SECURITY – CIVIL PROTECTION
SOLUTIONS
FOR
FIRE FIGHTERS

SATOR TECH

Contents

<u>Introduction</u>

The need has been felt for a long time now, urged on several fronts, first and foremost by sector operators, but also by the desire to bring about a positive solution in saving people, animals, things and the environment. In this sense, the companies that mainly deal with this, and **Tempestini** is an integral part of them, have worked to find solutions that make the work of man more productive.

Countless innovations have been designed, built and tested, from equipment capable of identifying human lives under the rubble to safer clothing for operators, to chemical and non-toxic substances for humans and the environment that manage to inhibit the initiation and spread of fires.

TMP-Fire-Barrier

- A new product, designed specifically for the prevention, containment and forest fire extinguishing.
- It works as fireproof barrier where previously is applied.
- Acts in dry conditions, preventing the combustion of the pre treated material.
- It is a natural barrier to the advance and propagation of the combustion of the forest mass.
- It creates a natural barrier protecting the forest, industrial and residential areas.
- Registered product unique in the market.

- Natural origin's product free from any toxics.
- Appears in form of concentrate, in dust or paste, emulsionable in water.
- It can act directly as a extinguisher on the fire or, previously applied, stops forming a preventive barrier of absolute effectiveness.
- It remains on the combustible mass without alteration, even with fine rains.
- It forms a persistent package until its cleaning with spurt of water or abundant rain.
- he leftover of TMP-Fire-Barrier become Integrated in the nature without toxicity or damage for the vegetation or soil.
- The product remains, after applied, adhered to the forest mass.
- fter evaporated the water from the emulsion, its protective action as barrier in dry state is excellent and its duration very prolonged.

TMP-Fire-Barrier has, in summary, two essential utilities:
- As preventive treatment forming barriers of containment of the advance of the fire
- As extinguisher agent of unequalled effectiveness

Video demo

How Does TMP-Fire-Barrier work ?

TMP-Fire-Barrier, acts on the forest combustible mass or of any other type, forming a solid layer around it with the following characteristics:

1.-It prevents the contact of the oxygen with the combustible material.

2.-It is fireproof and indestructible to the normal temperatures of flame.

3.-It avoids the loosening escape gasses, preventing the combustion.

4.-It acts as much in humid, with the product just applied, as in dry conditions after the treatment.

5.-It remains indefinitely on the mass treated until the sufficient rain appearance.

TMP-Fire-Barrier is an excellent container barrier for the advance of the fire in forest, industrial and residential surroundings.

TMP-Fire-Barrier acts surrounding the combustible mass completely, remaining over the same and avoiding the contact with the oxygen, even to high temperatures.

For facility of application TMP-Fire-Barrier presents/displays coloured aspect in order to distinguish the treated zones .

TMP-Fire-Barrier

- Extinguisher agent of high effectiveness by dispersed litre. Disperseable by very simple means.
- High extinguishing power.
- Capacity of dissolution with water.
- Ecological product.
- Low production cost.
- Especially adapted for fast creation fire-guards in forest surroundings

TMP-Fire-Barrier is eliminated at the moment wished with the simple application of water.
The product keep integrated with nature without effects. It is a product free of chemical toxics.

PREPARATION AND APLICATION of *TMP-Fire-Barrier*

- TMP-Fire-Barrier appears either in transportable containers of 1 cubic meter (1000 Ls), or in dust or paste soluble in water and packed in coats.

Preparation: Water spill, mixed homogenised.
Proportion: Variable, according to its use as extinguisher or as a barrier.
Application: By conventional means.
- Application manual with personal knapsack
- Fire engine of any size or power
- Launching from the air by helicopters or airplanes

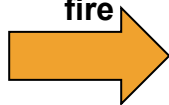* ***TMP-Fire-Barrier is 100%Compatible with any method used for the fire combat***

- **Fire-guard effect**

TMP-Fire-Barrier's application zone

Effective barrier to advance of fire

- Application with fire-engine for a real contention test

- **Huge fire with thick and dry material in forest area**

- **Huge bush fire**

- **Final result of pre-application of TMP-Fire-Barrier in the bush fire.**

PRODUCT DATA

Utility	Extinction, preparing of fire-guards.
Composition	Natural resins and additives in aqueous mean.
Preparation	1000 litre container, dust or paste in sacks.
Dangerous components	None
EU classification	Directive 67/548/EEC-2004/73/EC. Not dangerous product
PH	9 to 20
Specific Weight	1'66 g/cc to 20ºC
% of non volatile product	75% of his weight (3 hours at 105ºC)
Preparation	Soluble, miscible and emulsionable: fresh water (any origin)
Inflammation temperature	Non flammable.
Liquid ebullition	>100ºC at 1013 Hpascal

PRODUCT DATA

Road transport	Directive 94/55/EC (ADR 2005)	NON APPLICABLE
Train transport	Directive 96/49/EC (RID 2005)	NON APPLICABLE
Sea Transport	IMDG 32-04	NON APPLICABLE
Air transport	ICAO/IATA	NON APPLICABLE

EC Labelling		
Marked of pictograms	Directive 67/548/EEC 2004/73/CE (RD 363/1995. OM. PRE/1244/2006) and 199/45/CE – 2001/60/CE /R.D.255/2003)	NON APPLICABLE
Dangerous components	None	
Commercial limitations	Directive 76/769/EEC (R.D. 1406/1989)	NON APPLICABLE

TMP-Life locator - System for identifying people under rubble

In search and rescue, moments can make the difference between life and death. Having the right tools is critical. When it comes to effectively and quickly locating trapped victims who are alive but buried in building debris or other material, **TMP-LifeLocator** is that tool.

TMP-LifeLocator's unmatched technology locates the position of victims trapped in disaster rubble. Providing more information to 1st Responders than simply location, the system can distinguish between immobilized or unconscious victims and those able to move.

TMP-LifeLocator enables rescuers to cover larger areas of a disaster site than with conventional methods.

Simply put, TMP-LifeLocator saves lives.

Portable, wireless and effective through reinforced concrete and other building materials, **TMP-LifeLocator** eliminates the need for drilling and requires no complicated training.

The easy-to-use PDA control unit displays a black square when motion is detected. When only breathing is detected, a red circle is displayed. These icons indicate approximate distance to the victim from the sensor. **TMP-LifeLocator** senses victim movement or breathing in as little as 30 seconds.

Deployment takes seconds, not minutes or hours. Larger areas of a disaster site can be covered in much less time. With low power requirements, no maintenance and easily updateable "firmware" over hard-wired or wireless networks, the **TMP-LifeLocator** is a worry-free solution in the most stressful situations.

TMP-LifeLocator detects the location of living trapped victims quickly, easily and reliably. It's the right solution for every lst Responder team.

Features:
- Completely wireless, lightweight and portable
- Rugged/weatherized PDA control unit
- Low power requirements
- Weather and water resistant
- Ease of deployment
- FCC certified
- GSA - GS-24-F-1008B
- DHS Approved Equipment List

Specifications:
- Motion detection: up to 20 ft (6 m)
- Breathing detection: up to 15 ft (4.5 m)
- Detection volume: 4500 cubic ft (127 cubic m)/ 3 minutes
- Wireless range: up to 50 ft (15 m) WiFi
- Sensor unit
  - Size: 18x18x9 in (45x45x22 cm)
  - Weight: 21 lbs (9 kg)
  - Battery life: up to 4 hours
  - Battery type: LiOH
- PDA control unit
  - Size: handheld
  - Weight: 17 oz (490 g)
  - Battery life: up to 2 hours
  - Battery type: rechargeable
- Windows Mobile 5.0 (Premium Edition)
- Sunlight readable TFT display/backlight for low light

TMP-Contactor Helmet

We have a helmet available for use specifically by the Emergency Services and Search and Rescue in water based operations. Probably of the highest spec available, it is currently in use by US Navy Seals, Coastguard and Surf Rescue.

Using fully submersible components and a skull microphone, the helmet can be fully immersed in water of 7ft for 1 minute and not be affected. Coupled with its lightweight construction and fully tested against other manufacturers, this is the best available and can be connected to any portable two way radio.

Weight: 800g
Sizes: Small, Medium, Large, XL, XXL
Colour: Yellow, Black, Grey, White
Microphone: Bone vibration sensitive
Speaker: 2 x 1W, impendance 16ohm
Cable: coiled 4mm/500mm (Icom F50-F60) straight 4.2mm/800 (other radios)
Connector: 6 pin IP68 Bulgin 400 Series Buccaneer
PTT: 2 large left and right side buttons
Operational temperature - 10 to +65C continuous
IP Rating: IP67
Materials:
Outer: UV stable impact resistant ABS Plastic
Visor: UV stable shatterproof polycarbonate
Inner: Multi impact EVA closed cell foam

Photon Fire Camera - Ergonomic thermal imager for fire fighting and security surveillance

With the PHOTON Handsfree you can:
• Climb ladders and stairs
• Carry victims to safety
• Use tools effectively
• Handle the hose
• Clear obstacles

What's more, because your hands are free, you can use your standard, tried and tested, operating procedures without compromise.

Compatible with most fire helmets is common use throughout Europe, The PHOTON Handsfree is a lightweight yet robust helmet mounted thermal imager and advanced display that gives you everything you need to perform your task quickly, efficiently and with the minimum risk.

Designed and tested to withstand the rigors of firefighting the unit is available with all the features and facilities you demand, including:
• Temperature Measurement
• Colour
• Video Transmission

The PHOTON imager is easier to handle than any other miniature camera.

The ergonomic binocular design enhances usability in any situation. The PHOTON provides thermal imaging view for:

- fire fighting
- security / police operations
- rescue and search
- Handheld thermal imager
- Weight: 650g incl. batteries
- High temp, resistant Polyurethan body
- Microbolometer (Asi)
- Temperature sensitivity 0,1 °C
- IP 67
- One button operation
- Battery life: 240 min
- Battery type: 4 AA alkaline dry batteries
- Battery control: scale bar in LCD

From the receiving unit, the signal can be both recorded and transmitted via VSat satellite data connection to a server to allow viewing by one or more operating rooms or mobile devices equipped with a data connection.

System components and technical characteristics
Wearable unit: camera and transmission system.
Depending on the situation, the operator can substitute the different types of camera to be placed on the adjustable elastic support, to fit the head, the helmet or wherever desired.

TMP-VISORE: Operator visor

This viewer allows the operator to view the images taken by his camera (for example in the case of the thermal camera or the black and white one to improve visibility).

It consists of an optical display based on a revolutionary and unique optical unit (Lightguide Optical Element LOE). SVGA resolution can be provided by composite or RGB video connection.

The apparatus includes a bracket to be applied on a helmet and an electronic control (powered by batteries).

Includes a solar filter that reduces external brightness in those environments where excessive brightness reduces the view of the image inside the display.
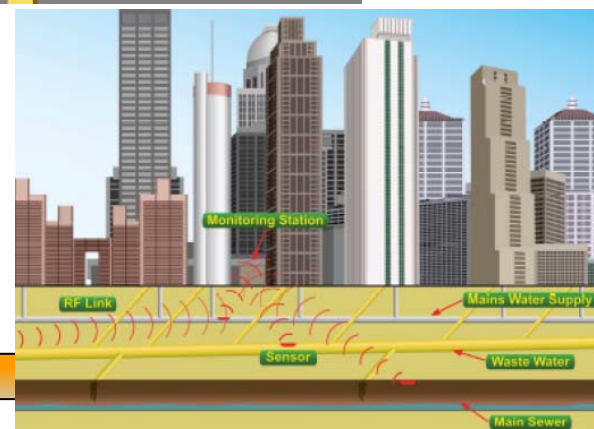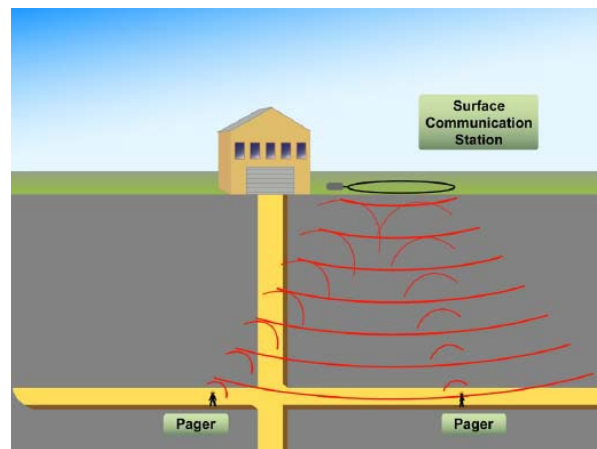
Ground-Text - Through-Ground Radio Modem

Ground-Text is a through-ground Radio Modem that was developed from the Water-Text Underwater system.

Ground-Text has been optimised to operate 2-way through rock, soil, reinforced concrete and other solid materials. Ground-Text can be readily tailored to a variety of applications.

MEETING THE CHALLENGES OF WIRELESS COMMUNICATION

We understand the challenges that operators face when designing and specifying systems for an operational scenario. This leading edge technology provides substantial operational and cost-effective solutions to the Defence & Homeland Security community

Ground-Tooth - Through-Ground Broadband Data Link

Ground-Tooth uses the latest electromagnetic digital technology to enable high data rate transmission over a short range, through ground, soil and concrete.
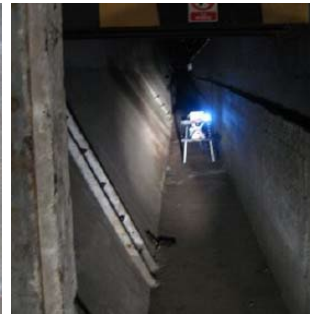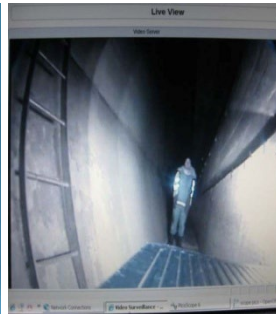When combined with a video system,
Ground-Tooth can be used as a communications aid in caves, tunnels, buildings and for disaster recovery.

TARGET APPLICATIONS
Two way wireless, high data rate transfer through rock, soil or walls
High speed secure wireless network through thick walls where wires are not an option
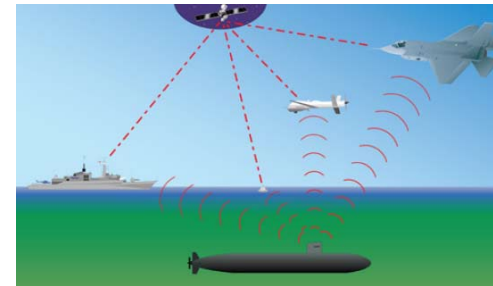Real time video streaming for covert surveillance

Water-text : Through-Water and Through-Ground Radio Modem

Water-Text is the world's first commercial through water and through-ground radio communication system, designed to interface with sensors and control units.

Water-Text can be readily tailored to numerous applications including: through water and through ground data transmission, underwater networking, AUV homing, underwater to UAV communications, test tank instrumentation and diver communications.

Delivering reliable communications under water is a challenge. We understand the challenges that operators face when designing and specifying systems for an operational scenario. The leading edge technology provides substantial operational and cost-effective solutions to the Defence & Homeland Security community

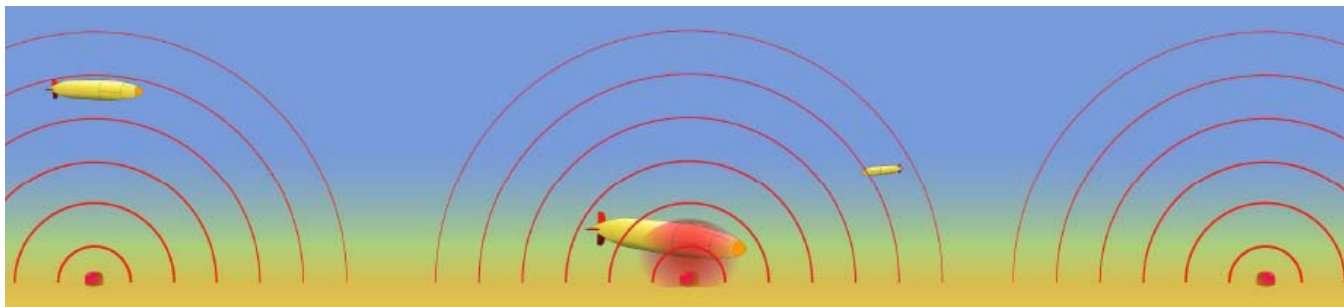# Water-Tooth - Through-Water Broadband Data Link

Water-Tooth uses the latest electromagnetic digital technology to enable high data rate transmission over a short range, through water and ground.

Water-Tooth provides 2-way penetrating, wireless RF communications through seawater at higher data rates of 100 kbps (compressed video transmission).
Applications include high speed data transfer between underwater sensors and unmanned underwater vehicles (ROVs, AUVs and HAUVs).

TARGET APPLICATIONS
- UUV to remote sensors
- UUV to UUV
- UUV to host platform
- Homing and docking
- Data collection
- Through bulkhead
- Test tank Communication
- Water-Text will support compressed video transmission

IMSI and IMEI Detector and Wi-Fi for Advanced Tactical Applications

Characteristics
- Fully passive scanning of the network environment
- List of all cells around the system in real time
- Automatic filtering of false cells based on defined criteria
- Search for the origin of the selected cell

Functions:
- The device can predefine what information from the network environment must be acquired during detection.
- The software will inform the user about the progress of the scan, highlighting the RAT (Radio Access Technology - Bluetooth, Wi-Fi, 2G / 3G4G) scanned at that moment, displaying the detected cells through the animation of an icon.
- The user can see the Provider logo, the Provider name, the timestamp indicating the time of the last detection and the RAT of the detected cell.
- You can view the following information about the detected cell:
- LAC, Cell ID, Channel, BSIC, PCI, Scrambling code ..
- Any cell detected can be marked as normal and suspect.
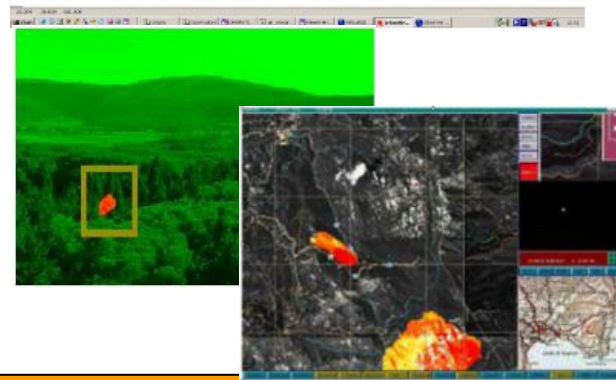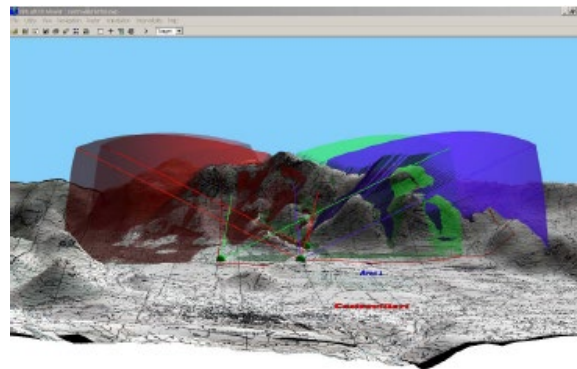- Depending on the factory settings, it can also detect Jammer.

Fire Prevention and Monitoring System

Fire prevention through the use of algorithms, thermal cameras and terrestrial sensors and weather stations, with an advance forecast of at least 2 hours of the possibility of a fire occurring.
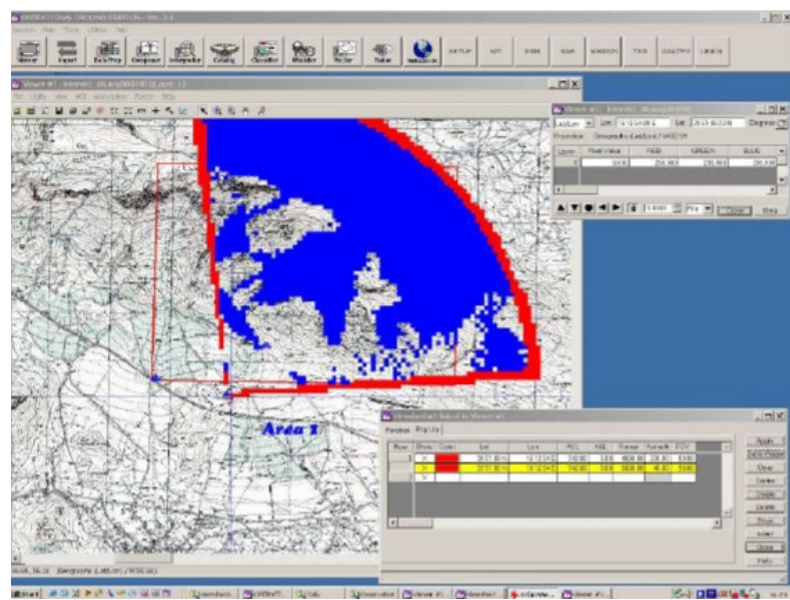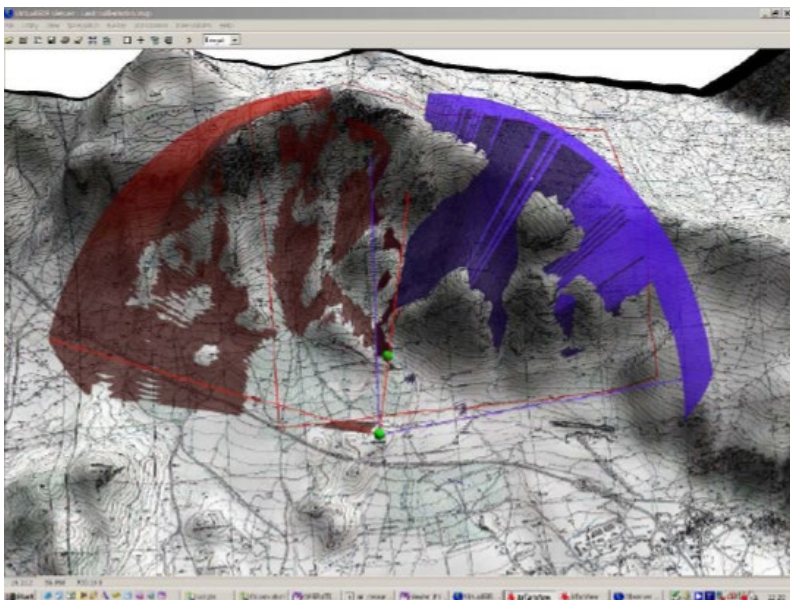
The objectives, as perceived by Tempestini, are summarized:
• allow for the earliest, most effective and documentable support of Fire Prevention activities, through an innovative approach which favors, through the use of appropriate sophisticated technologies, the constant control of the territory, in all the variables and information (images, meteorological variables , specific data of the territory) that have an impact on the early identification, evaluation and reactivity in the face of situations of potential or actual danger. Territorial control also implies the need to identify the presence of people, objects or elements through optical images.
• improve the effectiveness of emergency interventions, through the evidence of alarm situations, and through the coordination of information with the operational intervention units, in the context of the tools and procedures already in use by the Civil Protection.
• Allow a posteriori forensic-type activities, reconstructing critical situations exhaustively, or use the historical heritage stored in order to better calibrate the decision-making and operational criteria.

The analysis of the general requirements and of the general operating "philosophy" of the system, summarized below, leads to highlighting the characteristics that most influence the technological and architectural choices.

Given the context and the criticality in which it operates, the system must present stringent requirements in terms of Robustness and Reliability: it must be intrinsically "robust", must be able to operate in extreme conditions and must eliminate, at the component level, technological architecture and operational supervision, the risks deriving from malfunctions or falls of one or more system components.

TMP Special Fire Extinguisher

The TMP special fire extinguisher is universal, intuitive and, above all, highly mobile in use.

Depending on the unit's equipment, personnel may carry a fire extinguisher in a specially designed pouch.

This allows the extinguisher to be employed within seconds of the fire starting. In this case the motto "fires that are soon extinguished generally remain small, manageable and therefore extinguishable" is apt.

The extinguishing action of the spray combines performance and speed depending on the quantity of sprays used at the same time. Contrary to many other fire extinguishers used by the Police. Existing fire extinguishers are generally heavy and complicated to use, but more importantly, they are not available in sufficient numbers, and therefore are generally not where they are needed, in other words, at the place where the fire suddenly breaks out.

These fire extinguishers have been specially developed for this purpose of application and are filled with a special extinguishing agent which has been specially developed for the requirements of the Police, tested and certified.

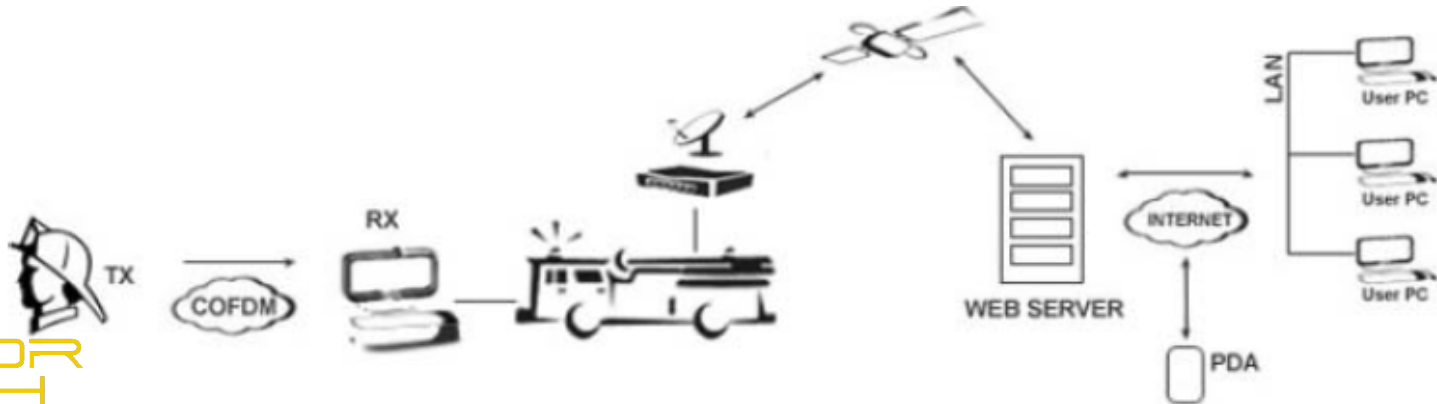In addition, the 3A /13B extinguishing performance has been tested and certified by MPA Dresden.

Video demo

Mobile video transmission and reception system dedicated to firefighters

Video transmission system developed to be used in emergency situations for all those operational departments of the fire brigade.

Consisting of a replaceable camera (colour, black/white and thermal) it is located on the operator's helmet or in another point of the body, to also allow other people, located outside the risk area, to carry out a analysis of the scene in order to evaluate the possible intervention strategies.

The video captured by the camera, in addition to being seen by the operator through the TMP-VISOR visor, is sent to the TMP -RECEIVER STATION receiving unit in real time and via COFDM wireless technology via the TMP-TRASMITTER transmission system located in a backpack o vest worn by the operator himself (the latter can be integrated into different types of clothing used by firefighters).

Satellite Bidirectional VSAT Transmission –Audio, Video, Data

It allows data (video) to be sent directly to the server to be made available via an internet connection from operating rooms, mobile devices, etc.

The transmit and receive antenna is directly located on the vehicle together with the modem, to make the connection. The characteristic shape and the properties with which it was designed allow to have a connection with the satellite in every place since it automatically provides for pointing with the satellite even when the vehicle is in motion.

Antenna characteristics:
- Light and compact, it is suitable for any type of vehicle and is easy to install
- Aerodynamic and stable design
- High speed satellite tracking for continuous communication (even with vehicle moving above 350 km/h)
- Global deployment using existing Ku satellite network
- Acquisition of satellite less than one minute
- Re-acquisition of satellite less than 10 seconds
- Uplink greater than 4 MBps

NB: Product characteristics are subject to change without notice.

Customized Systems for Fire Training

- Fire simulation
- Wide range of applications
- Versatile models
- State-of-the-art security controls
- Numerous customer references

We offer our customers a complete range of versatile and customized systems, based on the fire simulator with low emission burner and clean flame. These systems offer many advantages and, combined with our advanced safety systems, allow for realistic, reliable, safe and environmentally friendly training experiences.
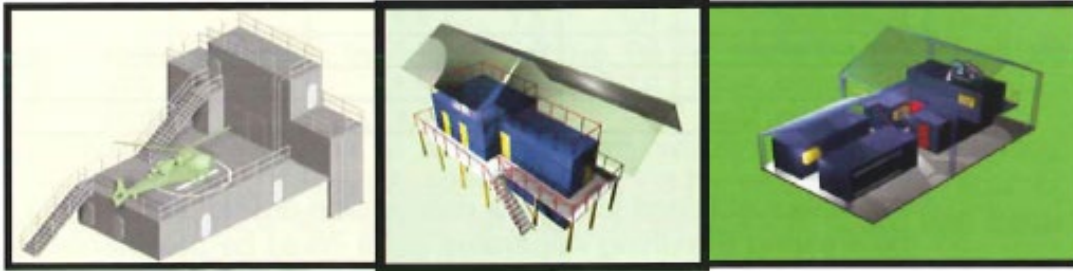
We can supply numerous references from customers using these systems, relating to both new systems, spare parts and system improvements. We also offer after-sales support to help our customers keep their systems safe, efficient and reliable.

Video demo

Modular Firefighting Training Units

A range of modular FFTU which can be built from basic construction elements to provide a low-cost Training Solution. All controls and safety equipment are included within the unit.

The modules are a conventional beam/column steel structure with a design life of 25 years. The basic 'building blocks' are 3m wide x 4, 8 or 12m long with an internal height of 2.8m.

Additional Elements:

The basic modules can be 'customised' to enhance training realism. Elements, which can be added, include:

Domestic Doors and Windows   Platforms
Loft Access Hatch   Rooflight
Ship's Hatch   Ladders and Caged Ladders
Removable Stair Treads   Removable Chimney

The Benefits of Fire Training Systems

This fire training systems offer a wide spectrum of LPG-fuelled simulators of varying fire scenario types and sizes, including a range of fire situations from a waste paper bin fire to an engine room fire on a warship. All fires are fully modulating, from minimum to maximum, under instructor control.

Each fire scenario is set, controlled and shut down in an emergency by a remote control system. This facility allows the training officer to fully control the fire and regulate its development according to the competency of the firefighters under training.

Fire Scenarios (Others Available)	
Bed, Double/Single	Bunks
Armchairs and Sofas	Waste Bin
Domestic Cookers C/W Spill	Chip-Pan
	Broken Pipes/Flanges
Engines and Sumps	Control Panel
Electric Motor/Generator	Television
Computer Tower/Monitor	Fuel Spills
Work Bench	Cylinder Storage
Gas Meter	Storage Shelves
Pallet Storage	Cars and Motorcycles
HAZMAT	Chemical Plant
Single Seater Aircraft	Transport Aircraft

Thank You!

SATOR TECH SRL

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