry via the EKM."

At the event, one-to-one meetings with the participants were also held in parallel to the final panel, with the SSM, MND General Directorate of Military Factories, MND General Directorate of Shipyards, ASELSAN, HAVELSAN, the Machine and Chemical Industry Corporation, ROKETSAN, TAI and TEI performing a total of 505 one-to-one meetings with 142 İSO and SAHA Istanbul members in three different halls. ◆



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AMAC Members Examine the Capabilities of Industry Companies on Site

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On October 19 and 20, members of the Ankara Military Attaché Corps (AMAC) visited eight institutions and organizations operating in the defence and aerospace industry. Organized under the coordination of the Undersecretariat for Defence Industries (SSM) and the Turkish General Staff Foreign Attaché Liaison Office (FALO), the visits were attended by a total of 51 attachés from 38 countries. Having already prepared a special news covering these visits for AMAC Magazine, MSI TDR's sister publication, we would like to also share the coverage of this event with MSI TDR readers.

The visiting attachés conversing with TAI officials before the presentation.

TAI Describes the Future of Aviation

TAI was the first location to be visited as part of the event. Greeting the visitors as they arrived, Tamer Özmen, Vice President of Corporate Marketing and Communications at TAI, first gave a presentation describing TAI and its products. Afterwards, the presentation performed by Bülent Batmaca, Marketing Operations Chief at TAI, informed the attachés about future air platforms, namely the TF-X, Indigenous Helicopter and HÜRJET. Some of the details concerning the HÜRJET were disclosed for the first time in this presentation. Being developed as a trainer jet aircraft for new generation combat aircraft, HÜRJET will also be combat-capable. In its air-to-ground configuration, the aircraft will see use in close air support and counter-insurgency (COIN) missions, while in its air-to-air configuration, it will assume homeland defence and air patrol missions. Some of HÜRJET technical specifications are listed as follows:

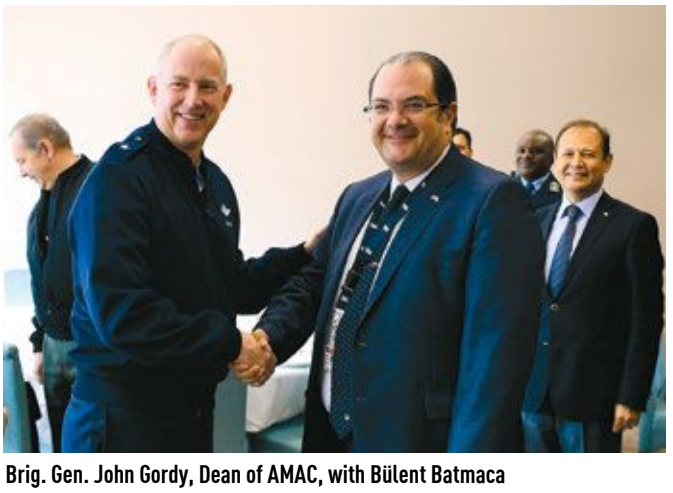
- Maximum speed: Mach 1.2
- Service Ceiling: 45,000 ft.
- g Limits: +8/-3 g
- Climbing Speed: 25,000 ft./min
- Continuous g: 6.5 (15,000 ft.)

In the facility tour organized after the presentations, the group visited building number 10 in TAI's facilities, which is the main production building. During this tour, the attachés found the opportunity to closely inspect the HÜRKUŞ, ATAK and ANKA. ◆

HÜRJET in combat aircraft configuration

HÜRJET in trainer aircraft configuration

Brig. Gen. John Gordy, Dean of AMAC, presenting a plaque to Tamer Özmen in memory of the event.



Brig. Gen. John Gordy, Dean of AMAC, with Bülent Batmaca

Tolga Özpolat giving a presentation describing METU Teknokent to the attachés.

METU Teknokent and TÜBİTAK Space Raise Awareness on Activities

The following two visits were made to the Middle East Technical University (METU) Teknokent and the TÜBİTAK Space Technologies Research Institute, located in METU's premises. Tolga Özpolat, TTO and Technology Collaborations Director at METU Teknokent, gave a presentation introducing METU Teknokent to the attachés. After the presentation, the delegation then moved onto to the TÜBİTAK Space Technologies Research Institute. The visit to the Institute was kept closed to the press. ◆

The visiting delegation at Meteksan Defence.

Meteksan Defence Achieves Goal with Mini Exhibition

The last organization to be visited on October 19 was Meteksan Defence, which hosted AMAC members in the conference hall of Bilkent Hotel. At the conference, the company opened a mini exhibition showcasing its RETINAR product family, Automatic Take-Off and Landing System (OKİS), MİLDAR and underwater acoustic solutions.

Following the welcome speech of Özgür Cankara, Vice President of Underwater Acoustic Systems Program at Meteksan Defence, a presentation was given by Burak Akbaş, International Sales and Corporate Reputation Executive, about the company and its products. After the presentation, AMAC members closely examined the products on display, and were briefed by Meteksan Defence officials. ◆

Burak Akbaş giving a presentation describing Meteksan Defence and its products.

Özgur Cankara presenting a plaque to Brig. Gen. John Gordy, Dean of AMAC, to commemorate this visit.

Meteksan Defence presenting the visiting attachés its broad range of solutions in underwater acoustics.

The attachés being briefed by Tolga Çelik, Business Development Manager, concerning Meteksan Defence's RETINAR product family, which recently saw significant export success.

The attachés also had the opportunity to hear first-hand the latest situation with Vestel Defence's work on the KARAYEL unmanned aerial vehicle.

Brig. Gen. Reinhard Schöberl, Defence Attaché of Austria, giving a plaque to İbrahim Pamuk, Deputy General Manager of Vestel Defence, in memory of this day and visit.

Vestel Defence and AYESAŞ Maintain Warm Relations

The first visit of the second day was made to the sister companies Vestel Defence and AYESAŞ. Having previously hosted AMAC members in February, Vestel Defence and AYESAŞ greeted the attachés in this visit with new solutions and products. Prior to the tour of the facilities, S. Ümit Ergin, Business Development Manager, gave a presentation introducing Vestel Defence, while Betül Kalay, Business Development Manager, gave a presentation on AYESAŞ. ◆

The visiting delegation at Vestel Defence and AYESAŞ.

Foremost among AYESAŞ' products that caught the eye during this visit were the vehicle panels produced for use on Nurol Makina's EJDER YALÇIN vehicles.

The visiting delegation at Nurol Teknoloji.

Nurol Technology Promoted Ballistic Armour Products

The next visit was performed to Nurol Technology and started with a tour of the company's facility. The delegation found the opportunity to see Nurol Technology's ballistic armour products in a factory setting, and to observe the production processes involved. After the tour of the facility, the attachés were given a presentation describing the company. ◆

Nurol Technology's structural protection solutions displayed outside, along with examples that sustained firing tests.

The attachés observing first-hand the production processes of armour plates, manufactured for personnel protection applications.

Brig. Gen. Reinhard Schöberl, Defence Attaché of Austria, presenting a plaque to Metin Tüfekçi, Marketing Director of Nurol Technology, to commemorate the day.

The visiting delegation at ASELSAN.

ASELSAN showcased its broad range of products to the visiting attachés.

ASELSAN Showcases its Broad Range of Products

The third location visited on the second day was ASELSAN. During the tour of the company's facility, which was performed behind closed doors, the AMAC delegation was briefed by Oğuz Yemişçiler, Marketing and Business Development Manager at ASELSAN. ◆

Attachés being briefed by FNSS officials about the vehicles and their features.

Brig. Gen. Reinhard Schöberl, Defence Attaché of Austria, giving a plaque to Emrah Alpsan in memory of the day and visit.

Emrah Alpsan

An FNSS Vehicle for Every Type of Requirement

The last visit of the second day was performed to FNSS. At the beginning of the visit, Emrah Alpsan, Senior International Business Development Leader at FNSS, gave a presentation on FNSS and its products. The delegation then visited an exhibition prepared outdoors, showcasing the SAMUR Armoured Amphibious Assault Bridge (AAAB), PARS 6x6 CBRN, PARS 4x4, PARS II 8x8, AV-8 GEMPITA and ACV 15 AAPC vehicles. Closely inspecting the vehicles, the attachés had the opportunity to obtain answers to their questions directly from FNSS officials. ◆

The visiting delegation at FNSS.

FNSS displaying its large family of vehicles in an open area.

The mission specific equipment of the PARS 6x6 CBRN vehicle was one of the equipment on display that attracted the attaché's attention.

Prepared by: Birol TEKİNCE / btekince@milscint.com

National Day of the Federal Republic of Germany

▶ The 27th Anniversary of the Reunification of East and West Germany under the Federal Republic of Germany was celebrated with a reception held at the German Embassy on October 6. Accompanied by their spouses, His Excellency Martin Erdmann, Ambassador of the Federal Republic of Germany to Turkey; Robert Dölger, Deputy Ambassador of the Federal Republic of Germany to Turkey; and Colonel Frank Tismer, Defence Attaché of the Federal Republic of Germany, greeted the guests as they arrived. The reception was attended by members of the Turkish Armed Forces, diplomats and foreign military attachés serving in Ankara, and many other guests.

Col. Frank Tismer, Defence Attaché of the Federal Republic of Germany and CDR Marco Hans-Philipp Frohlich, Deputy Defence Attaché of the Federal Republic of Germany together with AMAC members.

National Day of Austria

◀ The 62nd Anniversary of the Independence Day of Austria was celebrated in Ankara with a reception held on October 10. Her Excellency Dr. Ulrike Tilly, Ambassador of Austria to Turkey; Brigadier General Reinhard Schöberl, the Defence Attaché of Austria; Dr. Georg Oberreiter, Minister at the Austrian Embassy; MMag. Dr. Karin Traunmüller, the First Secretary; and Dr. Christian Maier, the Commercial Attaché greeted guests as they arrived. The reception was attended by members of the Turkish Armed Forces, diplomats and foreign attachés serving in Ankara, and many businessmen and senior company executives.

▲ Brig. Gen. Reinhard Schöberl, Defence Attaché of Austria together with the musicians of Quintet of Lower Austria's Military Music and AMAC members.

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Spain's National Day

▲ Spain's National Day was celebrated on October 13 with a reception held in Ankara. His Excellency Rafael Mendivil, Ambassador of Spain to Turkey, and his spouse; Eduardo Ibañez Lopez-Doriga, Deputy Chief of Mission; Colonel César Gutierrez De La Cámara, Defence Attaché; and Fernando Hernández Domínguez, Commercial Counselor, greeted guests as they arrived. The reception was attended by Mehmet Özhaseki, Minister of Environment and Urbanization, and also by members of the Turkish Armed Forces, diplomats serving in Ankara, representatives of the Spanish and Turkish defence industries, foreign attachés, and many other guests.

▼ Following the speeches, Minister Özhaseki and Ambassador Mendivil cut the celebratory cake together.

Col. César Gutierrez De La Cámara, Defence Attaché together with the members of AMAC and FALO.

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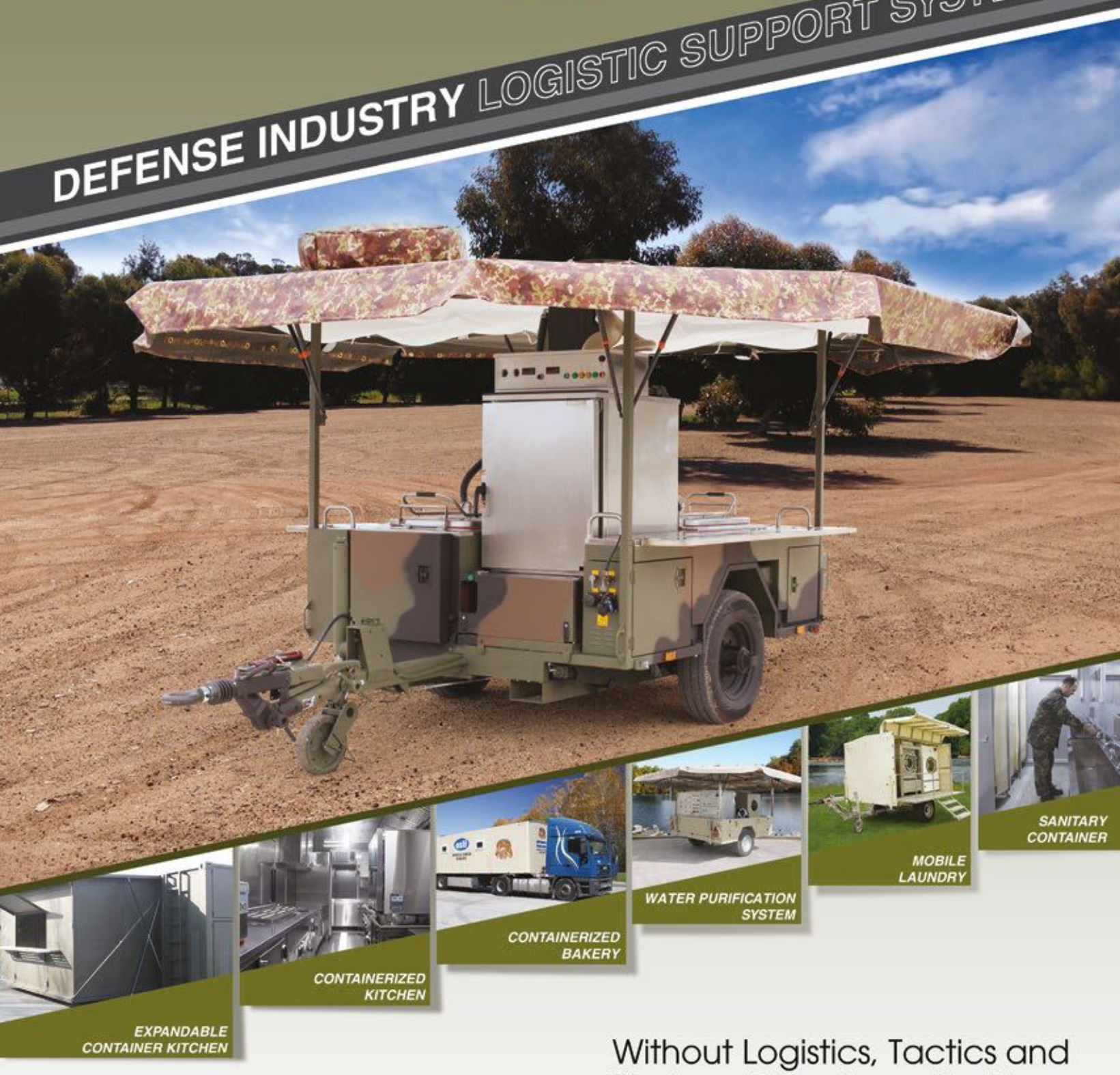
DEFENSE INDUSTRY LOGISTIC SUPPORT SYSTEMS



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Peruvian Armed Forces Day

▶ The 40th Anniversary of the Peruvian Armed Forces was celebrated in Ankara with a reception held on October 17. Attending the reception were Turkish Armed Forces personnel, foreign military attachés serving in Ankara and many Peruvian and Turkish guests. His Excellency Luis Manuel Santiago Marcovich Monasi, Ambassador of Peru to Turkey; Colonel Víctor Hugo Villasis Rojas, the Defence Attaché of Peru and his spouse, greeted all the guests on arrival.

Col. Víctor Hugo Villasis Rojas, Defence Attache of Peru together with the members of AMAC and FALO.

Hungarian National Day

◀ The 61st Anniversary of the 1956 Hungarian Revolution and War of Independence was celebrated with a reception held in Ankara on October 19. Guests were greeted as they arrived at the reception by His Excellency Gabor Kiss, the Ambassador of Hungary to Turkey; Ferenc Kékesi, Deputy Head of Mission; Lieutenant Colonel Janos Varga, Defence Attaché of Hungary; and their spouses. The reception was attended by Dr. Faruk Özlü, Minister of Science, Industry and Technology and the Vice Chairman of the Turkey-Hungary Joint Economic Commission; Geza Szocs, Senior Advisor of the Prime Minister of Hungary; Turkish Armed Forces personnel; diplomats and foreign attachés serving in Ankara, as well as many other guests.

▲ H.E. Gabor Kiss, the Ambassador of Hungary to Turkey; Dr. Faruk Özlü, Minister of Science, Industry and Technology and the Vice Chairman of the Turkey-Hungary Joint Economic Commission; and Geza Szocs, Senior Advisor of the Prime Minister of Hungary cut the ceremonial cake.

Lt. Col. Janos Varga, Defence Attaché of Hungary together with the members of AMAC.

Romanian Armed Forces Day

▶ The Romanian Armed Forces Day was celebrated on October 25 with a reception held in Ankara. His Excellency Gabriel Sopanda, the Ambassador of Romania to Turkey, and Colonel Iulian-Alin Done, Defence Attaché of Romania, and his spouse greeted guests on arrival at the event, which was attended by members of the Turkish Armed Forces, foreign diplomats serving in Turkey, as well as many other invitees.

▲ Col. Iulian-Alin Done, Defence Attaché of Romania Turkish Armed Forces representatives, together with members of AMAC and FALO.

Zambia National Day

◄ The 53rd Anniversary of Zambia's Independence was celebrated on October 25 with a reception held in Ankara. Hosted by Bwalya Lyapa Nondo, Chargé d'affaires of the Zambian Embassy in Ankara, who greeted the guests as they arrived, the event was attended by Jülide Sarıeroğlu, Minister of Labor and Social Security, and by Turkish Armed Forces personnel, diplomats and foreign attachés serving in Ankara, as well as many other invitees.

▲ Following the speeches, Minister Sarıeroğlu and Chargé d'affaires Nondo cut the ceremonial cake together with other high level guests.

Brig. Gen. Simeon Manyando, Defence Attaché of Zambia together with the representatives of the Turkish Armed Forces, members of AMAC and FALO.

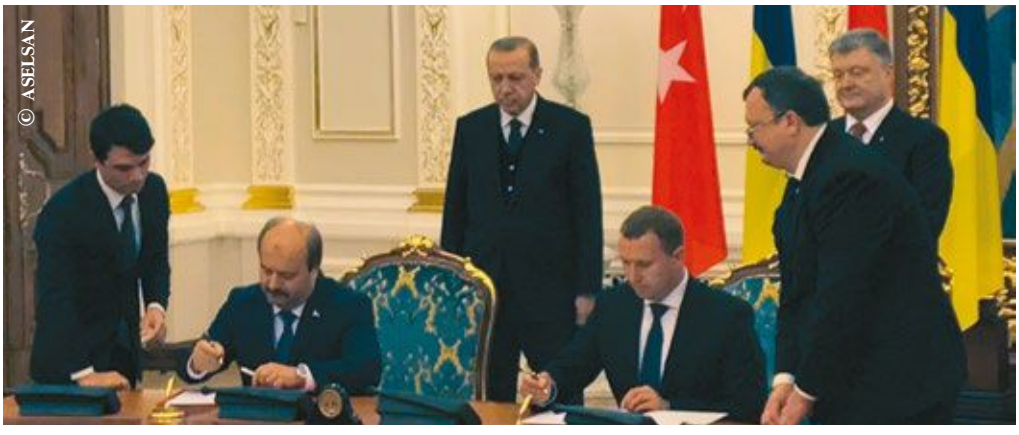
National Day of the People's Democratic Republic of Algeria

▲ The 63rd Anniversary of the Algerian Revolution was celebrated in Ankara on October 31 with a reception hosted by His Excellency Lahssan Boufares, the Ambassador of the People's Democratic Republic of Algeria to Turkey. Ambassador Boufares, embassy personnel and their spouses greeted the guests as they arrived. The reception was attended by Faruk Özlü, Minister of Science, Industry and Technology, members of the Turkish Armed Forces, diplomats and foreign attachés serving in Ankara, representatives of the Turkish and Algerian business community and many other guests.

▶ H.E. Lahssan Boufares, the Ambassador of the People's Democratic Republic of Algeria to Turkey; Faruk Özlü, Minister of Science, Industry and Technology; and the other high level guests cut the traditional cake.

▲ Col. Kouider Bensenouci, Defence Attaché of the People's Democratic Republic of Algeria together with the AMAC members.

Armed Forces of Ukraine to Acquire ASELSAN Radios



During President Recep Tayyip Erdoğan's official visit to Ukraine on October 9, ASELSAN and the Ukrainian company STE signed a contract aiming to meet the military communication requirements of the Armed Forces of Ukraine. With this contract, the Armed Forces of Ukraine will join the ranks of countries using ASELSAN's Software-Based Military Radio family.

The statement released by ASELSAN on the subject emphasised that the radios, developed using the latest technologies, stand out with their software-based architecture, different waveforms, and electronic countermeasures that offer high survivability against threats. ASELSAN's family of military radio products are used by agencies in nearly 20 countries. Moreover, in three of these countries, the radios are produced locally by means of technology transfer.

In its statement disclosed to the stock exchange, ASELSAN described that the value of the contract stands at $43,634,744.40, and that deliveries will be performed over the course of 2018.

Another development in October was the establishment of a new company named YİTAL Microelectronic Industry and Trade Inc. Owned by ASELSAN, TÜBİTAK and the Undersecretariat for Defence Industries (SSM) at ratios of 51 percent, 29 percent and 20 percent, respectively, the company will operate in the area of micro- and nano-sized devices containing semi-conductors, or materials of similar technology. The company was officially registered as having been founded on October 4, while its capital is reported as ₺17,462,500.

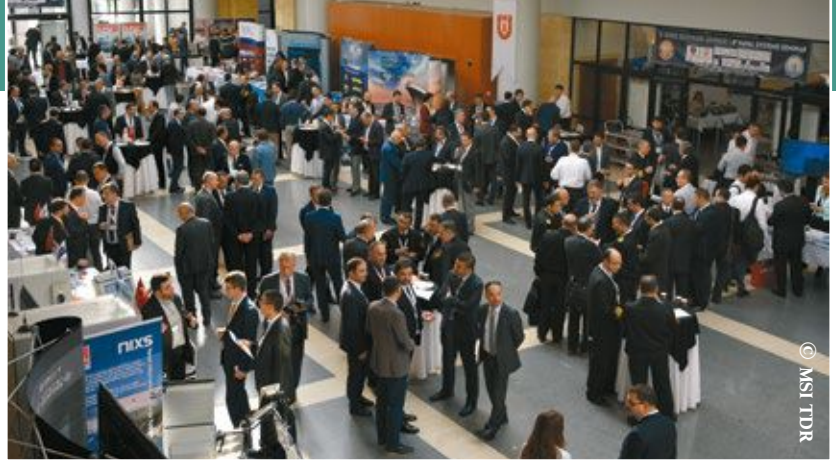
The company's factory, to be built in TÜBİTAK's Gebze campus, will initially carry out production processes for critically important technology. The factory will produce gyroscopes, accelerometers, uncooled infrared detectors, radar signal processing circuits and indigenous micro processors.

ASELSAN also announced that it signed of a number of contracts during October:

- According to the statement released on October 3, ASELSAN and the Ministry of National Defence (MND) signed a contract with a total value of $51,000,000 for the Network Enabled Capability (ADY) Project, which is being conducted to meet the needs of the Turkish Armed Forces (TAF).
- Another statement released on October 13 reported that ASELSAN and the SSM signed a contract amendment concerning the City Security Management System Project, with ASELSAN receiving an additional order valued at ₺350,000,000. In accordance with this contract amendment, deliveries will be completed by 2019.
- On October 20, ASELSAN and BMC signed a contract valued at ₺27,676,000 in total for the procurement the SARP Remote Controlled Weapon System, in order to meet the requirements of the General Command of Gendarmerie. Deliveries within the scope of the said contract will be performed in the first half of 2018.
- According to a statement released on October 24, ASELSAN signed a ₺60,000,000 contract with the Ministry of Interior's General Directorate of Provincial Administration within the scope of the 112 Emergency Call Centres Project, for the project titled "New Generation 112 Emergency Call Centre - Second Stage Installation Works". As part of this project, Turkey's 112 Emergency Aid infrastructure will be made operational in the provinces of Adana, Bartın, Çanakkale, Edirne, Erzurum, Hakkâri, Kayseri, Kırklareli, Mardin, Samsun, Şanlıurfa and Zonguldak. The project is planned to be completed within 2018.
- On November 30, a collateral contract valued at $58,900,000 was signed between the SSM and ASELSAN in relation to the main contract for the TAF Multi Band Digital Joint Radio Procurement project. Under the contract, ASELSAN will develop and produce handheld radios to meet the TAF's tactical and strategic communication needs. Deliveries will take place in 2019 and 2020. ◆

Date for High-Tech Port by MÜSİAD 2018 Announced

The High-Tech Port by MÜSİAD, an event which brings defence industry and leading high-tech companies together, will be held for the fourth time between November 14 and 17, 2018, at the CNR Expo Centre in Istanbul. In the previous event, held in November 2016 at Istanbul with the slogan "forming global strength through national capabilities", a total of 74 participating institutions and organisations had opened their stands. ◆



Naval Systems Seminar Turns Potential into Practice

Foremost among the list of events that are becoming an industry tradition, the Naval Forces Seminar was held for the eighth time in Ankara from October 16 to 17. Organised once every two years, the event hosted many high-ranking guests this years, such as Vice Admiral Adnan Özbal, Commander of the Turkish Naval Forces, and Prof. Dr. İsmail Demir, Undersecretary for Defence Industries. Furthermore, in contrast to previous years, it was noted that the Naval Forces Command personnel showed great interest to the seminar on both days of the event.

The opening speeches of the seminar were delivered by the following officials, in the listed order:

- Captain (R) A. Zafer Betoner, speaking on behalf of the organization committee,
- Alper Köse, Head of the Undersecretariat for Defence Industries (SSM) Naval Platforms Department,
- Rear Admiral Lower Half Mehmet Sarı, Deputy General Director of Shipyards at the Ministry of National Defence (MND),
- Rear Admiral Upper Half Ahmet Çakır, Naval Technical Commander at the Turkish Naval Forces Command (TNFC), and
- Prof. Dr. İsmail Demir, Undersecretary for Defence Industries.

A total of 46 presentations were made during the event by the various institutions and organisations operating in the ecosystem, and 36 stands were set up. MSI TDR's Special Issue for the 8th Naval Systems Seminar, which was prepared specifically for the event and distributed free of charge at the event, was also greatly appreciated by the participants.

In the December issue of MSI TDR, we will present our readers a special dossier covering in detail the outstanding topics relating to the seminar. ◆

Katmerciler: Gaining Ground with the HIZIR

In the month of October, Katmerciler shared three special announcements with the Public Information Platform (KAP), to inform about the new orders it received and the tenders it won.

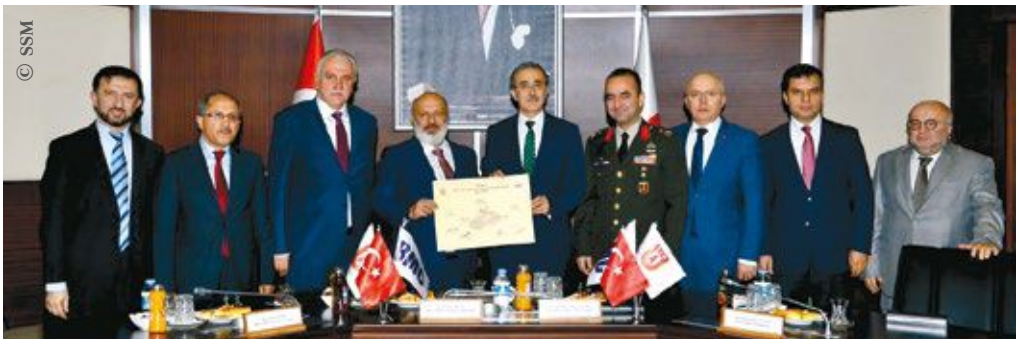
On October 6, it was announced that Katmerciler and ASELSAN signed two contracts within the scope of the project titled Supply of Mobile Surveillance Vehicles for Increasing Border Surveillance Capacity of Turkish-European Union (EU) Borders. With a total budget of €10,485,000, the contracts involve the delivery of Katmerciler's HIZIR 4x4 tactical wheeled armoured vehicles to ASELSAN. The HIZIR will thus enter the inventory for the first time. ASELSAN is the prime contractor in this EU-funded project that will be completed in 2018, and which is being conducted by the Central Finance and Contract Units (CFCU) of the Prime Ministry Undersecretariat of Treasury. CFCU is the agency responsible for administering funds allocated to Turkey as part of the EU accession process.

Meanwhile, the contract for the New Generation Criminal Investigation Vehicle (KIRAÇ) Project was signed between the Undersecretariat for Defence Industries (SSM) and Katmerciler on October 9. Conducted with a view of meeting the needs of the Turkish National Police (TNP), the project covers the acquisition of 120 4x4 vehicles. Of these vehicles, 110 will serve as New Generation Criminal Investigation Vehicles, while 10 will serve as New Generation Laboratory Vehicles. In addition to its

₺73,390,184.77 budget, the project will also have an additional budget of €11,392,672.85. The delivery of the vehicles is expected to take place in 2018. While there have been no official announcements concerning the platforms to be used in this project, it is believed that a different variant of the HIZIR 4x4 tactical wheeled armoured vehicle will be employed.

In its latest statement on October 18, Katmerciler also announced that it received an order for various amounts of armoured excavators and equipment, to be delivered to the security forces. The total value of the said order is reported as $5,019,959. ◆

BMC Becomes New Address for New Generation Light Armoured Vehicle Power Pack



The contract for the National Powerpack Development Project for New Generation Light Armoured Vehicles was signed on October 13 in Ankara between the Undersecretariat for Defence Industries (SSM) and BMC. The project covers the design, development, prototype production, testing and qualification of an indigenous power pack that will be used in new generation tracked light armoured vehicles. While the project envisages maximum use of existing domestic means and capabilities, technical support may also be obtained from abroad if deemed necessary. The project's final products will be a 675 kW engine, and a transmission to be used in 40-ton tracked vehicles. Contract negotiations between the SSM and BMC were carried out in accordance with the Defence Industry Executive Committee decision numbered 839, dated 28 October 2016. ◆

ROKETSAN Prepares for Space-Related Initiatives with Ukraine

ROKETSAN returned with important news and developments from the Arms & Security exhibition held between October 10 and 13 at Kiev, the capital of Ukraine. At the event, to which ROKETSAN participated for the first time, one topic that particularly stood out was cooperation in the field of space technologies. The main subject of the one-to-one meetings held between the Ukrainian side – to which Prof. Dr. İsmail Demir, Undersecretary for Defence Industries, also participated – was again about cooperation in the field of space technologies. The theme of space also figured prominently during ROKETSAN's meetings, as well as in its stand designs and promotional videos prepared for the event.
During the exhibition, ROKETSAN also signed a contract covering armour solutions, with a ceremony that was attended by Prof. Dr. İsmail Demir. Under this contract signed with SpetsTechnoExport company, a subsidiary of Ukraine's Ukroboronprom, the two companies will cooperate on the development of joint armour solutions. ◆

Helicopter-MİLDAR Ready for Duty

In an announcement released in its website on October 11, Meteksan Defence shared information about the latest situation with the MİLDAR millimetre wave fire control radar. The announcement read as follows: "As Turkey's first fire control radar operating in the millimetre wave band, and featuring Target Detection and Tracking (HTT) and Terrain Profiling (ARPO) capabilities, the Helicopter-MİLDAR has officially passed the acceptance procedures of the Undersecretariat for Defence Industries' Acceptance Delegation on June 23, 2017. We believe that the Helicopter-MİLDAR will provide the Turkish Armed Forces important operational advantages, such as high performance under weather conditions that decrease electro-optic system performance; guidance of electro-optic systems towards the target; faster weapon engagement; and better positional awareness for the pilot at low altitudes and under low visibility conditions. Now that its flight tests have been completed on the T129 ATAK Helicopter, we expect that weapon system integration and serial production activities will commence for the MİLDAR once its final position on the helicopter platform is decided." ◆

KSF Commander Lieutenant General Rama Visits Companies of the Industry

© Defense Office of the Republic Kosovo

Lieutenant General Rrahman Rama, Commander of the Kosovo Security Forces (KSF), performed a visit to Turkey between September 25 and 27 upon the invitation of General Hulusi Akar, Commander of the Turkish Armed Forces. The visit was organised with the stated goal of furthering relations between the Turkish Armed Forces (TAF) and KSF, and to conduct onsite visits to the facilities of Turkish defence industry companies. On the first day of his visit, Lieutenant General Rama discussed with General Hulusi Akar the various potential areas of cooperation that are currently on the agenda. And on the second and third days, Lieutenant General Rama and his accompanying delegation visited the Army Aviation School, as well as the companies ASELSAN, AVS Saraciye Textile, HAVELSAN, FNSS, MKEK, Nurol Makina and Yakupoğlu. During these visits, the delegation examined the companies, by taking the KSF's future requirements into account.

Very impressed by the Turkish companies he visited and their products, Lieutenant General Rama invited their representatives to Kosovo. As such, several Turkish companies, and in particular ASELSAN, HAVELSAN, MKEK and Nurol Makina, are planning to visit Kosovo in the coming months, in order to both introduce their products in detail and to take part in certain field tests. ◆

The ASELSAN delegation inspecting the premises of BUTEKOM

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BTSO Hosts ASELSAN

An event organised in Bursa on October 28 by the Bursa Chamber of Commerce and Industry (BTSO) brought together ASELSAN's purchasing officials with members of the Bursa Space-Aviation-Defence Cluster (BASDEC), which operates under the BTSO. Speaking at the meeting held in the Bursa Technology Coordination and R&D Centre (BUTEKOM), Prof. Dr. Mustafa Hatipoğlu, President of the BTSO Space-Aviation-Defence Cluster, described that the cluster comprises nearly 100 representatives from the industry.

"Our goal is to ensure our companies engage in production in the defence industry, as well as in maritime, civil, sports and general aviation, and in space technologies," he noted.

Speaking at the event, Ali Rıza Kılıç, Central Procurement Director at ASELSAN, highlighted that the workload of orders on ASELSAN has increased over the years. "As of today, we have $6.5 billion worth of received orders. The distribution of these orders according to the years is such that we have long delivery programme, stretching all the way to 2023 and 2025. ASELSAN doesn't try to handle this many orders, deliveries and tasks on its own. We're working with an extensive subsidiary industry network. As the subsidiary industry becomes more technologically advanced, the quality and quantity of the works we give them increases as well. While years ago we only transferred relatively simple tasks to the subsidiary industry, such as machining and casting, nowadays we can easily give them turnkey projects that include design processes," Kılıç explained.

Noting that domestic orders have increased nearly seven-fold over the past eight years, Kılıç emphasised that they are working extensively with Small and Medium-Sized Enterprises (SMEs) to meet this workload. He further stated that while the sum of orders placed on SMEs was $62 million in 2008, this figure has reached $410 million in 2016. "Moreover, in 2016, we've placed 9 out of 10 of our own orders on SMEs. The numbers this year aren't much different. As a result, our domestic procurement ratio has increased to 66 percent. This same ratio was 38 percent in 2008. We've reached the point where we receive two-thirds of our orders domestically. And we want this number to increase even further," Kılıç explained.

Stating that ASELSAN sincerely wishes to strengthen cooperation with Bursa-based companies, Kılıc said, "Bursa has tremendous potential. But until now, we haven't been able to bring Bursa's strength into the defence industry. It's indeed an important shortfall that the defence industry's activities are so limited in this city that concentrates extensively on industry and technology. Today will be a kick-off meeting of sorts. We want to contribute to the share Bursa will receive from the defence industry. And ASELSAN's door will always remain open to you. We'll continue to hold our cooperation meetings. I also would like to express my thanks and gratitude to BTSO for hosting this meeting."

Following the speeches, participating companies held one-to-one meetings with officials and experts from the ASELSAN Supply Chain Directorate. The ASELSAN delegation also examined the premises of BUTEKOM. ◆

Sempro Continues to Provide CMII Training to the Industry

The Configuration Management 2 (CMII) training programmes provided by Sempro are continuing nonstop. Sempro is the only official training organisation in Turkey authorised to provide CMII model training, and the company's CMII training programmes, organised in Ankara between October 16 and 19, have also attracted the attention of defence and aerospace industry.
Participants in these training activities included workers from Aksa Run Flat, ArGe PLM, BASE Studio, FNSS, TEI and Vestel Defence.
Two training session were held during the event, which were:

- CMII-01: "CMII and Integrated Process Excellence Model", the first training carried out from October 16 to 17.
- CMII-02: "Structuring and Managing Requirements", the second training carried out from October 18 to 19.

Participants in these two sessions – which together formed a continuous programme – were granted certificates at the end of the training.
Comprising system engineering and project management components, the CMII is essentially a configuration management model that can be applied to product design and development processes. Semiha Yaşar, Founder of Sempro, highlighted that while corporate or management processes are usually assumed to be different from one another, they are actually quite similar, and that, consequently, the CMII can be utilised for the management of any processes in an organisation. ◆


Semiha Yaşar
© MSI TDR


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STM and Turkcell Join Forces for Digital Transformation of Industry

STM and Turkcell will engage in a new cooperation that aims to lead the digital transformation of the Turkish industry. The statement released by STM on October 20 reported the signing of a cooperation agreement between the two companies. Within the framework of the agreement, STM and Turkcell will develop technological solutions in the field of digital transformation, in order to enhance the Turkish industry's efficiency and competitiveness.
Sharing details concerning the details of the agreement, Davut Yılmaz, General Manager of STM, said, "As part of the strategic cooperation we've laid down with Turkcell, STM's Optimisation and Big Data Analytics Platform (OVERA) will be used to process raw data collected from industries such as manufacturing, energy, automotive, agriculture and livestock. The resulting processed data will, through the Internet of Things platform, contribute to the digital transformation of industries in areas such as optimisation and predictive maintenance concepts. By making industries 'go smart' and ensuring a 10 to 15 percent increase in efficiency in terms of transformation costs, this digital transformation is expected to engender a growth rate of up to 3 percent per year."


© STM

Kaan Terzioğlu, CEO of Turkcell, also commented on the strategic cooperation agreement: "At Turkcell, we seek to offer innovative solutions to our customers on the Internet and in every area that involves a connection. We know that one primary requisite for efficiency is the proper implementation of the digitalisation process. Failure to digitalise leads to various problems when working to increase efficiency. It's precisely by preventing such problems that we want to contribute to the digitalisation of the industry and the relevant areas of production. Thanks to this new partnerships we've made with STM, we're aiming to make a big contribution to efficiency in terms of total production costs, by utilising Turkcell's infrastructure to analyse data collected with the NarrowBand Internet of Things." ◆

Prime Minister Yıldırım Examines TEI's Projects Onsite

Prime Minister Binali Yıldırım, Dr. Faruk Özlü, the Minister of Science, Industry and Technology, and their accompanying delegation visited TEI's facilities in Eskişehir on October 3. Prime Minister Yıldırım first examined the testing area of the PD170, Turkey's first indigenous turbodiesel unmanned aerial aircraft engine, and was briefed about the current situation in the project. He then toured the Advanced Manufacturing Technologies building, where he observed the latest status and progress with Turkey's first indigenous turboshaft engine, being developed by TEI for the Helicopter Development Programme, and the TJ90 engine, which performed its first flight last June on TAI's Şimşek platform. Prime Minister Yıldırım's visit concluded after the group photograph taken together with TEI employees.

In a statement released on October 24, TEI shared information concerning its Zeka Atölyesi (Intelligence Workshop) project. Within the scope of a project launched in 2016, TEI established its fourth workshop at the TEI Alparslan Elementary School.

Speaking at the opening of this workshop, made possible with contributions from TEI volunteers, K. Levent Tüfekçi, Human Resources Director at TEI, said that as a company located in Eskişehir, they are conducting numerous social responsibility projects based on a sense of responsibility and indebtedness towards the city, and noted that these projects will continue and increase in number. ◆

Statement by TRJet on the Regional Aircraft Project

TRjet released a statement on October 26 outlining the latest situation in the Regional Aircraft Project. The statement read as follows: "TRJet was established in 2015 pursuant to the Defence Industry Executive Committee's (SSIK's) decision, with the stated purpose of manufacturing Turkey's regional aircraft. After being introduced to the public, TRJet reached an agreement with the Undersecretariat for Defence Industries on all terms and conditions of the project, including costs and the local content ratios.

Following a number of studies which the Turkish government also approved, the Dornier 328 aircraft was selected as the most suitable infrastructure, or basis, for designing a new regional aircraft. After this choice was made, Eren and Fatih Özmen invested $100 million to acquire all the intellectual property rights and operations related to the licensed Dornier 328, thus guaranteeing the future success of the TRJet project.

Recent speculations have emerged in the media claiming that the project has been cancelled. To this day, TRJet has not received any notification from official authorities about a cancellation.

Sharing his thoughts on the subject, Eren Özmen, Owner and President of TRJet, said, 'The Regional Aircraft Project is a project whose significance and scope is greater than us all. This global investment of colossal proportions will help strengthen Turkey's economy in the world, while also creating new opportunities for the Turkish youth.'

Özmen continued as follows: 'Once the TRJet proves successful, our goal is to go public, and to make TRJet a company of the people. For Fatih and myself, TRJet has always represented a grand legacy, one to be bequeathed to the Turkish youth.'

In the coming days, we will continue to share additional details with you and the public concerning the project. ◆

ASİAD Gives CEO of the Year Award to Ahmet Hamdi Atalay


© HAVELSAN


© HAVELSAN

At the 3rd ASİAD Summit held on October 11 by the Ankara Industrialists and Businessmen Association (ASİAD), the CEO of the year award was given to Ahmet Hamdi Atalay, General Manager and CEO of HAVELSAN, for his contributions to digital transformation. Organised this year under the main theme of Digital Transformation, the event included the presentation of special awards specific to this theme. Owing to the important projects he conducted in the telecommunication industry and the major software projects he oversaw in both military and civilian areas, Atalay was granted the CEO of the year award. Receiving his award from Yalçın Topçu, Chief Adviser to the President of the Republic of Turkey, Atalay expressed his delight at winning this title. Chief Adviser Topçu also said that HAVELSAN holds a very important place for Turkey.

Another development for HAVELSAN in the month of May was the first export of its Hospital Information Management System. According to the statement released by HAVELSAN on October 1, the company's solution was selected as the fully integrated hospital information management system to be used in the Pakistan Kidney and Liver Institute (PKLI), which is currently under construction at Pakistan's Punjab province. The contract signed by HAVELSAN covers the provision, operation and maintenance and support services for the system in question. In this project, which is considered very important for Pakistan' e-health road map, and is viewed as a reference project, HAVELSAN will cooperate with stakeholders in its ecosystem. In a ceremony attended by Muhammed Şehbaz, Prime Minister of the Punjab Province, the acceptance document for the PKLI project was signed by Mujahid Sherdil, CEO at the Infrastructure Development Authority Punjab (IDAP), and Zeynep Arzu Çelik, the HAVELSAN Representative.

HAVELSAN Simulator at THY's Service


© HAVELSAN

The Boeing 737-800NG simulator, developed by HAVELSAN for Turkish Airlines (THY), was installed at the THY Training Centre with a ceremony held on September 13. Giving a speech at the event, Taner Düvenci, Deputy Chairman of the Board of Directors at HAVELSAN, said: "In addition to [its successes with] state-of-the-art simulators that contribute to the Turkish Armed Forces' training efforts, HAVELSAN has had yet another story of success with the Boeing 737 simulator it developed for THY, Turkey's global brand. This story of success belongs not only to the managers, engineers, technicians who worked sweat and blood on the project and the HAVELSAN personnel who supported them administratively during this process, but also to the THY personnel with whom we cooperated closely throughout the project...Aside from the production of simulators, in the area of civil aviation, our in-cabin entertainment systems will enter into use in the coming months. Standing out as the first indigenous system of its kind, and one we developed together with THY Technic, our in-cabin entertainment systems will be installed in THY aircraft, and take their place in skies around across the world. We will continue to work with increasing effort and dedication to become an actor that not only follows technology, but also creates it, and one which is significant not only at a national level, but also internationally. ◆

Yıldırım Beyazıt University Becomes Latest Institution to Join the SAYP


© SSM

The Yıldırım Beyazıt University (YBÜ) became the latest higher education institution to join the Researcher Training Programme for the Defence Industry (SAYP). With a ceremony held at YBÜ on October 18, the SAYP protocol was signed between the Undersecretariat for Defence Industries, YBÜ, ASELSAN, HAVELSAN, Meteksan Defence and TAI. The signatories of the protocol were Dr. Celal Sami Tüfekçi, Deputy Undersecretary for Defence Industries; Prof. Dr. M. Fatih Uşan and Prof. Dr. F. Vehbi Çelebi, Vice Rectors at YBÜ; Zafer Dokuzoğlu, Technology and Innovation Management Director at ASELSAN; Prof. Dr. Abdullah Çavuşoğlu, Chairman of the Board at HAVELSAN; Tunç Batum, President at Meteksan Defence; and Assoc. Prof. Dr. Fahrettin Öztürk, Vice President of Strategy and Technology Management at TAI. ◆


© OSSA

OSSA Raises the Flag of Turkish SMEs in Morocco

Taking part in the Aerospace Meetings Casablanca 2017 event, organised in Moroccan city of Casablanca between October 17 and 19, the OSTİM Defence and Aviation Cluster (OSSA) represented the Turkish defence industry in yet another international exhibition. The event saw participation by 250 companies from 17 countries, and was scene to nearly 5,000 one-to-one meetings. In addition to OSSA officials, participants from Turkey also included the OSSA members such as ASKAR Makina, EMGE, GÜR Metal, Küçükpazarlı, MEGE Teknik and MFK.

OSSA and its members held over 100 business meetings, not only with major industry leaders such as Airbus, Rolls-Royce, Zodiac Aerospace, Daher and Boeing, but also with regional companies such as Royal Air Maroc, Sabca, NSE Aero Maroc and ECM. During the event, requests and applications were also received for the Industrial Cooperation Days in Defense and Aerospace (ICDDA) in Ankara, which will open its doors for the fourth time in 2018. In addition, presentations were also given at the event by Hüseyin Kılıç on behalf of the SSM Industrialisation Department; by Halil Tokel, General Manager Consultant, on behalf of THY Technic; and by Ece Umay on behalf of the OSSA.

The OSSA and its members also performed visits to local companies, in order to gain a better and on-the-site view of the Moroccan aviation industry. After visiting Figeac Casablanca Aeronautigue company, the group was hosted at Bombardier's facilities. The delegation also paid a visit to the Moroccan Aerospace Institute (IMA) in Casablanca, which raises qualified workforce for the industry companies within in the country, and learned more about the centre's activities. ◆


© OSSA


© TAI

Engine Pods of the Airbus A320neo to Bear TAI's Mark

TAI added yet another item to the list of works it performs for Airbus, by winning the design and production tender for the engine pod of the Airbus A320neo aircraft variant that uses the Pratt&Whitney (PW) P1100G-JM engine. The statement released on October 2 by TAI concerning this development reported that the company will, as a single supplier, produce the engine pods throughout the platform's lifespan.

The engine pod to be designed by TAI will protect the engine against external factors and reduce air resistance on the engine, thus enhancing the aircraft's aerodynamic efficiency. TAI currently continues to produce ailerons of its own design for the Airbus A350 XWB aircraft; rudders for the Airbus A330 aircraft; and the Airbus A320 Section 19 barrel and Airbus A320 Section 18 shells.

In the month of October, TAI also announced the news of a new cooperation: On October 10, the company signed a cooperation protocol with Yıldız Technical University and Yıldız Teknopark that envisages the training of human resources to meet the defence industry's requirements, and the development of joint projects to lay the grounds for university-industry cooperation. Moreover, TAI will also carry out R&D studies with the university, in order to generate knowledge and provide skills in technological areas covered by its Technology Road Map. The undergraduate, postgraduate and doctorate programmes at the university will also be guided and oriented in line with the industry's requirements. ◆


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Second Chance for the ALTAY Tank's Power Pack

On October 16, the Undersecretariat for Defence Industries issued an announcement concerning the Power Pack Development Project. To be initiated with the purpose of meeting the ALTAY tank's power pack needs through domestic and indigenous means, the project aims to make maximum use of the Turkish industry's existing capabilities to develop a power pack that will be free of any export license-related restrictions. Bids for the tender will need to submitted to the SSM Department of Subsystems, Directorate of Mechanical Subsystems, by December 22, 5.00 PM. Following the announcement of the tender, TÜMOSAN released a statement on October 18 to the Public Information Platform, expressing that it has received the Request for Proposal, and that it will submit its bid by December 22. ◆


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for global security

Indigenous design and products like aircraft, helicopter, satellite systems, aircraft and helicopter components, aircraft engines, armored land vehicles, vessels and motor boats, missiles, rockets, launching platforms, light arms and ammunition, electronic systems such as radios, command control systems, simulators, sensors and application softwatre and logtistic support products such as field hospitals, military clothing and uniforms, engineering and technology transfer, modernization and modification services

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