© Defence Turkey

YALTES: "We are Ready to Compete Fairly with All Companies with Proven Solutions!"

Though 100% owned by Thales Group, the entire YALTES staff is Turkish. In time, having evolved from a company structure which conducted the production of designed products as per the provided the production documents, YALTES has transformed into a company structure that makes fully indigenous designs, develops indigenous solutions for Combat Management Systems (CMS) and Integrated Platform Management System (IPMS) for naval platforms, manufactures, delivers and offers maintenance and repair services for these solutions. In the special interview we recently conducted with YALTES General Manager Bülent HAMZAOĞLU, we discuss the milestones of the aforementioned transformation, R&D activities, the company's competitive power in domestic and global markets, their ongoing projects and export activities.

Defence Turkey: Can we start this interview with a brief introduction of YALTES founded in 2002 as a Turkish company with a foreign enterprise (Thales Netherlands/TNL)? Why was this company established and what has it achieved over the last 19 years? To what extent has YALTES achieved initial targets set in the beginning?

Bülent HAMZAOĞLU: YALTES was established in 2002 with the partnership between the Yalçın Group and Thales Netherlands (TNL). Taking the offset liabilities of Thales into consideration, the initial target during the establishment of the company may be regarded as manufacturing equipment and developing software for Combat Management Systems. In this stage which we may refer to as the initial stage, over 200 consoles and cabinets (3rd Generation) were manufactured, and various software business packages were developed for TNL. The manufactured products are currently

performing successfully over the platforms of more than 20 countries, including Turkey. (YALTES was later assigned as a center of excellence by TNL in console designing and manufacturing for Combat Management Systems. Design, production and qualification activities of 4th Generation consoles in different types have been conducted by our company since 2014. Our products related to these consoles are being utilized in the inventories of over 10 countries.)

Later, in the second stage, with the Uzun Ufuk (Long Horizon/Integrated Maritime Surveillance System), GENESİS and MİLGEM Projects, YALTES launched its activities in Naval Mission Systems on a project basis. YALTES played a critical role in the development of the first national Combat Management System (CMS) GENESİS (the starting point of the GENESİS-ADVENT used presently) which was developed indigenously by the Turkish Naval Forces. With the Operator Consoles and Cabinets with indigenous and national design and qualification, YALTES started to supply the GENESİS CMS equipment. By remarkably contributing to the interface software of critical systems such as the 3D Radar, Tracking Radar, RAM System and Torpedo System and to CMS software development activities, YALTES supported the production of this system, and as a project made our country proud. YALTES provided over 100,000-man hours of engineering services to CMS development activities as part of the GENESİS and MİLGEM Projects.

Within the scope of the MİLGEM Project, YALTES developed a solution in the area of Integrated Platform Management System (IPMS), another critical mission system. In the first two ships of the project, after enabling a proven solution by a partnership with a foreign technology company, we accomplished an R&D project with our resources and provided an entirely indigenous and national solution to the following vessels with a domestic participation rate of around 80%. In this way, YALTES owned an indigenous solution, too.

With its performance in the first and second stages I mentioned earlier, YALTES took part in the NTPB, LST, LDG (Logistic Support Ship), LHD, DİMDEG (Replenishment at Sea and Combat Support Ship, TVEG/TTS, SAT Boat, BARBAROS Mid-Life Upgrade Project and I-Class Frigate Projects executed for the Turkish Naval Forces in both Combat Management System (CMS) and Integrated Platform Management System (IPMS) areas with Defense Industry contracts with companies such as ASELSAN, HAVELSAN, STM, METEKSAN and ARMELSAN and the contracts it signed with DEARSAN, SELAH, SEDEF, YONCA-ONUK and ADİK Shipyards. Likewise, we assume roles in the projects - either completed or ongoing - in line with the various contracts with the ASFAR, ASELSAN, HAVELSAN, METEKSAN, DEARSAN Shipyard and YONCA-ONUK Business Partnership in relation to different projects designed for Turkmenistan, Qatar and Pakistan. These are export activities.

In the fourth stage, YALTES has been assigned to supply the equipment and sub-system of the MÜREN-AY and MÜREN-PREVEZE Systems according to a series of contracts it signed with TÜBİTAK since 2016. To that end, the design, production and qualification of the entirely indigenous and national consoles and cabinets of various types were accomplished featuring higher level requirements and that would be used in submarines in Turkey.

Since 2020, YALTES has been assigned as the sole authorized representative in technical support, spare parts, repair and modernization if required, regarding the Thales Group Companies' systems installed in Turkey and in the region and started to deliver services accordingly. Another company, YALTES BV, was established in 2021 to be in charge of the attaché procurements particularly for the Turkish Naval Forces platforms. Through this type of organizational structure and by using YALTES' industrial power, we aim to provide faster and high-quality services by eliminating the intermediaries and to increase customer satisfaction.

Following the transfer of Yalçın Group's shares to the Thales Group in 2011, YALTES has been continuing its activities as a 100% Thales Group Company.

Defence Turkey: What are your views on YALTES' current organizational structure, staff and employee profile, its performance and turnover in 2020 which was shadowed by the COVID-19 pandemic, and what expectations and targets are outlined for 2021?

Bülent HAMZAOĞLU: Despite the fact, that YALTES is a 100% Thales Group Company it has been developing indigenous and national solutions with its entirely Turkish staff and the Ministry of National Defense's (MoND) Production License, Individual and Facility Security and AQAP Certificates. Most of our designed and manufactured solutions are regarded as indigenous products even among the products of Thales Group. In this context, a remarkable part of our turnover is being exported to the Thales Group. In short, we are proud to be a member of the Thales Group, which is among the few technology groups in the world and a company striving to develop indigenous and national solutions with technological and administrative advantages while creating export opportunities.

The organizational structure of YALTES can be defined as the R&D Engineering Department, which comprises 50% of the employees, the Production Department featuring the 25% of the staff, the Administrative Department is composed of the 20% of the employees and Support Department that contains the remaining 5%. YALTES is mainly an

engineering company. In this sense, 75% of our staff comprises engineers and the remaining 25% is a blend of supporting staff and qualified technicians. Moreover, by building an ecosystem in its activity areas, YALTES also provides added value to domestic companies in terms of design, production, and qualification.

Despite the negative impacts of the COVID-19 pandemic, YALTES concluded 2020 quite successfully and exceeded its targets regarding new orders and sales. In this context, we received new orders amounting to over TRY 150 million and achieved sales worth more than TRY 70 million. In 2021 is a year where we anticipate an increase of 60%, with YALTES sales reaching the level of TRY 120 million. The Q1 sales of TRY 35 million that we achieved indicate that we can reach this target. Surely the tough economic conditions and the ongoing pandemic are our challenges. We aim to receive a new order of around TRY 100 million in 2021. The contract negotiations we have been carrying out signal that we will achieve this target as well...

Defence Turkey: YALTES is currently located at the Teknopark Istanbul Technology Development Zone. Could you evaluate the production infrastructure and capacity of YALTES as well as the technologies YALTES employs?

Bülent HAMZAOĞLU: In the beginning of 2014, YALTES moved to its premises to Teknopark Istanbul from its original headquarters where it was founded in 2002. This transfer had two goals; the first was to decrease the costs incurred due to being located as a defense industry company in an independent building. The second objective was to benefit from the synergy built at Turkey's most modern Teknopark that focuses on defense industry and maritime. Thus, as a result we have been among leading companies in the defense industry and have had the opportunity to collaborate with small-scale companies with high added value, and this has affected our business quite positively. Hereby, I would like to thank particularly our Presidency of Defense Industries (SSB) that took part in the establishment of Teknopark Istanbul, and the Istanbul Chamber of Commerce, Istanbul Commerce University, STM, HEAŞ and the Teknopark management team.

Within its premises, which spans an area of 2,000 m2, YALTES executes design and production via the implementation of modern smart-working operation methods. We have been conducting our engineering activities by using state-of-the-art tools (Windchill, Ansys, E-plan, Catia, Solidworks, Creo, Rhino, Altium, Jira, Doors, Primavera, etc.). To that end, each year a remarkable budget is allocated to engineering tools to enable the utilization of the latest versions. A significant part of our production is conducted by our sub-contractors in line with the technical documentation we provide (such as mechanical production, assembly and sub-unit production) while the final assembly, test and integration activities are executed in our facilities and the products are then delivered. All our technicians have an IPC Certificate, and these certifications are renewed within the required terms.

With over 50 engineers, YALTES has the capacity to develop hardware and software with 100,000 man-hours yearly. Thanks to the eco-system we created, over 25,000 man-hours of engineering support is being provided by our sub-contractors. In terms of production, the company has the production capacity to manufacture 250 Consoles and Cabinets per year and this capacity can be increased in line with the orders received.

Defence Turkey: Different from other companies of the sector, YALTES stands out as a company founded solely for the Naval Forces. Though it focused on potential projects (such as GENESİS and Long Horizon) during the period upon its establishment, the process that started with the production of a design completed 19 years ago, YALTES then built a structure capable of indigenous design and developing indigenous solutions for the Combat Management Systems (CMS) and Integrated Platform Management System (IPMS) of naval platforms and manufacturing such products, delivering and offering maintenance and repair services. What are your comments on YALTES' successful transformation towards an engineering, design and manufacturing infrastructure blended with the company's unique R&D capability? Has your foreign partner Thales Netherlands contributed to this process?

Bülent HAMZAOĞLU: As you have indicated quite clearly, YALTES evolved into a structure that develops indigenous products and solutions from a company where products designed previously were manufactured based on the production documents. The catalyzer at this point has been the growing potential that started with the MİLGEM Project since 2004 and the consecutive naval projects. In this context, I extend my gratitude to the Presidency of Defense Industries (SSB) and the Naval Forces Command (DzKK) that acted as a pioneer and worked in coordination on the MİLGEM project and in many other projects that followed thereafter. Without such project potential, many defense industry companies of various scales that presently witness great achievements in the sector would not be known at all.

As YALTES, particularly during the years 2013-2015 when many ambiguities arose regarding the MİLGEM Project's model, we conducted R&D projects in the equipment and sub-systems of the Combat Management Systems and the Integrated Platform Management System and subsequently prepared our company for future projects. Some of these R&D projects were funded by TÜBİTAK and some were funded by

our own resources. In this way, the entirely indigenous IPMS was developed and its certification was completed. The foundations of the transformation of the analogue consoles to digital consoles, digital video management system, power bank applications and single-screen high resolution new generation consoles were laid regarding the Combat Management Systems. We did not reflect any of these development costs to our customers and we supported our main contractor companies and shipyards in our country and abroad to build competitive prices.

As I mentioned earlier, as it positioned YALTES as a center of excellence in terms of CMS equipment, TNL encourages our company in R&D. In this context, the documents provided by TNL, called PFS (Product Functional Specifications) that enable all requirements related to the demanded product are quite precious. Thus, developing a product that fulfils all specifications and at which stage and how the verification of the product would take place are identified. In the end, the revealed product is the one fully compatible with the requirements of the customer. I have to say that Turkey has a long path to cover in this area. Unfortunately, the documents regarding criteria and Technical Specifications are still being prepared in a generic format and problems are being experienced in competition as well as in the design, development and delivery stages.

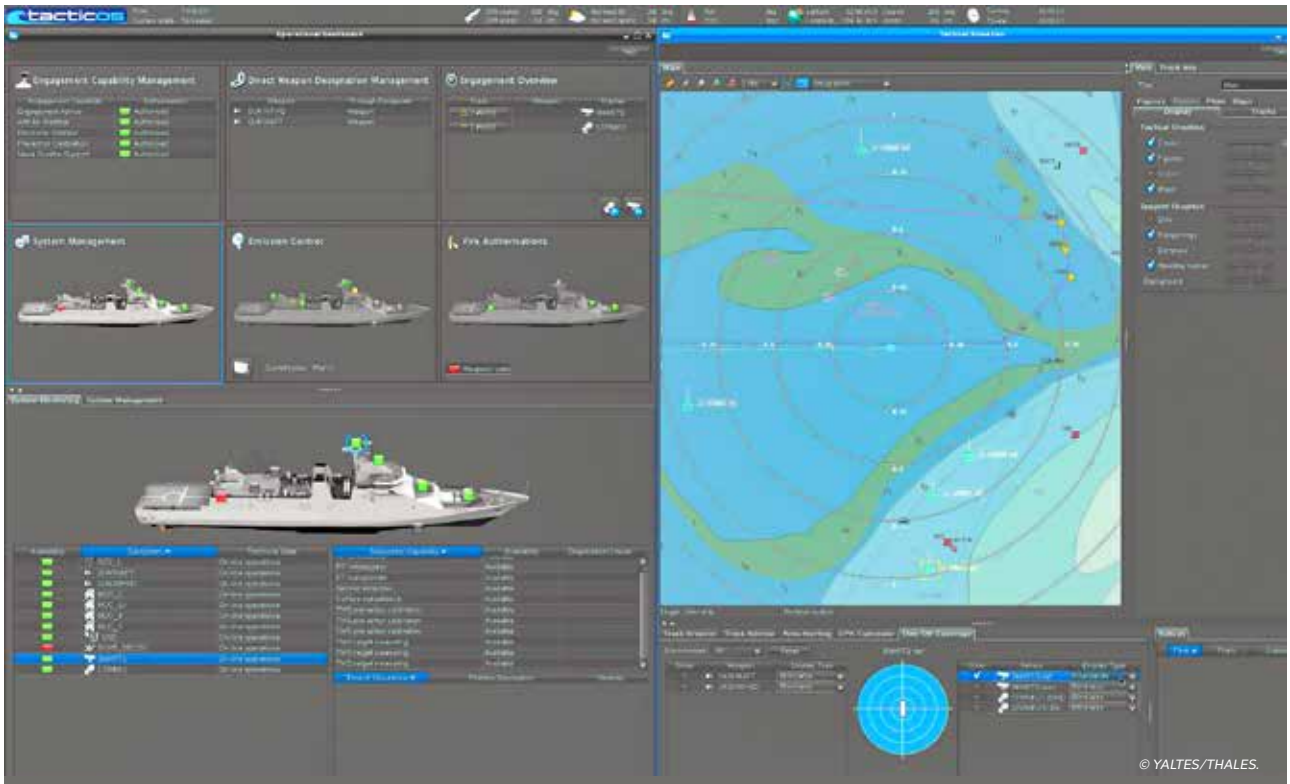
YALTES General Manager Bülent Hamzaoğlu met with İbrahim SÜNNETÇİ- Senior Editor of Defence Turkey Magazine at the YALTES Head Office, İstanbul

Defence Turkey: Research and Development investments and activities are indispensable in maintaining a robust and reliable structure for the Turkish Defense Industry. The R&D activities that constitute one of the most critical conditions of the sector's sustainability are at the same time a crucial warranty for becoming a global company for the companies in the sector. Could you enlighten our readers on YALTES' perspective of R&D, the yearly share of turnover allocated to R&D and ongoing R&D investments/ activities?

Bülent HAMZAOĞLU: YALTES allocates a minimum of 5% of its turnover to R&D and spends this amount in this area. Thales Group supports R&D investments as well. However, there are quite significant points they check such as the compliance of investments with a distinctive target or by avoiding repetitive investments. In this regard, we prepare yearly Strategic Technology Plans and we execute R&D activities approved in line with such plans within a project management discipline.

We divide our R&D activities into two groups. Our primary target is to carry out our R&D activities to keep our existing products up to date in line with rapidly changing technology and to retrofit the outdated parts in a cost-efficient manner. Our secondary target is to create new or additional solutions regarding our current products or activity areas by keeping the market tendencies in mind. Within this scope, we developed solutions with our shareholders such as the CCTV Systems, Stability Control solutions, Cargo and Ballast Control Systems, Valve Control System, Boat Structural Tracking System that would function with the IPMS as part of our existing projects. In this way, we increased the value of our products as we provided more cost-efficient turn-key solutions to our main contractors. We rendered systems such as Damage Control Software, Shipboard Training Systems 100% indigenous and compatible with customer demands. Our activities such as the development and indigenization of main components for the Combat Management System (Monitor, Workstation, Keyboard, Joystick, etc.) in line with our criteria continue. For instance, together with an OSTİM (Organized Industrial Site) company, we jointly developed designs and built a solution that fully aligned with the criteria for a Joystick that had been imported for many years. Many of our projects employ indigenous joysticks now, and the costs have fallen by half and there are no export license restriction risks, etc.

Defence Turkey: Universities are one of the most significant stakeholders in defense industry enterprises that consider human resources with superior qualities to their main capital. Could you talk about YALTES' approach to cooperating with universities, the past cooperation activities of the company as part of University-Industry cooperation and the projects conducted in the last five years in this regard?



A shot from the TACTICOS CMS operator console display. TACTICOS CMS is in use by over 20 navies including Turkey

Bülent HAMZAOĞLU: YALTES encourages qualified human resources in our universities to become stakeholders of defense industry companies. To that end, we received scientific support from Istanbul Technical University for the indigenous and national development of the IPMS project I mentioned earlier. This project was also supported by TÜBİTAK. Similarly, we have been executing certain activities with an academician from Gedik University for a project which I cannot speak about in detail due to confidentiality.

Defence Turkey: What is your evaluation on YALTES' current competitive power in the domestic and international markets?

Bülent HAMZAOĞLU: All projects YALTES provided products to have been won after an intense competition process. We do not refrain from competition as we are confident about the quality and price levels of our products and services. Our sole reservation at this point is fair competition and evaluation of the compliance of the demanded and proposed solutions.

Unfortunately, non-proportional solutions reveal due to less clear specification, with the products developed especially for IPMS being offered to military platforms. However, while commercial products are the labor-saving tracking and control systems that aim to maintain the secure navigation of ships, military products are the Platform Management Systems that directly affect the combat power of the ship and enable maneuver and stop control. Such military products are designed according to the damage control concepts known as internal combat. Thanks to these systems, the fighting force of the ship can be maintained. Several decision support software were integrated with the tracking and control functions. No commercial product can be called an Integrated Platform Management System (IPMS).

Similar conditions apply to the Combat Management Systems. The products in this area must be resilient to survive under challenging environmental conditions for long periods of time. The success reached by YALTES in this domain with the 450-500 main equipment components, which the company has been providing since 2002 to platforms of nearly 30 countries, is our greatest assurance. I would like to underline once again that we are ready to fairly compete with all companies with proven solutions on this scale.

Defence Turkey: Could you inform us on YALTES' ongoing export activities, the company's most critical export markets and the share of exports in turnover? How does your partnership with Thales Netherlands (TNL) and the Netherlands-based YALTES B.V., established in early 2021, contribute to your activities, also in what way will they contribute?

Bülent HAMZAOĞLU: YALTES conducts its export activities via two main paths. The first group consists of export activities conducted along with export projects signed by Turkish companies. The export projects carried out with DEARSAN in Turkmenistan, with YONCA-ONUK in Qatar and with ASFAT and HAVELSAN companies in Pakistan are the best examples of this group. We believe that with our proven products we will be taking

part in all projects to be won by the Turkish companies in this field.

Our second group of export activities is the one we conduct via TNL. The TACTICOS Combat Management System (CMS) Consoles and some of their related components developed by TNL that are being used by many country's platforms are supplied by YALTES. Therefore, all over the world we take roles in any project that involves TNL. Different areas of cooperation with TNL emerged in the recent period and these are linked with the renewal of outdated, old-generation consoles in existing platforms and new sensor integration projects. This is a very promising area as every country must keep existing platforms operational even if they fail to develop new projects. Since 2019, we have been conducting such activities for the Bangladesh Naval Forces' Flagship including on-site integration.

The export share of these projects in our turnover accounts for 60% as of 2021, 35% of this is from export activities we have been conducting with domestic companies and the remaining 25% is the result of our exports via TNL. Of course, the output we witnessed this year is a rare size based on our two major projects, the PN MİLGEM and the T31 Frigate Project we carried out with TNL. Maintaining our export share in our turnover at the level of 35-40% is our long-term target. The export projects of our domestic companies and shipyards bear great importance in this regard.

YALTES B.V. was established for the attaché procurements executed for our Naval Forces. As you know, this procurement channel is employed for rapid procurements in emergencies. There are many intermediary companies established to that end. However, these are the companies established for commercial purposes that merely sell and purchase goods. Though, with its industrial power and structure that enable the delivery and launch of the products and technical support such as the execution of required adjustments/ calibrations, YALTES aims to render the smooth acceptance process of the equipment and reduce the rate of return. Moreover, a price advantage will be achieved as the intermediary companies are eliminated. YALTES and YALTES B.V. have been assigned as the sole authorized representative to provide technical support, spare parts, repair and when required modernization services for Thales Group companies' systems in Turkey, and the related announcements were sent to all relevant units.

Defence Turkey: Could you inform our readers on the United Kingdom's Royal Navy's Type 31 Class (T31) Frigate Project conducted jointly with Thales Netherlands, German Naval Forces' 2nd Lot K130 Corvette and F126 Frigate Projects and the modernization activities on the Bangladesh Naval Forces' Flagship (BNS Bangabandhu [F25])?

Bülent HAMZAOĞLU: Thales Group companies signed quite extensive contracts for the 2nd Lot five K130 Corvettes to be built for the German Naval Forces (in 2018), for five T31 Frigates to be constructed for the United Kingdom's Royal Navy (in 2019) and for four F126 Frigates to be built again for the German Naval Forces (in 2020). In this context, Thales Netherlands, Thales Germany and Thales UK have been conducting the production, supply and integration of the mission systems of all three platforms. Within this scope, as YALTES, we have been providing the consoles, sub-units of the consoles and certain other electro-mechanical products for the mission systems. Taking part in such projects with quite high technical levels and specifications is a business success for YALTES but it is also an opportunity for the company to elevate its technological level. We use the experience we gain in such projects in our domestic projects and in the export projects we realize with our domestic companies as well.

In the Bangladesh Naval Forces Flagship BNS Bangabandhu Project, we took part as TNL's sub-contractor and worked as part of the modernization of the TACTICOS CMS, since 2018. As one of the stages of this project, all design, manufacturing and integration activities related to the modernization of the 2nd Generation consoles in the ship were successfully completed by YALTES. In the second stage, the migration of the CMS software to new hardware was achieved with the cooperation between YALTES and TNL and they were delivered to the end-user along with the sea acceptance tests. YALTES software engineers exerted an engineering effort of over 15,000 man-hours for this project. As a continuation of this project, once again as TNL's sub-contractor, YALTES will be conducting the replacement of the existing outdated cruise radar and helicopter control radar in the ship and the integration of combat management systems as turn-key supply, development and integration activities. The supply of the radars has been completed and the Factory Acceptance stage has been reached within this scope. The integration activities are being conducted in parallel.

As TNL and YALTES our most remarkable achievement in the Bangladesh projects has been the demonstration of a modernization solution for the first versions of TACTICOS, for the first time. Modernization of the TACTICOS CMS used by over 20 navies including Turkey is ahead of us with critical business potential. Though countries fail to develop new projects due to economic challenges, they still wish to effectively use the existing platforms they own. In this sense, the modernization projects that are cost-efficient and that can be implemented rapidly are being regarded as a crucial solution. For YALTES, the Bangladesh project has been a very notable experience for the accomplishment of an integration role in a global project for the first time.

A computer generated image of the PIKET 3000 IPMS. Developed by YALTES, the PİKET3000 IPMS has also been integrated on a KILIÇ-I Class FPB of the Turkish Navy

Defence Turkey: Can you evaluate YALTES' capabilities regarding the TACTICOS Combat Management System that has been used for many years by over 20 countries including Turkey? Presently, which version of the system is being installed to the platforms (for instance in the T31 Project)? Which activities are being conducted by YALTES in terms of the software and equipment of the former version TACTICOS CMS in use? In YALTES' road map for the next ten years, where do you position the activities to be conducted and capabilities to be acquired regarding the modernization of the former version of TACTICOS CMS and for supporting its new version? Could you compare TACTICS CMS' new version with the GENESİS ADVENT CMS, which your company is quite familiar with?

Bülent HAMZAOĞLU: As I mentioned in my previous answer, used by over 20 navies across the world, TACTICOS is the most extensive solution that has proven its effectiveness. The first two versions of this solution are no longer being developed. Especially the first version is outdated in today's technology. Within this scope, TNL built a solution compatible with all platforms and the first successful implementation has been accomplished. By assuming critical tasks in the software and equipment aspects of the modernization solution, YALTES became the most crucial actor for all modernization projects in this regard. TACTICOS' latest version BL2 is still being used in many new vessel construction projects and this version will be used in the T31 Project as well. As YALTES, we completed the design and qualification activities of the MOC Mk4 new generation consoles as part of this solution. The serial production process continues, and there are over 50 consoles functioning in the navies of 10 countries. We participated in BL2's software development activities and successfully completed and delivered the business package assigned to YALTES by exerting 50,000 man-hours of software development effort through the Scrum Team we formed.

TNL (formerly Hollandse Signaalapparaten-HSA), has been in close and intense contact with the Turkish Naval Forces for many years, either by directly conducting system and sensor sales or providing main elements of the software with its license during the GENESIS development stages. As YALTES, we have been providing products and services to HAVELSAN for the GENESİS-ADVENT and to TNL for the TACTICOS. So, comparing these two solutions does not make much sense. Both systems are first-class solutions compatible with the latest technology in the world and with the operational requirements. I believe that both will reach the end-user either through a smooth competition process or through cooperation, depending on the market's status. TNL is not only a CMS provider, but also a company that manufactures state-of-the-art sensors particularly for naval platforms. The utilization of TNL sensors in HAVELSAN's solutions in the international market will actually create a competitive alternative.

Defence Turkey: YALTES takes part as HAVELSAN's subcontractor in the GENESİS G-Class CMS Modernization project, TNL's subcontractor in the Long Horizon Project and the Long Horizon Fusion Center and System Integration Project. What would you like to say about the latest status of these projects? What kind of maintenance/ support activities has YALTES been conducting for these Projects? Is there any modernization activity occurring for products which have been in use for many years?

Bülent HAMZAOĞLU: Operation and maintenance of both projects are being executed by HAVELSAN under the supervision of the Turkish Navy Research Center Command (TNRC-C/ ARMERKOM). HAVELSAN is maintaining these systems by using the spare parts supplied as part of these projects. We are ready to provide support for both

YALTES' products and Thales Group's products if requested. Thales France (TDMS-Fr) assigned YALTES and YALTES B.V. as the sole support provider for the existing Electronic Warfare Systems and Radars as part of the Long Horizon Project and we will send the authorization documents to the relevant authorities as soon as possible. I can say that we are prepared to perform activities on outdated solutions, particularly regarding the equipment produced by YALTES.

Foreground - an operator console (OPCON) to be used at TCG Derya DİMDEG vessel's Combat Information Center (CIC), background - five large LCD displays to be used in the PIKET 3000 IPMS to be installed on TCG Derya. DİMDEG will feature two separate CICs. The first one is for combat management purposes, the second one with numerous OPDESKs (they are commercial products rather than military standard OPCONs) can serve as a Joint Operations Command Center or in case of a natural disaster as a Natural Disaster Management Center

Defence Turkey: Phase II identification activities for extending the Long Horizon System to cover the Black Sea were conducted by the Turkish Naval Forces Command (TNFC) in 2015. Have any concrete steps been taken regarding the Long Horizon Phase II/ Black Sea?

Bülent HAMZAOĞLU: As YALTES we conducted activities in the Black Sea for the equipment of the Long Horizon System's backup operation center. Regarding the additional solutions considered for the Black Sea coast, I believe we can provide support in the integration to the present system, yet we have not received any request.

Defence Turkey: As for the first two ships under the MİLGEM Project, in line with the contract signed in 2015, you have been assigned for the supply of the CMS equipment and IPMS (PİKET 3000) of the third and fourth ships. What are the differences between the first two ships and the MİLGEM 3-4 that contain the GENESİS ADVENT CMS in terms of CMS consoles and IPMS equipment/technology? For instance, as far as we know, since the firing/ control functions of the HARPOON Guided Missile can be executed by all the operator consoles at the Combat Operation Center/ COC on the MİLGEM 3-4, the third and fourth ships will not contain an AN/ SWG-1A Operator Console featured by the first two ships.

Bülent HAMZAOĞLU: As you know, utilization of GENESIS was planned for the MİLGEM 1 and MİLGEM 2 and GENESIS-ADVENT's utilization was planned for the third and fourth ships. The third ship was launched with GENESİS CMS in line with the ADVENT development schedule and its harmonization with ADVENT was scheduled to a later date. The 4th ship was launched to service with ADVENT. YALTES took part in the first ADVENT implementation with this platform. As YALTES, we updated the ADVENT and OPCONs and TACONs used in the MİLGEM 3 and 4 ships to support the digital video distribution. Moreover, the sub-system cabinets of both platforms were designed to be compatible with GENESIS and ADVENT. In this way, the ADVENT transformation in the 3rd Ship, and the direct application of ADVENT in the 4th Ship could be conducted smoothly.

The consoles designed by YALTES were either manufactured or aligned with the Electronic Warfare, Sonar and Special Mission Systems for many defense industries companies, in addition to the GENESİS and ADVENT applications. In this way, eliminating the need to use different equipment in the Combat Operation Center (COC)'s layout and arrangement, and logistical compatibility was enabled for the end-user.

Within the scope of IPMS, for the 1st and 2nd Ships, we conducted technological cooperation with a Dutch company that I mentioned earlier. The PİKET3000 System we developed as YALTES has been designed with advanced technology in line with the current technological developments. For instance, in the first two ships the data network was 1 Gbps, we increased it to 10 Gbps in the ships that followed. We elevated the video distribution to HD resolution from SD resolution. Our IT hardware has more capacity and speed. Retrofit solutions were prepared to implement such developments on the previous ships as well, and they were made available for utilization according to the ship maintenance periods.

Defence Turkey: Which type of tasks/work packages have you assumed for the MİLGEM-5 TCG İstanbul Frigate?

The Computer Generated Image of PN MİLGEM /JINNAH Class

Could you inform us on your test and delivery schedules? Will the last-minute change made in the weapon systems (such as MIDAS instead of Mk-41 and GÖKDENİZ CIWS instead of Phalanx) and sensor systems (CENK-S 3BAR instead of SMART-S Mk2) of the ship effect the design and layout of the CMS and operator consoles?

Bülent HAMZAOĞLU: In the I-Class Frigate project, YALTES takes part as the IPMS provider under the sub-contractor STM. Combat Management System (CMS) hardware is not included in our work share. We will be delivering all IPMS-related hardware as supply packages until the end of 2021, in line with our contract.

Defence Turkey: Which responsibilities and work packages have you assumed, or will YALTES assume as part of Pakistan's JINNAH Class and Ukraine's ADA Class Corvette Projects within the scope of ADA Class Corvettes export activities?

Bülent HAMZAOĞLU: In the PN MİLGEM (JINNAH Class) Project, we signed contracts with ASAT, HAVELSAN, ASELSAN and METEKSAN. In this framework, we are initially adapting our PİKET3000 solution as part of IPMS according to the demands and utilization concepts of Pakistan's Navy. We are launching the manufacturing process of our Combat Management System hardware. Our design activities continue for the Sonar Consoles and Cabinets in line with the new requirements, the components we design will be qualified according to high level criteria. Integration activities of the commercial-off-the-shelf product Navigation Assistants were assigned to YALTES as a separate work package by ASELSAN. Our contract negotiations on the Electronic Warfare System Console with ASELSAN are about to be finalized. We are proud to take part in this project which is Turkey's greatest export project by providing such intense and mission-critical products and we are constantly working for the project's success.

Defence Turkey: Which responsibilities have you assumed as part of the Ufuk TVEG (Test & Training Ship), Anadolu LHD, TCG Derya DİMDEG and BARBAROS Mid-Life Upgrade (MLU) Projects and which deliveries have you been conducting?

Bülent HAMZAOĞLU: We have provided our PİKET3000 IPMS solution for the TCG Ufuk TVEG as the subcontractor of STM and the sea acceptance tests of the project have been completed. Consoles related to Mission Systems have also been provided to ASELSAN for this project.

We delivered a wide range of Combat Management System hardware and subsystems for the TCG Anadolu as HAVELSAN's subcontractor. This will be the first project where our New Generation Consoles will be used. The installation of the products to the ships has started, and we are looking forward to their activation. We have designed and manufactured the STOP Consoles for the SEDEF Shipyard as part of this project as well.

In the DİMDEG Project, we provide our PİKET3000 IPMS solution as SEFİNE Shipyard's subcontractor. The stage regarding the adaptation of the solution has been completed in this project and we have reached the CDR phase. We will also supply the Bridge Console,

Bridge Console of the PİKET 3000 IPMS. The same console has been already integrated on MİLGEM Corvettes and TCG Ufuk TVEG, as well as being integrated on PN MİLGEM, I-Class Frigate TCG İstanbul and TCG Derya DİMDEG

Electronic Chart Table and Overhead Panel to Aselsan for the same project. We are at the production stage in this regard. Our CMS hardware, which we will provide as HAVELSAN's subcontractor has been manufactured and their preliminary tests have been completed. The acceptance process and deliveries will take place in May.

Defence Turkey: YALTES was going to realize the integration of STIR 1.8 Firing Control Radars (used in ships) to the GENESİS ADVENT CMS in the BARBAROS MLU/YÖM Project but a decision was made to use ASELSAN's dual band AKREP AKR-D Fire Control Radars instead. Is there any change in YALTES' work package in this regard?

Bülent HAMZAOĞLU: Our work share in STIR Integration has been excluded from the contract, but we are delivering additional hardware and services in this context. All our deliveries related to the first ship have been completed and our production activities for the second ship are in progress.

Defence Turkey: Could you give information about your 32-inch single-screen new type operator console used in the Anadolu LHD and BARBAROS MLU Projects?

Bülent HAMZAOĞLU: We accomplished the development activities of the MOC Mk4 console and by blending the experience we gained and the demands of our Naval Forces, we designed the New Generation Console with our own resources and completed its qualification. We focused on building the most compatible solution by identifying the contributions and input of the Turkish Navy Research Center Command (TNRC-C/ARMERKOM), End Users and HAVELSAN representatives at every stage of the design phase.

Bülent HAMZAOĞLU introduced the new generation OPCON developed for PREVEZE Class Submarines within the scope of the MÜREN-PREVEZE Project

The console is comprised of a 32-inch single-screen with 4K resolution and a 15.6-inch second monitor. Its security has been enhanced featuring TEMPEST architecture. Its power supply was place outside of the console for more practical console maintenance and operation. All the console power requirements are fulfilled redundantly with central uninterrupted power sources, as are the two cabinets also used in the IPMS by YALTES.

Defence Turkey: YALTES' activities are not limited to surface vessels, you developed your first products (operator console, local firing panel and interface units) for submarines as TÜBİTAK's subcontractor as part of the MÜREN-AY Project and integrated these products to submarines. This success paved the way for your assignment in the MÜREN-PREVEZE Project. Could you inform us on the features of the Submarine Operator Console that you developed and tested for the AY Class Submarines and on the latest status of the design, production and test activities conducted as part of the MÜREN-PREVEZE Project?

Bülent HAMZAOĞLU: As I stated at the beginning of the interview, the fourth stage in YALTES' history started with submarine systems. Compared to the relatively small content we provided in MÜREN-AY, we began with a quite large work share in the MÜREN-PREVEZE. We won the MÜREN-PREVEZE tender with a very competitive price under fully competitive conditions. Our starting point then was based on the experience we gained in surface platforms and our confidence in our capability of developing indigenous and national products. To date, systems directly manufactured abroad, or foreign solutions produced domestically through license and production packages were employed for our submarines. Like we did in the New Generation Console design activities, we achieved the participation of all stakeholders for the products we develop indigenously, for the first time. In this way, the perspectives and input of TÜBİTAK, TNRC-C/ARMERKOM and end users were reflected in our designs. In the design stage, both our customer TÜBİTAK's and TNRC-C/ARMERKOM's and the end-user's additional demands were applied to the design regardless of the costs. The most critical additional demand was the addition

of a cooling alternative for the consoles to be cooled with water according to the technical specifications. In this way, in an event where water-cooling fails in the submarine, the consoles would be able to cool with air and continue their performance.

The designs of five different units have been qualified after passing rather challenging environment conditions, climatic and electromagnetic compatibility tests. I wish to proudly emphasize that we achieved the First Test Success in all tests. The factor underlying this result is the seasoned experience of our engineers and their superb utilization of advanced engineering tools. During the design of all products, global and local analyses, and Computational Fluid Dynamics (CFD) analyses were conducted and potential weaknesses were identified. Thus, the required measures were adopted for their production and testing.

All products of the Project's first ship were delivered and their acceptance in a ground-based test system was finalized. The sea acceptance tests of the first ship are planned to be completed by the end of 2021, and we plan to deliver the second ship's hardware this year.

Defence Turkey: Which roles can YALTES assume in the Turkish Type Assault Ship, TF-2000 Anti-Air Warfare Frigate and National Submarine (MİLDEN) Projects which are to be launched in the upcoming period?

YALTES currently has an annual production capacity of 250 Multifunction Operator Consoles (MOCs) and here you can see different types of MOCs that the company continues to produce for different projects

Bülent HAMZAOĞLU: Since YALTES designs the IPMS and Combat Management System (CMS) solutions in a scalable and customizable way for different platforms, we are ready to take part in all surface and submarine platform projects. Surely, our R&D activities are in progress constantly to update our products based on the latest technologies.

Our surface applications are ready as our IPMS solution can be utilized in all projects ranging from the MRTP24 size to the DİMDEG Project. Regarding MİLDEN, we launched our R&D activities regarding the additional control requirements (automatic ballast control, battery tracking system, diving control system, steering wheel control, etc.) of the submarine platform systems and the selection of the hardware to be used particularly in limited spaces. We aim to complete the technical solution and launch the prototypes after establishing the operational concept with experts in the field.

Our Combat Management System hardware is available for both surface and submarine platforms. We believe that our cabinets with reduced sizes and lighter volumes due to the limited space in submarines will make a difference in the Turkish Type Assault Ship Project. These cabinets have passed all related tests.

Submarine Operator Console

As part of our new product line, Navigation and Communication Systems, we aim to offer new alternatives to our defense industry companies and shipyards in the integration of navigation assistants and communication systems. Keep following our activities in this field.

Defence Turkey: You have been assigned to the RAKAS MUKAS, HİSAR and HERİKKS Projects regarding Operator Consoles. What would you like to say about the activities and deliveries you have accomplished in these projects?

Bülent HAMZAOĞLU: The RAKAS MUKAS Project has been completed and delivered successfully. We have not received any negative feedback so far.

© Defence Turkey

MÜREN-AY Operator Consoles

The serial production and delivery of the consoles as part of the HİSAR and HERİKKS Projects are in progress. We are proud to constantly receive additional orders from ASELSAN. We aim to take part in projects where YALTES will be entirely in charge of the design.

Defence Turkey: Can you inform our readers on the capabilities and ongoing projects and activities of YALTES in Cyber Security, one of the main activity areas of your company?

Bülent HAMZAOĞLU: As you know, cyber security is one of the main business areas of the Thales Group and it is the leader in the market. The cyber security requirements are constantly increasing regarding the solutions we provide. According to the realities the pandemic taught us, our behaviors and business methods will change significantly very soon. Remote working and secure remote access will gain more importance. Therefore, we are carrying out activities to render our solutions secure against cyber threats.

Secure remote access as part of the IPMS will monitor the maintenance and repair of the system and remotely control the platform systems and enable preventive or predictive maintenance. We launched our activities to integrate with the network enabled communication systems that were recently acquired by our Naval Forces.

For our Combat Management Systems, we provided equipment featuring TEMPEST with New Generation Consoles. We continue our activities for building solutions that will track network traffic, give alerts depending on operator behavior changes and secure the systems.

We continue to inform our main contractors and related authorities that we are ready to work both on developing national solutions and for the solutions developed within the Thales Group.

Defence Turkey: What are your comments on YALTES' vision for the next decade?

Bülent HAMZAOĞLU: YALTES identified its vision for the next ten years as follows: Becoming a preferred supplier in competitive conditions in CMS hardware and sub-systems, IPMS and Navigation and Communication Systems integration areas by following and implementing the latest technological developments and taking part in our country's Defense Industry export projects with our national projects by providing indigenous and national state-of-the-art solutions that fulfill user demands.

Defence Turkey: What would you like to say about YALTES' participation in the IDEF '21 Fair and its related agenda?

Bülent HAMZAOĞLU: As YALTES, we plan to display our products at IDEF '21 through interactive presentations and digital material instead of directly demonstrating them at the booth due to the pandemic and in accordance with digital transformation trends.

Despite the limited participation, we consider this fair as an opportunity to build new connections with the members of our sector and our guests. I believe that socializing again after this pandemic process that has lasted for over a year will make us feel better, and of course by adhering to the distancing measures.

This year, we set up our booth next to Thales, thus, we will strive to blend the universal power behind us with our indigenous and national structure. On that note, the message we wish to convey will be "Universal Technology, National Solution". We believe that displaying the Thales dimension of us has a positive effect especially with our foreign customers, and over the last 19 years we have successfully established our indigenous and national structure in the Turkish Defense Industry.

Defence Turkey: Would you like to add a message to our readers as we conclude our interview?

Bülent HAMZAOĞLU: I want to thank Defence Turkey magazine, one of our sector's pioneers, for letting me introduce YALTES once again to our stakeholders in the defense industry and we wish you success ■