

# ORAD - Best of breed solution



Security



Safety



Control



Solar Energy



Service and  
Maintenance



**ORAD**





ORAD Ltd is a global veteran and experienced Israeli group company, which for the last 45 years has specialized in value engineering and providing overall solutions for complex technology multidisciplinary projects in security and in perimeter protection, in fire safety and detection, infrastructures, electromechanical systems, automation, communications and control, and solar energy systems (photovoltaic systems) in Israel and abroad.

ORAD develops, markets and installs innovative technological systems, based on a complete integral (holistic) solution tailored to the unique needs of each customer. ORAD offers decades of technological experience and integrative capacities that constitute a significant element in its proven ability to meet the many and diversified challenges facing integrators throughout a project lifetime.

ORAD's commitment to excellence is reflected in all stages of extensive projects - design, implementation, and maintenance. The company displays its high engineering capabilities in the design stage, where ORAD studies the customer's needs and performs a risk analysis process; during the implementation stage, in which ORAD works closely with the customer to ensure smooth integration; and during the operational stage, where the company provides routine, around the clock support and maintenance, to provide a complete solution.

ORAD entertains international partnerships with leading equipment manufacturers worldwide and at the same time maintains its unique status as an independent buyer, thereby guaranteeing that it works for the customer's benefit, which is our top priority. ORAD does the best to ensure that the solutions it provides are no less than perfect.

ORAD encourages teamwork, creativity, enterprise and excellence as main qualities of its employees, combined with a flat organizational structure that encourages its employees to take responsibility and to aspire to business leadership. ORAD's large pool of talented and experienced engineers constitutes the core of the company's professional staff.

At ORAD, quality is a way of life and providing the highest level of customer service is its foremost commitment. By virtue of this commitment to excellence in performance, our tasks are executed according to the highest levels of quality assurance procedures at the design, implementation, and system installation stages, and also subsequently, in conducting regular checks.

## Areas of Expertise





# Security



**ORAD – A whole ultra-advanced state-of-the-art world of innovative and unique solutions and answers for the ever-present needs of security and perimeter protection and intrusion detection fields, based on proven proficiency and know-how in the integration of a range of systems and sensors in the frame of advanced applications.**



## **Perimeter Protection and Fencing**

ORAD is a leading contractor of innovative and exclusive perimeter security - protection solutions and intrusion detection systems, delivering it. The company is proud to display a rich experience in all execution stages - design, implementation, and maintenance of security projects, such as deployment of large-scale, sophisticated defense systems for border protection, army bases protection, urban protection (Safe and Smart City), airports, seaports, railway terminals, prisons and other valuable governmental, public and private assets and resources. The protection solutions are based on the unique expertise of ORAD in the integration of a range of access and entrance control and monitoring systems, such as sensors, radar systems, electronic fences and night vision systems. These systems include available forefront state-of-the-art applications, including biometric control and video analysis systems.

In addition to all this, ORAD offers a readily available choice of perimeter security solutions of protection and intrusion detection systems, based on electronic warning systems fence-mounted with full design, installation, and maintenance, enabling voice and visual alerts, which are sent immediately to a control center following attempted neutralization / sabotage of any of the system's components or upon detecting intrusion attempts. ORAD is equally proficient in offering civil engineering works, including design, construction and maintenance of concrete infrastructures and arrangements for the security fences around the protected sites, design, installation and maintenance of physical fences, and a complete system of electronic fence detection and warning with full design, installation and maintenance.





## Closed Circuit Television (CCTV) and Video Analysis

ORAD is a market leading company, positioned at the forefront of international state-of-the-art technologies of answers and solutions offered in this all-important and sensitive field and provides the most advanced video management systems, for instance Genetec VMS, equipped with a wide range of overall viewing features, such as IP analog and thermal cameras and radar integrated cameras with unique capabilities for control of widely dispersed and remote sites, advanced maps, cloud storage solutions, Analytics - Online Content Analysis Systems, and Post-Event Analysis – debriefing, investigation and analysis systems.



## Access Control and Biometrics

ORAD provides an extensive variety of solutions for line- and wireless system-based access and entrance control, including the SiPass Integrated Access Control Software System, used for access and entrance control and central control over all the security systems present, a modular system tailored to all types of organizations, governmental, public, and private, regardless of size, sector or market. A world rank top electronic access control system, SALTO, is based on wireless electronic locks, cylinders, or both, powered by an internal battery. The system can be installed in any door, entry and gate, in hotels, offices and residential buildings.

ORAD delivers biometric systems, a revolutionary technology in its ability to identify people unequivocally using a biometric fingerprint signature, and facial and eye iris recognition / identification.



# DROM

DRONE DEFENSE SYSTEM

## Anti-Drone defense system with operational capability

ORAD markets the innovative DROM – Drone Defense System for defense against multirotor drones and UAVs including detection, location and neutralization of the multirotor drone. The system is designed for the military and security organizations, for instance at airports, stadiums and strategic sites.

The system has significant advantages in its detection range and blocking capability and precision. The system has an operational capability of detection of miniature multirotor drones from distances of more than 3.5 km and electro-optical homing, disruption, and neutralization from a distance of over 2.5 km. At the same time the system can provide a response for the closer range and create a defense dome around the required area. The system is modular and suitable for various security and protection missions.

It can be installed in a stationary version, suited for defense of critical assets, strategic sites, army bases or

government buildings, and in a mobile version to provide a solution for protection of occasional high-ranking figures events, or military vehicles and maneuvering forces.

The system provides effective aerial defense against hostile multirotor drones and other UAVs, including miniature micro- and nano-sizes. The system, called DDS DROM works to detect, identify, track, neutralize and even destroy multirotor drones constituting a threat.

There are several stages in the neutralization process. In the first stage, the system detects and identifies the multirotor drone by radar and electro-optical or infrared sensors. In the second stage, data calculation is carried out and a warning is transmitted to the operator if the multirotor drone is found to be hostile. In the third stage, the system operator initiates an automatic or manual disruption action, according to the calculation engine settings. In the final stage, when the hostile multirotor drone reaches the protected area, it is neutralized by GPS and radio blocking and brought to a preplanned "killing" area.



# A Quantum Leap in Command & Control

## OSM Orad Situation Management

Terror attacks in Israel and around the world heighten the importance of the human response to emergency situations. The human chain action from the command ranks to the end operational personnel in every moment of an emergency can determine the results of the events. Precisely for this reason ORAD developed a new technology called OSM - ORAD Situation Management.

The OSM system is an application installed on all end user's mobile devices. The system is based on semiautomatic specification and definition of scenarios, with localized operation of the forces and display of a global picture to everyone participating in an event - throughout the entire management and command chain. This is a technological innovation regarding optimal management and operation of the human resources. The application allows management of masses of people, with implementation of defined procedures. The system is unique in that unlike existing systems, it can warn of an "anomaly" and of "red flags" in important processes that were not executed as part of the event management system protocol in the designated area. This is a revolutionary system for planning and operation of complex field missions with a dedicated user interface for planning and application of procedures, investigation means and business intelligence tools.

The application can be implemented in a large number of tailor-made models for every site, as for instance the OSM urban model for smart urban management as part of the Safe & Smart City system.

OSM Urban allows effective management of any emergency or routine event in the city without need for physical infrastructure, and guarantees improved quality of urban management and quality of life of the residents. The system's user interface is intuitive, so that its operation requires extremely short practice.

The system is not aimed for emergency events only, but also for the management of routine events as part of the ability to convert urban work procedures into a computerized format and to operate it almost automatically: removal of urban waste, traffic loads, violence in the city surroundings, etc. The system improves the management and supervisory capabilities of the urban control center, allowing a broader picture of the current state of affairs in the city, detection and optimal management of exceptional events, alongside the ability to produce reports in every profile and carry out detailed event investigation.





# Safety



ORAD provides for the needs of its potential customers a wide range of advanced solutions for fire and smoke detection, smoke control and voice alarm evacuation systems. As part of the safety shell, ORAD delivers solutions which include different types of gas, water, foam, powder and water-fog fire extinguishing

ORAD's experts are busy customizing for the prospective customer a complete protection package tailored to the customer's size and budget which meets the requirements of the Fire and Rescue Department and the most rigorous other standards. ORAD's safety and fire protection systems provide a solution in every field, from fire and smoke detection and extinguishing, through management and evacuation of smoke in buildings, pertinent engineering planning through service and support, ending in comprehensive safety training



## Fire Detection and Extinguishing

As a Siemens partner representative, ORAD Company provides a range of fire and smoke detection solutions with different technologies, such as ASD systems combining public address system and Fire fighters phone and connection, smoke control management systems according to the UUKL Standard and other international standards. ORAD also offers fire extinguishing ability with gas, powder, water-fog, and OXY Reduct, a technological oxygen reduction solution, in areas where the risk of fire ignition must be reduced.





## Smoke Management Systems

ORAD provides a Siemens digital smoke Command & Control system combined with the fire detection system endowed with smoke control UL/UUKL (UL 864) standards certifications, using the existent mechanical air-conditioning systems of the building (HVAC - Heating, Ventilating, and Air-Conditioning) for smoke control in full automatic and/or manual configuration and including a digital firefighting station (Firefighters Smoke Control Station - FSCS) with smoke control standards certification. The smoke control system is an integral part of the fire detection system and is interfaced by a full communication system. All the system elements are certified with UL/UUKL (UL 864) standards and meet the NFPA 92 standard requirements, the US National Fire Protection Association standard.

The system enables automatic control of the air-conditioning and smoke removal systems, receiving command priority in emergencies. A predetermined scenario can be created for every event, defined for each of the fire areas separately and/or in parallel. The system also supports multiple firefighting stations according to the safety requirements, thereby allowing optimal control of the stations.



## Advanced Fiber Optic Fire Detection Systems

ORAD installs advanced fire detection systems wired with optical fibers. The FibroLaser system, made by Siemens, OTS-X series. This is an optical fiber based detection system connected directly to the control panel (without additional auxiliary means such as communications or other electricity sources). The optical fiber cable sheath is flame retarding and halogen-free. The fire warning is displayed with a distance resolution of 3-4 m from the place of the incident. The fiber temperature resistance range is  $-40^{\circ}\text{C}$  -  $+120^{\circ}\text{C}$ . The cable detector component is connected to the control unit for analyzing and displaying the data received from the optical fiber. The temperature measurement range is  $-30^{\circ}\text{C}$  -  $+90^{\circ}\text{C}$ .

The system allows connection of dry contacts for executing I/O commands during fire incidents, such as ventilation, traffic control, illumination, etc., and connected by a full communication system to a Command & Control system, the Siemens MM8000 Danger Management Station for a graphic display of the incidents, in accordance with international and Israeli standards.



## Active Aspirating Smoke Detector Systems

This is an aspiration system for use with special applications and used in cold rooms for particularly low temperatures. The system comprises a detector installed in a closed package, a blower for air aspiration, and a PVC pipe system. The active aspiration unit draws air from the protected space through a network of pipes and suction orifices spread along the pipes; the orifices diameter is determined according to the piping isometrics and the pipe length. Drilling of the suction hole diameter is made by means of a computerized method for an optimal sampling of the protected space.

Aspiration pipes of a length of up to 100 m installed in the form of a U or a double U – UU can be connected to the aspiration unit. An additional box containing a detector (through which the air in the branch will pass) can be installed on every pipe branch in order to receive a precise indication of the location of the smoke. Through this additional detector, cross zoning can be carried out.





# Control

ORAD provides integrative control solutions. The company carries out projects including planning, operation, air-conditioning (HVAC), for building management system, running and providing service in the fields of industrial control and building automation in its different configurations.

## Integrative Solutions

A building management system is a computerized management, command and control system, installed in buildings for control and supervision of the mechanical and electrical systems in the building - air conditioning, ventilation, illumination, electricity, water and plumbing, etc.

ORAD provides integrative control solutions and installs control systems, mainly in buildings full of electrical and mechanical systems. The control systems are based on the German Beckhoff company's PLC (Programmable Logic Controller) and have a range of open protocols (Bacnet, LON, Modbus, KNX, DALI, etc.). Those systems give to the maintenance supervisor maximum control of the different parameters and detailed information on the status of each system, rapid warning of technical faults, and savings in energy, air conditioning, etc.

ORAD has a Web-solution Command & Control system made by the Austrian company Certec. This solution is actually a dedicated software accessible from any computer device that can run a browser of any type (Explorer, Chrome, Safari, Firefox). This software processes the information from the controllers installed in the different systems. Through the software the different systems can be controlled automatically or manually.



ORAD provides photovoltaic solar energy solutions through its subsidiary, the Solarpower company.

ORAD's Solarpower is the leading EPC company in Israel in its field and has extensive experience in installation of grid-connected and off-grid solar systems, tailored to every building, with maximum attention given to carrying out installations on sensitive roofs. In parallel, the company carries out accompanying infrastructure works, such as high-voltage works, reinforcement and replacement of roofs, and other services. Until now, the company has installed 20% of the systems in Israel by net metering agreement and specializes in many sectors, with emphasis on the industrial and the rural sectors.

In this field, ORAD has leading customers from the industrial sector and the municipal sector, such as HP, Ormat, Intel, Galil Wineries, Mekorot, BIG centers, etc., in the industrial sector. In the rural sector, the kibbutzim Zikim, Nachshonim, Gadot, Tze'elim, Rosh Hanikra, etc. In the municipal sector – the municipalities of Jerusalem, Rishon Lezion, Yavne, Kiryat Motzkin, Holon, Hadera, etc.

The company builds turnkey projects, including licensing, planning, supply of equipment, installation and connection to the grid with in-house planning and engineering capabilities. It has years long experience in maintenance of hundreds of systems on roofs and on the ground, totaling over 200 MW PV projects under an O&M agreement service. The company is registered as a 160A Class electricity contractor and has ISO 9001 certification.

# Solar Energy







# Solar Energy



## Rooftop Solar Systems

Grid-connected solar systems with net metering arrangements are installed on all types of roofs, according to the building - industrial, commercial, office or agricultural. Among these, Solarpower specializes in carrying out installations on particularly sensitive roofs (for example, in companies such as Intel, HP, Bet Shemesh Engines, and others). These systems produce clean electricity for the property owner and according to the system output and the building consumption can, reset the electricity expenses.



## Ground Solar Systems (Utility)

Ground solar systems in tariff rate-tender arrangements. These megawatt power output systems are designed and installed with use of cutting-edge technology, with tracking devices for improved output, high-efficiency panels to reduce the facility area, and advanced control and monitoring systems.



## Off-Grid / Hybrid Solar Systems

Off-grid electricity producing systems are used to supply electricity to isolated locations. These systems solve infrastructure problems for remote sites, supplying continuous electricity to communication facilities, defense establishment facilities, and isolated settlements. Combining several energy sources, hybrid systems provide a stable and reliable electricity supply also in difficult climatic and logistic conditions.



# Service and Maintenance

ORAD has a Service and Maintenance Division located in 5 service centers from Dan to Eilat, including a variety of service level agreements (SLA) options according to the customer needs.

ORAD operates a 24/7 call center to handle service calls backed up by a dedicated service center software, sending regional technicians to handle breakdowns. The service system includes an extensive logistic and operational complex of over 120 mobile service units in 5 service centers in Israel. A customer relations department manages service contracts at the end of the warranty period, including service agreements at all levels, as required by the customer, with emphasis on quality of service, leading to long-term relations with the customers. High survivability of the systems with prevention of the need to replace them during the product lifetime, together with strict standards requirements and proprietary and technical know-how, lead to customer loyalty.

ORAD currently provides O&M (Operations and Maintenance) service to solar systems, national monitoring center, periodic inspections, thermal photographs through multirotor drones with dedicated thermal camera, on sight management services and extension of warranty agreements in hundreds of systems with a total power output of 200 MW until today.

Emphasis on the quality of service has created long-term relations with the customers - the cost for replacement of systems during the product lifetime together with strict standard requirements and proprietary and technical know-how have strengthened the customers loyalty to ORAD. Over 97% of the systems sold enter into maintenance service contracts. Over 97% of the customers renew the original service agreement beyond the warranty period.

ORAD's commitment to excellence in work is reflected in every single stage of the project. In the design stage we study the customer needs thoroughly and analyze the risks; in the implementation stage we work closely with the customer in order to guarantee easy integration; in the operational stage we provide 24/7 support and routine maintenance in order to guarantee a perfect solution.





# References

## University Campuses

Bar-Ilan University  
Technion – Israel Institute of Technology  
Tel Aviv University  
The Hebrew University of Jerusalem  
Weizmann Institute of Science  
Haifa University  
Ben-Gurion University

## Traffic Control

TLV Fast Lane  
Arazim Tunnel  
Petach Tikva Municipality

## Hospitals and Medical Centers

Rabin Medical Center  
Yoseftal Medical Center  
Hadassah Medical Center  
Emek Medical Center  
Hillel Yaffe Medical Center  
Shaar Meneshe Mental Health Center  
Barzilai Medical Center  
Kaplan Medical Center  
Laniado Hospital  
Ziv Hospital  
Soraski Medical Center Tlv  
Soroka medical Center

## Hospitality

Hilton, Tel-Aviv  
Mamilla, Jerusalem  
Waldorf Astoria, Jerusalem  
David Citadel, Jerusalem  
The Ritz-Carlton, Herzliya  
Daniel Hotel Herzliya  
Orchid Okeanos Herzliya  
Aristobulus Hotel  
Astral Coral Eilat  
Astral Village Eilat  
Herods Tel Aviv

Herods Dead Sea  
Leonardo Bazel Tel Aviv  
Fattal Paradise Eilat  
Leonardo Royal Resort Eilat  
Rimonim Central Park Eilat  
Royal Rimonim Dead Sea  
The Caesar Premier Eilat  
Royal Plaza Tiberias  
Dan Panorama Jerusalem  
Adi Eilat

## Oil & Gas

Delek Petroleum  
Paz Oil and Chemicals  
Sonol Petroleum  
Dor Alon Petroleum  
Pi-Gililot Petroleum Terminals and Pipelines  
Oil Refineries  
Petroleum Energy Infrastructure

## Hi-Tech

Intel  
Comverse  
Cisco  
Mercury  
IBM  
Amdocs  
Tower Semiconductors  
Motorola  
Elbit  
Rafael-Armament development authority

## Chemicals & Pharmaceutical

DSW Magnesium  
Abic  
Agis  
Plasson  
Chemovil  
Bromine Factories  
Careline  
Alfa Cosmetics  
Promedico  
Perigo  
Galil Chemical

Teva-Tech  
Tambour  
Elgat Chmical  
Interpharm  
Rotem Fertilizers  
Gadiv Petrochemical  
Carmel Olefins  
Dead Sea Works  
Gadot biochemical  
Haifa chemicals  
Israel Chemicals  
Machteshim Agan

## Train Centers

Tlv Center  
TLV Hahagana  
Asdod station  
Rehovot Station  
Train Engine Repair Shop – Hifa, Asdod

## Logistics Centers

Tnuva (Alon Tavor Dairy Palnt)  
Delek Motor  
Sano  
Osem Nestlee  
Agrexco Agriculture Export  
Nesher – Israel Cement Works  
Nilit  
American Israeli Paper Mills  
Alliance Tire Company  
Critical Infra  
Israel Defense Force HQ and Bases  
Israeli Arm forces Taring Center  
Israel Electric Corporation  
Israel's Prime Minister's Office  
Mekorot – Israel National Water Company  
IPS-Ktsiot Prison

## Sea Ports

Hifa Port  
Haifa Oil Port  
Ashdod Port  
Eilat Port

## Financial Institutes

Israel Diamond Exchange  
Bank of Israel  
Bank Hapoalim  
Bank Leumi  
Israel Discount Bank  
Bank Mizrahi –Teffahot  
First international bank of Israel  
Migdal Insurance  
Bank Otzar Hahayal

## Retail Facilities & Shopping Malls

Shifersal  
Kitan  
Super-pharm  
Ako mall  
Harel mall  
Rennanim mall  
Ramat Gan mall  
Rehovot Mall  
Petah Tikva mall  
Holom mall  
Givatayim mall  
Lod mall  
Herzeliya mall  
Netanya mall  
Carmiel mall  
Nazareth mall  
Rosh Ha'ayin mall

## Food Industries

Nestle  
Unilever  
Tnuva (Yoplait)  
Strauss Elite  
Carmit  
Beit Hahsita Asis  
Pri-Or  
Hod Hefer  
Soglowek  
Telma  
Off Haemek  
Tivol  
Off Tov  
Soda Club  
Pri Hagaliil  
Coca Cola  
Carlsberg

## Telecom & Media

Bezeq  
Partner  
Cellcom  
Pelephone  
Mirs  
Med-1  
Yes

## Aviation

Ben-Gurion Airport  
Israel Aerospace Industries  
Israel Airports Authority

## Smart City

Rishon Municipality  
Tlv municipality  
Mamila Jerusalem  
Petach Tikva Municipality  
Ashdod Municipality





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