
TACTICAL TRAINING COMPANY
Training and Simulation Devices

COMPANY PROFILE

FORCE ON FORCE LASER TRAINING PRODUCTS AND SERVICES

Our company's roots lie in decades of experience gained by a team of instructors and engineers who previously worked closely with special forces and gained experience within NATO research groups. This deep understanding of the sector and its specific needs forms the foundation of our commitment.

The primary focus of the company is the supply of products dedicated to advanced training and related services. We cater to a broad spectrum of clients, which includes not only military forces, law enforcement agencies, and special units, but also private security companies and public administrations, offering customized solutions for their specific training requirements.

Furthermore, we conduct intensive research and development on special projects, working in close collaboration with the client to develop innovative and tailor-made solutions for their most specific needs.

Laser Training Products - LTP

Force on Force

Within the landscape of advanced solutions for military and law enforcement training, our Force-on-Force systems represent cutting-edge technology for direct engagement simulation. These systems are based on an intuitive and effective operating principle: operators equipped with a sophisticated wearable sensor system, strategically distributed across the body, legs, and head, are able to precisely detect laser beams emitted by the weapons in use. A complete kit therefore consists of this network of high-sensitivity sensors, which ensures 360-degree coverage, and a compact and versatile laser emission system, easily integrated onto a wide range of armaments, regardless of type or caliber.

Targets and Vehicles

Our Force-on-Force systems represent cutting-edge technology for direct engagement simulation in military and law enforcement training. Operators equipped with wearable sensors on the body, legs, and head precisely detect laser beams emitted by weapons. The kit includes high-sensitivity sensors for 360-degree coverage and a compact laser emission system, integrable on various weapons.

A crucial element is the variety of targets, simulating threats and operational scenarios. Laminar targets can have specific shapes (IDPA or IPSC) or be photorealistic (human silhouettes). Vehicles as dynamic targets are equipped with positionable sensors providing immediate feedback on hits, damage, or destruction to the crew, operations center, or referee. Different vehicle types are supported: cars, armored vehicles, watercraft, and aircraft.

Drones

Drones are increasingly relevant in operations. We outfit any type of drone with dedicated sensors for laser simulation. This allows both engaging drones (analyzing countermeasures) and using drones to engage operators and vehicles (studying tactics). Integrating drones into training helps understand the dynamics of drone engagement against other objects and develop elimination maneuvers with different strategies.

Engaging drones: Our systems enable the simulation of attacking and tracking drones in flight, providing crucial data on the effectiveness of countermeasures.

Utilizing drones for engagement: Drones equipped with our laser emission systems can simulate attacks against ground operators and vehicles, allowing for the analysis of the technical and tactical dynamics of this type of engagement.

LTP
EMITTER EM1

The core of our laser direct engagement simulation technology lies in our advanced infrared beam emitter. Designed with robust polymer technology, this cutting-edge device stands out for its unique ability to recognize the specific vibrations emitted by a weapon during its operating cycle. This inherent characteristic allows it to operate universally, adapting to any type of weapon or weapon simulator without the need for complex modifications or dedicated interfaces. Furthermore, the system is equipped with specific technologies capable of detecting ambient electromagnetic light radiation to conveniently adjust the power of the Class 1 laser, thereby optimizing the system's performance across varying environmental conditions.

A further differentiating element is its advanced programmability. The emitter can be configured to precisely simulate different types of damage, in close consistency with the ballistic characteristics and target effects of the real ammunition that is desired to be replicated. This flexibility allows for the creation of extremely realistic training scenarios and for the accurate evaluation of the effectiveness of different weapons and ammunition in simulated operational context.

The infrared emitter is powered by an integrated rechargeable battery, designed to ensure prolonged operational autonomy. A distinctive feature is the ability to be recharged in real-time even during the exercise. This innovative functionality allows for virtually infinite extension of the simulation activity duration, eliminating interruptions due to the need to replace or recharge batteries. The average expected charging time is approximately 60 minutes for a full charge, while the average battery life on a single charge is estimated at over 12 hours of continuous use, ensuring complete and uninterrupted training sessions.

LTP
OPERATOR SENSORS KIT

Our operator sensor kit is designed to ensure precise and comprehensive engagement detection in any operational scenario. It mainly consists of three ergonomic and durable components:

The Headset (Halo): A compact and lightweight sensor system, specifically designed to be mounted on the operator's head, ensuring coverage of engagements in this critical area.

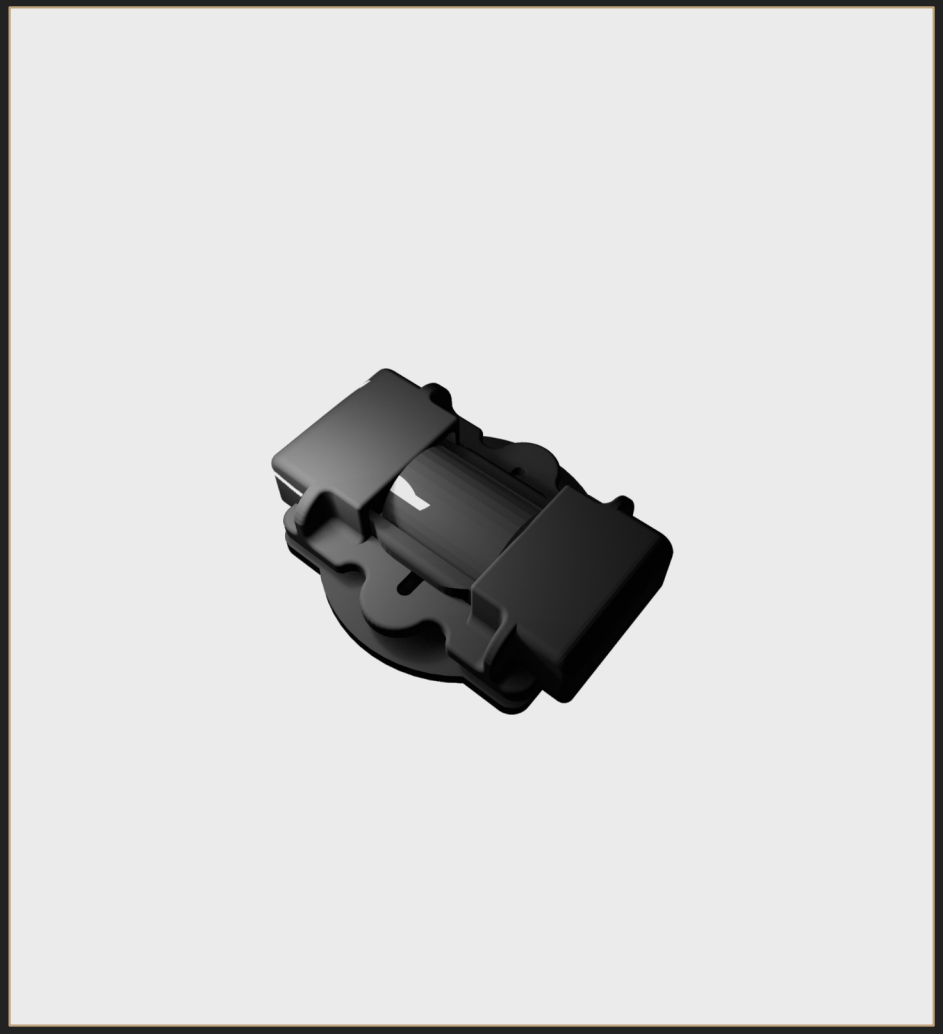
The Chest Rig (Chest): A larger sensor panel, intended for mounting on the operator's torso, offering a wide detection area for frontal and lateral impacts.

The Leg Protection (Legs): Sensorized elements that cover the front of the legs, ensuring the detection of engagements even in the lower limbs.

The strategic distribution of sensors across these three main components, together with additional sensors positioned on the shoulders, offers 360-degree omnidirectional coverage, allowing for the engagement of the operator in any postural condition, whether standing, prone, or moving. The detection capability extends over significant distances, from 0 up to over one kilometer, ensuring the validity of the simulation even in long-range engagements.

All sensors in the operator kit are intelligently connected to one or more electronic control units. These control units represent the core of the detection system, as they are able to recognize the specific type of infrared beam emitted by the weapon emitters, precisely decode the exact area of impact on the operator's body, and evaluate the level of damage sustained. Furthermore, the control units are capable of considering any virtual protection values that can be individually configured for each operator, adding an additional level of realism and complexity to the training scenarios.

LTP
SENSOR KITS



Sensor Technology Versatility for Every Type of Target

Our system architecture stands out for its versatility and scalability, allowing for the integration of the same sensor technology across a wide range of targets, whether static, laminar, buildings, maritime vehicles, aircraft, land vehicles, or drones. Each type of object is equipped with sensors specifically adapted and optimized to ensure robustness, water resistance, and appropriate weight for the specific application, while maintaining high detection performance.

Under standard outdoor lighting conditions in Europe, our sensors are capable of detecting the infrared beams emitted by our engagement systems at distances ranging from 0 to over one kilometer. This significant range ensures the validity of training exercises even in complex scenarios and over large operational areas.

A key feature of our sensors is the ability to be programmed to provide immediate visual feedback upon engagement. This allows the hit subject to clearly understand which specific area of the target has been struck, improving situational awareness and post-action analysis.

In parallel, the integrated sensor control unit offers advanced feedback capabilities. In addition to visual feedback on the target, it can release localized acoustic feedback, control external actuators and other devices via standard wireless connections such as Wi-Fi and Bluetooth to simulate additional effects (e.g., the opening of hatches, the activation of alarms, etc.). Furthermore, for long-distance communication, we utilize LoRa technology, which allows for sending and receiving feedback even at distances exceeding one kilometer. Thanks to this technology, it is possible to conduct simulated engagements of vehicles and long-range shooting training targets, receiving immediate feedback on the outcome of the engagement even when the targets are a considerable distance from the operator.

SHOOTING RANGE

COMBINED LASER & LIVE-FIRE SHOOTING RANGE TARGET TECHNOLOGIES

Enhanced Training with SR-AS Analysis Software and Specialized Targets for Combined Laser and Live-Fire Exercises.

Our advanced SA-RS system, designed for Extreme Long Range (ELR) and dynamic first-response shooting capabilities, integrates seamlessly with ballistic targets. This provides a revolutionary approach to long-distance shooting training.

Combined Training Modes: The system allows for seamless joint training in both laser simulation and live-fire modes. This versatility ensures comprehensive skill development without needing separate equipment or training environments.

Real-time Wireless Communication: The system communicates via radio, providing immediate feedback on impact points for both ballistic and laser targets. This instant data enables operators to make real-time adjustments and learn effectively.

Segmented Target Areas: Ballistic and laser targets can be divided into multiple areas, tailored to specific training requirements. This feature enables highly granular analysis of shot placement, allowing operators to focus on precision within designated zones and refine their accuracy for various engagement scenarios.

SHOTTING RANGE
LIVE-FIRE & LASER

RevolutionizeIndoor/Outdoor Live-Fire/Laser Shooting Range

Unprecedented Precision, Data, and Versatility: Prepare for a higher level of refining your shooting skills. Our cutting-edge indoor system is designed to elevate the effectiveness of your training, offering a dynamic and data-rich experience that's essential for every operator.

Maximum Realism: Engage static or moving targets at various distances using live ammunition. The system is compatible with a wide range of configurations, installable on ballistic steel targets or high-density plastic sheets.

Surgical Precision and Detailed Analysis: Thanks to an innovative vibration-reading system, our technology precisely differentiates impact areas on the target.

Every shot is monitored: the system records the number of impacts for each desired zone of the target, providing you with detailed engagement statistics.

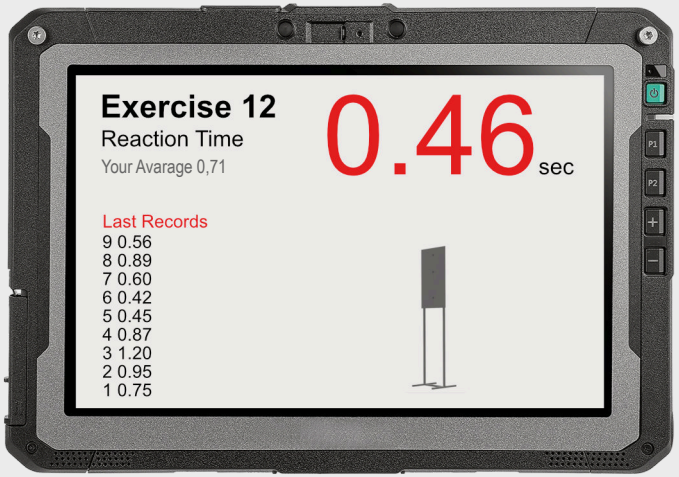
Immediate and Intuitive Feedback: Instantly improve your performance with light and auditory feedback. This interactive system is crucial for refining fundamental aspects of operational shooting, such as response times, accuracy, rapid malfunction clearing, and much more.

Your Digital Coach: Access all statistics and analyses from your shooting sessions via an intuitive web interface, available on tablet or smartphone. Track your progress, identify areas for improvement, and optimize your training path with concrete, easily accessible data.

Unmatched Versatility: From Live Ammunition to Laser Simulation: A single solution for every need. Our system can also detect and track simulated weapons for laser engagement. With the same device, you can seamlessly switch from live-fire exercises to laser simulations, maximizing efficiency and return on investment, in both indoor and outdoor environments.

SHOOTING RANGE

SR-AS



SR-AS: Shooting Range Analysis System

SR-AS is designed to comprehensively track and analyze an operator's shooting performance, covering a wide range of disciplines and scenarios.

Static/School Shooting: Precise monitoring of range sessions, focusing on basic technique.

Dynamic/Quick Response Shooting: Evaluation of capabilities in scenarios requiring rapid decision-making and reaction.

Engaging Moving Targets: Analysis of effectiveness in hitting non-static targets.

Long Distance Shooting (LDPS/ELR): Tracking precision and ballistic factor management over extreme distances.

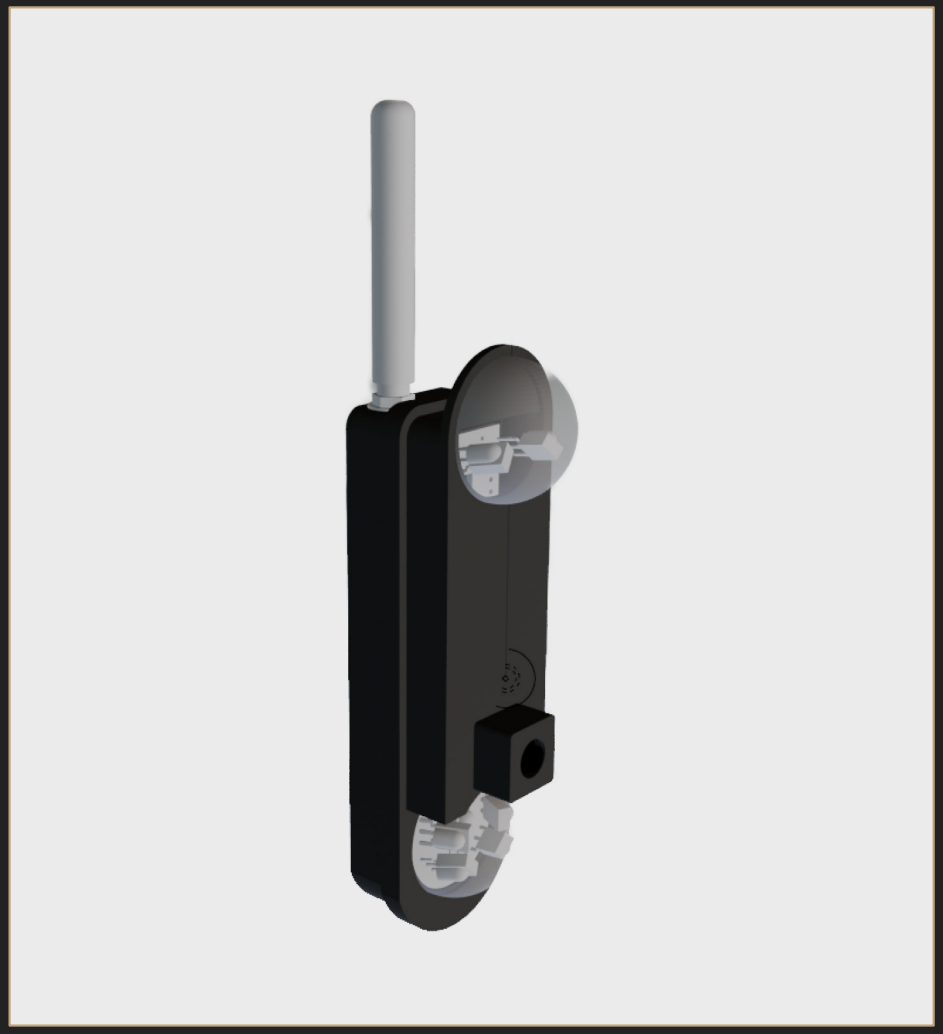
Detailed History: All collected information is archived to create a complete performance history.

Operator Profile: Aggregated data allows for the creation of a detailed operator profile, highlighting strengths and areas for improvement.

Readiness Level: The system can assess the operator's current level of readiness in various shooting areas.

Progression and Skill Maintenance: Allows monitoring the progression of skills over time, both in relation to specific training activities and the maintenance of acquired abilities.

SHOOTING RANGE
LKCS



LKCS Sensor:v A new approach to the Marksmanship Training

The LKCS (Laser Kinetic Combo System) Sensor revolutionizes marksmanship training, providing detailed feedback to enhance performance. It integrates laser precision with kinetic impact analysis of projectiles.

This versatile sensor detects both kinetic impact and laser beams on the target, enabling highly precise laser simulation or live-fire exercises. This allows operators to train in realistic scenarios, gaining targeted data for any situation (engaging vessels, remotely controlled vehicles, static targets, etc.).

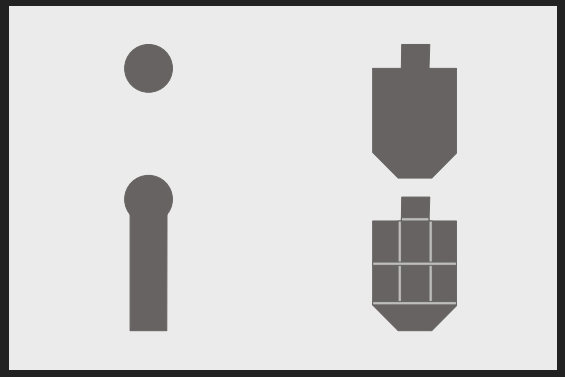
The LKCS system boasts long-range reception, facilitating information gathering over vast areas. This is invaluable for post-exercise analysis and optimizing training and operational strategies.

For a more immersive training experience, the LKCS sensor can be equipped with lighting and audio feedback systems, providing immediate signals that improve situational awareness and learning.

In summary, the LKCS Sensor is a robust and versatile solution that elevates marksmanship training standards, delivering comprehensive data and instantaneous feedback to refine operator skills in any operational scenario.

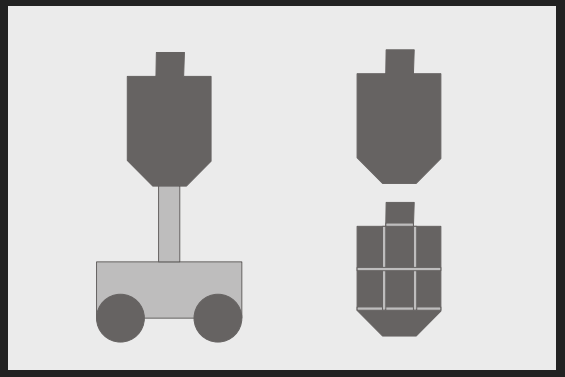
SHOTTING RANGE

Live Fire Targets



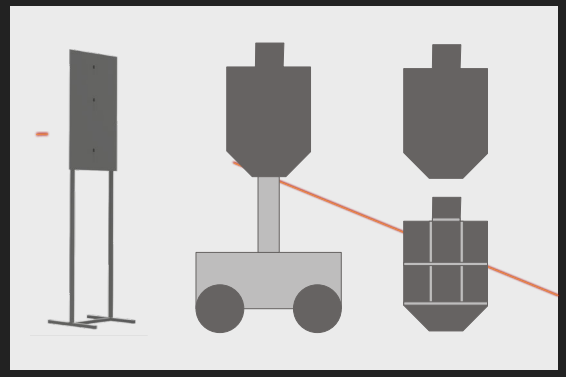
Our specialized targets for live-fire training at the range offer remarkable versatility and advanced functionality. You'll find options that mirror the classic Brinell 500+ steel impact targets, available in various designs to suit diverse training needs. Beyond traditional steel, we also offer targets crafted from high-density plastic materials, designed for repeated use, making them an excellent reusable solution. For more specific training objectives, we can even develop targets with sub-sections. This unique feature allows the system to pinpoint exactly which area of the target an operator has hit, providing highly detailed feedback. Crucially, all these targets can be seamlessly connected to our vibration recognition system, ensuring they're fully monitored by the SR-AS (Shooting Range Analysis Software) for comprehensive performance tracking.

Long Range Live Targets



When it comes to long-distance shooting, our system exclusively utilizes targets made from high-density plastic and Brinell steel. These targets can be a single, unified shape, providing general feedback on the overall impact area, or they can be designed with composite forms, allowing for precise identification of the exact section hit by the round. All the crucial data is relayed through a long-range radio system, capable of reaching several kilometers in open environments, provided there's a direct line of sight to the target – and by that, we mean an unobstructed visual path. The information gathered is instantly transmitted to the application, and an advanced GPS system ensures perfect timing synchronization among all the targets.

Laser Targets



or scenarios involving our laser engagement system, it proves to be an ideal complement to live-fire training. This versatile system allows for operation across all types of targets, from those at short distances made of materials like cardboard, aluminum composite, or wood, to dedicated live-fire targets crafted from static or moving Brinell steel. The significant advantage of combining these two training tools is the ability to maximize training time while minimizing costs, all while preserving the crucial realism of live-fire shooting.

Photorealistic Tagerts for discrimination Exercises

TRAINING SCENARIOS

FORCE ON FORCE LASER TRAINING SCENARIOS

The Force-on-Force training system we provide is designed with versatility at its core, enabling deployment across a wide spectrum of training scenarios. The only limitations to its application are the specific operational needs of the users, and the creativity, ingenuity, and proactive approach of both the operators undergoing training and the instructors facilitating it.

The system is engineered to provide a high degree of precision in engagement simulation, while maintaining simplicity of use for both setup and operation. Its realism is a key feature, achieved through accurate replication of weapon behavior and impact effects, and its duttilità (flexibility) is demonstrated by its compatibility with both live weapons firing blanks and dedicated weapon simulators. To illustrate the system's adaptability and potential, the following sections present some of the most common and significant training scenarios encountered in the operational domains of police forces, private security companies, and military units.

These examples are intended to be representative and not exhaustive, as the system can be configured to address highly specific and niche training requirements.

Training Modules

Shooting Practice

Our system is ideally suited for basic firearm training through the use of static targets. In this configuration, the system is installed on a simulated weapon, completely eliminating the risks associated with the use of live ammunition and ensuring maximum safety for trainees. This approach allows for a virtual increase in the number of participants for each training session, optimizing teaching efficiency. The essential technical composition for this type of training includes at least one infrared beam emitter, mounted on the simulated weapon, and at least one static target equipped with high-sensitivity sensors, capable of providing immediate auditory and visual feedback to the operator following the simulated engagement.

Deescalation

Thanks to our laser Force-on-Force system, operators safely practice de-escalation and escalation management in complex scenarios with role-players (civilians or threats).

This immersion allows practicing verbal and non-verbal de-escalation techniques, evaluating strategy effectiveness via immediate feedback on simulated engagement. Controlled force escalation is also simulated, from non-lethal tools to simulated engagement. The system records interactions, highlighting procedural errors, excessive force, or simulated 'casualties'.

This safe "on-the-ground" training develops rapid and conscious decisions, procedure memorization, and psychological preparedness, reducing the risk of errors in real situations.

Skill House Force on Force

Our training system seamlessly integrates with exercises in predetermined structures like Skill Houses, offering unparalleled realism. In these controlled environments, both laser-equipped simulated weapons and live weapons loaded with blanks can be used, significantly broadening the exercise spectrum.

This unique capability allows operators to train in conditions closely replicating real operations, while maintaining high safety standards. Every action during simulation is recorded in detail by the system, enabling in-depth After Action Review (AAR). These objective data-based analyses are crucial for identifying strengths and areas for improvement in tactics and procedures.

An additional element of realism is the virtual bullet size, comparable to real bullets. This detail, combined with system feedback on simulated 'hits', makes the training experience highly significant educationally, effectively developing muscle memory and situational awareness.

Training Modules

Force on Vehicle

The integration of vehicles into Force-on-Force training scenarios opens new frontiers in the realism and complexity of simulations. Vehicles can be equipped with dedicated detection systems, making them fully active participants in the scenario, capable of being precisely engaged by the operators' laser systems.

In parallel, the vehicles themselves can be equipped with simulated weapon systems, allowing occupants to engage operators on foot or other vehicles, recreating realistic vehicular combat dynamics.

A crucial aspect of our technology is its ability to simulate the penetration of glass. The system is able to detect the impact of the laser beam on the glass and transfer the engagement to those inside the vehicle, faithfully replicating the behavior of a real projectile. This advanced functionality allows operators to train in handling engagements involving moving or static vehicles, with occupants representing direct threats.

Urban Force on Force

Thanks to the versatility of our infrared laser-based Force-on-Force engagement system, it is possible to extend training simulations into complex urban areas, overcoming the physical limitations of buildings. Operators can conduct dynamic and realistic engagement simulations, interacting with other individuals even through the windows of homes or shopfronts.

This unique capability paves the way for advanced training scenarios, including intervention operations inside crowded shopping centers, operations in outdoor areas such as streets and squares, emergency response simulations within school buildings, and VIP protection exercises in varying urban contexts. The precision of our system in simulating engagement through transparent surfaces adds a crucial level of realism, allowing operators to refine their tactics and procedures in environments that faithfully replicate real operational challenges, while ensuring maximum safety for all participants.

FTX Force on Force

Our Force-on-Force training system adapts with extreme flexibility to FTX (Field Training Exercise) environments, allowing for the faithful replication of variable operational contexts, from dense wooded environments to vast desert expanses, from rugged rocky areas to dynamic coastal zones.

In these multi-domain scenarios, the system ensures extreme precision even in long-range engagements, enabling the execution of complex exercises involving snipers operating at extended distances and support and disposal teams interacting dynamically on the ground.

Upon specific request, our system can be integrated with other advanced simulation systems, further extending training possibilities. It is possible to simulate Improvised Explosive Devices (IEDs) with realistic effects and other types of specific threats, customizing the FTX environment to fully meet the most detailed and complex training needs.

Training Modules

Maritime

Our Force-on-Force training system proves to be an essential tool for training in Maritime Interdiction Operations (MIO) and Visit, Board, Search, and Seizure (VBSS) scenarios, allowing operators to conduct realistic exercises directly within ships, in engagement scenarios from ship to small boats, or from fast watercraft towards the coast or other watercraft. Safety is a top priority in these dynamic and potentially risky contexts. Our laser system ensures a safe training environment, allowing operators to familiarize themselves with standard operating procedures, boarding tactics, search techniques, and engagement dynamics in the maritime environment without the use of live ammunition.
To ensure reliability and durability in the marine environment, often characterized by harsh environmental conditions, our systems can be supplied with IP66 and IP67 certification upon request. These certifications attest to high resistance to water and dust, ensuring the proper functioning of the system even in the most demanding operational conditions.

Counter Terrorism

Our Force-on-Force system offers an advanced and versatile solution for anti-terrorism training in sensitive contexts such as trains, schools, cinemas, embassies, aircraft, and airports.

It allows for the integration of role-players with 'virtual bomb' systems to simulate complex and dynamic threats, requiring rapid and coordinated responses.

Compatibility with laser, CO2, and electric simulated weapons increases the realism and safety of the training, already successfully employed in critical environments like nuclear power plants.

The system effectively prepares special forces and law enforcement to face a broad spectrum of threats.

Spec Ops

Our Force-on-Force training system is designed to integrate seamlessly with the advanced technologies used by special forces operators, such as Night Vision Goggles (NVG) and thermal imagers. A fundamental feature of our system is the absence of any operational limitations or interference with the use of these advanced vision tools.

The emitter of our system can be mounted securely and stably using appropriate accessories directly onto the Picatinny rail of their weapons, or, depending on the configuration of the service weapon, on the barrels or silencers. This mounting flexibility ensures that the laser simulation system adapts perfectly to the standard equipment of the operators, without compromising the ergonomics, balance, or functionality of their weapons, and allowing for the combined use of night vision and thermal imaging technologies for operations in any lighting condition.

Training Modules

Counter Drones and Drone Training

In response to the growing threat posed by the widespread use of drones (Unmanned Aerial Vehicles - UAVs) for asymmetric attacks, advanced forces require specific and realistic training to develop effective counter-drone capabilities. Our infrared laser-based Force-on-Force training system offers a cutting-edge solution for this type of training.

The devices of our system can be mounted on various platforms, including flying drones, land vehicles, and watercraft, creating dynamic and complex engagement scenarios. This allows operators to practice engaging drones in complete safety with infrared laser technology at distances ranging from 0 to over one kilometer, replicating real operational distances.

Specific counter-drone training is crucial to prepare troops for the effective use of the equipment at their disposal, such as 12-gauge shotguns or other dedicated technologies, to counter and neutralize unconventional aerial threats. Our system allows for the simulation of different engagement tactics and for the evaluation of the effectiveness of countermeasures adopted in a safe and controlled environment.

TACTICAL TRAINING COMPANY

Training and Simulation Devices

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