



LUDAN  
GROUP

# LUDAN GROUP

Business  
Overview  
2019



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# General



# General

## Who We Are

LUDAN GROUP is proud to be a most diverse provider of integrated solutions for Industrial Development, Plant Optimization, Environmental Issues, and Industry- Specific Implementation Knowledge.

LUDAN GROUP is a unique blend of companies in the fields of Engineering, Software, Process Control, Environment, Energy and more, located in Israel, western Europe (Holland, Belgium), Eastern Europe (Romania, Bulgaria, Croatia, Russia) and China.

## Our Vision and Philosophy - Built to Last

- Leading position in its environment
- Appreciated by professionals
- Leaving a deep impact
- Managed by consequent generations
- Several life cycles



# Top Management



# Top management



**Arnon Aharon**

Joint C.E.O



**Yehuda Sarid**

Joint C.E.O



**Willem Pronk**

CEO – LudanCom



**Yuval Alon**

C.E.O of Ludan  
Engineering Israel



**Dmitri Militescu**

C.E.O of Ludan  
Engineering SRL &  
Regional Manager  
Of Eastern Europe



**Avi Lieber**

C.E.O of Ludan Tech

# Milestones



# Milestones

## Ludan Engineering Co. Ltd.

- 1977 - Foundation of Ludan Engineering Co. Ltd.
- 1979 - Ludan South Branch, Israel
- 1983 - Ludan North Branch, Israel
- 1995 - Foundation of Ludan Software & Control Ltd.
- 1997 - Ludan - IPO in Tel-Aviv Stock Exchange
- 1997 - Foundation of Ludan Engineering SRL, Romania
- 2005 - Foundation of Ludancom BV by Ludan Group
- 2005 - Acquisition of KH Engineering BV
  - 1949 - Foundation of KH Engineering as Keynes
    - Acquisition of KH Engineering by Matthew Hall Keynes
    - Acquisition of KH Engineering by AMEC Engineering
- 2007 - KH Engineering NV, Belgium
- 2008 - Foundation of Ludan Engineering Ltd., Bulgaria
- 2009 - Foundation of Ludan Engineering DOO, Serbia
- 2013 - Foundation of Ludan Engineering International Ltd.
- 2014 - Foundation of Ludan RUS Ltd., Russia
- 2015 - Foundation of Ludan China
- 2015 - Acquisition of Technip Benelux N.V. in Belgium
- 2015 - Acquisition of the Industrial Engineering department of Royal Haskoning DHV in Holland
- 2017 - Foundation of Ludan Trade

## Ludan Tech Ltd.

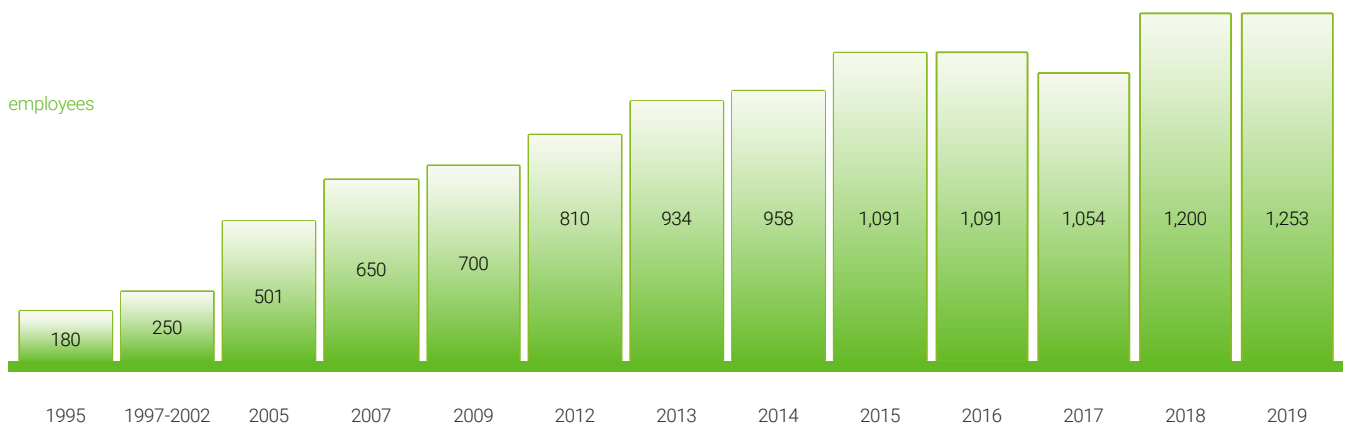
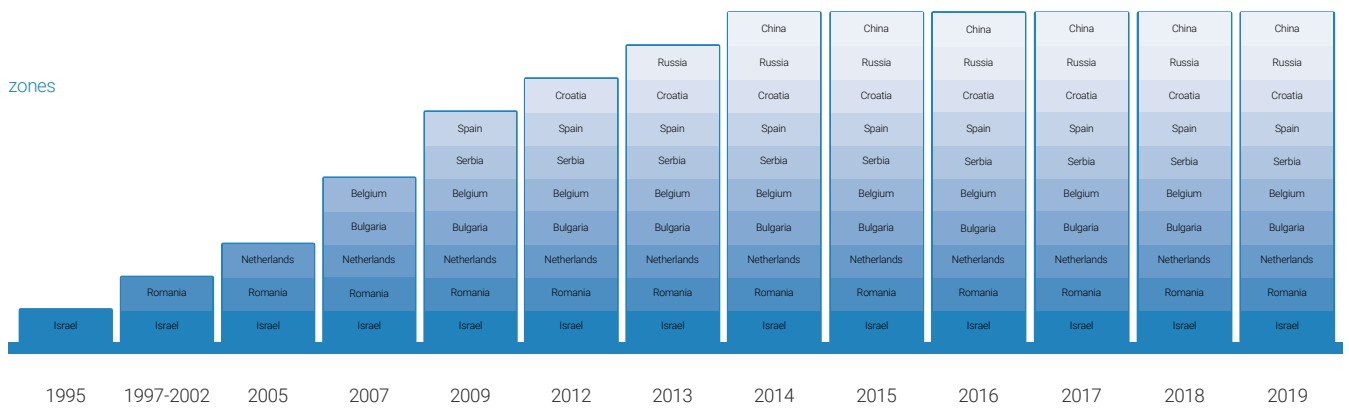
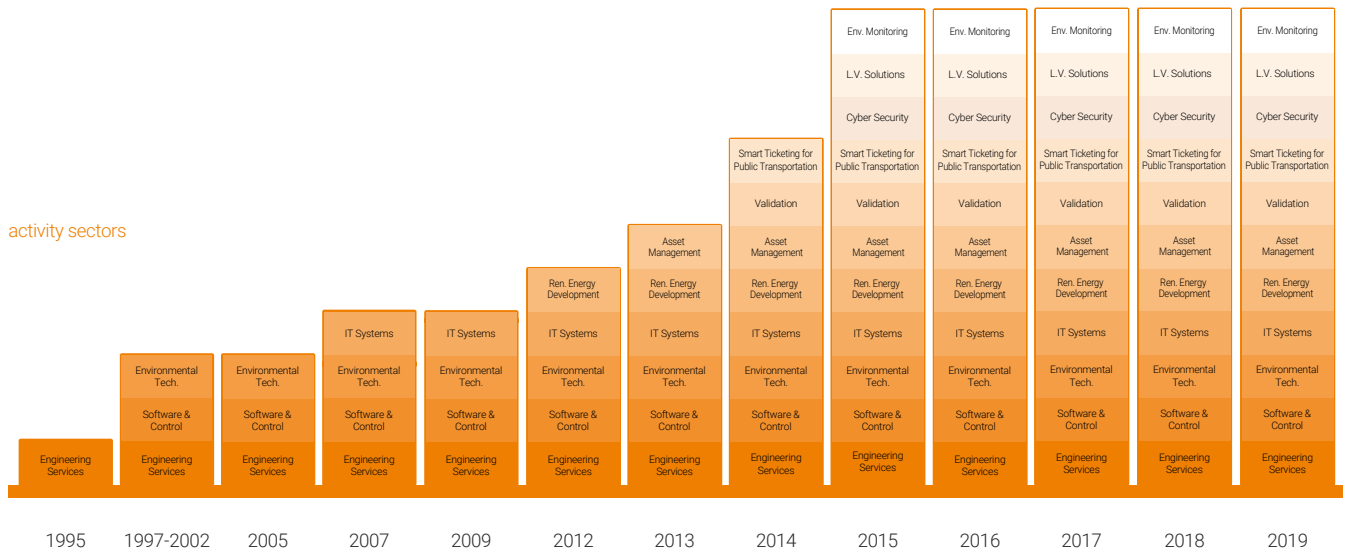
- 2007 - Foundation of Ludan Tech Ltd.
- 2007 - Acquisition of Symcotech
- 2008 - Acquisition of Tact.
- 2008 - Foundation of Ludan Software & Control Systems SRL
- 2014 - Foundation of Ludan Cyber Security
- 2015 - Acquisition of Ardan Control- Tech.

## Ludan Environmental Technologies Ltd.

- 2007 - Foundation of Ludan Environmental Tech Ltd.
- 2009 - Foundation of Ludan Renewable Energy in the Netherlands and Spain
- 2010 - 2014 Foundation of several SPC's to Build, Own and Operate biogas plants.
- 2015 - Acquisition of Eco Tech Environmental Services



# Milestones



# Group Structure



# Ludan Group Structure

## Ludan Engineering Co. Ltd. (Holding Company)

PROJECT IMPLEMENTATION	COMPUTERIZED SYSTEMS INTEGRATION	ENVIRONMENTAL AND ENERGY	TRADING
LUDAN INTERNATIONAL ENGINEERING SERVICES LTD.	LUDAN - TECH LTD.	LUDAN ENVIRONMENTAL TECHNOLOGIES LTD.	LUDAN TRADE
Ludan Engineering Israel Ltd. www.ludan.co.il	Ludan Software & Control Systems Israel www.ludansy.co.il	LRE Holland, Spain www.ludan-env.com	Trading Israel www.ludantrade.com
KH Engineering BV Holland www.khe.eu	Symcotech Israel www.symcotech.co.il	Ludan Energy Overseas Israel, Holland www.ludan-env.com	
Ludan Engineering SRL Romania www.ludan.ro	Ludan Software & Control SRL Romania www.ludansy.co.il	Eco Tech Israel www.ludan-env.com	
Ludan Engineering Ltd. Bulgaria www.ludan-group.com	Ardan Control Tech Israel www.ardantech.com		
Ludan Engineering Rus.Ltd. Russia www.ludan-group.com	Ludan Cyber Security Israel www.ludansy.co.il		
KH Engineering NV Belgium www.khe.eu			

# Where to find us



# Where to find us



Israel



The Netherlands



Belgium



Romania



Bulgaria



Russia

# Spectrum of Services



# Engineering

## Main Markets

Refining and Petrochemical, Chemical and Agrochemical, Pharmaceuticals, Food, Semiconductors, Defense industries, and Power Plants.

## Services

Services are provided as engineering services in the EPCM or EPC framework, which, inter alia, include:

- Project management
- Preparation and Control of budgets and schedules
- Permitting Authority Engineering
- Procurement and contracting
- Construction management and Supervision
- Validation (implementation of international standards, such as FDA/GMP)
- Commissioning



# Computerized Systems Integration

## Services

**Software** Implementation and maintenance of shelf software packages of international brands

**Cyber Security** Infrastructure threats protection solutions

**Control** Design and implementation of integrated Control Systems

**Ticketing** Implementation of ticketing systems for public transportation, including back office systems

**Automated Test Equipment** Supply of ATE systems for the defense industries

**HLS** - Access Control and Video Surveillance

**BMS** - Building Management system

**Street Light Control** – street and outdoor light control system and energy saving





# Environmental and Energy

## **Solutions**

Providing consulting and remediation solutions for soil and groundwater; proven technologies and track record of treating all types of industrial waste, air pollution (including CO<sub>2</sub> from natural gas wells).

## **Services**

Laboratory tests, field surveying, technology consultation, demo-installation, commercial and operating performance, maintenance.

## **Renewable energies**

Energy production using raw materials from the green energy field, such as: recycled municipal waste, agricultural produce, organic waste, etc. (biogas, biomass, gasification and green gas).



## Main Markets

Process Industry- Refining and Petrochemical, Chemical and Agrochemical, Pharmaceuticals, Food, Energy and Power Plants.

## Services

Procurement Services are provided as agency, representing selected Chinese manufacturers, which, inter alia, include:

- ▶ Local presence in China.
- ▶ Technical involvement in proposal stage.
- ▶ Supporting Chinese manufacturers with International Q.A.
- ▶ Supporting communication during negotiation.
- ▶ Supporting expediting process.
- ▶ After sales support.

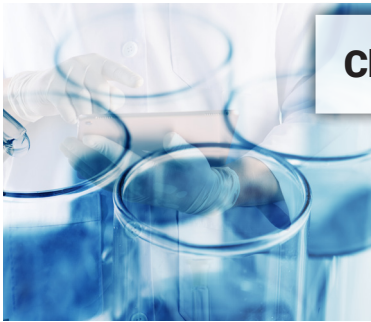


# Market Presence & Major Clients



# Market Presence

## Markets/ Industries



**Chemical**



**Energy**



**Natural gas**



**Petrochemical and Refining**



**Pharmaceutics**



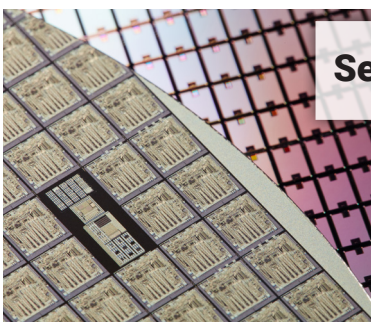
**Public Transportation**



**Defense Industry**



**Food**



**Semiconductors**



**Agrochemical**

# Major Clients



# Main 2019 Highlights



# Main 2019 Highlights

## **KLM and KH engineering move towards integrated building maintenance**

### **'KH ENGINEERING REALLY MAKES A DIFFERENCE'**

**For airline KLM, 'moving your world by creating memorable experiences' is central to everything they do. There is an incredible focus on customer-oriented, safe and comfortable air transport. This is reflected in the maintaining of the buildings in which they want to enable their employees to get the best out of themselves. KH Engineering plays an important role in this: 'I greatly appreciate their reliability, expertise and willingness to get things done, says Corporate Real Estate Manager John Sowa.**

KLM, the most famous and largest airline in the Netherlands, has a huge amount of buildings at and around Schiphol Airport. From hangars to offices and from workshops to technical rooms, there is a total of approximately 700,000 m<sup>2</sup> of gross floor space for which John Sowa, as Corporate Real Estate Manager, is responsible together with his team. A major challenge is to continue to comply with ever-new legislation and regulations and to respond to changing usage of buildings. In addition, KLM is striving for a different, more integrated approach to building maintenance with attention to the "total cost of ownership".

### **Programmatic approach**

Three years ago, the size and complexity of the projects increased enormously, resulting in a too fragmented approach. 'The volume simply couldn't be handled anymore with the limited manpower,' says Sowa, 'and the projects became so numerous and extensive that real professional engineering had to precede them in order to be able to manage both the execution and the risks properly. Therefore, about three years ago I issued a tender for engineering, project and construction management. KH Engineering came up with the best proposal. In doing so, they were especially convincing in being able to organize such a project volume in a management environment, and not simply individual projects. I selected KH Engineering for their "hardcore technical industrial expertise" and their programmatic approach. They have amply lived up to that expertise and that also helps in managing the contractors. Who are quicker to accept guidance from someone who speaks the right language, rather than generic project management.'

### **Stand for your profession**

Since winning the assignment, KH Engineering has contributed to the realization of the long-term maintenance plan, through portfolio and program management. 'KH Engineering takes care of the engineering and execution of the work on electrical and mechanical installations in our "industrial" buildings,' says Sowa. 'And to your satisfaction. The people of KH Engineering stand for their profession and are focused on cooperation. Very important, because you work here in very different buildings, all of which have one thing in common: they support KLM's primary process. This must always be uninterrupted; and for the building where KLM Catering Services is located, this means something different than in an office building. You have to be able to deal with all these differences, with the greater importance of the airline always in mind.'

### **Masterpiece**

Sowa is therefore still fully behind the decision to use the KH Engineering engineers. 'Good engineering costs a hefty amount at the front end of your projects, but you earn that amount back twofold during the implementation

## Main 2019 Highlights

phase. I would like to characterize KH Engineering as technically very competent, solid and professional, but they could propagate a bit more what they are capable of. To give an example: recently KH Engineering has replaced the emergency power supply in our Operational Control Center. Now you have to imagine that it looks a bit like the NASA's Mission Control Center in Houston and it has a similar function: there you are really at the technical heart of our business process. So beforehand, we were extremely focused on preventing problems: simply put, nothing may go wrong. When I asked afterwards what the people there had noticed about the work by KH Engineering,



the answer was: 'We heard that there were two humming containers on our site.' You can rightly call that a masterpiece, which KH Engineering can be very proud of. They sometimes forget to take the credits for that.'

### **KLM contractor safety day**

'In the field of Safety & compliance, they have done a perfect job! For two years, KH Engineering has drawn up and implemented the KLM Safety & Compliance manual for us. That, in addition to the many good effects in daily work, in terms of reach this was also very well reflected in the KLM Contractor Safety Day that they organized. It is impressive to experience live how many large and small contractors have embraced it and developed themselves in a short time and then apply it passionately on a daily basis.'



## Integrated

Sowa can no longer imagine working without KH Engineering and other important contractors. 'We have built up a close relationship: I no longer have to explain to anyone here who KH Engineering is and KH Engineering works with dozens of people at our location, so they too have become very familiar with KLM. What I particularly like about the collaboration is that I can really rely on them: if I call on Sunday evening that something has to be done early Monday morning, they will just be there at the agreed time. I greatly appreciate that reliability and willingness to take action. They really made an important difference here several times, and I really appreciate that.'



## Main 2019 Highlights

### Cooperation otagt; towards to the largest lpg terminal In europe

#### 'PRECISION AND RESOLUTION, THAT I CAN DEPEND ON AT KH ENGINEERING'

With the help of KH Engineering, Oiltanking Antwerp Gas Terminal (OTAGT) is more than tripling its storage capacity. KH Engineering has been entrusted with a highly complex project that accounts for half of the total expansion. 'A complicated, but fascinating project and we really need KH Engineering for that,' says Managing Director Michel Ruttens.

Since the takeover by the German family business Oiltanking, there has been considerable investment power at the Antwerp Gas Terminal. That works out well: their major customers INEOS and Borealis have an increasing need for storage and logistics due to expansions. The current storage capacity will more than triple in the coming years and KH Engineering plays a crucial role in this. This will help OTAGT become the largest independent LPG terminal in Europe.

#### Big projects

'At the tank terminal, OTAGT takes care of the logistics of LPG in various forms: propane, butane and different types of propylene,' says Managing Director Michel Ruttens. Besides being a regular tank terminal, the terminal is also a kind of "spider-in-the-web" logistical hub; Connected via pipelines, with various industrial companies in Belgium and the Netherlands: think of Borealis, INEOS in Geel, Total in Antwerp and Feluy, but also the Dutch SHV is also a customer. 'The most important thing for us is that we ensure the safe import, storage and export of gases every day,' says Ruttens. 'We do this transport in many ways: pipelines, tank wagons, trucks and ships. Our second concern is to serve our customers optimally. Our third challenge is to expand our storage capacity. That is now 138,000 m<sup>3</sup>. The new projects will add 300,000 m<sup>3</sup> via two multifunctional, cooled LPG storage tanks of 150,000 m<sup>3</sup>. All together an investment of hundreds of millions of euros.'

#### WORKING MORE EFFICIENT AND ENVIRONMENTALLY FRIENDLY

OTAGT builds the tanks according to the best possible technology and Ruttens adds: 'Which also means: the safest and the most expensive. The new tanks are both technical masterpieces, executed in a full containment version, with a concrete outer tank and a steel inner tank. We put a lot of our know-how into these installations, for example how to operate the terminal process in the most energy-efficient way. For example, we ensure the transfer of cold propane to warm propylene via a specially constructed heat exchanger. In this way we cool the propylene while the propane is being heated: you can't have it any greener! Our new installations have all kinds of innovations that enable us to work more efficiently and environmentally friendly. We are quite proud of that.'

#### Relationship grown

The relationship between OTAGT and KH Engineering goes back almost twenty years. Ruttens remembers: 'At the time, we needed engineering for the addition of booster pumps and cooling compressors, among other things. From there, the relationship grew and more and more small, medium and now very large projects came to KH Engineering. The new construction and connection of the tank for Borealis is now fully entrusted to KH Engineering: they do the complete basic and detailed engineering, the project planning, the procurement, the Hazops, the SIL definitions - actually many crucial parts of the project. In the beginning of our collaboration, we worked with KH Engineering on installing piping and equipment, and now it has grown into a complete portfolio. In the meantime, they have also built and expanded that expertise, including process simulation

software such as Aspen. That is very convenient for us: we can make process simulations together with KH Engineering. Because it is often not so easy to integrate new installations or processes and connect them to the existing installation. After all, you have to map out very well in advance what the impact of the new process will be on the existing process. You have to work with a complexity of process parameters, and quality of the work and the calculations has to be extreme.'

### **Precision and resolution**

'I expect KH Engineering to do their work as accurately and flawlessly as possible,' Ruttens continues, 'so that we have no problems during the realization and start-up of the project. Devising and delivering high-quality work is essential to me. Precision and determination are qualities I recognize in KH Engineering. I am like that myself, and that's what I like in the partners I work with. It is also nice that I have known the people of KH Engineering for a long time. They ensure that a project is delivered on time and within budget. You can rely on them and I think that's really important.'

### **Complex but fascinating project**

Compared to twenty years ago, Ruttens believes KH Engineering has gotten better. 'Work is now being done in a much more professional manner and they are pulling us along at a tight pace. Their quality is at a consistently high level, I have great confidence in KH Engineering. The extension project will run until November 2021, the tank is scheduled to start up in February 2022. So the project runs quite long, and is complicated. At a certain point we have the tank with which we now supply Borealis out of service and make it suitable for another customer. Borealis then "moves" to the new tank. But in the meantime, their old propane dehydrogenation unit has to keep running and feed their new unit. So we're going from a greenfield to a brownfield project with highly complex couplings. A complex, but fascinating project, in which KH Engineering plays an indispensable role!'

### **Belgium Antwerp tanks**



## Main 2019 Highlights

### KH Engineering helps SHELL Pernis to remain Future-Proof

#### 'KH ENGINEERING IS AN EXTENSION OF MY ORGANIZATION'

**Safe and responsible means of production are of great importance to energy company Shell, as is cost efficiency. After all, the company is active in a very competitive market. Coert Abrahamse is Team Lead Capital Projects at Shell Pernis and has been working with KH Engineering for some time. 'For me, KH Engineering is really an extension of my organization,' says Abrahamse. 'They bring in technical expertise, help with the development of projects and also feel responsible for the end result.'**

Shell Pernis is the largest refinery in Europe. Oil products and base chemicals are made from petroleum in around sixty different factories. Most of the site is occupied by Shell's refineries. The terminal in Europoort is also part of the refinery. This location takes care of the reception, storage and pumping of crude oil and naphtha. From this point, products can also be shipped to overseas markets. The total surface area of Shell Pernis is 550 hectares, the same size as a thousand football fields.

#### Safe and responsible

'At our location, we make all kinds of end products and raw materials for the chemical industry from crude oil,' Abrahamse explains. 'The better and more efficiently we do that, the more future-proof we are. In order to continue producing safely and responsibly, we continuously implement changes on site. This ranges from regular maintenance to adjusting factories or installing new units. This happens within a competitive climate, so cost efficiency is also a determining factor. We must achieve our goals smarter and cheaper. And that is also the challenge for Shell Pernis and KH Engineering together.'

#### Successful turnaround

In Abrahamse's team work technical people who are responsible for the safe and proper delivery of the many projects on this site. Abrahamse: 'We are working on various projects to respond to changes in the energy market, but in the past year, for example, we have also had very large and successful turnarounds. During such a major maintenance shutdown, we carry out countless maintenance and renovation projects, while the factories are temporarily out of operation.'

#### Extension

Abrahamse has been calling on KH Engineering for a number of projects for many years. 'KH Engineering usually takes care of the engineering and procurement, and Shell does the initial scope definition, construction and commissioning. So in terms of order, KH Engineering is in the middle of our projects.'

#### Re-instrumentation pipeline network

The relationship with KH Engineering started a long time ago, but the collaboration grew considerably ten years ago during a program to replace some operating systems in a number of factories. 'At the moment we also use the services of KH Engineering for other types of projects,' Abrahamse says. 'They also work for us at the Europoort site, where we collect the crude oil for further processing at the Pernis location. But the biggest

project we are currently doing together is taking place “outside the gate”. This is a re-instrumentation project for the pipeline network of Shell pipelines. The instrumentation is replaced which collects data about pressure, temperature and flow, among other things. Here KH Engineering again provides expertise in engineering and procurement and provides flexibility and capacity. For me, KH Engineering is really a professional additional extension of my own organization. They work from among other locations from Schiedam, which is nice and close when a face- to -face consultation has to take place. KH Engineering helps us to ultimately find a better solution. In addition, I would like to know how we can do things smarter and cheaper. On that point, KH Engineering can think with us even more critically. I am sure that is possible: within Shell we often have an idea of what a solution should look like, but KH Engineering may know much better how to tackle something from other places in the industry.’

### **Driven**

All in all, Abrahamse is certainly pleased with KH Engineering: ‘It is a technically competent, professional club with a lot of work drive towards a good quality end result. Constantly keeping an eye on cost efficiency is very important to Shell. We work in a changing and competitive market and we need engineering firms such as KH Engineering.’



## Main 2019 Highlights

### Project: Logistic Center and production line Client: SANO Romania

Since 2006 LUDAN was the General Contractor for SANO Bruno's Enterprises new facilities in Romania, consisting of: industrial hall, offices, installations: electrical, water, firefighting, sewage, HVAC, loading ramps and accesses, roads, platforms. Further, a new facility for production detergents and cleaning products was added. LUDAN has executed: permitting, multidisciplinary design, site organization and supervision, material and equipment supply, construction works: earth works, concrete, steel structure manufacturing and erection, cladding, flooring, partition walls, joinery, painting, insulation, project management and co-ordination. In 2019, Pursuant Turnkey contract LUDAN completed the Expansion of Utilities & Production Facilities



#### Main features:

- New Steam Boiler, 500kg/h steam@12 bar, incl. Boiler Room
- New Compressor, 14m<sup>3</sup>/min@10bar, incl. Compressor Room
- New Chiller, Heat Exchanger, pumps, valves, pipelines
- New Reactor/Mixer (Client delivery), incl. weighing cells and accessways
- New Heating Room (Client delivery) and Slewing (labeling) Machine (Client delivery)
- Upgrade of DCS and software





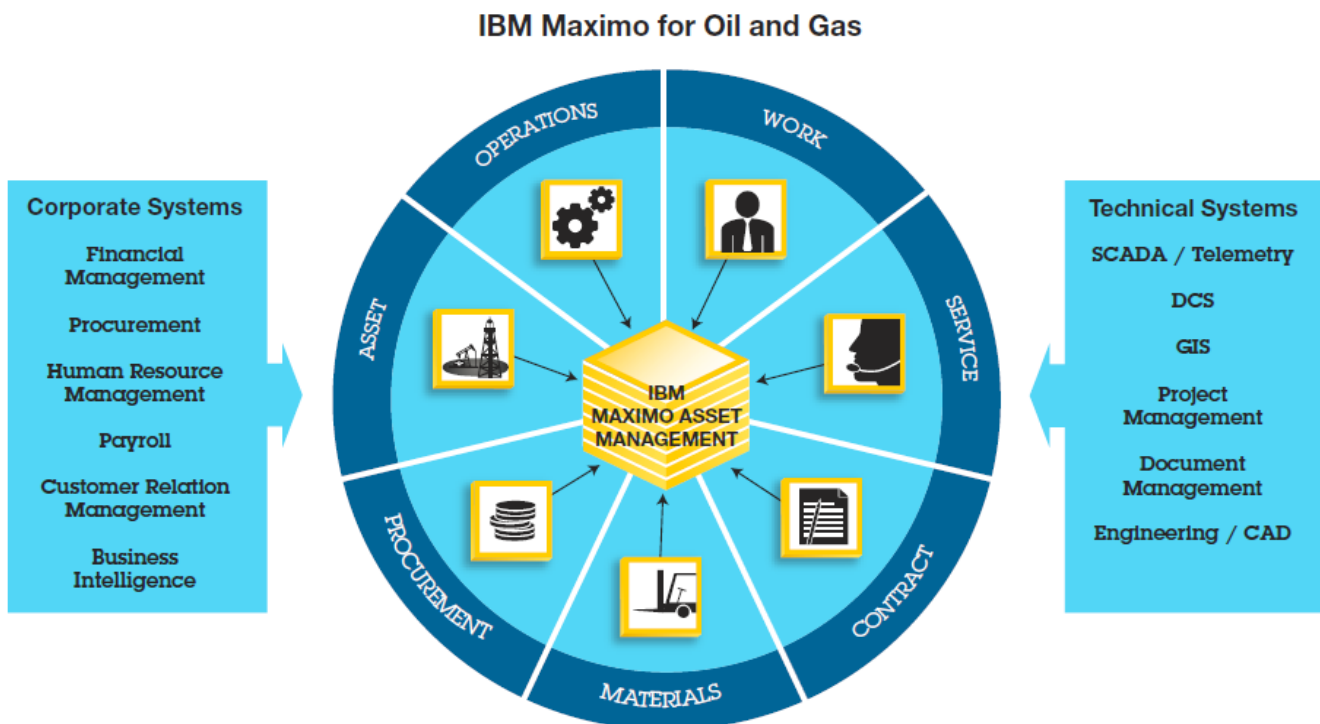
## Main 2019 Highlights

### Maximo Asset Management has been implemented within Petromidia Refinery since 2001. The system was continuously upgraded in 2003 (v5) and 2008 - 2011 (v6.2.7)

Throughout the years, Rompetrol has continuously developed new custom classes, triggers and functions for supporting various business needs, within a system which, sometimes did not support the flexibility of the existing Maximo version. This practice was carried over to the 6.2 version.

In 2015 Rompetrol decided to improve major operational business processes (Maintenance, EPC projects and related support sub-process) by developing a new and functional system architecture. The project scope consisted in upgrading IBM MAXIMO EAM system to its last version (v7.6) with industry solutions add-ons and integration with SAP ERP system.

A detailed analysis of business processes, mapping of workflows as well as implementation and integration, with current Maximo functionalities were delivered.



#### To reach the full capacity of the new features of Maximo (v7.6) the following tasks were completed:

- New workflow for Work Management, Procurement, Asset Management, Materials Management, Contract Management, KPIs, Reports;
- New interfaces with SAP-PM, OsiSoft – PI, Oracle Primavera;
- User training;



**Stock Default Interface - Version 1**

---

**PRODUCTION ENVIRONMENT** DB:

MAXIMO WEB SERVICES ADDRESS:

LOGS PATH:

DRIVE:

PORT:

PSWD:

**Interface control**

Scan period (min):

Interface is running. Scan period is 0.08 [min]

Next checking time: 1/30/2020 11:41:27 AM

Last duration: 00:00:00.0156014

Highest duration: 00:01:46.7882685

Errors: 0

Update StockDefault Reservations

**Backup**

**SQL connection settings**

Server:

Database:

Table name:

User name:

Password:

**Log Messages**

```

1/30/2020 11:24:22 AM Processing reservations for item 4813 and GIAccount 26G3-P18001/XXXXXX
1/30/2020 11:24:22 AM Reservation was deleted by MAXIMO
1/30/2020 11:38:39 AM Processing reservations for item 4785 and GIAccount 26G3-P18005/XXXXXX
1/30/2020 11:38:39 AM Reservation was deleted by MAXIMO
1/30/2020 11:38:40 AM Processing reservations for item 5179 and GIAccount 26G1-P18030/XX
1/30/2020 11:38:40 AM Reservation was deleted by MAXIMO
1/30/2020 11:38:40 AM Processing reservations for item 5179 and GIAccount 26G3-P18001/XXXXXX
1/30/2020 11:38:40 AM Reservation was deleted by MAXIMO
1/30/2020 11:38:41 AM Processing reservations for item 15007 and GIAccount 26G3-P18001/XXXXXX
1/30/2020 11:38:41 AM Reservation was deleted by MAXIMO

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## Main 2019 Highlights

### Egged Public Transportation – Smart Card Validators on Buses

Supplying a smart card validation system in Israel's biggest bus operators.

Our new system includes supplying and installations of a back-office system and 7,000 validators in 2,000 busses.

The systems support the world's most advanced validation features.

#### Scope of work:

- Design and implement a full ticketing system
- Integrate our system with the customer's environment
- Implement advanced payment features
- Installations of 7,000 validators in a challenging time-table



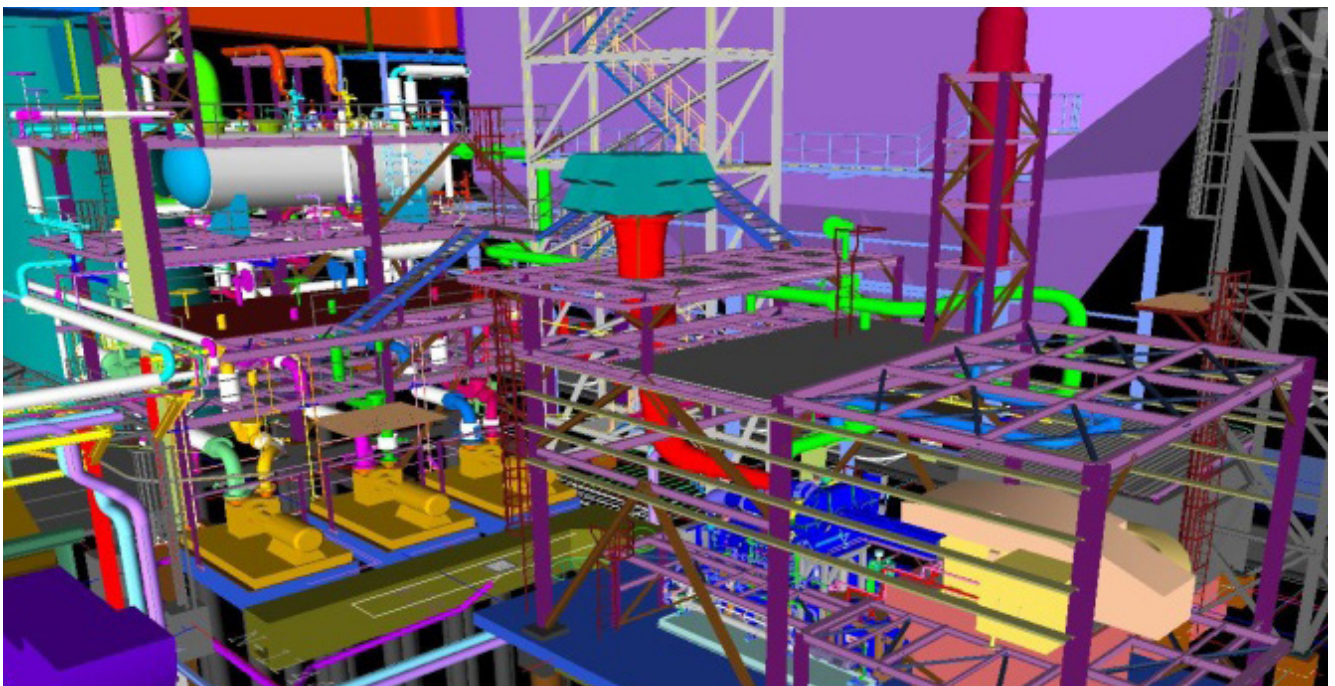
## Paz Ashdod Oil refinery FCC expansion - Design

### Project Description:

Expansion of FCC unit by addition of catalyst cooler and its auxiliary's .The project included addition of special heat exchanger, air compressor and steam production system. The project scope was the design and overall supervision of the project. The main purpose of the project design was to enable the connection of all the equipment during a very short 10 days shut down of the FCC unit and operate it immediately after it.

### Scope of Work:

- Design project management
- Civil Engineering
- Mechanical Design
- Piping Design
- Electrical Design
- Instrumentation & Control System Design
- Site Construction
- Supervision
- Procurement technical management



## Main 2019 Highlights

### Dead Sea Bromine Ltd. BI-Polar Chlorine Plant

#### Project Description:

Expansion of the existing Chlorine Plant from 50 Kton/year to 60 Kton/year.

By-products: caustic soda, hydrogen, HCL and hypochlorite solutions.

Bi-polar membrane electrolyze cell technology was supplied by UHDENORA company. Dry chlorine gas product is supplied directly to the nearby elementary bromine extraction plant. Caustic soda is concentrated to 51%.

#### Scope of Work:

- Overall Project Management
- Process Detailed Design
- Civil Engineering
- Plant Layouts
- Piping Design



## Rotem Amphert 97 Meter High Stack

### Project Description:

Adjustment of the stacks in the Sulfuric Acid plant to meet the Clean Air Act standards.

Adjusting the stacks' height to the Sulfuric Dioxide emissions permitted by law and based on the emissions forecast after improvements are made at the sulfuric acid facilities.

### Scope of Work:

- Overall Project Management and Coordination
- Plant Layout
- Mechanical Design
- Civil Engineering
- Piping Design
- I&C Design
- Electrical Design
- Construction Superior Supervision



## Main 2019 Highlights

### Rotem Amphert New RTO Plant – Turn Key

#### Project Description:

Air Pollution Collection System from the White Acid Production Plant and Treatment by Regenerative Thermal Oxidizer System. The project includes design and supply of gas Condensation and Recovery System, scrubbers. Supply of RTO, Project Construction and Management.

#### Scope of Work:

- Overall Project Management & Procurement
- Civil Engineering
- Mechanical Design
- Piping Design
- Electrical Design
- Instrumentation & Control System Design
- Site Construction
- Supervision
- Start up



## Main 2019 Highlights- Natural Gas Division

### Tel Kashish – Dovrat (doubling) high pressure NG pipeline Client: Israel Natural Gas Lines Ltd

#### Project description:

The project includes laying of 31 Km of 36" high pressure natural gas pipeline, Construction and installation of 3 valve stations and 2 HDD's

#### Services provided:

- Project management
- Quality assurance
- Welding inspection and Supervision
- Pipeline works inspection and Supervision
- Document Control
- Mechanical work inspection and Supervision
- HSE services
- Budget and schedule control
- Landscaping and reinstatement supervision
- Cathodic protection inspection and Supervision
- Civil work inspection and Supervision



## Main 2019 Highlights

### Leviathan Natural Gas field Onshore development

**Client: Noble Energy**

**Project Description:**

Leviathan reservoir onshore development at Dor beach, its connection to the national transmission system and laying condensate lines (about 15 km) from Dor beach to Hagit power plant.

**Services provided:**

Civil engineering work and natural gas lines inspection, schedule management, electrical work supervision, earthworks and infrastructure supervision, welding supervision and material supply management.

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### Karish Natural Gas field onshore development

**Client: TechnipFMC**

**Project Description:**

Karish reservoir onshore development at Dor beach including its connection to the national transmission system.

**Services provided:**

Quality control and control of civil engineering works and natural gas lines inspection, schedule management, electrical work supervision, earthworks and infrastructure supervision, welding and safety supervision.

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# 2019 - Financial Data

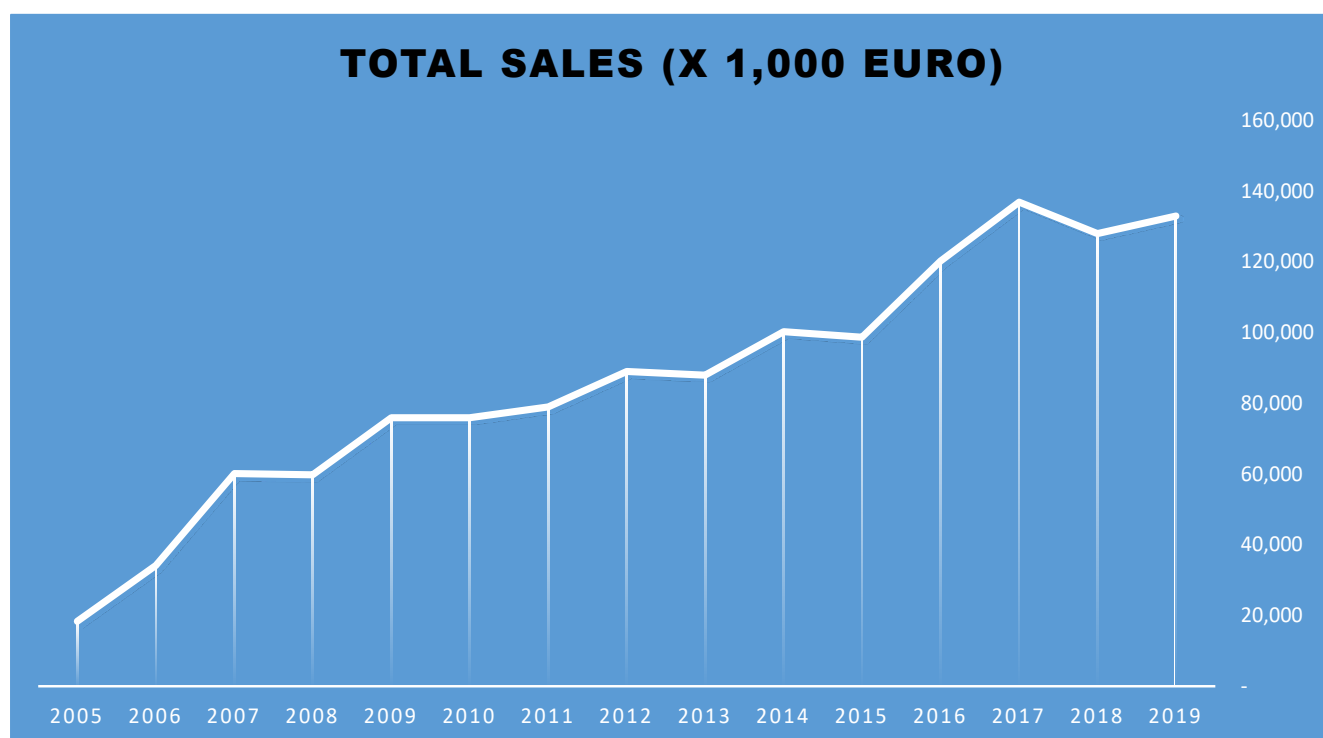


# 2018- Financial Data

## Development of Financial Results 2017 - 2019

(Detailed data are available in the "Overview 2018"/ "Auditors Reports" in the Group website)

Consolidated Balance Sheet (in '1.000 EUR)	2017	2018	2019
Current assets	66,544	68,333	63,311
Investment in long-term receivables	11,454	3,312	24,238
Fixed assets	4,226	4,388	3,862
Intangible assets after amortization	6,461	6,013	6,687
<b>Total assets</b>	<b>88,685</b>	<b>82,046</b>	<b>98,098</b>
Current liabilities	52,025	54,343	56,344
Long-term liabilities	16,582	11,073	22,793
Minority interest	18,565	15,019	17,478
Shareholders' equity	1,513	1,611	1,483
<b>Total liabilities and shareholder's equity</b>	<b>88,685</b>	<b>82,046</b>	<b>98,098</b>
<b>Consolidated Results (in '1.000 EUR)</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Sales	129,829	130,834	141,500
Gross Profit	17,409	17,174	17,785
Operating earnings	4,216	4,179	6,593
Earnings before income tax	2,724	2,650	4,562
Earnings (losses) after income taxes	2,373	-1,975	2,215
<b>EBITDA</b>	<b>6,016</b>	<b>6,357</b>	<b>15,032</b>



# Group Contacts



# Group Contacts

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global experience  
local approach