Convivium has very high standing institutional relationships in many African Countries; in Italy and Europe it can deal with many Companies in many sectors, and it is able to manage *"Private Public Partnership"* projects.

In March 2004 Convivium signed an MOU in Kenya with the Eastern Africa Secretariat of NEPAD (New Partnership for Africa's Development), to develop projects in partnership with the local governments and the private sector.

At present, Convivium is mostly operating in East African, West African and Southern African Countries, after having deeply invested in the last years in terms of financial and human resources.

Convivium already registered Companies in several African countries and has a suitable network of Consultant and Collaborators in place.

Convivium is also supporting Solidarity projects in Africa; since 2006 it has been promoting a project to help young students in Kibera Primary School in Nairobi, Kenya. The school is attended by 2.500 students coming from the slum of Kibera, the biggest and one of the poorest of all African Countries, with more than 1.000.000 people (see our web site www.kiberasfriends.it - www.conviviumafrica.org).
Other similar programmes are now arising in Senegal, Ghana, Tanzania and Mozambique.

It is important to consider that African market can be much more developed; this process could contribute to an enormous increase of the standard of life. Many people in Africa are still very poor but, in terms of raw materials and agricultural products, while the continent is very rich with tremendous potentiality.
Why don't we try to decrease this gap? We are deeply sure that promoting business opportunity is the best way to reduce this gap. This is the objective of Convivium Africa.

The President of Convivium Africa, Dr. Alfonso Ippolito, is also the Managing Director of all the local Companies registered in the different African Countries and he has developed a wide experience in Africa since 1982.

Since 2001 **CONVIVIUM AFRICA**, in joint with a Group of leading Companies in different sectors, has been investing in several Countries in Africa. Convivium is currently present in 15 African Countries (Tanzania, Kenya, Ethiopia, Mozambique, South Africa, Senegal, Gambia, Ghana, Nigeria, Angola, Marocco, Tunisia, Egypt, Mali, Madagascar) and has relationship in many other Countries.

Areas of expertise of Convivium



Energy

- Production and distribution of Electric Power also through alternative energy sources (Solar, Wind, Gas)
- Small equipments to produce clean energy off grid (Solar - Wind - Hydro) in rural areas
- Street Lighting provided by solar energy with back up batteries with technological application for Traffic and Security
- Smart Cities



Water Management

- Hydro Power Plant
- Drinkable Water - Photovoltaic Wells for fresh water provided by Solar Energy with back up batteries
- Sanitation and Sewerage
- Construction of Plants for the Production of Pipes for Irrigation



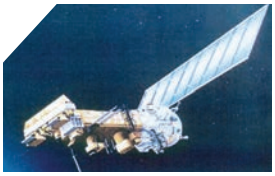
Security System

- Vehicle and Aircraft scanning System
- Bomb Disposal System
- Integrated border control System (maritime and terrestrial)



Construction

- Housing
- Buildings for public and civil use
- Hospitals



Information Technology

- Information Technology System applied to Public and Private sectors
- Cyber Security



Solidarity Project

- Solidarity Projects with the poorest people with focus on the children growing

Photovoltaic Solar Plant





Photovoltaic Solar Plants are the best solution to produce clean energy without create any impact on the environment.









The high irradiation in the sub saharian countries and the presence of the sun during the year guarantee **the best results for the production of energy** and also gives **a big support to the social and economic grow** of the local population that will be involved in the construction and management of the Plant; it will create development, it will bring innovative technologies on the territory and also will give a larger energetic stability, from clean energetic sources, **contributing also to the safeguard of our planet**.

To realize a big Photovoltaic Solar Plant is necessary to sign an agreement with the Government, in order to be able to plan a project shared by the Investor, the Contractor, the local Authority and the local Population to obtain all the required authorizations.

It will be also necessary to agree with the Government a Tariff to manage the project for 20/25 years or a price to realize the Project and sell. Also the research of the land is very important; about 1,5 hectares per MW, flat and clean from vegetation, with the possibility to access to water source. Land has to be near the electrical line that will be suitable to receive the electricity produced and near the substation.

The photovoltaic modules can be or **installed in fixed way**, with the best inclination (tilt) and orientation toward north (azimuth), or **on systems of pursuit** that follow the sun or on an axe, or on two axes, solution that allows to get the highest outputs in absolute for this technology.

This electricity however is not alternating, but continuous and therefore a device called "Inverter" must be installed to convert the direct electricity into alternating one, with voltage and frequency values to insert this energy in the national transmission grid, or to exploit with the traditional domestic or industrial devices.

The plants not connected to the grid are called "stand-alone" or "off-grid" plant, while those connected are called "grid-connected".

Autonomous Water Well & Potabilization Unit (Mobile)

- **Stand-alone autonomous (solar panel & eolic) field plants (well & draft - mobile & containerized) for:**
  - **drinking water treatment;**
  - **desalination of seawater treatment;**
  - **brackish water treatment.**



The autonomous units can be installed in a complete water system where are present a complex of different sub-system:

- **Water Unit: Pump and Filtration Units**
- **Local Distribution Unit**
- **Tanks**
- **Remote Control System**

• Water Unit

Pump and Filtration Unit: The pump is integrated into the unit where are installed all the equipment. The entire system, even the filtration system, are powered by the solar panel system over the container and controlled directly with a local control panel.

Type of unit:
- Containerized Unit
- Mobile Unit





Type of power:
- Solar Panel
- Solar Panel + Eolic



Type of water supply:
- Borehole
- Draft



• Local Unit or Network for water distribution

The distribution of the treated water can be done in different ways:
- Local distribution Unit: It's a pre-assembled and containerized unit with pre-installed taps that will be connected to the borehole-filtration unit.
- Distribution network: In this case will be designed a network made by a specific type of pipes for a fast installation and smart handling.



Autonomous Water Well & Potabilization Unit (Mobile)

• Tanks

– Elevated Tank. This system guarantee a safe storage of the water and, given the height, more pressure for the distribution.

– Traditional Tank. It's a underground prefabricated tanks concrete block vibrated.





• Remote Control System

The system provides a distributed control center on two levels, respectively related to the supervision center.



The system is able to concentrate all the data from each Autonomous Water System (system functionality, water goodness, water level, filter usage, etc).

It should be possible provide a complete Control Room facility (equipment, furniture, installation and configuration) located at a premises suggested by the customer.

The collected and integrated data are forwarded to Control Room Center, the operators are able to manage all the sensors and information provided by the field rigs.

SPECIAL EQUIPMENT for emergency situation management: The containerized or mobile units are even certificated with Nato/Military standard.

Military Nato NUC codes:
BW - 4610-15-202-5363,
SW - 4610-15-202-5364,
WWTP - 4610-15-202-5365





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Skywater

Pure water from air



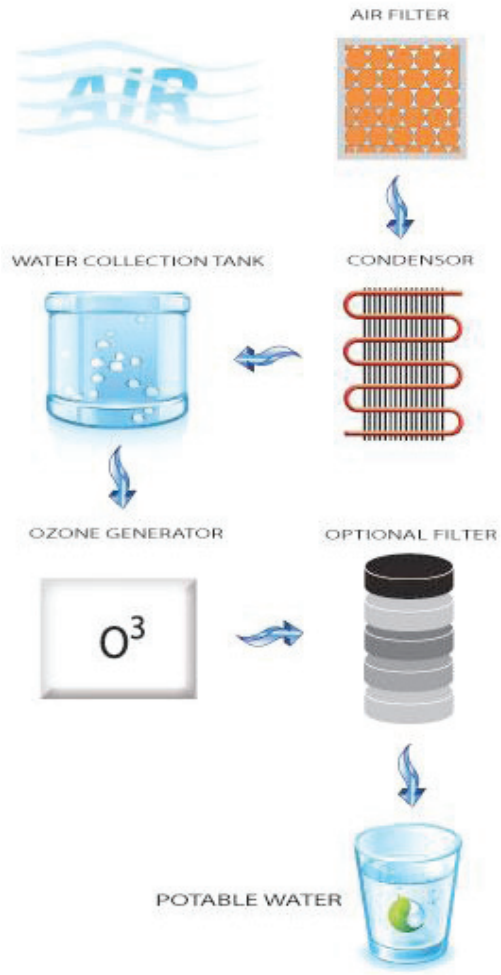
INTRODUCING SKYWATER

Over 3.5 million people Over 3.5 million people die each year from water related diseases and more than half of those are young children.

Atmospheric water generation is a safe, proven method to produce drinking water.

Skywater 1000 products are currently being used throughout the MENA region, effectively providing solutions to water scarcity and contamination.





HOW DOES THE TECHNOLOGY WORK?

- The machines use refrigeration techniques to maintain a dew point within a condensation chamber to maximise water production from the existing atmospheric condition.
- The higher the humidity and temperature, the more water that can be produced.
- After condensation, the water is filtered and treated with ozone to enhance its taste and prevent potentially hazardous micro-organisms from forming

Skywater

SKYWATER 1000

- Looks like a medium-sized air-conditioning unit – Can produce up to 1,100 liters of drinking water per day in optimal conditions, enough to meet all of the water demands of an average household
- Input power – 9 KW/hr – comparable to a household air conditioner
- Initial target markets:
  – Regions where clean drinking water and/or infrastructure is limited or non-existent;
  – Residential property developments;
  – Remote mining camps;
  – Greenhouse irrigation;
  – Light industrial businesses;
  – Humanitarian and emergency relief;
  – Government and military.



SKYWATER 500

Skywater 500 operates using about 4KW of electricity per hour and is ideal for pairing with alternative energy such as solar and wind power.
In ideal working conditions the machines will make up 500 liters in a 24 hour day.



When paired with small bottling equipment, the water can economically be produced for resale distribution, creating jobs and improving the quality of life.

Skywater -100



Skywater -250



Skywater -500



Skywater - 1000



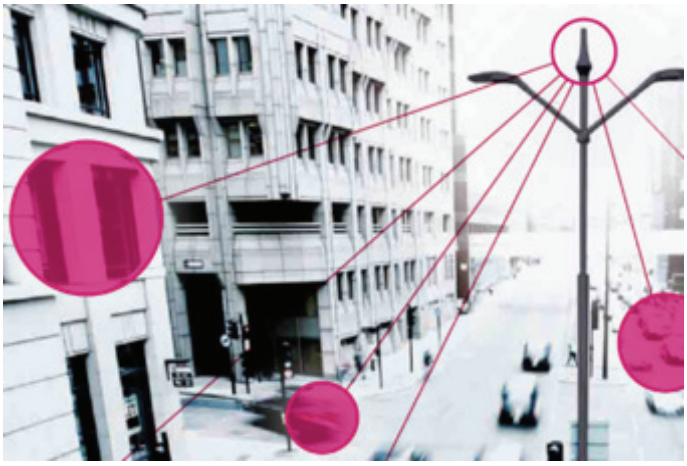
MODEL	SW- 100	SW- 250	SW- 500	SW- 1000
Power Supply (voltage,frequency, phase)	220/50-60Hz/single 380/50-60Hz/Three	220/50-60Hz/single 380/50-60Hz/Three	220/50-60Hz/single 380/50-60Hz/Three	220/50-60Hz/single 380/50-60Hz/Three
Refrigerant	New R22 or R 407C	New R22 or R 407C	New R22 or R 407C	New R22 or R 407C
Working conditions Temperature Range	22◦c-40◦c	22◦c-42◦c	: 22◦c-42◦c	: 22◦c-42◦c
Relative Humidity	Range : 50%-99%	Range : 50%-99%	Range : 50%-99%	Range : 50%-99%
Size (L * W * H)	71*71*138cm	163*112*115 cm	180*112*115 cm	204*115*136 cm
Net Weight (in Kgs)	125	220	335	450
Nominal Power Consumption (kW/hr)	1.80	2.9	4.4	8.2

Water output dependent on RH & Temperature Note: Model numbers indicate approximate production in liters

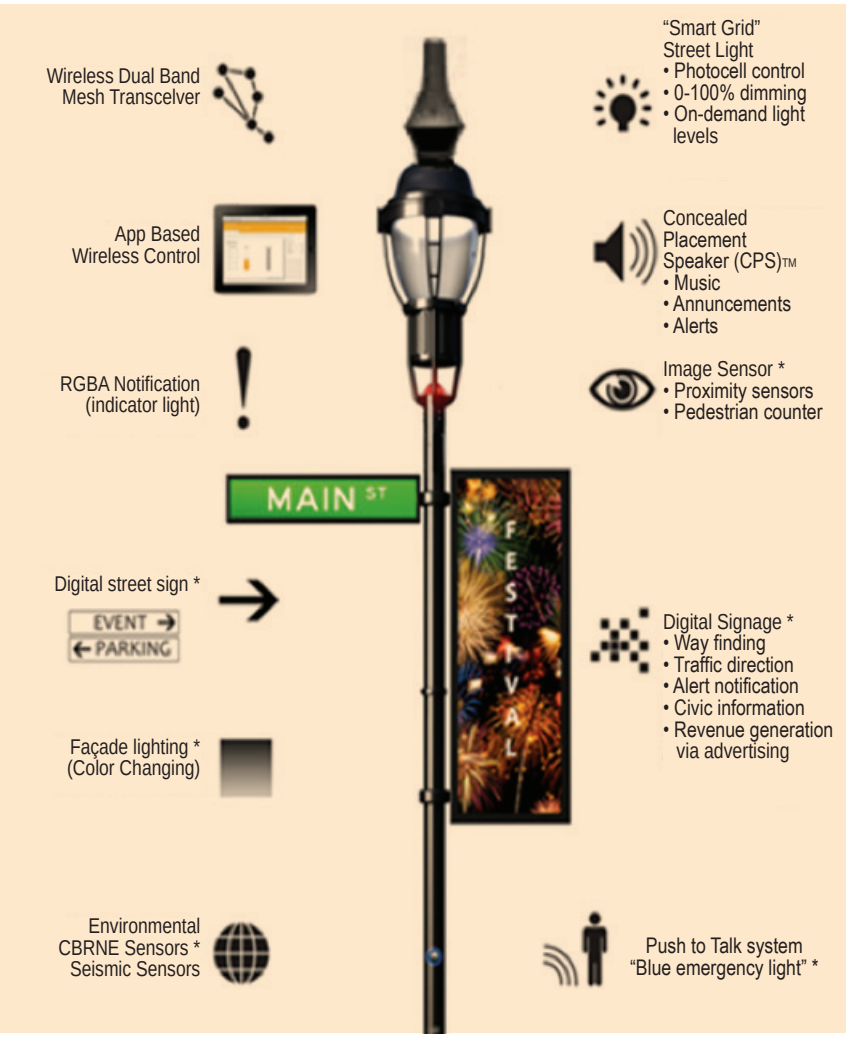
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Integrated Smart Lighting System

Integrated Smart Lighting System provide smart technology on-board of poles.



- **LED:** Excellent LED diodes technology and quality components. 100.000 hours of MTBF, comply with EN 60825-1 and EN 62471 directives for retinal photo biological safety.



- **Video Surveillance and Video Analysis:** Fixed and PTZ on-board cameras, Video Management Software control, Specific sounds analysis (i.e. gunshot), TVCC, Video Analysis Algorithms (Crowding or grouping, Loitering, Unattended Object, Traffic Obstacles, OCR Plate recognition, Removal of assets, Graffiti, Tailgating of people, Vehicles through secure checkpoints, Penetration of unauthorized people, Vehicles into restricted areas, and more…).

- **Internet Connection:** Wi-Fi hot-spot Internet access, Handover and Roaming management.

- **Transport Connection:** Hyperlan, Wi-Max, Mesh network.

- **Sound and Voice broadcasting:** Voice advertising and warning, music and sound broadcasting.

- **Advertising Boards:** Shopping News, Touristic and Events advertising.

- **Variable Message Panels:** Warning Messaging, Traffic conditions updates, Public Transport Information.

Integrated Smart Lighting System

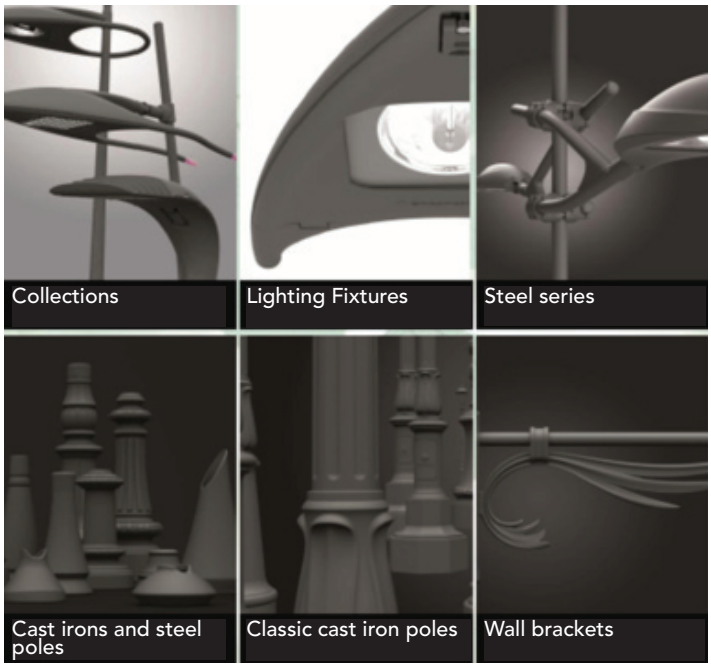
- **Meteo and Weather conditions:** Weather conditionswarning, environmental control system, meteo forecasting.

- **Smart Grid:** Improvement of efficiency, reliability, economics, and sustainability of electricity distribution, remote control and fault diagnosis, LED dimming and consumption control.



Unobtrusive video surveillance with wireless connection





Smart lighting systems reduce energy costs based on photovoltaic solar panel and includes lot of Italian stylish design poles an headlights (classic and modern).

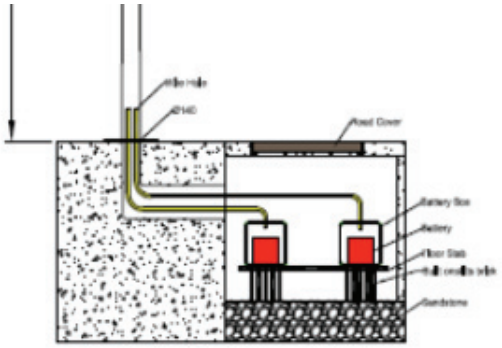
It is possible to choose how to compose the pole, from the base to headlight.



The systems can be installed in both modes:

- **traditional electricity network:** wired in a municipality, civic or private network.
- **stand-alone photovoltaic system:** autonomous system able to guarantee the power request for the technology installed on-board.

In the photovoltaic systems the batteries and the charge controller can be installed under the pole base or on the top of the pole (behind of the solar panel).



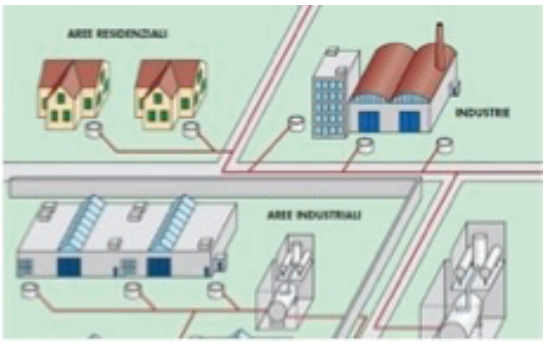


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Sewerage Capabilities

Our company can provide sewerage solutions consisting in the wastewater treatment, water re-use and solid urban waste.
We can provide solutions in the treatment of all water, from urban wastewater to the slurry of industrial plants. By innovatively applying primary and secondary flotation and filtration treatments, we are able to obtain the level of water quality desired by our clients, whether it be levels required for returning water to the sea or rivers, or quality levels required to enable immediate re-use.
We can apply conventional tertiary treatments, such as physical-chemical treatment and filter beds to purified water, or apply the latest membrane technology, from microfiltration, ultrafiltration and nanofiltration to reverse osmosis processes.
In addition we can provide solutions for solid urban waste. Our recycling plants maximize waste re-use by utilising technologies for biomethanisation and energy generation.



VACUUM SEWAGE SYSTEM

Design and construction of vacuum sewage systems which offer cost effective alternatives to traditional sewage systems for the transport of civil and industrial wastewater.

The vacuum sewage system (otherwise defined vacuum-sealed) uses the vacuum created inside a network of pipelines for the collection of sewage water and for their carriage to a final station.
The system uses the vacuum technology as a method of waste water transport; its great flexibility permits to exploit the advantages in those applications where the traditional methods are too expensive or unsuitable.

The vacuum sewage plant represents a solution for a centralized collection system at reasonable costs.

Application of the Vacuum Sewage System:

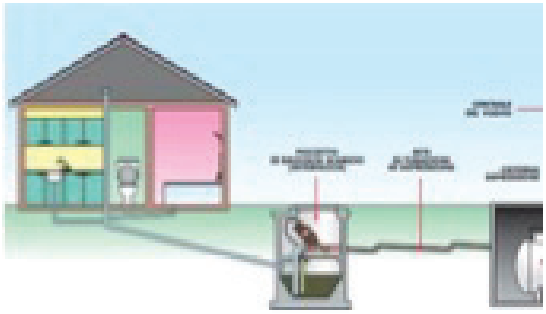
- construction of a new sewage network
- completion of existing sewage network
- extension of the sewage net at isolated inhabited units
- substitution of obsolete and inadequate network
- separation of waste water collection networks
- historical centers with particular characteristics
- wastes collection in industrial areas
- hospital centers
- tourist ports
- equipped service areas
- exhibition centers
- commercial centers
- recreational centers
- tourist villages
- coastal urbanization
- campings

Advantages of the Vacuum Sewage System:

The characteristics and the performances guaranteed by the vacuum sewage plants permit to resolve a series of surmountable problems otherwise solvable only with higher costs; the choice of an alternative system involves a series of direct and additional advantages.

- use of small diameter, light, resistant, lasting and easy-laying pipes
- reduced dimension of the excavations, both in width and in depth
- minimization of the environmental impact caused by the laying works of the pipes
- in case of excavation with ground water, reduction or elimination of the costs for well- point
- absolute absence of infiltrations and leakages along the lines

Sewerage Capabilities



- connection at the consumptions simply with short gravity collector
- elimination of the inspection shafts
- possibility to overcome counter slopes
- possibility to avoid or overcome known or
- unexpected obstacles along the course of the pipe
- electrical connections limited only to the vacuum central
- installed global power reduction
- elimination of blocks and sedimentations: the system is self-cleaning
- flexibility of the plant installation which can be easily and economically enlarged and developed
- ease of integration with the traditional sewer system existing
- realization of a separate sewerage system with minimum installation and exercise costs

LARGE WASTEWATER PURIFICATION PLANTS

Design and construction of civil and industrial wastewater treatment plants of medium to large dimensions with innovative processes and technology developed according to environmental and normative standards.
Activated sludge and fixed biomass process technologies with oxidization, BioDisc and membrane plants.

PRIMARY WATER TREATMENT PLANTS, DRINKING WATER AND DESALINATION PLANTS

Planning and realization of treatment plants for the production of drinking water and water for industrial and technological uses as well as the desalination of brackish and sea water.
Installed on site or preassembled and mounted on self-supporting skids for transportation.
Medium and large plants with biological, chemical-physical and reverse osmosis technologies.

Application fields

The desalination or demineralization of brackish water, the purifying of sea water, medicine, cooling systems, irrigation, market gardening and floriculture are the traditional fields of application for reverse osmosis technology.

Specifically, reverse osmosis can proven to:

- drinking water for communities, hotels, motels, camp sites and other accommodation facilities.
- feed water for boilers and treatment of concentrates (together with ion exchange plants)
- cooling and process water (such as used in refineries)
- highly purified water for special applications in the pharmaceutical, chemical, photographic and electronics fields.
- drinking and process water for industries.
- water for plant nurseries and greenhouses in coastal areas
- demineralized water for medicinal use in hospitals and laboratories.
- treatment of industrial waste in order to recover precious matter.
- recycling of process water.

Our plants are supplied preassembled on stainless steel skids for ease of relocation and transport including in sea containers. They come with anti-encrusting dosing stations, conditioning products and a complete group of chemicals for membrane washing.
The systems are equipped with a pre-treatment line of sand or carbon filtration and are complete with an electronic control system commanded from an electrical control cabinet.
The dimensioning of the plant depends on a series of variables which must be defined carefully in order to obtain the correct function characteristics.

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Construction & Housing













Housing
Buildings for public and civil use
Roads and Infrastructure

Convivium Africa with its subsidiaries and associate companies, operates in the sector of public and private **works with the entire cultural knowledge, structure and the highly qualified personnel** originating from former companies but in a new guise responding to the new demands of the market; a structure which has been renewed in order to make it more flexible and dynamic, a company organisation and new top managerial structure, moulded around the experience gained in several years of activities at national and international level.

It is on this perspective that the present Company Management has focused its attention, **investing in the strengthening and training of its human resources** and the implementation of the operational structure through **the acquisition of new industrial machinery**.

The rationalization of their use and the constant monitoring of the production processes makes it possible to respond today to the new needs of the global market, **a better quality control**, **greater safety in the workplace**, while containing costs, which are fundamental strengths in an ever more competitive field.

Construction & Housing



Convivium Africa is in fact constantly active in the realization of important interventions relating both to the construction and recovery, the redevelopment and the transformation of large building complexes.





The Company possesses **a modern and dynamic structure** which allows it great functionality to which is added highly qualified technological training supported by substantial financial capacity allows the company to manage and carry out highly qualified works, either in respect of sectorial specialization or economic entity.

The objectives of the company, with its primary aim of operating on a national level, where it is constantly engaged in the carrying out public works and large building complexes undertaken in its own right and for the companies belonging to the group, consist in the **expanding of its remit in countries in need of highly qualified technical and practical co-operation**.

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Integrated Detection & Scanning Solution for Security Check

Soluition for large border, special areas, driveway check-point and general security projects, providing design production and installation of Hi-Tech equipment like:

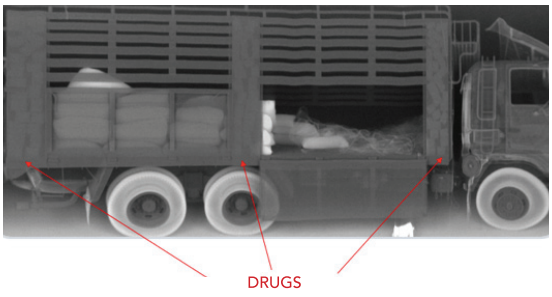
- Truck and container X ray / Gamma ray imaging systems
- Conventional X-Ray equipment for baggage, parcel and cargo
- Explosives and narcotics trace detection
- Metal detectors for checkpoint security
- Contraband detectors



SYSTEMS DETAILS

- **X-Ray**

Non-intrusive inspection system can perform radiography of a car, truck, container or any other object in seconds.
It is an advanced gamma scanner technology with impressive image analysis capabilities that ensure the highest productivity for inspection applications without compromising the safety and security of the operators and/or the driver.



MOBILE X-RAY SCANNING



FAST DEPLOYMENT X-RAY PORTAL



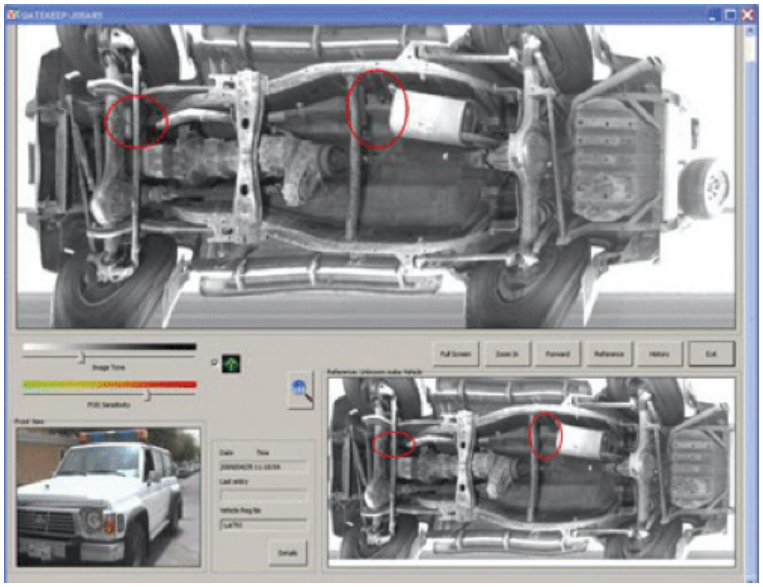
X-RAY FIXED PORTAL



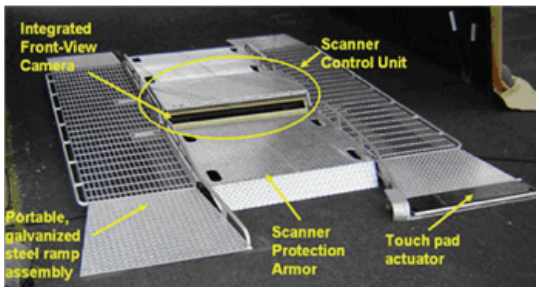
Integrated Detection & Scanning Solution for Security Check

• Under Vehicle Inspection

There are various version of the system available: fixed (grounded), fast deployable and totally mobile.







• Ummaned Bomb Disposal System

3,5 mt long arm.

The grip hydraulic ram has a strength over 5 tons when closing and 7 tons when opening.

It can cut rods of up to 4 mm diameter.

The hydraulic arm can lift up 250 Kg. The wheel base can drag up to 800 Kg.





• Handheld Inspection System

Easy operation: As an operator scans a target, an image appears in real-time on the system's dedicated tablet.

Scan Speed: Designed for a scan speed of 15 cm (6 in) per second.

Operating Time: Four (4) hours per battery charge.



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Integrated Solution for Border Control Security and Surveillance

Comprehensive and experienced system integration solutions to its shore-based integrated systems with additional waterborne and airborne interacting components for supply, installation, commissioning and after sal logistic support throughout the lifespna of the system.



- **Homeland security**
- **Coastal Surveillance**
- **Port Surveillance**
- **Surface control in coastal and deep sea**
- **River and narrow water surveillance**
- **Off-Shore Platform Security**

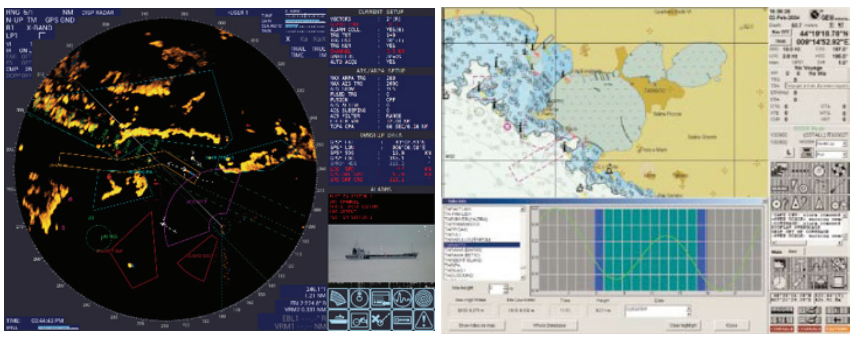
SENSORS

- Radar: Single or dual band solid state radar antenna (X – Ka band)
- Optronic: TV and IR day/night cameras integrated with the target video traker and with different shape factor (Ball - T)
- Diver Sonar and Long Range Acustic Gun
- Metereological Station



SOFTWARE AND INTEGRATED SOLUTION

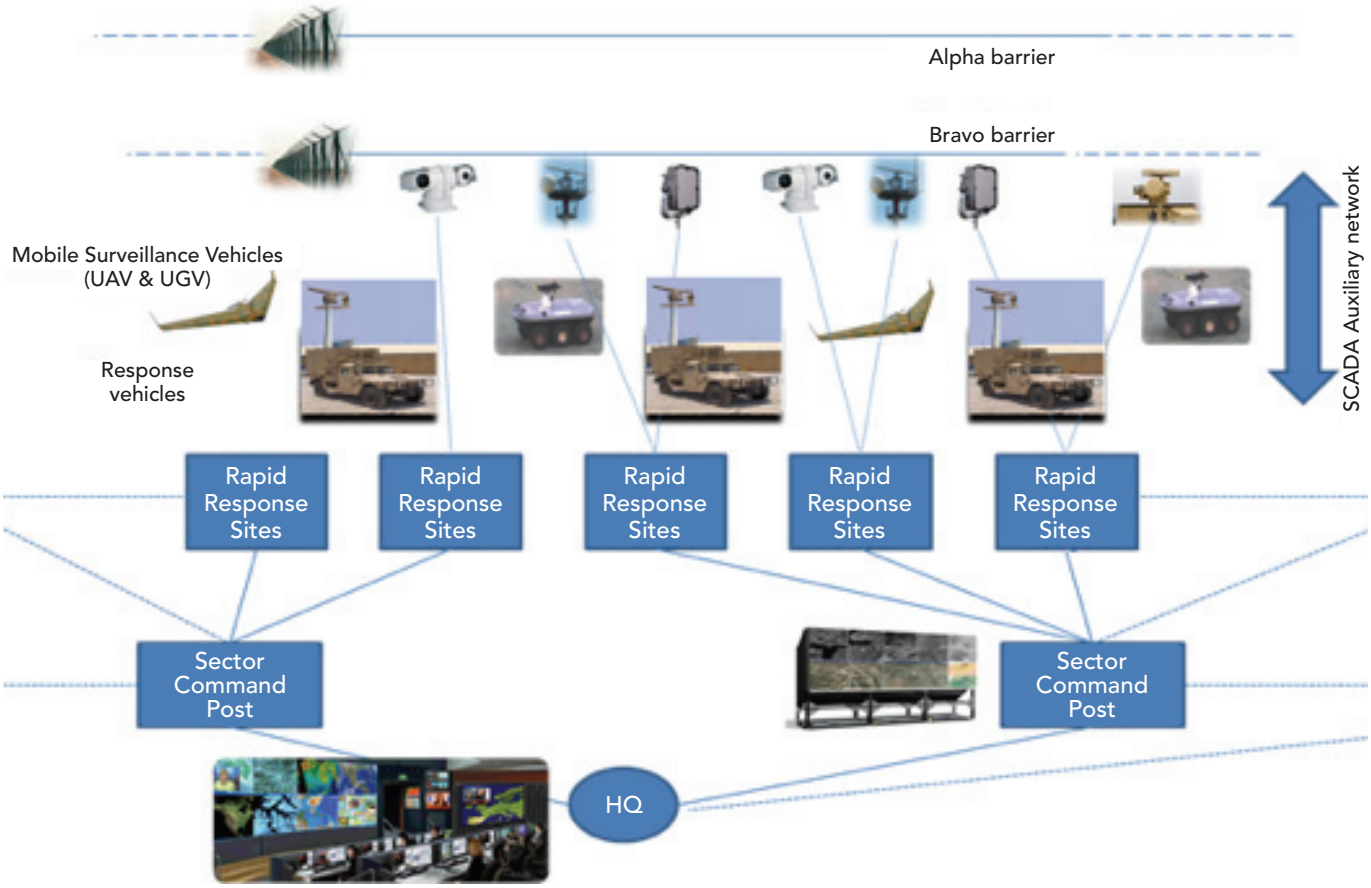
- VTS/VTMIS: Vessel Traffic System/Vessel Traffic Management Information System, Tactical and management solution for the vessel control.
- AIS: Automatic Identification System, automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships.
- C2 & C4: Command and Control - Command, Control, Communications and Computers, Strategic & Operational management software integratedwith the mayor authority (Coastal Guard, Navy, etc…).



Integrated Solution for Border Control Security and Surveillance

- **Terrestial Border Control Solution:** a similar solution is applicable for the terrestrial perimetral borders.
  Same Tactical and Operational Software.
  Different sensor will be integrated into the solution:

- X-band radar (reduced dimensions)
- UAV/UGV with multiple on-board sensors
- Optronic TV/IR Cameras
- Perimetral Intrusion Sensor and Barrier



Stand-alone Mobile Station integration.



INTEGRATE CONSOLE AND CONTROL ROOM

The collected and integrated data are forwarded to the local, regional and/or national Control Room Center.

The operators are able to manage all the sensors and information provided by the field rigs. The personnel are supported by decisional management software based on pyramidal structure depending on the role of the different users/administrators.





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Solidarity Project





Convivium Africa supports and promotes Solidarity Projects in Africa.











Since 2006, it has been promoting a project to help young students and children of the ***Kibera Primary School*** in Nairobi – **Kenya**. The school has 2.500 students coming from the slum of Kibera, the biggest and one of the poorest of all African Countries, with more than 1.000.000 people living there (see our web site www.kiberasfriends.it - www.conviviumafrica.org).
A twin program has been developed between Convivium and the management of the Government School. The project started with the aim of creating a cooperation between Italian and Kenyan football teams, but very soon it turned out into a deeper program finalized to help the 2,500 children and students and their families.

In **Ghana** Convivium created the ***"Unifootball Project"***, as a mean of social promotion, human development and integration.

In **Senegal**, in the ***Community of Mont Rolland***, another project is arising, according to the priorities of the local Community, focused on the children support.

Other similar programs are now taking off in **Tanzania** and **Mozambique**.

In all the above Countries, Convivium is developing projects for the economic growing of the local population, always considering the first priorities of the different Governments.

It is important to point out that Convivium stated to devote a percentage of the business profit to the needs of the local Communities.

Convivium's motto is: no business without benefit for the local population.