nurol DÜNYASI
SEPTEMBER 2016
"World of Nurol" Turning...
NO 27

+ ENGLISH SECTION



OSMANGAZI BRIDGE AT YOUR SERVICE

- **OTOYOL A.Ş.**
- **Interview**
  Cem SAPMAZ

OSMANGAZİ



Chairman of Otoyol Inc. M. Oğuz ÇARMIKLI, Minister of Transport, Maritime Affairs and Communications Ahmet ARSLAN, Prime Minister Binali YILDIRIM, Prime Minister of Albania Edi RAMA, President Recep Tayyip ERDOĞAN

The fourth suspension bridge with greatest central span around the world

Osmangazi Bridge has been put into service on 30th September, with the participation of President Recep Tayyip ERDOĞAN, Prime Minister Binali YILDIRIM, Ministry of Transport, Maritime Affairs and Communications Ahmet ARSLAN, Director General of Highways İsmail KARTAL and the managers of the twelve creditor banks.

The two coasts of Osmangazi Bridge is united with the last deck

The screws in the last deck of Osmangazi Bridge were tightened by the President Recep Tayyip ERDOĞAN, the then prime minister Ahmet DAVUTOĞLU and the then Minister of Transport, Maritime Affairs and Communications and the current prime minister Binali YILDIRIM together on 21st April 2016.



“Ballistic Protective Vest Project Agreement” is signed by **Nurol Technology** and Undersecretariat for Defense Industries



Asst. General Director of Turkish National Police Faruk ÜNSAL, Undersecretary of Defense Industries Prof. Doc. İsmail DEMİR
Chairman of Nurol Holding Inc. Nurettin ÇARMIKLI

The “Ballistic Protective Vest Project” Agreement, the negotiations of which has been decided to be started by the Prime Ministry Office on 2nd September 2016, has been signed between Undersecretariat for Defense Industries and Nurol Technology Industry and Mining Trade Inc. on 11th October 2016.

The 180.000 “Ballistic Protective Vest Project” need of Security General Directorate aimed to be met by means of national production potentials and capabilities at maximum rates and all the submittals of the project are planned to be completed in a short period of time as 11 months.

The agreement signed in the scope of the ballistic protective vest bid in such a big size is a first in our country and thus a one more important step was taken towards meeting the needs of Security General Directorate by national potentials.

“Weapon Carrier Vehicles Project Agreement” is signed by FNSS and Undersecretariat for Defense Industries



As part of the ongoing agreement negotiations and due to the decision taken at the meeting of Defence Industry Executive Committee held on 9th March, WCV Project Agreement was signed at a ceremony held at the Undersecretariat for Defense Industries with the participation of Oguz ÇARMIKLI, FNSS Chairman of the Executive Board.

In both track laying and wheeled type 260 anti-tank system in total will be supplied within the scope of the project.

GRANT HOLDER
Chairman of Nurol Holding Inc.
Yönetim Kurulu Başkanı
Nurettin ÇARMIKLI

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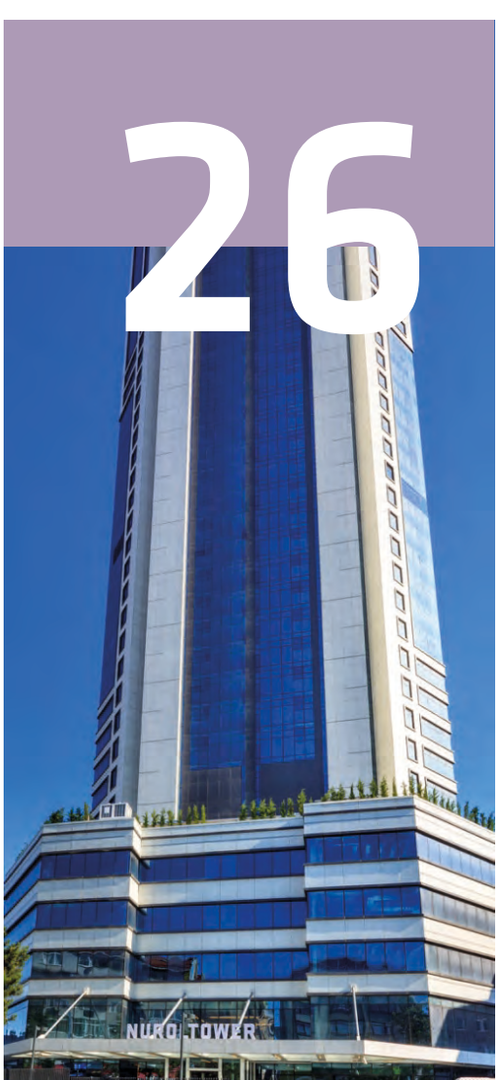
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and present...



The highway in the 1950s



"In retrospect, it seems that the history of the land journeys, which fifteenfold fastened in the past 250 years, is at the same time the history of economic growth, technological improvements and also the cultural shifts.

However, above all, this may be the history of the roads been constructed, buildings been erected, railways been spreaded, swamps been drained, dams been barriered before waters, in sweat and tears despite of the impossible conditions. It is the history of the contractors, engineers and workers who calculated and builded all of those and the history of the bureaucracy and politics, finance capital, modernisation. In short it is the history of public works."

Within this long journey starting from small subconstruction works to being **the first five contractors of the world** would not supposed to be that easy. Given that a journey between Istanbul and Ankara lasts 8 hours today, in normal circumstances, we barely express the duration of the same journey as days or even weeks at the times road constructions had newly begun.

To mention the history of highways briefly;

*In the period of **Ottoman Empire**, although the priority list of the roads and bridges to be constructed was identified with the Imperial Edict of Gulhane announced in 1839, the construction of the first roads delayed until 1850s.*

*The roads can be considered as modern firstly constructed by British and French engineers were Bursa-Mudanya 34 km, Bursa-Gemlik 34.5 km, Trabzon-Erzurum 314 km in length. The construction of the first two roads 68.5 km in total was completed in **15**, Trabzon-Erzurum road, on the other hand had continued **22 years** and completed as late as 1872.*

*Since there were no roads appropriate for the motor vehicles even as of **1914** there were only **187 motor vehicles** all throughout the Empire territorial.*

We understand that the progress Turkish construction sector has covered in years not only in Turkey but also throughout the world is a result of enormous efforts, huge experiences and well-deserved successes.

Editor



*"Interestingly enough, the first highway project of the Republic Era was the causeway between **Artvin-Borçka-Hopa**, which is the hometown of our bosses. The construction of this road was started in 1924 and was put into service in 1938. At those times, the natural conditions were very challenging and since there were no heavy construction equipments all the construction process had to be relied on manpower so the construction work was proggressing in a very slow pace. The work was re-contracted in 1932 and was commissioned to a French engineer to lead the project. The completion of the project lasted for **14 years.***

Accompanying over the last 50 years of this historical and challenging journey of our homeland **NUROL** is really a source of pride for us. Certainly, this was not an easy way to go for this magnificient structure, although we get used to the successes of our company and suppose that everything were always been like it is now. Aiming to provide a best qualified service, always trying to be the first and the excellent in all fields of activity, our bosses **Nurettin ÇARMIKLI, Erol ÇARMIKLI** and **M.Oğuz ÇARMIKLI** keep on providing added value to the national economy as well as pursuing the public interests with years of knowledge and experience. And we, as members of **Nurol Family**, are very lucky indeed by closely witnessing all these.

In this issue, you will read the detailed interview with **Yavuz BATUM, CEO of Otoyol A.Ş.**, which is founded by the associated companies of the consortium that won the tender, together with Nurol Construction. Being not only Turkey's but also yhe world's one of the most important transportation investments **Gebze-Orhangazi- İzmir Highway Project**, is the biggest project of the Rebuplican era with the build-operate-transfer model realized in a lump and when completed will decrease the travel time between Istanbul and Izmir to 3.5 hours. We now, as far as our pages allow to present, tried to share the information together with the visual representations.

Today **NUROL** serves as a model under the roof of the strong company culture established by our bosses together with our employees over the years, with the qualifications, trustwortiness and the "brand value" it gained both inland and abroad. Putting signatures to huge investments, magnificient projects, significant partnerships not only in the construction and contracting but also in various sectors both in Turkey and in different geographies worldwide Nurol Group of Companies, keep on progressing and growing.
Hope to meet you in the next 50th anniversary issue of Nurol World magazine.

Meral SARI CEYLAN
Editor

Reference: *Arslan, Gökhan (2015) NAFİA Türkiye'nin İnşa Tarihi, Ankara, Demircioğlu Matbaacılık*



Distinguished Nurol Family, Dear Reader,

According to researches of Forbes and Capital Magazines, which closely monitor the economic developments in the business world, in the first half of 2016, Nurol Company Group has ranked as

• the 33rd among the top 45 holdings in terms of turnover,
• the 85th among the top 500 private companies of Turkey,
• the 2nd with an increase of 355% and 12.000 employment respectively considering the turnover change of the last ten years (2006-2015) for the fifty-year and older companies and employment data of 2015.

Besides, NUROL Construction, which celebrates its 50th anniversary, filled our Group with pride by taking place, as in the previous years, in the "Top 250 International Contractors" list published by ENR-Engineering News Record research body and prepared based on the income obtained from abroad activities in 2015. This success gained in spite of global ambiguity and problems in Libya and Iraq, two of our main markets, is critically important for our country.

Activity field of Nurol Construction covers fifteen countries on a large geography including Algeria, Morocco, United Arab Emirates, Saudi Arabia, Libya, Qatar, Georgia, Poland, Russia, Turkmenistan, Kazakhstan, Uzbekistan, Iraq and Afghanistan.

Under the light of this general evaluation within and beyond the territories of Turkey which is a reflection of our quality and trust principles, we continue providing services with impressive large-scale projects in the sectors of construction, commitment, defense, manufacturing, real estate investments, energy, mining, tourism and finance.

We have the proud of completing and putting into service the "Osmangazi Bridge" under "Gebze-Orhangazi-Izmir Project", named as the biggest Build-Operate-Transfer Infrastructure Project of the history of the Republic of Turkey in a single time. Osmangazi Bridge which connects the Izmit Gulf to Hersek Headland from Dilova is the fourth bridge of the world and second bridge of Europe with the biggest central span, with a central span of 1.550 meters and total length of 2.682 meter. We are very pleased to take part in this project which will reduce the travel time between Istanbul and Izmir to 3.5 hours instead of 9.

Construction of South Approach Viaduct, which comes after Osmangazi Bridge and built by Nurol Group required advanced construction technology just as the suspension bridge. A total of 33.000 tons steel material was used in this viaduct of 1.380 m long.

Ilısu Dam and HEPP project which is unique in the world with 1.800 meter crest length among rock-fill dams with concrete-covered frontal face exceeded the progress

rate of 80% and it is targeted to make it ready for water retention at the end of 2017. As to Ordu Beltway Project, planned to be completed at the end of the year, constructions reached the initial estimated amount as of 2015 and estimate increase of 20% was granted by the Contracting Authority.

Nurol Machinery, FNSS and Nurol Technology companies turned our Group into the biggest Holding in the defense industry too with entirely domestic and unique system design and construction. A new contract was concluded between Undersecretary of Defense Industry and Nurol Machinery for provision of 180 pieces EJDER YALCIN 4x4, the best armored tactical vehicles of its class and another contract was signed between the Undersecretary and FNSS for provision of 260 pieces weapons carrier vehicles of tracked and wheel type.

In the real estate sector, Nurol GYO combines office concept and residence comfort in city center Mecidiyekoy with Nurol Tower project while recording new successes in this sector with Nurol Life project which provides a luxury residence life just near Turk Telekom Arena Stadium and lastly with Nurol Park project which meets all requirements of metropolis life in Basin Expres and opens the first Designer Outlet of Turkey.

TUMAD Company which offers services in the mining, the latest sector of our Group, aims to perform precious metal mining activities with high economic return in line with the international mining criteria, by observing EU environmental norms and using hi-tech machinery and equipment. Gold and silver production will be achieved under Canakkale Lapseki and Balikesir Ivrindi projects, developed within this framework, and feasibility works were completed and investment phase was launched in these projects.

Other developments achieved by our Group in the first half of 2016 and details of the projects above are available in our Magazine.

2016 performance of Nurol Group is ongoing with acceptable deviations from the total budget targets in the strategically focused sectors of the Group despite negative effects of the political factors. Conjuncture of Turkey affects our other domestic activities, especially tourism.

Targets of 2017 will be laid down following the budget meetings which are planned to be held in the last quarter of 2016. However, our strategic targets and growth strategies abroad will aim to increase the number of countries we are working with. Especially, we aim to obtain infrastructure projects in the field of construction and commitment, main expertise areas of the Group, and the new projects and business opportunities in the field of defense industry. In this regard, Sub-Saharan Africa Region, mainly Ghana and Benin, has been chosen as the target geography.

We are currently passing through a period characterized with some national challenges in addition to the global political and social developments. When efforts of jeopardizing future of Turkey have been eliminated by our Nation, I would like to emphasize that we, as Nurol Family, will continue serving to our country by performing large-scale projects within and beyond territories of Turkey without making any concession regarding democracy, freedom, equality, justice and rule of law.

I wish you all peace.



Uğur DOĞAN
CEO

nurol
CONSTRUCTION and TRADING CO. INC.



Ordu Beltway

Project Manager: Naci ASİLKAZANCI

The Ordu Beltway Project has been constructing since 20 March 2012 under the partnership of Nurol-Yuksel-Ozka-YDA. The highway separates from Akcaova River and goes through a tunnel under Boztepe then passes by Civil Stream, Melet River and Turnasuyu viaduct till to the coastal road up from Turnasuyu Village. The total length of the project increased to 21.4 km from 19.1 km with the change of the route.

To be constructed in the width of 26 m. platform as 2x2 separated highway the Ordu Beltway consists of 7 viaducts, each of which are 3.105 m; 6 tunnels 18.759 m in total single tube) and 6 crossroads, 3 of them with bridge.

Despite the bad ground conditions, 11.816 m (single tube) tunnel excavation and retaining works are completed and the 10.580 m long cincture of the tunnel is covered with concrete pavement. The Civil Viaduct which is 785 m. long is also completed. Besides, the small engineering structures, the earth works and other manufacturing works are still ongoing. The superstructure manufacturing is in progress and the both tubes of the Öceli Tunnel are completed in bituminous basic level. In addition, the plant mix base, plant mix sub-base and bituminous fundamental manufacturing within the Boztepe Tunnel are still ongoing.





NATIONAL

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South Approach Viaduct

Project Manager: Cengiz F. GÜMÜŞDAĞ

The steel structure of the South Approach Viaduct that is located at the continuation of the Suspension Bridge is also an important structure that requires high construction technology as much as Osmangazi Suspension Bridge construction (it requires engineering processes demanding extensive knowledge such as processing of raw steel, subjected to controls and tests and in situ construction) and all of them made by Turkish contractors.

The South Approach Viaduct is at the Hersek Peninsula section of the project, constructed on 1.378,92 meter route on 11 steel piers as steel deck between the km 7+081,76, starting with the reinforced concrete abutment at the end of the south section of the Osmangazi Bridge and the km 8+460,68 that is the last reinforced concrete abutment at the south, the structure has been completed. The commissioning and handling over works are ongoing.

The general information of the South Approach Viaduct and the quantities of the work items can be summarized as follows:

LENGTH OF VIADUCT	: 1379 m
WIDTH OF VIADUCT	: 35.930 m
NUMBER OF PIERS	: 11 Pcs
NUMBER OF ABUTMENT	: 1 Pc
FOOTING HEIGHT (MİN - MAX)	: 13 – 57 m
PROVISION OF TOTAL STEEL MATERIAL	: 33.000 Ton
STEEL PIER	: 6.000 Ton
STEEL DECK	: 26.000 Ton
TOTAL CONCRETE AMMOUNT	: 37.735 m^3
CONCRETE REINFORCEMENT BAR AMMOUNT	: 6.580 Ton
SEISMIC VISCOUS DAMPER	: 108 Pcs
SEISMIC LEAD RUBBER BEARING	: 22x2 Set
SPHERICAL BEARING	: 4 Set
ANTI UP LIFT DEVICE	: 4 Set





Seismic Design

South Approach Viaduct is located so close to the world's one of the most active seismic fault named as North Anatolian Fault. This brings prequisite of serious analysis on 3 different feedback perioded earthquake scenarios like 150 years (FEE), 1000 years (SEE) and 2475 years (NCE).
Steel pier foundations are designed for mitigation of fault activities during powerful earthquake for the first time in Turkey as Reinforcet Concrete Diaphragm Wall method.

Viaduct is going to be protected from seismic threats with 22 Lead Rubber Bearings, 108 Viscous Dampers (both transverse and longitudinal) , 4 Spherical Bearings and 4 Anti Uplift Devices.





Steel Pier and Deck Manufacturing

South Approach Viaduct consisted of 11 piers between 10 - 50 meters height. Total weight of steel piers are approximately 6.000 tons.

Decks are consisted of 16 subcomponents which have 40 meters length, 35,93 meters width and approximately 800 tons weight as main components. South Approach Viaduct has 32 main components as deck parts. The sliding part of the steel deck is composed of 16 sub-components and produced as 28 blocs weighing 800 tons and which are 35,93 m-wide, 40 m-long. The viaduct is built from 32 main constituents in total with the deck blocs added with the heavy lift method.



Launching and Heavy Lifting Operations

Combination of Incremental Launching and Heavy Lifting Operations provide uniqueness to the South Approach Viaduct Construction.

22.500 tons weight, 1.123 meters length deck launched to it's project location in 15 months as a world record.

In the first sequence of heavy lifting operation 2.350 tons,118 meters length deck is lifted and erected to 60 meters height. At the second phase 2.600 tons, 128 meters length deck is lifted and erected to the 57 meters height. Both are natioal record.



Waterproofing and Asphalt Works

When steel manufacturing works have been finished, surfaces of the viaduct located under the asphalt layer and walkways isolated for waterproofing with membrane. Finally, 28 mm mastic and 32 mm stone mastic asphalt laid on traffic flow zone.

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Ilısu Dam and Hydroelectric Plant Project

Project Manager: İbrahim YAVRUCU





The Ilısu Dam and HEP Project constructed as a rock fill with the concrete-covered frontageis the longest dam crest of the world with this method. The construction works are still ongoing in the location which is 44 km. far from the Syrian border over the Tigris River. The installed capacity of the project planned for producing energy is 1.200 MW and it is expected to produce 4120 GWh energy annually.

The Ilısu Dam which is one of the key facts like Atatürk Dam within the Southeastern Anatolia Project, has a 24 milyon m^3 dam volume consisting of rock fill and its filling production is completed. Besides, the concrete pavementworks of the frontage will have been finished by this October. There are 6 units each of whom are 204 MW in the power house, and the construction and electromechanical works are ongoing. The construction works for the Concrete Gravity Dam and Dolusavak are ongoing and it is expected that they will be ready for water holding in the mid of 2017. 83.87% of the project is completed till the end of July.

Some transportation routes are needed for Hasankeyf district to be replaced in the upper parts and the tenders of bridge constructions for the parts of these routes going through the lake of Ilısu Dam are conducted by the General Directorate for Highways of the Republic of Turkey and the construction works are maintained by us.



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Gebze - Orhangazi - İzmir Highway Construction

Project Manager: Yavuz YÖNTEM

Gebze – Orhangazi Section



Figure 1

The construction works within the scope of contract that NUROL signed with NÖMAYG (Employer) for the section approximately 9 km length that takes place between Gebze - Orhangazi (Ch: 34+350-43+296) of "Gebze - Orhangazi - İzmir Motorway (Including Izmit bay suspension bridge and access roads)" (Figure 1), which is constructed with Build-Operate-Transfer model under the obligation of Otoyol A.Ş. (Company In Charge) has been completed by the end of March 2016. This section of motorway was opened to the traffic on April 2016. Responsibility area of NUROL takes place between Samanlı Tunnel exit and Orhangazi (Figure 2). Earth works, structures, geotechnical works, landscape, toll collection and secondary works (utility relocations, service and park areas) are under the responsibility of NUROL, pavement works are excluded. In addition to service area on Ch:37+500, K4 Junction and toll collection area were constructed on Ch: 40+000 of the Motorway.

PROJECT (KM: 34+350 - 43+296)	
EXCAVATION	:6.201.082 m^3
FILL	:6.304.983 m^3
ROCK FILL	:469.487 m^3
BORED PILES	:6.323
WICK DRAIN	:52.880 m
BOX CULVERT	:17 nos
UNDERPASS	:16 nos
BRIDGE	:2 nos
PEDESTRAIN OVERPASS	:1 nos
U TYPE RC CANAL	:9 nos
RETAINING WALL	:2 nos

Table 1

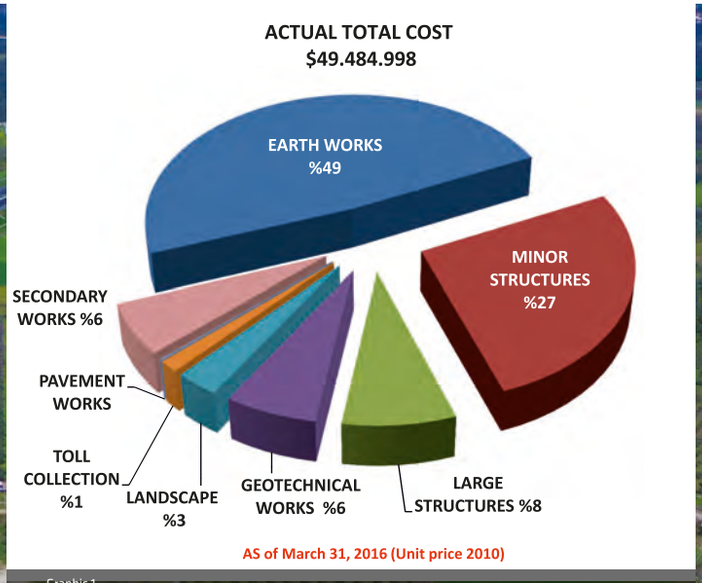
QUANTITIVE REALIZATIONS

	Revised Quantity	Quantitive Realization	Realization %
1. EARTH WORKS			
1.2 EXCAVATION	6.046.550 m^3	6.201.579 m^3	103%
1.2 FILL	6.039.167 m^3	6.304.983 m^3	104%
2. MINOR STRUCTURES			
2.1. CONCRETE	66.530 m^3	66.767 m^3	100%
2.2 REBAR	6.075 m^3	6.097 m^3	
3. LARGE STRUCTURES			
3.1 CONCRETE	13.724 m^3	13.749 m^3	100%
3.2 REBAR	2.075 m^3	2.077 m^3	100%
4. GEOTECHNICAL WORKS	451.959 m^3	469.487 m^3	104%
5. LANDSCAPE	$ 2.134.334	$ 1.616.686	76%
6. TOLL COLLECTION AREA	$ 950.000	$ 656.981	69%
7. SECONDARY WORKS	$ 2.931.256	$ 3.069.065	105%
7.1 UTILITY RELOCATIONS	$ 2.931.256	$ 3.069.065	105%
7.2 SERVICE&PARK AREA			
7.3 MAINTENANCE CENTER			

Table 2

Actual total cost of the project is 49.484.998 USD as per 2010 unit prices and distribution of the total amount according to work items are shown at the graphic 2.

Within the scope of the project 6 million m^3 excavation and fill, over 90.000 m^3 concrete and over 8.000 tonnes of structural reinforcement works were completed. Total works are shown on Table 1 in detail and quantitive realizations as of end of March 2016 are shown on Table 2. Finishing works were completed on main road, service and toll collection areas besides landscaping. Junction lightings, guardrail, Row fence, traffic signs and road markings were constructed by NOMAYG (Employer).



Graphic 1



Figure 2

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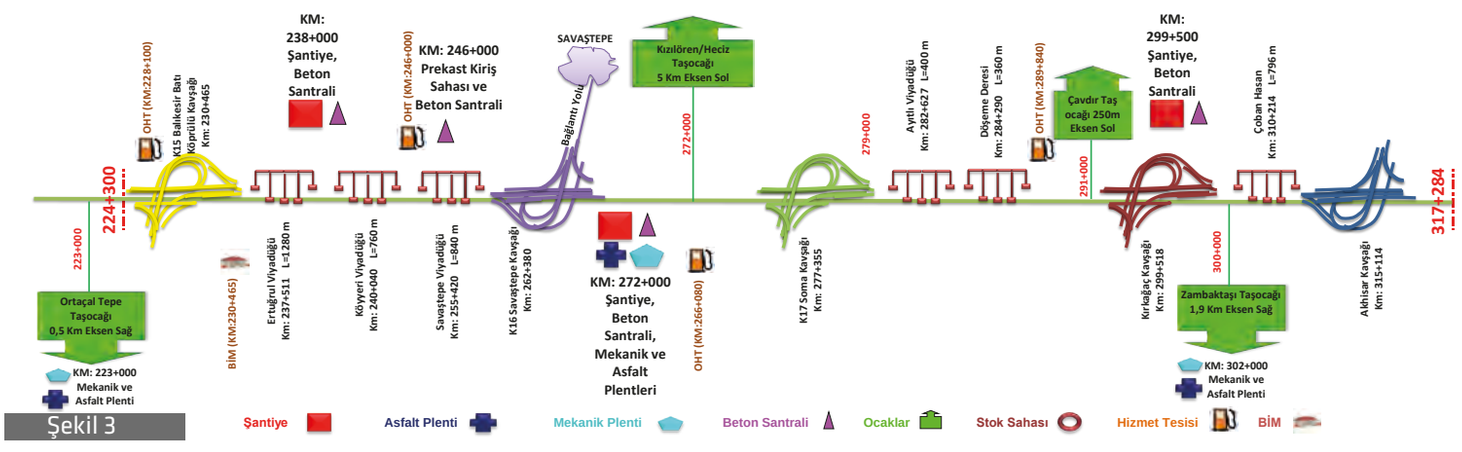


Gebze - Orhangazi - İzmir Highway Construction

Balıkesir – Kırkağaç - Akhisar Section

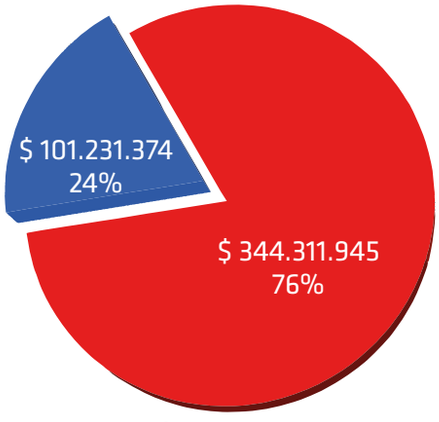
Under the contract which was signed between NOMAYG (employer) and NUROL, construction works on approximately 93 km of motorway between Balıkesir - Kırkağaç – Akhisar (Ch: 224+300-317+284) as a part of Gebze – Orhangazi – İzmir – Motorway (Including Izmit bay suspension bridge and access roads commenced as of April 2015. In this section, 5 junctions and toll collection areas are taking place which connect the motorway to Balıkesir, Savaştepe, Soma, Kırkağaç, Akhisar Settlements. In addition there are 4 service facility areas which are placed on both directions as type A(1), type B(1) and type D(2).(Figure 3)

BALIKESİR - KIRKAĞAÇ - AKHİSAR SECTION (BETWEEN KM: 224+300 with KM: 317+284)



Şekil 3

PROJECT CONTRACT VALUE
$ 454.543.319



Graphic 2







Within the scope of the project, earth works, minor and large structures (6 viaducts with a total length of 4.436 m.), pavement works (wetmix and hotmix), geotechnical works, landscaping, toll collection and secondary works (utility works, service and parking areas, maintenance centers) will be constructed. Traffic signs, road marking, guardrail and Row fence constructions are excluded and will be contracted out by NÖMAYG separately. Coordination and supervision of the construction works of those items will be on responsibility of NUROL.

By the end of September 2016 works on minor and large structures, cut and fill, viaducts drainage, pavements and prestressed beams are proceeding on all sections. 24% progress were realized on construction works since the begining of the project (Graphic 4). Quantitive amounts in project and realizations as of end of September 2016 are shown at Table 4.

According to planning of 2016, 11,2 million m³ excavation on main road, 1,6 milion m³ borrow pit excavation, 1,1 milion m³ topsoil excavation, 11,4 milion m³ fill, 368.000 m³ reinforced concrete, 22.000 m³ surface drainage concrete, 450 number of prestressed beams, 4.000 m. bored pile, 300.000 tonnes wetmix pavement, 150.000 tonnes hotmix pavement and utility relocations are planned to be completed. Contract end date is 31.12.2018.

STRUCTURES BETWEEN KM: 224+300 AND 317+284	
TYPE	**PIECE**
Box Culvert	217
Underpass	77
U type RC Canal	10
Retaining Wall	4
Underpass Bridge	15
Overpass Bridge	23
Viaduct	6
Prestressed Beam	3.319
Bored Pile (m)	20.018 m

Table 3

	TOTAL QUANTITY CH: 224+300 - 317+284	COMPLETED QUANTITY As of September, 2016
Excavation	22.568.131 m^3	13.438.181 m^3
Fill	25.752.888 m^3	9.769.092 m^3
Borrow pit Excavation	7.667.616 m^3	15.360 m^3
Concrete	908.784 m^3	381.834 m^3
Pavement - Wet Mix	4.378.230 tonnes	64.381 tonnes
Pavement - Hot Mix	2.130.784 tonnes	7.591 tonnes

Table 4

nurol REIT

Nurol Life

Redefines 'practical and luxurious' within the concept of 'Practical Luxury'

Nurol Life - which is being implemented on Seyrantepe, the new raising value of Istanbul - becomes prominent with its modern, practical and luxurious functions along with its high investment value and advantageous location.

It strikes with its convenient location to the underground within walking distance. Easily connects to Kemerburgaz via Ayazağa valley and to Bosphorus via Sarıyer crest, Seyrantepe is 5 minutes away from Maslak, 10 minutes away from Levent. With this feature, Nurol Life provides the comfort of living on the very heart of the city and it is close by the New Etfal Hospital which has been constructed recently. Distinguished with its close range to Fatih Sultan Mehmet and Bosphorus bridges, the project combines the comfort of being in the centre of the city with the "Practical Luxury" concept in which the luxury concept is redefined.

Nurol Life's "Practical Luxury" concept holds privileges in itself that make life easier. A special guesthouse for your guests, a pet sitting service you can leave your beloved fellows in state of urgency, a home theater for you to . watch your favourite films, a premium catering service that brings tastes from all overthe world to your door, a yoga-pilates studio in which you can make your mind and soul rest by realizing your hobbies, a spa and steam chambers to destress yourself, functional meeting rooms and offices equipped to meet your needs are just a few of them.

Designed by the award-winning architect Hakan KIRAN, with the interior design owned by Autoban, Nurol Life shines through with its forest scened apartments and very exclusive penthouses that have openable windows, breathable stone walls, and 4 meter high ceilings.

Diamond Zone is the primary privilige that Nurol Life offers. Designed by Eric Bernard Interior Design, it is located between 37-44th floors of Nurol Life Project. Decoration packages from world-wide famous firms like Ralph Lauren Home are distinctively presented specially for you. A spectacular view of Istanbul's largest forest is one of the features waiting for you.









nurol REIT

Nurol Tower

Being centrally located, Nurol Tower brings a fresh breath to the city with its 'green construction' features.

It combines office concept with residence comfort at the very center of the city, Mecidiyeköy. Located at the opposite of New Palace of Justice, neighbouring Çağlayan Square, Nurol Tower stands out with its transportation alternatives. E5-frontage location, easy access to the beltway and the Bosphorus Bridge, closeness to metro and metrobus stations will provide a great ease for transportation.

Designed for meeting all of your daily needs, Nurol Tower makes your life easier with shops, markets, restaurants and cafes. The opportunity of easily meeting your needs without lgoing out of the building is waiting for you in Nurol Tower. With its 4 m high ceilings and 73-193m² surface areas, home, office and home-office options of Nurol Tower offers a 149mt height scenery. This spectacular scenery covers both the old city, reflecting the historical and cultural aspect of the city and the Marmara Sea, and also the Bosphorus view with a unique panorama of Istanbul.









LEED GOLD

Nurol GYO constructed Nurol Tower coherent with the criteria of GOLD level on the category of LEED C&S which is the most well known and acceptable green construction certificate. Nurol Tower was designed and constructed to prevent the negative effects of housing to the environment, reduce the carbon emision and the costs of the management expenses that may occur during the operation of the building and minimize the operational costs through the strategies and systems that were used.
The principals that were taken into consideration in the Nurol Tower Project;

Sustainable area and location

The project was located in a central location close to the public transportation to reduce carbon emission. Safe bicycle parks and charging stations for electrical vehicles were placed into the building for the use of employers and visitors. Rain water and the condensing waters of the cooling system was gathered to be used on landscape irrigation. Light-coloured and permeable mantle types were used to reduce the heat island effect.

Water Productivity

The less water consuming and the most suitable plants for the climate of the area were preferred in the landscape. 100% saving was aimed by using the rain water and the condensing waters of the cooling system for the irrigation of the plants instead of the city water. Up to 40% water saving was aimed by using less water consuming, efficient faucets and reservoirs.

Energy Productivity

The energy consumption of each system in the building is provided with energy analysers, calorimeters and an energy tracking system. Through this system any probable defects or ineffectiveness can be detected instantly by observing the energy consumption levels seperately. Non damaging to ozon layer and enviroment friendly cooling fluids were chosen for the cooling system of the project.

NATIONAL

nurol REIT









Nurol Park

Nurol Park is hosting the first "Designer Outlet" of Turkey.

Nurol Park

Considered as the new Maslak of Istanbul and located on the prestigious point of Basın Ekspres, Nurol Park makes a difference with its complex project which ideally meets the modern needs by providing a sincere daily life desired in the modern day metropolis. It offers an enjoyable life with loft, residence and tower flats, modern offices, shopping centers and landscapes.

Turkey's first "Designer Outlet" is at Nurol Park

For the first time in Turkey, world brands will come together under the roof of "Oasis Designer Outlet" with the most affordable prices and varieties. With the shops located here, Nurol Park will be offering a lively shopping atmosphere to its visitors. By creating a new center of attraction in Istanbul, Nurol Park will also have a contribution to have the value of the area risen. At Nurol Park business, life, shopping, sports and landscape areas will be together in perfect harmony. If residants of Nurol Park desire, they will be able to have their houses and offices on the same area and have the opportunity to enjoy their lives by doing sports activities and jogging in greenery.

Located on prestigious Basın Ekspres which connects E5 and TEM roads, Nurol Park offers an easy and modern opportunity of transportation. Two metro stations next to Nurol Park which is very close to the transportation alternatives of Atatürk Airport and the 3rd Airport Project also make transportation to every part of the city possible.

OTOYOL
YATIRIM VE İŞLETME A.Ş.

ONE OF THE LARGEST PROJECT IN THE HISTORY OF THE TURKISH REPUBLIC

GEBZE - ORHANGAZİ - İZMİR MOTORWAY PROJECT

"The Gemlik-Bursa section is being constructed by **Makyol**, Bursa-Susurluk section by **Göçay**, Susurluk-Balıkesir section by Astaldi, Balıkesir-Kırkağaç-Akhisar section by **Nurol**, Akhisar-Manisa section by **Özaltın-Makyol Partnership** and Manisa-İzmir section by **Özaltın**."

We are presenting the interview of Otoyol Inc. CEO Yavuz BATUM





May we please get to know you?

I was born in Arhavi in 1956. My father was a banker and we moved to Ankara in 1960. I studied primary, secondary and high schools in Aydınlıkevler. Afterwards, I chose and entered METU Mechanical Engineering and graduated in 1979. I am married and I have a daughter, Ceren, and a son, Yigit.

Since our employers are also from Arhavi, have you known them before you joined this project?

Of course I have. Our houses are in the same neighborhood in Arhavi. Our elders have known each other for a long time. Nurol is a great holding that we are proud of. **Interestingly indeed, my acquaintance with the group dates long back in time.**
When I was at METU, the university was closed due to boycott and it was uncertain when it was going to be opened again. My father took me to Mr. Nurettin and said: "My son is a successful student but the university is closed so he started to loaf around. It would be better for him if he takes some time out and sees the business world." Thus, Mr. Nurettin took me to Ayaş tunnel immediately. I worked there as an intern for six months as an intern. That is where I first learned and loved site work.

What did you do after university? Did you enter the business world right afterwards?

After graduation I did master's degree in the same department. However, I went to Libya before I finished my master's degree because I did not want to burden my family financially and I worked there for about 4 or 4.5 years. After I got back from Libya, I joined to Bayindir Group as a co-founder.

Actually it seems to be a young age to be an employer. How did this happen?

Bayindir Construction was founded in 1984 as a multi-partner establishment. I also joined this establishment as one of the co-founders when I was twenty-eight years old. Bayindir developed and grew in a short period of time. As it developed further, so did we. We gained great experience in different sectors. I took the Vice Presidency of the Executive Board and General Directory when I was thirty-five. In 1997, I and other three friends of mine left Bayindir.

Here it becomes obvious where you got your success in managing partnerships. Your experiences always took place in multi-partnered structures. What did you do afterwards as four partners?

As four partners leaving Bayindir, we established ENER Group and we continued our activities in construction, energy and tourism fields. Coming to 2003, in addition to ENER Group, I established Defne Agriculture and Eni Energy Construction as family companies and I continued working.

In which stage have you joined the project and how did this happen?

Since I got back from Libya, that is, since Bayindir was founded in 1984, I had continued my life as employer. Therefore, naturally I never had professional management in my mind. Towards the end of 2010 I had all my work on track. Companies I owned and the establishments I was a partner of were performing their activities and there were high quality managers in all of them. We are fairly comfortable financially. I had been putting effort into business life for so long that I wanted to take some time out and spend more time with my family and children.Of course, I was following the daily agenda and the bidding as an outsider. A great project indeed. **We always had bond of communion with Mr. Nurettin. Mr. Nurettin, Mr. Erol, Mr. Oguz, they all are people we respect deeply and are proud of the fact that they all have high humanitarian values.** On a personal scale, it was a home for me to which my father took me trustfully 40 years ago.

I was very happy to see that Nurol won the bidding. Afterwards, I received this offer and I stated that I was unable to accept it due to reasons I just mentioned. We kept in touch for a few months. Finally I met with Mr. Oguz in Istanbul. Mr. Oguz insisted me so much that he said **"Consider this as a national service"**. I was deeply touched. In addition, it was impossible to endure the desirability of the project.

The structure contained six partners – Yüksel was also in then- and partnerships are not easy at all. Six different disciplines, six different business management styles; a six-partnered structure is not easy to manage. Upon Mr. Oguz saying "There are not many people to manage this and you do not really have the right to reject", I stopped resisting. He said "You will come in the beginning and get the place organized in a couple of years, have the system in place and you may leave after that if you still want to". It has been six years and I am still here...

You are implementing one of the greatest projects of Turkey and also one of the most important infrastructure projects in the world. Isn't it very proud and exciting?

Of course, the facts that the extent of the project is really large, the project is a world project and it is the greatest project in the history of the Republic of Turkey have been very exciting during the process. We engineers are drawn by the fascination of the work after a short while. On one hand there are works to do and I was having worries about how to spend time with my family and children; on the other hand there is this fascination of the work, building the greatest bridge of the world, highways, tunnels... Step by step it becomes a kind of "challenge" and finally this feeling overwhelmed me. **It was just the beginning of the year 2011; I accepted the job with excitement and happiness.**

I was agreeing to what Mr. Oguz said earlier. I was planning and hoping to create the system primarily, set things in place and then leave. However, it turned out to be not that easy. In the beginning we encountered very important difficulties and challenges for a few years. Nevertheless, thank God, now it is all in the past. Now, with the opening of Phase-I, which includes the bridge, the most critical threshold of the project is passed with success.

Would you please tell us about the characteristics of the project? We will mention the completed parts of the project such as bridge, highway and tunnel in the following pages. How was the situation in the very beginning?

The characteristics of the project are that; for the first time in Turkey an infrastructure project of this size, a highway project is going to be realized with build-operate-transfer model. This contradicts all of the existing habits. **It was the largest project in Turkey when it was tendered.** Now, 5.5 years are left in the past. At the point we commenced, there were some gaps in the legal infrastructure regarding especially the obtaining finance for a government build-operate-transfer project of this size.

Some legislation had to be adapted to be compatible with one another and this process took a while. Once the compatibility was obtained, we were able to pave the way for financing. In addition to this, the project being very large in size, an economical liquidity crisis occurring in the world at that time overlapping with the project and a very large financing being required were among the greatest challenges we had in the beginning.

Could you please inform us about Otoyol Inc.?

Otoyol Enterprise and Management Inc. has been established by six co-founder companies with 50 million Turkish Lira capital as a special purpose incorporated company within the build-operate-transfer regulations framework in Ankara on 20 September 2010. Later in 2012, one of our partners Göçay Construction Inc. had decided to assign most of its shares in the company to other partners. At the end of year 2013, Yüksel Construction Inc. had decided to leave the company by assigning its share to three partners. **Today, each of the partners of Otoyol Inc. is one of the five leading companies of construction sector in Turkey and in the world. Our partners are Nurol Construction, Özaltın Construction, Makyol Construction, Astaldi and Göçay Construction companies.**

In multi-partnered projects like these, were there any problems due to different working styles of the partners, especially regarding the harmony of the personnel? I suppose management and coordination of such issues are very difficult. How did you blend these?

In the beginning of the project we started with six partners. After a while we were five partners. **Right now, we have reached to a zero-problem term in terms of partner relationships and company management.** Thus we gained something here. A structure with six partners, all have different habits, different wage policies, different price policies and different working styles. It was impossible to create a company by collecting these and copying the firms. Therefore, as Otoyol Inc. we created a novel company which is independent of the partner firms.

We will talk about the project but before that, there is a subject of great interest. Do not pressure or manipulation occur arising from the fact that such great companies have shares in the partnership?

No, no kind of pressure occurs. Each important subject is discussed in the Board of Management and each and every partner abides by the decisions. **Otoyol Inc. is a separate and independent legal entity and is open to every kind of inspection.**

Did the establishment of Otoyol Inc. become an obligation because the government stipulated so? Would you please inform us about the operation of the company?

There was a requirement to establish

> **“Suspension Bridge towers are at a height of 252 meters from the sea level and are only 12 meters shorter than the Sapphire building in Istanbul.”**



Osmangazi Bridge



Phase 1 Motorway-Orhangazi Tunnel 29+500-increase

an investment company to which the prerogative of constructing and managing this highway for 22 years was going to be given. Otoyol Inc. was established with this purpose. The company has found the money, constructed and managed the highway; the firms are partners and each of them are represented in our Board of Management with a common representative, each firm has right of one vote. For example, Oğuz ÇARMIKLI represents Nurol and he is also head of the Board of Management of Otoyol Inc. **Mr. Oguz contributed in a large extent to the trouble-free management that we have now. He earned the respect of all parties with his coordination, management ability and experience.**

When we look at the operation of the company, each partner attends the meeting with the right of one vote. It is our sixth year and we have never voted in any of our decisions so far. We made all of our decisions with consensus.
There is not yet a decision we made with majority of votes. I am confident to say that we are a team that works very much in harmony. The problems we had in the beginning diminished as we solved each one by one.

How do you manage the company as the CEO of Otoyol Inc.?

We spend 8 billion dollars in this project and we manage a large investment. The system we would build had to be a structure which anyone may inspect; everyone may see everything transparently and gather information in the same manner. As you stated, from the start I am managing this system where all the decisions are made in a competitive environment and with transparency.

After I compose the respective strategy about every important subject, I take and submit it to the Board of Management. We discuss different opinions, if any. We create the main strategy together. We draw the framework and make decisions. I perform the decisions. Board of Management is held once a month routinely. All firms attend on the employer level. **Within the scope of our company, we have five general managers who are subordinates to me.** They also attend the Board of Management. We have a very good financial reporting system. Each unit submits what had been done in the meetings, thus, no problems occur regarding the decisions made afterwards. We do not experience stress or interference. Decisions are made by rational evaluation at all times.

Other than OTOYOL Inc., are there any companies that are structured differently to participate into the project?

Yes, we are performing the management with four distinct companies. First is the investing company **Otoyol Inc.**, which is the party in the contract signed with the Administration. Second is **NÖMAYG Ordinary Company**; which is Producer Company and performs the construction



Orhangazi Tunnel

business of the project.

The third company is **Otoyol Management and Maintenance Inc.** (OİB) is the company which is responsible for the project design, construction and management of the 33 service stations (gas stations, sales centers, food units) that we are going to establish along 400 km. Our cofounder firms participate with the same share structure to all these three companies. Fourth company is **GİİP**, which performs the management of the highway (traffic management, fare collection systems, repair and maintenance, profit campaigns, accident response etc.). 50 % of this company belongs to Otoyol Inc. and the other 50% belongs to French EGIS firm which has international experience in highway management. **We have talented General Managers in managing for each of the four companies. Above them, I myself strive to coordinate the whole structure.**

Now we can talk about the project. We are talking about the greatest project in Turkey that is being implemented with build-operate-transfer model. Within the scope of the Application contract, which took effect in 15 March 2013 upon being signed by the Highways General Directorate and Otoyol Investment and Management Inc. in 2010, a total of 433 km road is being constructed, including 384 km of motorway and 49 km connection roads. Could you please tell us about the development process of the project before the signing step?

The process before the signature of the application contract happened as follows;

Tender Announcement	7 April 2008
Tender	9 April 2009
Opening of Tender Envelopes	13 May 2009
Opening of Tender Bids	19 June 2009
Announcement of the Most Favorable Bid	2 July 2009
Approval of High Planning Council (HPC)	24 September 2010
Establishment of OTOYOL INC.	20 September 2010
Application Contract Signature	27 September 2010

What kinds of benefits will the Project provide in the economic and social context and which regions will it affect?

We are connecting three of the most developed provinces of Turkey that make the largest contribution to the national economy, namely Istanbul, Bursa and Izmir, to each other with a contemporary motorway.According to the projection studies performed on the subject, it is expected that the Project will provide an added value of approximately 11-12 billion TL per year to the national economy and additional employment for 15,000 persons, especially in automotive, textile and tourism industries. Also, when the whole project is commissioned, it is expected to provide a saving of 600-650 million US Dollars per year to the economy due to the shortened route and prevented traffic congestion.

What are the major stages of the project in sequence? Would you make explanations about the motorway, connection roads, viaducts, bridges and tunnels? We know that there will be different structures where services will be provided such as toll booth areas, park areas, services areas?

Project Characteristics Data:
- Route Main Body Length: 384 Km
- Bursa Peripheral Road (open to traffic): 21 Km
- Total Main Body: 405 Km
- Connection Roads: 49 Km
- Junction Arms: 140 Km
- Side Roads: 26 Km

Number of Bridges, Viaducts, Tunnels, Service Facilities, and Maintenance Operation Facilities are as follows:

MAIN CONSTRUCTION ITEMS	TOTAL QUANTITY
SUSPENSION BRIDGE	1
TUNNELS	3
VIADUCTS	38
Reinforced Concrete	36
Steel	1
Composite	1
BRIDGES	171
Overpass	87
Underpass	45
Hydraulic	1
CULVERTS	984
Box Culverts (Underpass)	281
Box Culverts (Hydraulic	703
JUNCTIONS	22
MOTORWAY SERVICE FACILITIES	18
MOTORWAY MAINTENANCE OPERATION FACILITIES	4
TUNNEL MAINTENANCE OPERATION FACILITIES	2

**3 Junctions are located on the existing Bursa Peripheral Road. They are not included in the number of junctions.*

We had heard about smart buildings. But the term "smart motorway" sounds somewhat peculiar. What is exactly meant with that?

Smart Motorway application to be downloaded via the cell phone will become functional in stages.
- Weather-Road Condition info.
- Special Motorway Radio
- Resting areas, recreation places, food courts, shopping opportunities, emergency car repair points, retail brands promotion messages announcement channel
- Possibility to make reservation for restaurants and similar places on the way
- Mapping the covered distance, pinning the visited locations.

It will be possible to share the experienced road summary over Facebook, Twitter and Instagram.

Can we now get some information about financing? How much loan has been obtained for which part of the project and for what period? What is the equity/debt structure? Was additional load used afterwards?

The first loan for the project was borrowed in 2013 in the amount of 1.4 billion US Dollars for Gebze-Gemlik section, including Osmangazi Bridge. In 2014, an addition of 600 million US Dollars was made to this loan, thus financing for the motorway section from Gebze to Bursa was provided. Finally, we signed a new loan package in the amount of 5.0 billion US Dollars in 2015 we paid back the old loans of 2013 and 2014 using this new loan. **We estimate that when the project is completed, 68% of the cost of the construction phase will be financed with loans and 32% with equity.**

"We are connecting three of the most developed provinces of Turkey that make the largest contribution to the national economy, namely Istanbul, Bursa and Izmir, to each other with a contemporary motorway. According to the projection studies performed on the subject, it is expected that the Project will provide an added value of approximately 11-12 billion TL per year to the national economy and additional employment for 15.000 persons, especially in automotive, textile and tourism industries."



Orhangazi Tunnel Entrance

Was the starting of the project postponed due to the time delay in the supply of the planned loan? How was this problem overcome?

Before the start of the project in 2013, the shareholders of our company provide equity in the amount of 600 million US Dollars starting from 2009 and thus prevented any delay being encountered in the project.

How was the division of works accomplished among the partners? Did it not carry a risk to subcontract some of the works to firms outside the group (for example, Samanlı Tunnel, the longest tunnel in Turkey)?

After the Motorway Works are divided into equal sections on the basis of cost, division among the partners was made by drawing lots. In Phase I, the work items that require special expertise such as Suspension Bridge, Samanlı Tunnel, Southern Approach Viaduct were given to firms that are expert in their works and that meet the eligibility criteria through tenders. Regarding the construction works responsibilities, the road between Gebze-İzmir was divided into 7 different sections and motorway construction works were subcontracted by NÖMAYG A.O. to firms according to the breakdown given in Table 1 and Table 2 below.

What is meant exactly by terms Phase 1, Phase 2A – Phase 2B that we hear frequently when discussing financial matters?

They refer to the motorway sections in the loan agreements. Phase 1 represents Gebze-Gemlik section including Osmangazi Bridge, Phase 2A represents Gemlik- Bursa section and Phase 2B represents Bursa-İzmir section.
Phase 1 has been completed and opened for operation and was financed with our first loan in 2013. Phase 2A was financed with the loan in 2014 and Phase 2B was financed with the loan in 2015.
The loan package in 2015 also re-financed the original loans of Phase 2A and Phase 2B.

Are all the motorways on the route of the project being newly constructed or are there existing state highways that will be used. Can we have some information on this subject?

When the project is completed, it will have a Main Body Length of 405 Km. Of this length, 384 km shall be constructed by our Assigned Company (Otoyol Investment and Operation Inc.) within the scope of Build-Operate-Transfer Model, 21 km is the existing Bursa Peripheral Way built by KGM and opened to traffic. In addition to the 384 km Main Body Motorway construction, our Assigned Company will perform the construction of connection roads, junction arms, existing state highway arrangements and side roads I mentioned above and open them to traffic.

What are the important structures that we can call milestones of the project?

Important Structures:
For Phase I: Suspension Bridge, Southern Approach Viaduct, Orhangazi Tunnel (Samanlı) and Viaducts.
For Phase II A: Selçukgazi Tunnel and Viaducts
For Phase II B: Belkahve Tunnel and Viaducts

Were there unforeseen circumstances in the implementation process of the project? At what points there were processes that did not conform to the work schedule and why?

We encountered unexpected situations in the process of carrying out the expropriations from time to time but I can tell you that both the administration and the related government bodies made significant contributions for solutions and used all their means to pave the way for us for this project.

An important component of the project is İzmit Bay Crossing Bridge, which will be named "Osmangazi Bridge", has been opened on 30 June 2016 and began to provide service. Can we have some information?

Subcontractor: IHI-ITOCHU Consortium
Contract Price: 1,114,489,552 USD
Contract Period of the Work: 37 Months
Completion Time: 42 Months

The bridge was constructed at a very critical location regarding earthquake, very close to the North Anatolia Fault Line; with what kinds of studies and solutions were the disadvantages of this situation was overcome?

The Suspension Bridge is located quite close to North Anatolia Fault, which is one of the most active seismic regions of the world. For this reason, NÖMAYG selected American **FUGRO** Company for geotechnical, geological and seismological assessment, which is one of the most trustworthy companies in the world on the subject. FUGRO Company completed all

PHASE	SECTION	LOCATION	KM	FIRM	FIELD OF ACTIVITY	PLACE OF CONSTRUCTION SITE
1	1	GEBZE-ORHANGAZİ	0+000 - 4+174,76	ASTALDI	MOTORWAY	2+300
			4+174,6 - 7+081,76	IHI+ITOCHU	SUSPENSION BRIDGE	4+100 - 7+550
			7+081,76 - 8+460,68	NUROL	SOUTHERN APPROACH VIADUCT	8+400
			8+460,68 - 19+213,00	MAKYOL-GÖÇAY	MOTORWAY	15+500
			19+213,00 - 30+700,00	YÜKSEL-ÖZALTIN	MOTORWAY	23+600
			30+700,00 - 34+350,00	DAĞCAN	SAMANLI TUNNEL	30+500 - 34+750
				SIEMENS	SAMANLI TUNNEL (Electric-Electromechanical Works)	
			8+460,68 - 34+350,00	ENİ	SUPERSTRUCTURE WORKS	23+000
			34+350,00 - 43+295,88	NUROL	MOTORWAY	40+000
			0+000,00 - 58+300,00	SDG	MOTORWAY SECTION LIGHTING	
			0+000,00 - 43+295,88	BETAFENCE	WIRE FENCE CONSTRUCTION WORKS	
			49+076,61 - 83+441,21	DOĞAN TEL		
			0+000,00 - 58+300,00	UNICOM	SMART TRANSPORTATION SYSTEM	
			0+000,00 - 58+300,00	KISAN	HORIZONTAL AND VERTICAL TRAFFIC SIGNS	
			0+000,00 - 58+300,00	ASELSAN	FARE COLLECTION SYSTEM	
	2	GEBZE - BURSA	0+000,00 - 83+441,21	ALKA	MOTORWAY GUARD RAILS	
		ORHANGAZİ - BURSA	49+076,61 - 58+300,00	MAKYOL	MOTORWAY	57+500
			58+300,00 - 83+441,21		MOTORWAY	
II-A			58+300,00 - 83+441,21	UNICOM	MOTORWAY SECTION LIGHTING	

Table 1

PHASE	SECTION	LOCATION	KM	FIRM	FIELD OF ACTIVITY
II-B	3	BURSA-SUSURLUK	104+535,00 - 163+300,00	GÖÇAY	MOTORWAY
	4	BURSA-SUSURLUK - BALIKESİR	163+300,00 - 178+927,16	ASTALDI	MOTORWAY
			174+923,75 - 224+300,00		MOTORWAY
	5	SUSURLUK-BALIKESİR - KIRKAĞAÇ-MANİSA	224+300,00 - 231+519,50	NUROL	MOTORWAY
			232+000,00- 297+193,83		MOTORWAY
			297+000,00- 317+284,00		MOTORWAY
	6	KIRKAĞAÇ-MANİSA- İZMİR	317+284,00- 297+193,83	ÖZALTIN-MAKYOL	MOTORWAY
			352+000,00 - 363+450,00		MOTORWAY
	7	MANİSA-İZMİR	363+450,00 - 407+655,55	ÖZALTIN	MOTORWAY
			407+700,00 - 408+654,59		MOTORWAY
			KEMALPAŞA CONNECTION ROAD	DOĞAN TEL	WIRE FENCE CONSTRUCTION WORKS
			KEMALPAŞA CONNECTION ROAD	UNICOM	LIGHTING, SMART TRANSPORTATION SYSTEM
			KEMALPAŞA CONNECTION ROAD	AYDIN	VERTICAL TRAFFIC SIGNS
			KEMALPAŞA CONNECTION ROAD	ÇEPAŞ	MOTORWAY GUARD RAILS
			389+657,00 - 408+654,59	UNICOM	MOTORWAY SECTION LIGHTING
			389+657,00 - 408+654,59	AYDIN	VERTICAL TRAFFIC SIGNS
			389+657,00 - 408+654,59	KİSAN	HORIZONTAL TRAFFIC MARKING
			389+657,00 - 408+654,59	UŞAKLIGİL	WIRE FENCE CONSTRUCTION WORKS

Table 2

kinds of soil investigations of the region geologically and seismically in 2010 in 4 months. After that, FUGRO Company determined the design criteria for İzmit Bay Crossing Bridge, drew the maps of the region with and without faults and made the earthquake engineering interpretations including the following subjects:

• It developed the "seismo-technical modeling of the region".
• It determined the seismic damage analysis probabilities.
• It determined the non-linear soil reaction analyses.
• It developed the design ground movements by taking into consideration sinking effect.
• It made the fault displacement probability damage analyses.

A safe bridge design with seismic resistance was found as a consequence of this information.

There was the information that in the original design of the bridge the distance between the two towers was greater and the southern tower was on land. As far as we can see from the later implementations, the distance was shortened and became 1,550 m. and the southern tower was relocated in sea. Can we learn the reason for this?

As the sea span crossed by the bridge is 3000 meters, the bridge towers always had to be in sea. In the batimetric measurements NÖMAYG had FUGRO Company perform in April 2010, it was found out that the planned location of the southern tower at around -5 meters depth was a very steep slope with landslide track.

As it was not appropriate to place the tower foundation on this slope, the southern tower had to be moved towards north 150 meters. In order to keep the bridge span constant, it would have been necessary to move the Northern Tower and Northern Anchorage together with the Southern Tower toward north by the same distance, but in that case Northern Anchorage block would overlap with the existing railroad line. For this reason, Northern Tower and Northern Anchorage were left in their places and only the Southern Tower was moved towards north.

I watched the construction video of the towers with admiration. One feels proud, seeing the level of the technology and its implementation in our country. What are the technical characteristics of Osmangazi Bridge, such as length, span, height?

The only applicable criteria in the ranking of Suspension Bridges in the world engineering literature is

"The only applicable criteria in the ranking of Suspension Bridges in the world engineering literature is the main span distance. With 1.550 meters of middle span, Osmangazi Bridge ranks 4th among the largest bridges of the world."



Osmangazi Bridge

the main span distance. With 1.550 meters of middle span, Osmangazi Bridge ranks 4th among the largest bridges of the world. Suspension Bridge towers are at a height of 252 meters from the sea level and are only 12 meters shorter than the Safir building in Istanbul. In order to decrease the steel tower vibrations during the construction stage of the bridge and in its service life, two active mass dampers (AMD) are used at each tower.

The Suspension Bridge was designed a monumental structure with a service life of 100 years in accordance with European Technical Specifications. In order to ensure that the bridge is kept in its best condition for a longer period of time, sensors were placed at various points on the bridge to detect temperature, tension, motion and similar events and Structural Health Monitoring System (SHMS) was installed, which records the collected data and makes them available for monitoring at the bridge control center. The bride was designed according to international wind criteria and it passed all performed wind tunnel tests successfully. Main cable of the Suspension Bridge, insides of the steel towers, insides of steel slabs and anchorage rooms were equipped with a dehumidifying system that supplies dry air to protect them against corrosion. **Our bridge has the feature of being the first SUSPENSION BRIDGE where all of its major components were implemented with a dehumidifying system as early as the design phase.**

Would you please mention the construction stages of the bridge in sequence? Basic structures, deck slabs, towers, etc.

Suspension Bridge construction period was determined as 37 months, appropriate construction techniques were used in accordance with this and its construction was completed in a much shorter time than similar suspension bridges in the world. As the service life of the bridge was designed as 100 years, the concrete structures were made accordingly. For this reason, necessary chlorine impermeability limits and necessary spacers were calculated and special concrete production was made that meets these limits and that has low water permeability.

Our reinforced concrete caisson structures that form the foundation of the suspension bridge towers are the largest caisson structures of the world constructed until today. The caisson foundations that have dimensions of 67x54x15 meters were constructed in two different locations, namely in dry and wet docks, in two different stages in 12 months, floated to their places and were sunk to the sea bottom reinforced with driven piles on 15 March 2014 and 26 March 2014. **Base area of the caissons is 3650 square meters and is about the size of a football filed at minimum dimensions; the height of 15 meters corresponds roughly to the height of a 5-floor apartment building.**

The bridge was known to be the second largest bridge of the world. Then it was announced to the fourth one. Why was that?

As a result of the comprehensive soil investigations made by Fugro on behalf of Japan IHIITOCHU consortium, soil maps of the region were generated with and without faults. As mentioned above, the detected secondary fault was taken into consideration and the southern anchorage block was displaced 138 meters in the north direction. The southern tower was displaced



Gebze - Orhangazi - İzmir Motorway Main Management Center

towards north due to the fact that it was located on slope in the sea and located on a horizontal soil at a depth of -40 meters. **As a result of these inevitable displacements in the north direction, the main span of the bridge was shortened from 1700 meters to 1550 meters. For this reason, it became the 4th longest suspension bridge of the world.**

When did you begin to earn income from the project and at which section? What is the truth under the statement of "everyone will pay, whether he passes or not" about the income that was publicized in the press? Would you make some explanation about the fee charging?

In the project, the motorway section of 40 km between Altınova – Gemlik junctions were opened for operation as of 21 April 2016 and income was started to be collected for the first time. As you have pointed out, an assessment is made in the form of "everyone will pay, whether he passes or not" based on the guarantee payment. **We think that this assessment does not reflect the truth accurately.** The principle in Build-Operate-Transfer projects is to make the users pay for the made investment. However, especially in mega projects that require very large amounts of investments such as our Projects, to make up the deficit from the budget until the income obtained from the users reaches the guaranteed income level is a rule which is applied not only in Turkey but in the whole world. **Guaranteed traffic numbers and vehicle passage fees were determined by Highways General Directorate (KGM) at the time of the tender and were included in the Implementation Contracts signed by and between the Administration and our Assigned Company.** This consideration asserts the argument that all investments made from the state budget are investments paid by those who "do not pass/use" them. **Fare charges were determined in 2008 by KGM and tender was held. We do not have the authority to determine the fares.** In the contract, the car equivalent bridge fare (1st class vehicle) was defined as 35 US Dollars + VAT and motorway passage fare as 0,05 US Dollars + VAT per kilometer on the basis of year 2008. Later, with the HPC decree dated 17.06.2016 and decree of Cabinet of Ministers car equivalent bridge fare (1st class vehicle) was defined as 25 US Dollars and 8% VAT. The current value of this figure is 88,75 TL.

How many vehicle passages are guaranteed daily according to Highway data? What will happen when this number is not reached?

Gebze-Orhangazi	40,000 cars equivalent/day
Orhangazi-Bursa	35,000 cars equivalent/day
Bursa-Balikesir	17,000 cars equivalent/day
Balıkesir-İzmir	23,000 cars equivalent/day

Pursuant to the contract, if the toll booth income corresponding to these figures is not reached at the evaluation to be made at the end of the year, the difference will be put into the budget of the next year by KGM and paid by KGM to the Assigned Company.

When the bridge is commissioned, how much will the motorway be shortened compared to the existing state road? What will be its contribution to the economy? What are the advantages it will provide from financial and time points of view?

When the bridge is commissioned the distance covered by going around the bay will be shortened by 75 km. **The distance covered in 90 minutes before over the state road will be crossed in 7 minutes.**



Altınova K2 Facility of Operating Maintence and Counter of Fare Collection



Orhangazi Tunnel Enterance

There is information that Osmangazi Bridge was made with a curve. As far as we followed up in media, we know that the reason for that is environmental awareness -to protect the natural laguna of flamingos- and to protect the historical heritage – Hersek Ottoman Bath- and similar factors. What would you say on this issue?

A curve was not made in the suspension bridge itself, while the first two spans of the Southern approach viaduct that connects the suspension bridge to the motorway, were straight, a slight curve was given in the subsequent spans so as not to pass over the historical aqueduct ruins indicated to be left from the Byzantine times, which is located in Hersek lake.

Were different practices applied in this project due to environmental awareness and historical sensitivity? Can we have some information about these?

We have quite a sensitive approach in these matters as the project. **Special works specific to the project aimed at the Environmental and Cultural Heritage are being made since the design stage and are still in progress. Some examples of these are as follows:**

• In line with the studies we have caused to be performed in order to protect the Terrestrial Ecology and Biodiversity and to ensure the animal passages are made properly, ecological corridors have been determined and, ecological passages, tunnels and viaducts are designed by taking these corridors into consideration and this way, protection of wild life corridors was intended.

• During the construction activities of Osmangazi Bridge, in order to minimize the noise that may be generated under the sea, hydraulic hammers of high technology were used that generated low noise.

• From the beginning point of the project to its end, archeological surveys were made for Cultural Assets, and recovery excavations and drilling excavations were made and are still being made at the areas determined in line with the surveys under the supervision of authorized bodies.

What will be the effect of establishing Silicon Valley in Kocaeli on the bridge crossings?

We think that transportation of raw materials and processed goods related with the Silicon Valley will be much easier and comfortable over the bridge and the junction that will be newly built.

Can we have some information about the use of communication technologies? If it were not for the bridge, the fiber optic lines would have passed under the sea, etc. what are the developments on this issue?

You know that communications are all based on fiber optic cables. Within the scope of our contract, various number of micro tubes have been left along the bridge; they will be used and caused to be used by KGM. That is, out of 6 different units, we use one unit for our internal communication in the project and allocate the remaining ones to the government.

The Southern Approach Viaduct connecting the Bridge to the motorway was also a very important project. Can we have some information about the basic characteristics of the Southern Approach Viaduct, whose tender was won by NUROL Construction and whose construction started on 1 April 2013 and whose provisional acceptance was performed on 30 June 2016? What was its difference from the other viaducts?

The other viaducts in our project are reinforced concrete viaducts and each of the load bearing beams are constructed



“ Our Southern Approach Viaduct project gave important experiences to the construction sector that entered the bridge construction literature. It became one of the reference projects of bridge construction with its design and construction techniques, especially push-drive and heavy lifting methods, foundation structure and corrosion protection features. “

separately at each span. **In the Southern Approach Viaduct, on the other hand, we made use of the flexibility of steel in its design and construction because of the size of the earthquake loads.** For this reason, its entire superstructure above the foundation, which consists of the abutment and the deck slab, is steel. I**ts deck slab is continuous, single piece and welded along 1.379 meters.**

Its foundation structure in reinforced concrete; due to the soil structure consisting of sand and clay and due to the magnitude of the earthquake loads, **it was constructed with Diaphragm Wall Type Foundation structure** with continuous reinforcement in horizontal, which is implemented in our country for the first time in this project.

It is coated with a special surface protector due to the reasons that its upper structure is steel and it is located in a corrosive atmosphere, that is in marine environment. **It has a surface protection with cold zinc coating material and special paint coating that does not require any maintenance for 35 years. Its geometry was affected by the geography it is located in; the environmental and historical circumstances and its construction became difficult. For this reason, the construction of the viaduct deck slab was made with push-drive method in a section of 1.123 meters and with heavy lifting method in a section of 256 meters.**

The push-drive method used in the project was implemented by pushing upwards a single piece of deck slab structure with an overall length of 1.123 meters, width of 36 meters and weight of 22.500 tons in a radius of 2.000 meters and at a slope of 3,5%, and **it is the first one in the world** with these characteristics.

In addition to the construction works carried out by Nurol Construction, we know that steel construction and steel deck slab drive works are performed by Nurol Steel, one of our group companies. A Turkey record was broken as of July 2015 by placing the last deck slab. Would you please mention about this?

As I mentioned just above, construction of the viaduct deck slab was made by applying the heavy lifting method in a section of 256 meters consisting of 2 small and 2 big parts.

The largest of these parts is 124 meters long, 36 meters wide and weighs 2.600 tons. This part was constructed on the ground and was lifted to its position at a height of 57 meters. **With these characteristics, a country record was broken as construction technique.** Our Southern Approach Viaduct project gave important experiences to the construction sector that entered the bridge construction literature. **It became one of the reference projects of bridge construction with its design and construction techniques, especially push-drive and heavy lifting methods, foundation structure and corrosion protection features.**

Looking at the project as a whole, which companies are performing the works in progress and in which regions? Are the dates for opening the sections to traffic definite in the future periods?

The section between Gebze-Gemlik has been opened to traffic as of 30 June. The Gemlik-Bursa section is being constructed by Makyol, Bursa-Susurluk section by Göçay, Susurluk-Balıkesir section by Astaldi, Balıkesir-Kırkağaç-Akhisar section by Nurol, Akhisar-Manisa section by Özaltın-Makyol Partnership and Manisa-İzmir section by Özaltın.

Works are being carried out at all sections intensively; Gemlik-Bursa section and the 20-km part between Bornova-Kemalpaşa are planned to be opened to traffic at the end of 2016 and the other sections are planned to be opened in 2019.

What is the total number of personnel presently employed in the project? What was the maximum number? What will this number be approximately when the project is completed?

In line with the July 2016 data, approximately **7.000** personnel are employed in Gebze-Orhangazi-İzmir Motorway (including İzmit Bay Crossing Bridge and Connection Roads) Project. When Phase I and Phase IIA construction stages were being implemented together (taking into account the period when the suspension bridge construction works were also intensive), we can say that approximately 8,000 personnel worked together in November 2015. **We are planning to employ around 10,000 persons in the summer seasons of 2017 and 2018, depending on the pace of the Phase IIB construction works.**

Can we learn the completion ratios of the phases at the present? We know that the section with the highest expectation of income is Phase 1 DİLOVASI – GEMLİK section. What is the revenue projection between the phases?

General completion ratio of the project is around 61%, with Phase I = 100%, Phase 2A = 83%, Phase 2B = 26%.
When the whole motorway is opened for operation, our toll booth projection is 300-350 million US Dollars for Phase 1, 30-40 million US Dollars for Phase 2A and 200-250 million US Dollars for Phase 2B.

Highways had removed all the barriers on motorways and switched from card pass system to fast pass system for the purpose of decreasing the congestion. It is known that quite a few illegal passages are being made on motorways and a serious revenue loss is caused, even though there is a penalty fine. We know that barriers and toll booths are placed on all our motorways in our project. How did you make the Highways accept this different practice?



If it were not for the barriers, 70% of the bridge revenues would be uncollectable, as we mentioned above. Also, since we are not in the scope of the existing legislation, we are not able to apply the requirement to pay the fines during the sale or inspection of the vehicles, as KGM does. KGM analyzed these circumstances and made the right decision about the necessity of the barriers.

One of the largest and most sophisticated toll booth areas was installed by Aselsan for İzmit Bay Crossing Bridge. An Integrated Pass System was developed for this project that accepts OGS, HGS, credit card and cash. Also, it will be possible in the system to check the balance for electronic payments such as OGS and HGS instantly to see whether the users' balances are adequate for passage. Do the drivers react adversely to the fact that a different system is being applied than the other motorways? Do you think this will change in time?

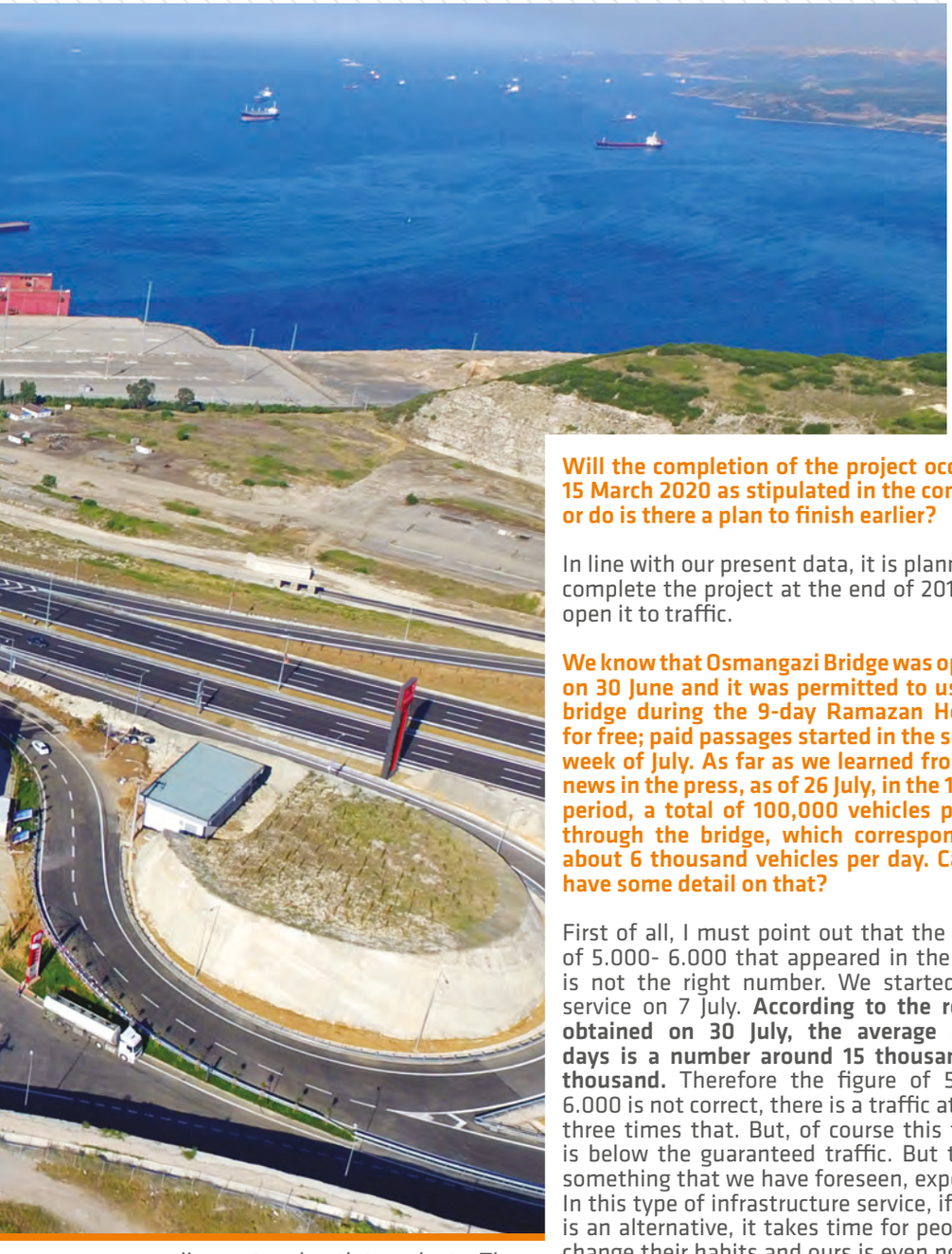
As you have pointed out, we installed a completely different system at both the bridge and the motorway toll booths, even though the name remains the same. This way, we gained the ability to control a great majority of illegal passaged and to make the collections.

Also, by detecting all problems such as wrong tag, defective tag, wrong vehicle class or insufficient balance instantly, which are not detected presently, we prevented the persons getting in a punishable situation without knowing. However, this requires the persons with problems to stop in front of the toll booths and pay cash. Even though we prevent the persons from paying 10 times fines due to reasons they are not aware of with the developed system, they express their displeasure because they are directed to pay cash. In reality, we prevent the persons from being aggrieved. If we had not taken the problems under control in this manner they would have had to pay the passing fare and 10 times fine; 11 times payment in total, we prevented this. We have difficulty in explaining this important detail. However, as the persons rectify the detected problems, both sides will begin to use the system without any problem.

Can we have some information about OKSİJEN SHOPINN areas in Phase 1? It is mentioned that big brands will provide service in these areas. How was this concept generated?

As I have pointed above, one of our established companies, OİB (Otoyol Operation Maintenance), is carrying out these activities. There will be a total of 33 shopping, resting and recreation areas; 16 of them will be in İstanbul-İzmir direction and in 17 İzmir-İstanbul direction. All of them are being designed, constructed, rented and operated by the consortium. These facilities are managed and inspected from one center; 5 of them are in operation, 6 of them were designed and their construction started, remaining 22 are at the design stage.

Project are being produced that will enable the brands to reach it customers with their own values, colors and identities including



season, discount and outlet products. These are not locations where needs are satisfied and left. They are locations to be visited and seen, to have shopping experience on the new road, to pass time. Motorway Shopping-Resting-Recreation areas will address all income groups in a very wide range. We will see many shops from restaurants to coffee houses and big market chains. From ready-made wear brands to some new entries to Turkey; we will see them for the first time on this route. The first two of these, Gebze Oksijen AVM and Orhangazi AVM have been commissioned. **Also, there is a Museum in Gebze Oksijen AVM that presents the technological and histroical details of the Motorway and Bay Bridge, which is unique in Turkey, along with an exhibition area.**

Our purpose is to be able to present our people with smart/safe travels that provide saving in time and fuel, gives the opportunity of entertainment, profitable shopping and food, which give them the opportunity to access on the road what they experience/like in the city.

Will the completion of the project occur on 15 March 2020 as stipulated in the contract, or do is there a plan to finish earlier?

In line with our present data, it is planned to complete the project at the end of 2019 and open it to traffic.

We know that Osmangazi Bridge was opened on 30 June and it was permitted to use the bridge during the 9-day Ramazan Holiday for free; paid passages started in the second week of July. As far as we learned from the news in the press, as of 26 July, in the 15-day period, a total of 100,000 vehicles passed through the bridge, which corresponds to about 6 thousand vehicles per day. Can we have some detail on that?

First of all, I must point out that the figure of 5.000- 6.000 that appeared in the press is not the right number. We started paid service on 7 July. **According to the results obtained on 30 July, the average of 23 days is a number around 15 thousand, 16 thousand.** Therefore the figure of 5.000-6.000 is not correct, there is a traffic at least three times that. But, of course this traffic is below the guaranteed traffic. But this is something that we have foreseen, expected. In this type of infrastructure service, if there is an alternative, it takes time for people to change their habits and ours is even not one month old. Even in this period of 20 days we can see the rising trend in the traffic in these 20 days.

People change their habits, they test, after testing if they get satisfaction they tell their friends, people learn. This has been always like this. After the opening of Bosphorus Bridges, for example Fatih Sultan Mehmet Bridge, the number of vehicles passing thorough the bridges was quite low. Even there were criticizing articles that asked, why did we need this bridge?

Of course there are also other habits. Such as adopting the use of a certain route. These all will take time. As I said, this is a situation we had expected. The second one is that only 53 kilometers of a 400-kilometer motorway is in service today, the section up to Gemlik.

Therefore, when the subsequent sections are completed and put into service, the traffic will become more attractive. Our goal is to connect the section between Gemlik-Bursa at the end of the year. For example, when we finish it at the end of the year, it will also make that road more usable. **A person living in Bursa will be able to go to the Sabiha Gökçen airport in 45 minutes.** Of course, these are extraordinary outcomes. Therefore, the numbers being around 15-16 thousand today, earlier than one month, is an expected situation. In the projections we had foreign firms make for us, the number at the opening was 13,500 vehicles. It is seen that it is above the first projection and it will rise quickly.

As for the government guarantee; giving a guarantee for a traffic number is indispensible for build-operate-transfer projects. It is impossible to finance these projects, to find financing model for these projects. Revenue must be known. It is not possible to get loans over an uncertain revenue, to develop a financial model with the banks. **Therefore a minimum passage guarantee is given to all build-operate-transfer projects in Turkey and in the world.** Or, some of them have government buying guarantee. For example, as in power plants.

To reach almost half of the guaranteed traffic in only 20 days is a great success for a BOT project. You know that, the targets to reach the given guarantees in BOT projects vary between 7 and 10 years. As a consequence of our government's contributions to lower the bridge fares, the indicated traffic figures were reached in one month.

Are you preparing a documentary film/book or similar documents that will cover the technological and historical process of this great project since its beginning?

In the construction process of Osmangazi Bridge, its video was recorded and compiled to document the progress of this structure. In addition, documentary works are under way related with the history of the whole project.



We thank the CEO of Otoyol Inc. for the enlightening information he provided.

Reportage: Meral SARI CEYLAN

INTERNATIONAL ALGERIA

nurol CONSTRUCTION and TRADING CO. INC.

Regional Manager: Nurettin DEMİR



Traffic jam and low standards of the current public road (RN25) between the cities of Tizi Ouzou and Bouıra causes difficulties for transportation. A 48 km. highway construction which is alternative to the RN25 public road has been given to the partnership of **Ozgun-Nurol-Engoa (GROUPEMENT O.N.E.)** by the Algerian Directorate of Highways (Agence National Des Autoroutes) with a 538 million euro valued agreement signed on 12.02.2014.

The region is under the effect of Mediterranean rainy climate conditions and geographic features are mostly steep. Project and excavation works started partially in May 2014 and it gained acceleration with the start of viaduct and tunnel constructions in May 2015.

The 48 km. long project, an important linking road on the East-West highway, has been planned as 2*3. **There are 9 crossroads, 15 underpasses and overpasses on the route. In addition, 21 viaducts (10,5 km) are being constructed; 10 of them (3 km) planned with precast beam and 11 of them (7, 5 km) planned as balanced cantilever viaduct.** The Djebahıa viaduct which is totally 1773 m long -567 m. planned with precast beam and 1206 m planned as balanced cantilever- in the region of Djebahıa will be the longest viaduct of Algeria. The spans on the balanced cantilever viaducts are almost 150 m and on the highway there are also 2 tunnels 1,57 km length in total. The tunnel section is nearly 180 m^2 as planed 2*3. The project is important as the first highway to be constructed by Nurol and Ozgun companies in Algeria and 19% of the project has been completed.

MAIN CONSTRUCTION QUANTITIES WITHIN THE PROJECT

24.9 million m^3 route excavations
7,5 million m^3 route fill
1,3 million m^3 concrete
130.000 tonnes reinforcing bar
800.000 tonnes cement
3,5 million tonnes aggregate
122.000 meter bored excavations
2.200 precast beams
10.000 tonnes steel rope
45.000 tonnes bituminous material
970.000 tonnes hot mixture
1,5 million tonnes base

PTO TIZI-OUZOU HIGHWAY

Project Manager: Taner UZDİL











ALGERIA

BOUKHROUFA DAM

Project Manager: Cumhur Tufan BOZ



The Boukhroufa Dam is located at the eastern part of Algeria, 20 km. south of the city of El Tarf near the border of Tunisia. **The dam with the storage capacity of 125 million m^3 will meet the requirements of the region for the potable water and for the irrigation of the agricultural lands.**

The dam body shall have a crest length of 880 m and a height of 90 m above the foundation. The dam embankment consists of a total earth-moving of 7.000.000 m. The project includes a diversion gallery of 280 m length, 900 m injection galleries, 80.000 m^3 concrete and 30.000 m drilling for the grout curtain. Construction works proceed at the present for completion of the diversion gallery and the appurtenant structures in order to implement the river diversion latest in January 2017, which is the milestone required for commencement of the dam fill. In this respect, the upstream cofferdam has been completed, the diversion gallery and the water intake structure have proceeded significantly. Furthermore, the rock quarry operation is in progress with blastings for preparation of the rock material for the dam embankment.



Capital City	: Algeria
Official Language	: Arabic
Governance	: Republic
Surface Area	: 2.381.741 km^2
Population	:34.895.000
Currency	: Algerian Dinar







DOUERA DAM

The Douera Dam, located near Douera district and 27 km southern west of Algiers, the capital city, is the first project having been realized in Algeria by NUROL. The Douera Dam shall provide potable water for the Alger city as well as irrigation water to the farm lands (17.200 Ha) in the Mitidja plain. **The Dam was totally completed including the works of the 2 years warranty period that the final acceptance was performed on 5 October 2016.**

The inauguration of the Dam was performed on 4 July 2016 by his excellency Abdulmalek SELLAL, Prime Minister of Algeria, and the reservoir impounding had been initiated since then.





SOUK TLETA DAM

The Souk Tleta Dam, the second project of NUROL in Algeria, has a 100 million m^3 water-retention capacity, which will be used for potable water supply to Boumerdes and Algiers cities of the Country. The Dam is a zoned earth fill embankment with a total quantity of 3.000.000 m^3 earth-moving including the side embankment. The project consists of two 9 m diameter diversion tunnels of each 375 m length, a scheme of injection galleries totally 750 m length, 105.000 m^3 concrete and 50.000 m drilling for the grout curtain.

The project has remained suspended for a long time owing to the expropriation problems in the lake area and because of the incomplete relocation of the RN25 highway passing through the construction site of the dam. **The project works have been resumed since 17 July 2016 upon resolution of the expropriation problems and the re-settlement issues.** Construction works are performed at present at an accelerated pace with the aim at realization of the river diversion within the first half of the year 2017. Besides, works are performed for completion of the side embankment of 200.000 m^3 volume within the year 2016.

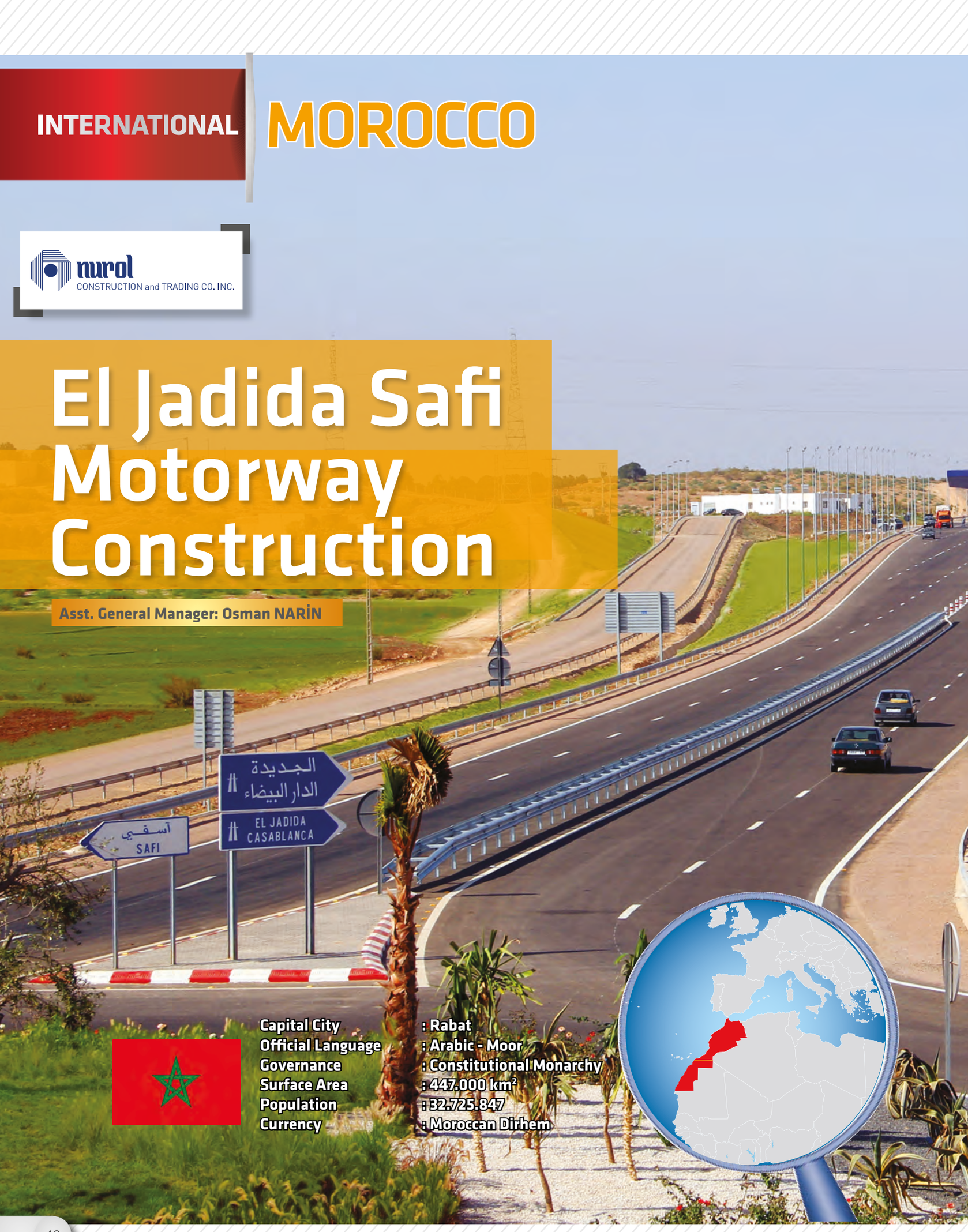
Project Manager: Kamil İlhami GÜMÜŞDAĞ

MOROCCO

nurol
CONSTRUCTION and TRADING CO. INC.

El Jadida Safi Motorway Construction

Asst. General Manager: Osman NARİN



Capital City	: Rabat
Official Language	: Arabic - Moor
Governance	: Constitutional Monarchy
Surface Area	: 447.000 km²
Population	: 32.725.847
Currency	: Moroccan Dirhem







El Jadida-Safi Motorway is a two-lane and 142,1 km length toll road which takes place on Atlantic Ocean Coast and contracted out by Morocco Motorways Company (Autoroutes de Maroc-ADM) for the purpose of contributing tourism, industry and social development of the region.

Under two separate contracts which are signed by ADM and our company on 2012, 3rd parcel "Sidi Smail - Oualidia" and 4th parcel "Oualidia - Safi" sections that totals 82.1 km were constructed.

In total; 7.1 million m^3 excavation, 8.6 million m^3 filling, 1.8 million m^3 base/sub-grade, 860 thousand tons hot mix asphalt and 230 thousand m^3 concrete, 10 thousand tons ironwork including 2 viaducts, 30 vehicle overpasses, 2 pedestrian overpasses, 16 vehicle underpasses, 16 pedestrian underpasses, 57 km drainage pipeline, 111 km drainage channel were carried out in the scope of work for the projects.

Provisional acceptance has been done as of 10th March 2016 and highway was opened to traffic on 4th August 2016.



UAE



Nurol LLC General Manager: Ali Mirza ÖZBEK



Capital	: Abu Dhabi
Official Language	: Arabic
Management	: Constitutional Monarchy
Surface	: 83.600 km^2
Population	: 8.264.070
Currency	: Arab Emirates Dirham





In spite of negative effect of low oil prices in the United Arab Emirates, there is slight movement in construction market with the positive effects of Expo 2020 development where we are prioritizing our project development activities for the potential trustworthy contracts. Nurol LLC with it's over 1.500 highly qualified human and work resources, continue its organizational development over 13 years with success.

NUROL LLC PROJECTS

nurol LLC.

INTERNATIONAL UAE



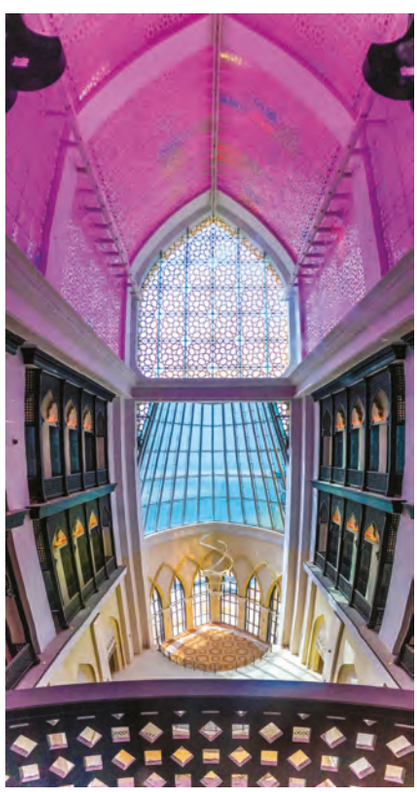


'Bab Al Qasr' Hotel and Serviced Apartments Project, which means the 'Gate of Palace' in Arabic is located at the most prestigious and prime location of Abu Dhabi, just opposite of the Emirates Palace Hotel and Jumeirah Etihad Towers which may also be considered one of the landmark buildings of Abu Dhabi with its unique Moroccan Stylish design.

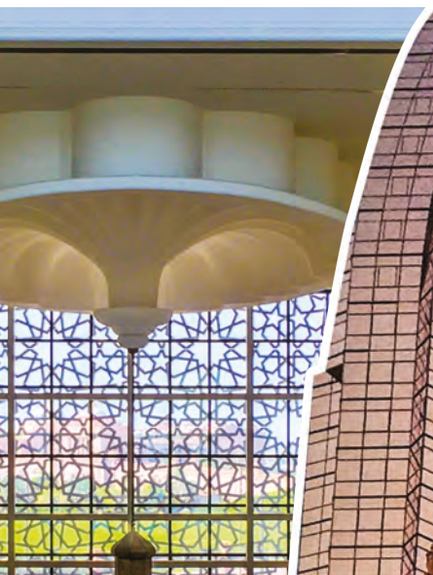
With its 164.000m^2 total construction area, this 36 storey twin towers building accommodates 265 serviced apartments and 412 hotel rooms constructed over 4 common basement and 5 common podium floors.

On 31st July 2016, the project has successfully handed over to M/s. Emirates and Morocco Trading & General Investment Company (EMROC) and its Operator Millennium Group, whereby M/s. Surbana was Design and Supervision Consultant and M/s. Jacobs International Project Management Company for and on behalf of the Employer.







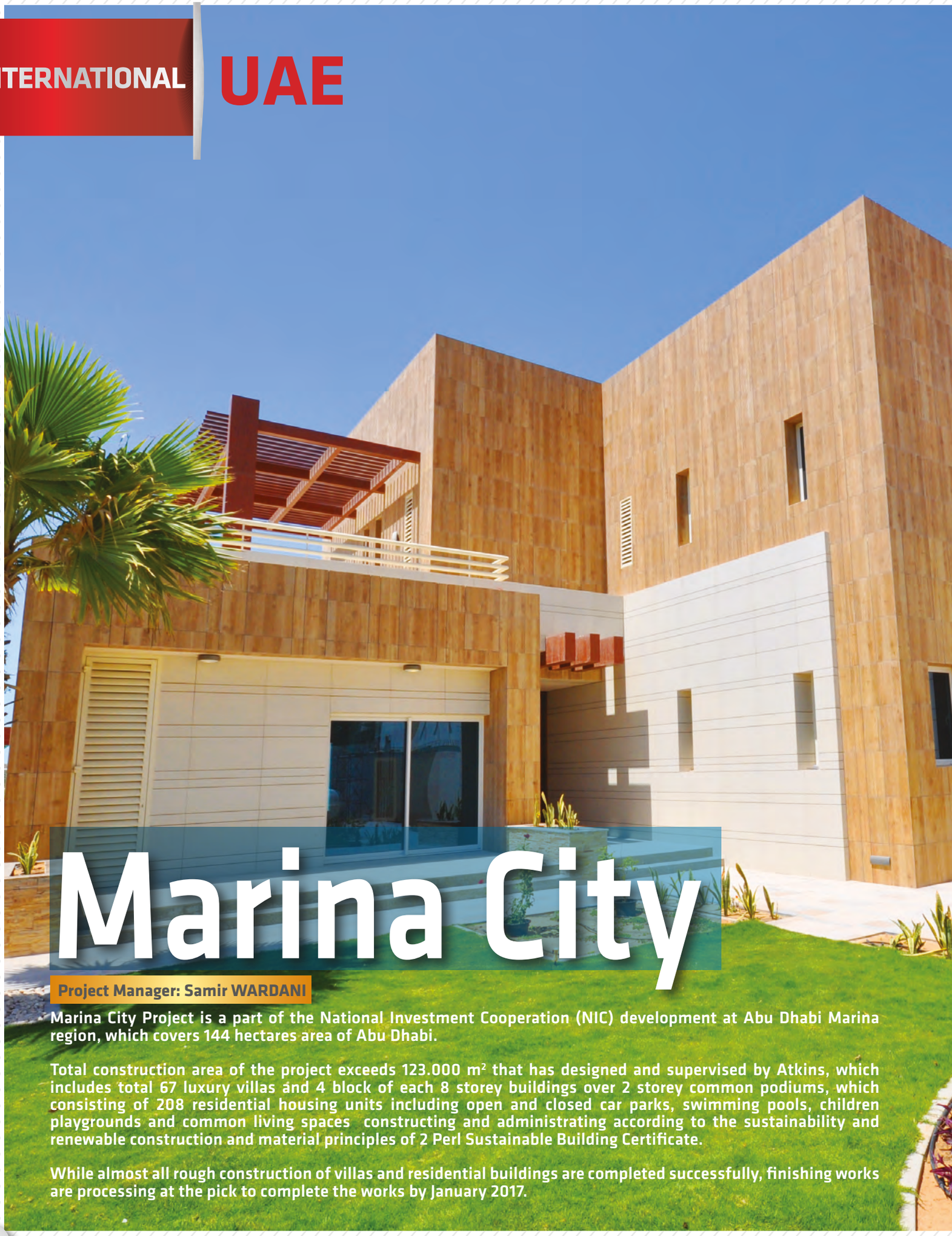




BAB AL QASR

Project Manager: Ömer KURT

nurol LLC.



Marina City

Project Manager: Samir WARDANI

Marina City Project is a part of the National Investment Cooperation (NIC) development at Abu Dhabi Marina region, which covers 144 hectares area of Abu Dhabi.

Total construction area of the project exceeds 123.000 m^2 that has designed and supervised by Atkins, which includes total 67 luxury villas and 4 block of each 8 storey buildings over 2 storey common podiums, which consisting of 208 residential housing units including open and closed car parks, swimming pools, children playgrounds and common living spaces constructing and administrating according to the sustainability and renewable construction and material principles of 2 Perl Sustainable Building Certificate.

While almost all rough construction of villas and residential buildings are completed successfully, finishing works are processing at the pick to complete the works by January 2017.







nurol LLC.



Rawdhat Residential Buildings Project

Project Manager: Omer Ali Al KHODARY

Rawdhat, Abu Dhabi project is consisting of construction, completion and maintenance of G+5 and G+4 storey, two residential buildings, over two storey common underground car park structure for H.H. Dr. Sheikh Sultan Bin Khalifa Bin Zayed Al Nahyan.

The total construction area is exceeds 25.480 m^2 that has designed and supervised by Dar Al Khaleej as high-end, full automated and sustainable buildings and currently in process of construction in accordance with 1Perl Sustainable Building Certification.

Meanwhile, we are in direct discussion with the Client for two buildings adjacent to our sites, which are currently at the final design stage and that will be considered as an additional to our existing , which one of the building successfully completed by 31st August 2016 and other one is process of handing over.





nurol LLC.



Shams Canals

Project Manager: Akram HİJAZİ

nurol LLC.





Shams Canals and Marine Project is part of ALDAR Group`s development at Al Reem Island, Abu Dhabi where Hyder is a Design and Supervision Consultant and M/s. Jacobs International is a Project Management Company for and on behalf of the Employer.

The project is consisting 108m Open Sea Water Canal, 1048m Closed Sea Water Canal, 731m long Sandy Beach, 87m L-Shaped Sea Wall, 2 number Weirs), 4.871 m Handrail with Coping and Pumping Station, and expected to be completed by end of 2016.



Marina Mall Extension Project

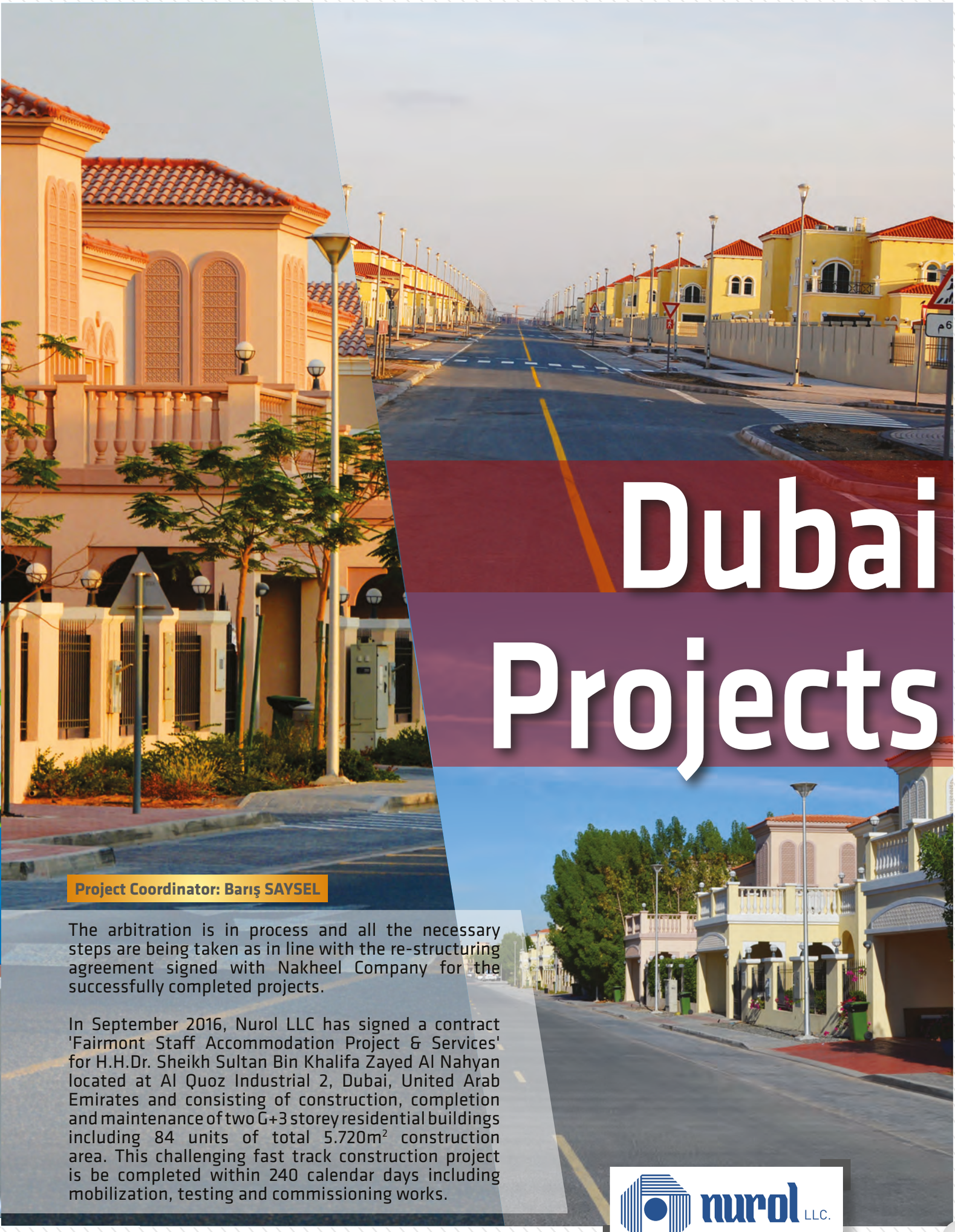
(Utilities Diversion Package)

This is the first and most important stage of Marina Mall Extension works designed and supervised by Khatib&Alami, which is consisting utilities diversion works and planning to complete and hand over to its Client NIC by end of 2016.

Project Manager: Samir WARDANI







Dubai Projects

Project Coordinator: Barış SAYSEL

The arbitration is in process and all the necessary steps are being taken as in line with the re-structuring agreement signed with Nakheel Company for the successfully completed projects.

In September 2016, Nurol LLC has signed a contract 'Fairmont Staff Accommodation Project & Services' for H.H.Dr. Sheikh Sultan Bin Khalifa Zayed Al Nahyan located at Al Quoz Industrial 2, Dubai, United Arab Emirates and consisting of construction, completion and maintenance of two G+3 storey residential buildings including 84 units of total 5.720m^2 construction area. This challenging fast track construction project is be completed within 240 calendar days including mobilization, testing and commissioning works.

nurol LLC.

INTERVIEW



Nurol Technologies Inc.

Cem SAPMAZ

General Manager

> “ Our main purpose is being the number one company in the field. ”

I have read your CV when you took office at Nurol. The most prominent information I remember is your being the top student both in high school, then in the department of Mechanical Engineering and the Faculty. What do you owe your success to? I want to begin our interview with some information about your educational life.

I have always defended that course should be learned during the lesson not by doing homework as I always tell my son. I think this a discipline. When you practice this discipline, you can strengthen your course just with a single repetition and have much more time for your social life.

I believe that social life, attending to common and humane initiatives contributes to educational life. Yes, I was a student on the first place in many times during my school life. When I look back, I was a student with a full attendance both in my high school years and in my university education. However, I also spared time for my social life, so no one can call me as a ‘nerd’. In addition, I contributed to my education expenses by giving lectures and preparing notes from 3rd class of the high school to my graduation from university.

As I see in your CV, you have tendency to learn languages. Your English and Spanish are advanced, German and Korean are basic level. What leaded you to learn Spanish and Korean?

My family always provided me to take language courses when I was in primary school. They encourage me to speak English with my elders during both the school days and in summertime. Since then I accepted learning language as a mission. Spanish and Korean were required in my business life; I was charged with motor design within the project of the TP400 huge cargo plane by TEI TUSAŞ Motor Industry between the years of 2002 - 2006 in Spain. I lived 3 years in Alcala de Henares, a Spanish small town 20 km. far from Madrid. We had some difficulties regarding to residence permit on the first days as we could not find anyone who speaks English.

After a 6-month with private tutors, I began to speak Spanish both in my social and business life with my Spanish colleagues.

Korean was also needed for my business life. An aviation design contract was signed with the company of Korean Aerospace Industries (KAI). KAI

was located in a small district named Sacheon City in the South with 25.000 residents. A small company was established to meet the needs of service installation, all engineering works, settlement and insurance and I was appointed as the Director General. Unlike Spain, no one was speaking English in Korea except foreign people. (except the cities of Seulé Busan) So I learned Korean to meet the requirements of the company and maintain my life.

You held office in different companies proceeding step by step in your previous business life. Could you give information about these experiences?

After graduation, I worked for a while as a research assistant at the University. I had a plan regarding to do master in USA, but the Engineering Faculty passed under the administration of another University. So I could not realized my master plan and had to leave from my position as research assistant.

Then I worked one year on manufacture of aircraft engine at the Air Supply and Maintenance Center Command in a prominent city in aviation sector. I also conducted some projects both in USA and Turkey to gain experience. After a short term military service, I worked on process and link establishment of the new developed motor within the project of motor development of cargo trucks at the General Directorate of Manufacturing Engineering, at Ford İnönü premises.

Besides, I began to work with TEI Tusaş Motor Industry in aviation sector and I conducted the design project of the first small national motor of Turkey within the TP400 1100 hp motor by R&D / UR-GE (Support for Development of International Competition). Then I had duty in some Defence Industry aviation projects under ATARD which I am a shareholder of. Finally, in 2013 I began to work at Nurol.

You are married and started a family although this busy schedule. Would you give information about your family?

Actually, to start a family for us wouldn't have been that easy. For example, we had difficulties to choose the wedding date due to my workload. I could not go home for 4 months when I was working on the project of motor development at Ford.

My hour of work per month was 150-200 hours in total. So when you ask to my wife, she can say I am a 'workaholic'. She is also a mechanical engineer and is very tolerant and patient.
I am really lucky to have her as I always feel her support.

We try to use opportunities in our 15-year old marriage when we have time for ourselves. We have a son who is 12 years old and we try to bring up him as a conscious person who questions, researches the truth and respects national values. We make detailed plans with my wife for his future.

You have a tremendous responsibility in a prominent company under Nurol Group's in Defence Industry, especially in this hard counter-terrorism period. What were your emotions at the beginning? Was Nurol Technology as you expected?

I knew that there are very few companies working in defence industry as I worked for years in different institutions in this industry and knew very well both administration part and work fields.

As a professional who had the opportunity to join the brand new projects and to see the first products in the past I accepted the proposal to start in another challenging job without even hesitating a single moment.

I guess I am a hard mission person, I always choose the hard way instead of the easy one. We reached today as a team, in cooperation with personnel of Nurol Technology with our working principle, sense of belonging and determination to succeed.



"I guess I am a hard mission person, I always choose the hard way instead of the easy one. We reached today as a team, in cooperation with personnel of Nurol Technology with our working principle, sense of belonging and determination to succeed. ,,



Although Nurol Technology was a company having potential to go further especialy in National Projects/Export and having made huge investments, it could have not reached to a desired position. Now, at that point, we succeeded to make a worldwide impression and gained the trust of law enforcement officers, service commands and decision making mechanisms.

I can say that this could not been realized without the cooperation of my colleagues and especially the support of our bosses. However, our main purpose is being the number one company in the field so we keep on working hard for this purpose. In the forthcoming days, we expect to give good news about the investments of new and big projects.

"Our expected endorsement increased 6 times compared to 2014 in which I became the General Manager."

What are your personal contributions to the company's existing capabilities? What do you think has changed after you?

We gained the consciousness of being a family working together for common purposes, working discipline, following deadlines, and overcoming difficulties. We gave importance to all kinds of opinions in the meetings and we encouraged the working groups for this to able to conduct many projects in the same time and find solutions for the problems in cooperation. Upon this basis, we became a company working on new productions and projects; enhancing quality on the current productions, getting involved to new projects on armoured cabins and construction equipment in addition to personal ballistic protection equipment.

We increased our capacity 8 times with the same team and foundation. As a result, the company could made profits and investments with these profits in a short time. **Our expected endorsement increased 6 times compared to 2014 in which I became the General Manager.** Our profit increased evenly as well. Now we are a company making profit, standing behind its productions, giving importance in cooperation, sharing with other companies, most importantly a self-sufficient company.

You are among the youngest General Managers in Nurol. Are you satisfied with your position? What is your target in short and long term?

We need to work harder and to develop more strategies in order to be become a leader in this field in the coming 3-4 years. However, I am against the same and monotonous working mentality due to my working discipline and resolution. So we continue our way resolutely to be a company meeting the needs in the sector, appeal to customers with all alternatives of the productions and be an innovator in this field. We are a leading firm in the field of Land, Air, Sea platforms and personal ballistic protection solutions. However we still have a long way to get over.

My target in business life is raising our company to the top and turn it into a role model in terms of both endorsement –profit and production. In addition, we wish to form a partnership especially in the Arabian Peninsula for technology transfer. Accordingly, we have aims of establishing a facility in Europe, developing projects by getting involved directly to tenders in Europe and finally creating a company exporting productions in the region.

In the long term, we also aim to work in the direction of the sense of belonging and principles of Nurol, developing projects, establishing companies and being the best in the field.

How do you define yourself?

I can say that I am a disciplined, hardworking, sharing, human driven, result oriented, gogetter, instructive, ambitious person and I highly give importance to human.

What are your hobbies? Do you have time for them or suspend till retirement?

I cannot have spare time for my hobbies for the last 3 years, so I suspended some issues related to social and educational life for a while. However, I think that I need to plan some of them soon and conduct in parallel with my business life. I like to follow basketball in terms of sportive activities.

I am a fan of Fenerbahçe and I try to go to basketball matches as much as I can do. I also attended the last Final Four but we could not win, hopefully next year. **I do give importance to sports and play squash once a week.** I wake up at 5.30 in every morning and morning sport is a must for me. I walk outside or go to gym. **I also do kinesis in advanced level once a week.** In summer, we like to ride bike together with my family. I like travelling and experiencing

different cultures. However, I suspended these plans for a while. I would like to see South America.

I like to research and learn the civilizations before the B.C, their lifestyle and cultural wealth. They have their own story, distinct cultures and society. **In addition, my hometown is very nice and I have a small field inherited from my grandfather.** I plan to build a house with garden on that field and write my experiences in its garden.

Certainly, it may take many years. I need time to plan the architecture of the house. If we would have another chance for another interview and if I would realize my dream I hope we will do our next interview in this house.

You worked in many prominent local or foreign projects. We do not have enough space here for all of your memories but could you share a few of them?

For 6 months, we were testing working performance of the jet engine produced by our own facilities during conducting the project of the first national and small engine at TEI. We were planning the tests according to data taken from Meteorology.

One night at almost 24.00, we tested the engine at -22 degree to observe its condition in the coldest weather. However, as the testing area was outdoors and as the ground was concrete we did not think the effect on us. We worked till 3.00 am and then we went home.

We could not feel our hands and I woke up with a terrible foot ache a short time after I slept. I could not stand even. We needed to finish the work with my three colleagues and we finished although we did not feel good ourselves. Finally, at the time of display of the first national aero engine manufactured in Turkey in the fair, we forgot all difficulties and pains we had during manufacturing process.



As another experience, we went to a nice fish restaurant for celebration after we had signed a business agreement with KAI in Korea. It was my first Far East experience and I had heard that I needed to be careful about the foods. We sat around a floor table but we could stretch our legs. We were asked how we would like to eat our fish. We said that we can also take what they would order.

Then the waiter came with a huge boiler and four fishes. After keeping a fish 30 seconds in boiling water, he put it on my dish. Korean authorities began to eat their fishes. **However the fish was still alive and I was just looking at the fish on my dish.** Then they noticed the situation and ordered a grilled fish for me.

So I tested personally the requirement of being careful about the foods in Korea. I think I never say again 'I take what you eat' especially for foods. They can also find Kokoreç weird as I think the same for their food due to cultural differences but I think this is a very good example of cultural and geographical differences as well.

Do you have any last remarks for our readers?

Nowadays, our country has been going through a difficult period. I hope we will overcome this trauma at once it will finish soon and we will have peaceful, restful and happy days in which this terror troubles will end forever. I hope that we will become a society respecting all kinds of opinions and beliefs, living in unity and solidarity, working honestly with the sense of belonging and teaching these values to others. Finally, I want to pay my respects to my bosses and thank for their support and contributions. I want to thank to our readers sparing time to read this interview as well.

Many thanks...

We also thank to our Director General for these valuable information...

Reportage: Meral SARI CEYLAN

New agreement for EJDER YALCIN 4x4 ACV from Nurol Makina



Nurol Makina, as an armored vehicle OEM, signed another deal by the Undersecretariat of Defense Industry (UDI) of Turkish MOD for the supply of EJDER YALCIN 4x4 armored combat vehicles (ACVs). The deal is for the supply of a newer version of the EJDER YALCIN 4x4 ACV that was first publicized during IDEF'15 Fair and involves 180 vehicles. Being best ACV in his class, EJDER YALCIN 4x4 draws significant attention from the armies and security forces of allied countries as well and Nurol conducts a strong marketing campaign in various countries.



EJDER YALÇIN 4X4

nurol MAKİNA

SPECIAL NEWS

EJDER OPERATION THAT REPELLED THE COUP



THEY TOOK OVER AS SUCH When people blocked the team assuming the Ejders in camouflage as soldiers, police logos are sticked. The coup plotters at the Gendarmerie General Command surrenderred as such.

The resistance against the tanks of the coup plotters was made available by the Special Operations forces secretly receiving the Ejders, which would be delivered at the end of the month.

Was being tested At the evening of 15th July, when the jets were flying over Ankara the situation was discussed in detail at Special Operations Directorate in Golbasi. They didn't have any armoured vehicles in hand against the tanks. At that point, Nurol's armoured Ejders, manufactured in Sincan came to mind. Ten vehicles were at the test stage. They would have been delivered at the end of the month.

Protected Bestepe The director promptly called Nurol and received approval. A Special Operations team of 20 persons went to Sincan and received Ejders. When the team was on the way Golbasi was bombed. As of that moment Ejder team had been in the front line of the resistance. An Ejder which had an anti aircraft weapon on top of it repelled the helicopter shooting to Bestepe.

Police logo was sticked

By the 16th July morning the coup attempt was mostly prevented and the coup plotters at the Gendarmerie General Command surrendered in company with an Ejder. At the side of Ejder a police logo was sticked to ensure that people would not assume the vehicles in Ankara streets as the coup plotters'.



GHOST TEAM RECEIVED 10 EJDERS FROM THE PRODUCTION LINE

VATAN reached the details of Ejder Team's secret mission who came out from The Special Operations building in Ankara, Golbasi during the coup attempt...

On the evening of 15th July, upon the jets low flying over Ankara the situation was discussed in detail at Special Operations Directorate in Golbasi.

While planning a resistance against the coup attempt the director said that they cannot confront the tanks with the patrol cars and he brought forward the Ejders, armoured vehicles manufactured by Nurol in the Sincan factory. Due to the agreement, 60 of the vehicles had already been delivered to be send to East Anatolia. The remaining 10 vehicles was planned to be sent there at the end of the month, after the testing procedures. However, the truth was revealed soon afterwards.

Ejder Team took their place, at the points police forces confront the military forces in the frontline.

It was found out that one of the Ejders had prevented the helicopter at Bestepe to fire into the crowd.

Dynamic, quick, sophisticated

Ejder Yalcin 4x4 is produced to meet the needs of security forces for operations in urban and rural areas. It is a dynamic and quick, modular, sophisticated combat vehicle with high ballistic armour and mine protection. It has the largest internal volume in its class and a capacity of carrying useful load up to 4 tons.

"Appreciation messages full of complimentaries from top state officials are received"

Completely developed by local engineers of Nurol Makina and being a Turkish production our EJDER YALCIN 4x4 vehicles were distributed to the crucial points by the security forces and this played an important role in preventing the coup attempt. The capability of our vehicles and our standing beside the government has been honoured by the top state officials.

**The news item is quoted from Vatan Newspaper dated 28th July 2016.*



NUROL MAKİNA
chose ASELSAN SARP II for the weapon system of
EJDER YALCIN 4x4 ZMA



Nurol Makina, chose SARP II of ASELSAN as for the weapon turret of the recent contract with the Undersecretariat of Defense Industry.

ASELSAN I.C., will work as a subcontractor of Nurol Makina in this program.



NUROL MAKİNA expands its final assembly area

Nurol Makina, one of the ventures of Nurol Holding in the defense industry, has started to expand the final assembly area within its high quality manufacturing facility. The expansion aims to double the final assembly area, which becomes a necessity due to high demand to Nurol Makina products from local and international customers.

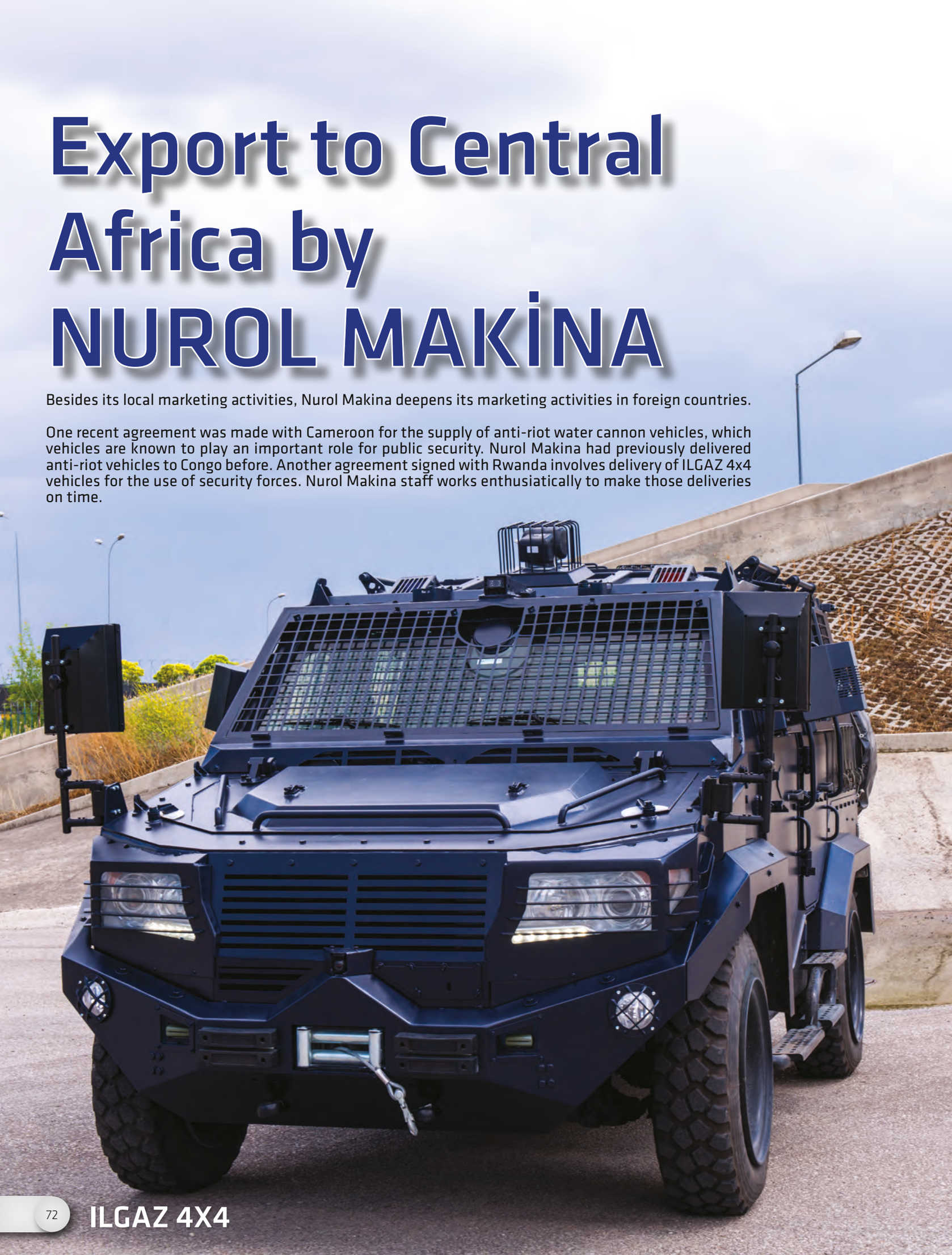
Maintenance Contract was signed between NUROL MAKİNA and the General Command of Gendarmerie

A 'Maintenance Contract' was signed between Nurol Makina and the General Command of Gendarmerie for the Nurol Makina vehicles. Within the contract, the vehicles on the inventory list of the General Commandership will be maintained by expert after sales support staff and service network of Nurol Makina in a shorter time and more efficient way so as to improve operation readiness of the vehicles.

Export to Central Africa by NUROL MAKİNA

Besides its local marketing activities, Nurol Makina deepens its marketing activities in foreign countries.

One recent agreement was made with Cameroon for the supply of anti-riot water cannon vehicles, which vehicles are known to play an important role for public security. Nurol Makina had previously delivered anti-riot vehicles to Congo before. Another agreement signed with Rwanda involves delivery of ILGAZ 4x4 vehicles for the use of security forces. Nurol Makina staff works enthusiatically to make those deliveries on time.



ILGAZ 4X4

Nurol Makina attended Efes military exercise



With its new vehicles, Nurol Makina attended the EFES 2016 International military exercise under the guidance of Aegean Army Commandership by TAF. In the course of exercise, EJDER YALCIN 4x4 ACV, EJDER YALCIN ETİ manufactured jointly with ASELSAN, Mine Detection and Clearance Vehicle and EJDER KUNTER 6x6 Armored Ambulance Vehicle were on display in the exhibition area.

Vehicles of Nurol Makina drew considerable interest by TAF, local and foreign participants during the exhibition. Vehicles of Nurol Makina were also appreciated by President Erdogan and the accompanying delegation.



EJDER YALCIN attended the fairs in Slovakia and Romania

EJDER YALCIN 4x4, a unique design of Nurol Makina, was on display in IDEB'16 fair in Bratislava, Slovakia between 9-12 May as part of joint marketing effort with FNSS. The participation of EJDER YALCIN 4x4 to the fair enabled Slovakian authorities to examine the vehicle in detail including in operational condition. Lieutenant General Peter Gajdos, Minister of National Defense of Slovakia; Major General Ondřej Novosad, Chief of the army of Slovakia; IvanRohal, the General Manager of BAE Systems in Slovakia; and many high ranking government and military officers were amongst the visitors of EJDER YALCIN 4x4 ACV during the fair.

EJDER YALCIN 4x4 ACV also attended the BSDA fair in Bucharest between 18-20 May 2016. EJDER YALCIN 4x4 ACV was one of the most attractive vehicles in the fair and Turkish and Romanian high level authorities visited and honored the booth of Nurol Makina like Mr. Şuay ALPAY, the Deputy Minister of National Defense of Turkey.



VISITS



Orhan AKBAŞ, Director General of TAF Support Foundation and a delegation from ASELSAN visited our facility on 12 January 2016. Parties expressed that EJDER YACLIN 4x4 ACV shall be used as a platform for ASELSAN solutions.



Commander Bekim OSMANİ, Military Attaché of Kosova visited Nurol Makina with Police Attaché of Kosova. In the meeting, the facilities of Nurol Makina and especially 4x4 EJDER YALCIN ACV and EJDER water cannon vehicle were demonstrated.



A briefing about the products and facilities of Nurol Makina was given to Kenya Police Department who visited Nurol Makina. During the factory tour, demonstrations of EJDER YALCIN 4x4 ACV and EJDER water cannon vehicle were made.



Hüseyin AVŞAR, Director of Land Platforms of the Undersecretariat of Defense Industry and the accompanying delegation visited NM. Presentations reagrding Nurol Makina products and capabilities were made during the visit. Besides, test drive of the armored vehicle was realized for the delegation who closely examined Ejder YALCIN 4x4 ACV.



Suay Alpay, Deputy Minister of the Ministry of Defense visited Nurol Makina and a briefing about the products and capabilities was given to him. Then a factory tour was realized and information was given about the different versions of EJDER YALCIN 4x4 vehicle.



Major General İbrahim ABDULJELIL, Head of Logistic of Ethiopian Armed Forces and the accompanying delegation visited NM on 19 April 2016 and presentations about Nurol Makina and Nurol Technology were made to the delegation. A factory tour was also realized with participation of the representatives of the Turkish General Staff. Finally, EJDER YALCIN was introduced and visit was finalized.



Procurement authorities of the Ministry of Interior of Tunus and high authorities of Police and Gendarmerie Departments visited NM in May and June. The factory, Ejder YALCIN 4x4, ILGAZ 4x4, Ejder TOMA 4x4 and Ejder KUNTER 6X4 Ambulance were introduced during the visit. The members of the delegation tested YALCIN 4x4, ILGAZ 4x4 and Ejder TOMA 4x4 and demanded to buy them. Besides, the delegation also visited FNSS and the Nurol Technology.



A delegation of the Ministry of Defense of Slovenia and Colonel Milan KRANJEC, Military Defense Attaché visited NM within the project jointly conducted with ASELSAN. Engineering facilities were presented to the delegation. After exchanging opinions mutually, NM factories were showed around and the program was completed with the practice of Ejder YALCIN 4x4.



The General Directorate of Ordnance Development under the Ministry of National Defense of Hungary, visited NM in company with the authorities of the Ministry of National Defense of Turkey on 10 March 2016. After company presentation, Brigadier General Istvan FILOTAS, National Armaments Director and the accompanying delegation toured the facility. After the practices of the vehicles, visit was finalized with factory tour.



Staff Colonel Müşfig MEMEDOV, Military Attaché and Naval Attaché of Azerbaijan visited Nurol Makina. How Nurol Makina could contribute to further improve defense relations between two brotherly countries, were among the topics discussed during the visit. In the meeting, the facilities and EJDER YALCIN 4x4 ACV were presented.



A delegation consisting of the Supreme Headquarters of Rwanda Defense Forces and the personnel of Staff College visited Nurol Makina on 6 April 2016 within the program of Turkish visits and with coordination of MND. Presentation about the company was made to the delegation and practice of EJDER YALCIN 4x4 ACV was realized within the program.



- Presentation was made for Kuwait Purchasing Commission visited Nurol Makina; AVC and EJDER YALCIN drew considerable interest.

- A delegation from Ivory Coasts under the chairmanship of the Ministry of Interior, visited the facilities of Nurol Makina. Presentation of Nurol Makina, particularly based on EJDER ACV and EJDER 4x4 ACV, was made and both vehicles drew great interest.

- Staff Colonel Ali KORUK, Military Attaché of the TRNC and the accompanying delegation visited Nurol Makina. Issues related to EJDER YALCIN were discussed in the meeting.

- Colonel Dzemal Masinovic, Military Attaché of Bosnia Herzegovina visited Nurol Makina and opinions regarding to sales of EJDER ACV to Cantons, were exchanged.

Nurol Technologies



As of Nurol Technologies Inc. our aim is to design and manufacture lighter, safer and robust armour systems alongside the classic armour systems, through hybrid solutions that only exist in a few countries worlwide with nanosize powder metallurgy advanced technique ceramics and composite materials.

Nurol Technologies Inc. has been successfully manufacturing advanced ballistic resolutions for the defence industry with the classified "NATO Confidential" and "National Confidential" Facility Security Clearance and the "Production Permit" certificates it holds.

Nurol Technologies Inc., from the very first day of its establishment has given utmost importance to research and development studies, created its own technology, increased its fund of knowledge and is capable of analysing the process from raw material to finished product by means of the Quality Laboratory and Test Shooting Polygon equipped with cutting edge technology. During the manufacture process our company does its best to achieve the highest standards in applying Quality Management System. In this scope, our company is accredited with ISO 9000, 14000 and 18000 series certificates.

Our armour systems designed and developed to be implemented successfully at all kinds of platforms such as land, naval and air for personnel and arctitectural protection. The armour solutions used on these platforms are presented to our valuable clients as the most appropriate combination of the threat, weight and cost factors.

With its advanced laboratory potential Nurol Technologies Inc. displays all kinds of sensitivity for product quality, high performance and product reliability, beginning from the raw material input level. **Not only the advanced equipment and test devices in our high tech laboratories developed to be used in quality control, product applications, technical analysis, research and development activities but also the high standard Ballistic Test Shooting Polygon meet the needs of our defense industry.**





nurol
TECHNOLOGIES INC.



To meet the needs of Security General Directorate an agreement has been signed for 180.000 “Ballistic Protective Vest Project” between Undersecretariat for Defense Industries and Nurol Technologies Inc. on 19.09.2016.

NATIONAL



Some of the Nurol Technologies Inc. Projects currently completed or ongoing are given below:

- Presidential Office protection implementation
- T.R. Prime Ministry ballistic protective dais implementation
- MİLGEM 2. Armouring Ship Deckhouse Project
- The armouring project of TCDD luggage van and locomoti ves against the ammunition with kinetic energy and large amounts of mines for protection
- Special Forces Command ballistic protective vest project
- EGM Sikorsky helicopter cockpit base armouring project
- STM –Gendarmerie General Command ballistic vest Project
- Gendarmerie General Command BTR vehicle base armouring Project
- Gendarmerie General Command protective shield project
- Gendarmerie General Command armoured guardroom project
- EGM protective vest project
- EGM Ballistic protective shield project
- EGM shield set project
- EGM armoured guardroom project
- EGM Special Operations Department ballistic shield project
- T.R. Ministry of Interior armoured guardroom project
- T.R. Prime Ministry ballistic vest project
- T.C. Prime Ministry ballistic testudo set project
- EGM-SSM backhoe loader remote controlled armoured heavy construction equipment project
- Air Force Command ballistic vest project
- Naval Forces Command, SAT Command ballistic shield and ballistic vest project
- Ministry of Foreign Affairs vehicle armouring project
- EGM SSM armoured cottage & testudo project
- Saudi Arabia Ground Forces ballistic plates and vest project
- Libya Ministry of Security, ballistic vest project
- Republic of Azerbaijan, ballistic plate and vest project
- Sultanate of Oman ballistic protective vest project
- Republic of Kosovo ballistic protective vest project
- Republic of Colombia ballistic plate project
- Italy-Larimart ballistic protective plates project
- Ukraine, ballistic protectivechest plate project
- Czech Republic Ministry of Defense, ballistic vest project
- 'Protector' military personel carrier vehicle armouring Project of Pakistan-HIT company
- Various çivil vehicle armouring projects
- Governor Offices armoured cabin project
- Provincial Security Directorates armouring projects
- National Ship MİLGEM 3 command control room armouring project
- Heavy construction Equipment, Excavator armouring project
- Ballistic vest projects for banks and airports
- Kongo Ground Forces ballistic vest project
- Poland NFM ballistic ceramic plate export
- Tunusia ballistic plate and vest project
- Greece ballistic vest project

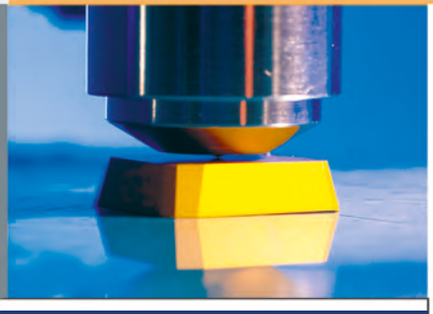
To meet the demand increasing day by day our company restlessly keep on investing for either increasing the current capacity or facilitating the new technologies.

Aiming to bring the highest technological developments to Turkey, Nurol Technologies Inc., follows, enhances and applies material content technologies developed worldwide. Our company has taken place among the leading establishments of both Turkey and the world with its experienced and innovative oriented team.





nurol
TECHNOLOGIES INC.









FNSS' BRAND NEW SABER-25 FIRING QUALIFICATION TESTS

FNSS' Brand New SABER 25mm One Man Turret successfully completes firing qualification tests on FNSS PARS 8x8 Infantry Fighting Vehicle.

SABER is a new generation one - man turret that can be deployed on wheeled and tracked armored vehicles and designed by taking the modern combat conditions and customer demands into consideration. The firepower of the turret consists of a 25mm automatic cannon and 7.62mm machine gun.

The design of the project has been started in November 2013 with the support of TUBİTAK (The Scientific and Technological Research Council of Turkey) and the qualification and the firing tests have been completed in June 2015 after realization of the prototype production.

The long range firing tests of the SABER Turret mounted on FNSS PARS 8x8 vehicle have been conducted on 22 - 26 June in the firing test field of the Ministry of Defense located in Konya Karapınar District. During the tests, static firing and shoot on the move demonstrations where conducted to the targets located at a range of 600m to 1.500 m. The targets are hit with high hit rate and all tests are completed successfully.



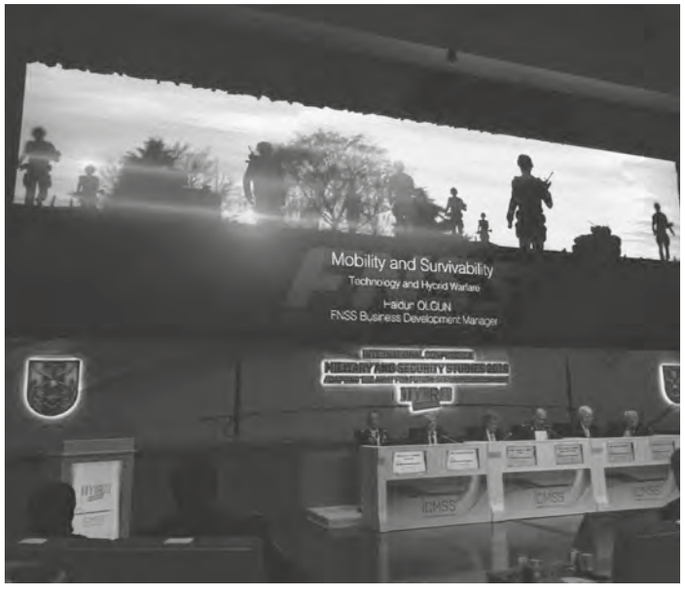
AS A GLOBAL BRAND, FNSS LAUNCHES ITS REDESIGNED LOGO

The new logo of FNSS will symbolize the determination, dynamism and reputation of our brand FNSS Savunma Sistemleri A.S., the international defense systems company and a major land systems manufacturer of Turkey, was built with a culture of growth, development and transformation. Today, as the company celebrates its 25 year history, FNSS signifies this evaluation by the introduction of its redesigned logo. FNSS designed a logo that symbolizes the strength and reputation of the company. The newly designed FNSS logo in red letters, represents unlimited energy, a new generation, dynamism, agility and determination. The underlining steel arrow stands for "our faith in continuous development.

FNSS AT THE WAR COLLEGES CONFERENCE

The International Military and Security Seminar organised by the Turkish Armed Forces was held at the Turkish War Colleges Command.

Attended by numerous military and academic speakers, the theme and concept of this year's seminar was Hybrid Warfare. At this year's seminar, the subject of adaptation and possible responses to the threat of Hybrid Warfare that regular armies might face in the near future was discussed. Haldun OLGUN, the FNSS Business Development Manager, contributed with a presentation entitled Mobility and Survivability regarding the relationship between Technology and Hybrid Warfare. Through its current and future contributions to the sector, FNSS is committed to assume an active role in events organised by the Turkish Defence Industry.



FNSS AWARDED NEW CONTRACT TO DELIVER PARS WHEELED ARMOURED VEHICLES

Turkey's leading land based defence systems company FNSS, has achieved another success with its PARS Wheeled Armoured Vehicle (WAV) family. Turkey's leading land based defence systems company FNSS, has achieved another success with its PARS Wheeled Armoured Vehicle (WAV) family. Recently FNSS was awarded a contract to supply the PARS WAV to a new customer. The contract is already effective and FNSS has started to fulfill its obligations under this new contract which includes delivery of a series of vehicles in various configurations. The exact customer, vehicle types, total budget and additional details will remain confidential. In 2011 FNSS has achieved the highest export value among the Turkish defence industry based on a single contract with the Malaysian AV8 program.

"This latest success for the PARS vehicle family, which has become a world standard in 8x8 and 6x6 wheeled armoured vehicles, has once again highlighted the status already achieved by FNSS on the international market. In competition alongside the world's other top companies, FNSS has once again demonstrated the real quality and value of its vehicles, securing the highest scores in both the technical and value domains. We will continue to maintain our customer's satisfaction at the highest level by meeting the contract requirements in terms of the schedule, budget, and quality", says K. Nail KURT, General Manager and CEO of FNSS.

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