Total Volume of Projects Carried Out by MilSOFT Reaches US$ 123 Million

With a fruitful twenty-year history, one of Turkey's greatest software companies, MilSOFT hosted press members of the defence industry at its headquarters at ODTÜ Teknokent on 9 January 2019. We had the opportunity to gather information on the current status of the company as well as its projections with a vision aiming toward international competition. The press meeting hosted by the Co-Founder and CEO of MilSOFT İsmail BAŞYİĞİT

MilSOFT CEO İsmail BAŞYİĞİT, Deputy General Manager in Charge of Production and Programs Hakan ZEREN, Director of the Programs Mehmet DEĞİRMENCİOĞLU, Director of Development and Marketing İbrahim AKSU, Product Manager Ekrem SERİN, Quality Manager Burak BAYSAK, Contracts Manager Deniz KÜZECİ, Business Development Manager Sinan TOPUZ and Consultant to the CEO (Ret.) Air Com. Pil. Sargun GÖKTUN attended the meeting and the opening remarks were delivered by MilSOFT CEO İsmail BAŞYİĞİT.

Noting that MilSOFT was established in 1998 in order to become a system integration and software technologies company capable of competing in the international arena and that the company went through structuring to this end, BAŞYİĞİT began with the following: " From the outset of our founding, we aimed to build a system integration and software technologies company capable of competing in the international arena. In order to achieve international competition, we adopted the supporting principles of conducting business in line with international standards and conducting production compatible with the international quality standards. Moreover, we started this journey with the aim of building a company capable of revealing the latest technologies before our rivals in the international area, a company that is able to develop its own technologies. We prepared documents containing answers to the question of how to design projects in accordance with international standards in the company in advance of employing Software and Electronics engineers,

then we identified specific R&D projects and made an application to TÜBİTAK. Up to date, none of our project applications to TÜBİTAK were rejected. We projected several R&D projects in our fields of business. While carried out these projects, we gained the experience of implementing international standards in these projects. We assumed our first international project from the Sikorsky Company. SeaHawk Helicopters were retrofitted from classic cockpit to the glass cockpit by Sikorsky and one of our teams collaborated with them in the US during that period. With the help of our know-how fully compliant with international standards, our culture of interoperability and the competence of our engineers, they were called to the tender. We were assigned a project at an amount of US$ 5 million regarding a system for collecting the data from all systems of S92 helicopters, reporting the breakdowns to a pilot, recording these data and providing maintenance staff. We delivered the software by receiving the first FAA certificate, in 2004 and 2005."

Assuming the critical task software for the S-92 in international arena - the Data Computer Software Maintenance Project in 2002, MilSOFT had the Maintenance Data Computer (MCD) software certified for this project with the RTCA/DO-178B Standard Level C certificate, and confirmed the compatibility of the software with the rules of the US FAA (Federal Aviation Administration) and as a continuation of this achievement, MilSOFT also successfully completed the Task Computer software of the SeaHawk helicopters and delivered it to the procurement authority.

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İsmail BAŞYİĞİT - CEO of MilSOFT

BAŞYİĞİT: "We were the first company in Europe to Obtain the CMMI 5 Certificate in 2005"

Stating that they built a system by focusing on future technologies rather than the present circumstances, BAŞYİĞİT continued, "Within the scope of our founding purpose, when a request emerged, we aimed to be the best fit for it. Therefore, we are presently operating as a single source in a sense in many areas. We provided the command control software in Search and Rescue Ships, the Link-16 Command Control Systems in particular in Tactical Data Links, and we also delivered this capability to the G-Class frigate of our Naval Forces Command, then to the Landing Ship Tanks and to 3 ships as part of the MILGEM project. We continued to conduct business in foreign countries in the meantime. We are executing significant projects in Italy, Germany and Pakistan. We received the CMMI5 certificate in 2005 and we were the first company that had reached such a level in Europe."

Underlining that thinking towards the future is the essential part of MilSOFT's culture, BAŞYİĞİT said that they focus on ways of

transferring the know-how acquired in national and international projects and the technologies emerging for the future to the software systems of the Turkish defense industry, adding that their aim is to provide on-time delivery of the best qualified products to the Turkish defense industry.

Upon the question on whether they will be planning any joint ventures in the upcoming period, BAŞYİĞİT emphasized that companies developing their own unique technologies should remain national and he said that even though they do not think of transferring the core technologies abroad, they are ready to transfer the products and technologies which were developed and utilized by the customers upon the approval of the Ministry of National Defense.

Director of Business Development and Marketing İbrahim AKSU: "Our Naval Information Exchange System - NIXS was launched for use for a customer abroad"

Following MilSOFT CEO İsmail BAŞYİĞİT's speech, Director of Business Development and Marketing İbrahim AKSU made a presentation on the projects conducted by the company within the country and abroad and its projections on the upcoming period.

Noting that MilSOFT was founded in 1998 as a 100% private Turkish company, today operates with nearly 200 staff at two different campuses at Istanbul Teknopark and ODTÜ Teknopark, AKSU continued: "Quality is at the top of our sine qua non values. One of the most crucial factors of our quality is holding a CMMI5 level certificate; we are the first company ever in Europe and Turkey that achieved this level.

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İbrahim AKSU - MilSOFT Director of Business Development and Marketing

And in other areas, we obtained NATO's AKAP 2310 and AKAP 2110 and ISO quality certificates. Besides our national and NATO confidential certificates apply both for our facilities and our employers. Presently, at the CMMI5 level, among nearly 10 thousand CMMI followers, 27 organizations in Europe and 600 organizations across the world are at CMMI5 level. In 2005, MilSOFT became the first user in Turkey and in Europe. CMMI's advantage to the end user is the delivery guarantee in line with the budget and on the schedule in a way that meet all the specifications. All the work performed is being documented in terms of achieving permanency and this facilitates permanence and moving onto the next stage."

Explaining that they split their activity areas into 8 main groups, AKSU added, "Regarding the Command Control Area; we developed infrastructure software, C2 and C4I Systems Infrastructures, Combat Management System (Mil-CMS), Coordinated Naval Operations, Naval Information Exchange System and Strategic Level C4ISR Solutions. The systems we developed in Tactical Data Links and Messaging areas are being utilized in many platforms. We developed all the Tactical Data Links from Link-1 to Link-22. By benefiting from our experience in Tactical Data Links, we offered the indigenous tactical data links (Link-1, Link-11, Link-16, Link-22), JRE Processor unique Tactical Data Link/ Network Solutions (Mil-Link/ Link-M) to our customers. Considering Intelligence, Reconnaissance and Surveillance and Image Sensing Systems we have ISR systems, UAV specific ISR solutions and sensing solutions

specific to sensors."

Adding a few notes to the presentation at this point, MilSOFT CEO İsmail BAŞYİĞİT said, "The Link-1, Link-11, Link-16 and Link-22 Tactical Data Links are the systems still being utilized by the US and NATO. The utilization of these Tactical Data Links in the world depends on the permission of the US and NATO, it is not granted to every country or it is being provided over specific hardware. We launched R&D activities in 2001, the first project activities in 2006 and later in 2009 we initially developed the Link-16 and Link-11, and then the Link-22 Tactical Data Links for the submarines, for the Turkish Armed Forces. We developed Links operating with existing devices that are not subject to export licenses. My colleagues will be sharing the details with you in a little while."

Talking about the activities they conducted in Electronic Warfare Modelling and Simulation, Embedded Systems, Information Technologies and Cyber Security over the slide, AKSU noted that they are developing various software in Training and Simulation area and added: "We are developing simulation software of all types and we also provide solutions regarding electronic warfare, data link training and simulation. The feature we put to forefront in this area is the interoperability of the products in this platform as they already utilize the same infrastructure and technology. If we take a look at the Command Control combat computer technologies; we have command control and C4I system as well. Our Combat Management System is being utilized by Coast Guard Search and Rescue ships. We developed a system we refer to

as the Naval Information Exchange System - NIXS for the Naval Forces of one of our friendly nations. Moreover, we have strategic level C4I solutions as well."

Naval Information Exchange System (NIXS)

Developed through national resources, the Naval Information Exchange System (NIXS) provides great situational awareness to end-users and it is currently utilized successfully by an undisclosed country's Naval Forces. MilSOFT has accomplished the development and delivery of the NIXS, in record time, such as 8.5 months after the effective date of the contract. MilSOFT is currently getting prepared for proposing the NIXS solution, which displayed great export success, to the Turkish Naval Forces and the Coast Guard Command at home as well. The NIXS System could be utilized through a laptop in surface platforms. Besides, when a big screen is requested, the image on the laptop could be reflected to the big display at the Combat Information Center (CIC). Two different images are generated on the vessel, and one of them is the tactical image prepared through the sensors while the other is the regional tactical picture sent from the Headquarters. The decision maker on the vessel is able to pick one of the two images and display it. The Headquarters which is a fusion center generates the regional tactical picture in light of the data transmitted through the platforms equipped with the NIXS and then it publishes/sends this image to the vessels within the IP based network, according to the 'Area of Interest'. As the Headquarters imprints the regional tactical picture to the vessel, it transmits the assignment order at the same time. All this communication could be conducted securely through encryption. Within this context, if the user to whom MilSOFT provides its own encrypted solution has its own indigenous encryption, then this encryption system could also be integrated with the NIXS as per the request.

Extending information on MilSOFT's references since its establishment AKSU said, "Taking a glance at our references; Modernization of GABYA class

Frigate Modernization (GENESIS) and MILGEM combat management system's middleware maintenance and development were accomplished under our responsibility. We developed the Link-16 command control solution and accomplished the integration to the Frigate and MILGEM ships. We delivered the Combat Management System to the Coast Guard Command and provided the Coast Surveillance Radar System with the same infrastructure. We accomplished the ESSM guided missile integration of our frigates with NAVSEA and Naval Forces Command Research Center Command. We have been providing our DDS product to our defense industry companies such as Aselsan, Havelsan and Roketsan. We have been delivering Tactical Data Links to GABYA Class Frigates since 2010. As MilSOFT we indigenously developed the Tactical Data Link solution. This solution was completely cleared from the restrictions of the NATO or the committee authorized to decide on any subject related with the links and was fully developed through national resources. We developed the software causing such restrictions such as Network control software, crypto software completely indigenously and tested them through national resources."

Mil-LİNK Solution Integrating the Radios over the Ship on an IP Network with a Single Application

Mil-Link solution integrates the radios over the ship on an IP network through the help of a single application. Therefore, an IP Network could be derived via the radios over the ship. When a tactical data link processor and a network control are added over this

Naval Information Exchange System (NIXS)

infrastructure, the Link-M emerges. While the network control software subject to Link-M license is being developed fully indigenously, it is capable of operating without any restrictions over the indigenous crypto or existing modems or the HF or UHF radios over the ship. Capable of operating with the indigenous radio, modem and crypto systems manufactured in Turkey, Link-M will enable the utilization of a network built between the military platforms with an indigenous link. The domestic and indigenous tactical data link's eliminating the obligation of utilizing the software/ hardware subject to the license at the NATO systems creates a critical potential in terms of exports as well. On account of this characteristic, Link-M could be exported to the friendly and allied countries without the license of the third countries. The Link-M system is being tested between naval platforms with the approval of the Naval Forces Command, and meanwhile nearly 3000 messaging were achieved over approximately 260 miles between Aksaz- Gölcük. The tests are still ongoing.

Expressing that in addition to the indigenous solutions, they were accomplishing critical deliveries to the Turkish Naval Forces regarding the Link-11, Link-16 and Link-22 solutions utilized across the world, AKSU added, "We provided the Link-11 simulator for the HELSİM - Helicopter simulation center, Link-11 processor to the Thales Aircraft for the MELTEM-II Maritime Patrol Aircraft utilized by our Naval Forces and the Link-16 processor to the Alenia MELTEM-III Maritime Patrol Aircraft utilized by our Naval Forces Command. Also, as the subcontractor of Havelsan, we delivered the Link-11

and Link-16 Tactical data processors to the LST ships."

Link-16 Enables a Communication Range of 300nm within LoS

Link-16 is designed for the exchange of reconnaissance data, EW data, flight assignments, weapon allocations and control information. It enables a data communication resistant against jamming which integrates all command and control data and the target information between the aircraft and the Tactical Air Control Parties [TACP]. Link-16 is constantly and automatically updated.

Link-16 communication is limited with the Line of Sight (LoS) and the system operates at the UHF band. Still, the alternative systems are required since Link-16 is limited with the LoS and utilizes a different message format. Link-16's maximum communication range within LoS is 300nm (555km).

Link-16 uses data words of 70 bytes and conducts serial transmission. In each transmission time slice 3 or 12 data words could be transmitted. The number of the data words forming one Link-16 message varies, but under normal conditions it is one data word or two or three data words.

The ongoing projects of the company providing Tactical Data Link Systems to numerous platforms of the Turkish Armed Forces are composed of the following:

> Link-11 and Link-16 Tactical Data Link Systems for 8 G-Class Frigates and 2 GKMs.
> Link-11 and Link-22 TVLS for the 6 New Type Submarines as part of the New Type Submarine Project,
> Link-11 and Link-16 TVLS for the 1st and 2nd ships of MilGEM,
> Link-11 and Link-16 TVLS for the 3rd ship of MilGEM, (acceptance of the SAT tests completed as of 31 December 2018)
> Link-11 and Link-16 Tactical Data Link Systems for 2 LSTs
> Link-16 Tactical Data Link System for 6 ATR-72 Maritime Patrol Aircrafts,
> Link-16 Tactical Data Link System for 19 C130 Platforms
> Link-16 Software for the Integration of Medium Altitude Air Defense System (HISAR).

Unique Tactical Data Link (Link- M)

ATMACA Missile Could be Controlled via the SatCom

Moreover, MilSOFT developed the software enabling the missile control (missile, aircraft and vessel) via the SOM and ATMACA Missile's Link-16 Network, the activities were launched in 2014, through its own resources.

Under normal conditions, the communication range over the Link is maximum 300 miles depending on the correlation conditions of the HF system environment. For instance, the Tomahawk Cruise Missiles are capable of conducting their data link communication via SatCom. In this respect, there is a JLF standard set for SatCom satellite communications and MilSOFT owns a solution in this area. The link capability communicating via SatCom will be delivered to the procurement authorities under the projects, the contracts of which were recently signed with Aselsan. Within this scope, ATMACA missile could be controlled via the satellite. In the current situation, the communication of the platforms has to remain within the Link-16 LoS. The correspondence is presently being controlled over the HF/UHF communication.

R&D Projects on Block Chain Networks and Swarm Drone Concept

In his presentation, Business Development and Marketing Director AKSU also delivered information to the press members on MilSOFT's newly launched projects. The information on the presentation slides shared that the company has already launched the project on

the modernization of NEKSIM joint electronic warfare simulation system, the contract signed with Aselsan in November 2018 on the HERIKKS-6 tactical data link to be provided to air defense system and the project on the tactical data link capability to be provided to the HERIKKS system. In addition, MilSOFT has also been executing various R&D projects under its auspices. According to this, the company also has an R&D project that was launched in April 2018 for the acquisition and tracking of mobile targets under the coordination of the drones. The development of a swarm drone concept application is aimed in this project. In addition, MilSOFT launched a project on Block Chain networks in December 2018, supported by TEYDEP 1511 again. Following the development stage which is planned to last 24 months, the know-how acquired is aimed to be integrated to defense systems.

MilSOFT Gaining 60% of its Total Turnover from Exports

Having signed project contracts with the approximate size of US$ 231 million since its establishment, the total volume of contracts presently being executed by MilSOFT is nearly US$ 123 million and 31% of this amount is composed of foreign sales.

According to the data provided by the Turkish Exporters Assembly (TIM), MilSOFT placed 170th on the list of Turkey's top 500 greatest Exporter Companies and the company is 6th in the sector ranking. Obtaining 60.2% of the total turnover from exports, the Company's export revenues amounted to US$ 8.8 million ■