



MAKNOON SHOOTING

MAKERS OF POWER, PROTECTORS OF THE FUTURE



MAKNOON SHOOTING

A company of
Maknoon Investment Group

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About Maknoon Shooting

Maknoon Shooting for Military Consulting, Armament, and Training

Maknoon Shooting was founded by a select group of experts with extensive military and security experience, with the aim of providing integrated solutions that enhance defense and security capabilities in the region.

We believe that true readiness stems from an integrated system that combines sound strategy, advanced equipment, realistic training, and state-of-the-art infrastructure.

Based on this philosophy, we offer a comprehensive range of services, including military and security consulting, supplying the latest armament systems, developing specialized military software, and conducting tactical war games. Our experience in establishing and equipping shooting ranges of all types (electronic, open, and simulated) on a turnkey basis is a benchmark of excellence in this field.

We don't just provide equipment; we build capabilities. Through advanced military simulation systems and specialized training programs, we ensure that personnel are at the highest levels of competence and readiness. At Maknoon, we combine deep field experience with cutting-edge technology to be our clients' trusted partner in building a more secure and prepared future.

In a world demanding the highest levels of precision and readiness, Maknoon stands as a trusted strategic partner at the forefront of the military and security industries.

We offer a comprehensive suite of solutions and services designed to empower our partners to meet current and future challenges with efficiency, confidence, and complete confidentiality.

Based on a deep understanding of the requirements of modern operational environments, we combine strategic expertise with technological innovation to deliver unparalleled services.

Our main services include:

Military and Security Consulting: We provide strategic insights and precise analyses to support decision-making at the highest levels and enhance defense and security capabilities.

Advanced Training and Qualification: We design and implement specialized training programs to enhance the combat efficiency and tactical readiness of individuals and units.

Armament and Defense Systems: We provide advanced armament solutions and, through our network, offer all types of weapons that comply with international standards and meet the specific needs of our clients.

Military Technology: We develop and provide the latest military software, simulators, and war games to enhance realistic planning and training.

Integrated solutions for establishing shooting ranges:

We specialize in the design, implementation, and maintenance of modern shooting ranges, offering turnkey solutions that encompass all technical and engineering aspects:

Studies and consultations: We provide feasibility studies and technical consultations to ensure project success.

Implementation and construction: We construct all types of ranges (enclosed and open electronic, and simulated) complete with a battle atmosphere system.

Protection systems: We provide the best protection systems, including bulletproof rubber, rubber curtains, and armored steel.

Maintenance and development: We guarantee the continuity and efficiency of range operations through ongoing and periodic maintenance and development services for existing shooting ranges.

Recreational and sports ranges: We equip specialized shooting range complexes for recreational shooting activities such as pistol, rifle, air rifle, paintball, archery, and skeet shooting.



About Maknoon Investment Group



Since 1998, Maknoon Investment Group has embarked on its journey with an ambitious vision, rapidly evolving into a leading development group. It has gradually grown to own a diverse portfolio of companies operating in multiple sectors, with services extending across numerous countries, making it a significant force in the global economic landscape.

We are proud to have built an investment entity with a strong presence in diverse markets worldwide, driven by an unwavering passion for achieving excellence and creating remarkable breakthroughs in every sector we operate in.

Maknoon adopts a proactive approach to exploring promising opportunities. Our investments encompass key areas including media, visual and digital media, international relations, sports and talent identification, industry, and military and security consulting, armament, and training.

Our expertise also extends to the civilian and military software industry, electronic warfare programs, specialized tourism, the eyewear and sunglasses industry, contracting, and many other sectors that the group has strived to develop since its inception, achieving unprecedented growth and acceleration.



Projects and Operations

At Maknoon Shooting, we don't make promises; we build tangible realities. This section is more than just a showcase of our work; it's a testament to our established presence at the heart of the defense industry and tactical training.

Our expertise stems from direct execution and complex operations spanning continents, positioning us as leaders in providing integrated security and defense solutions. We believe that true strength lies in the precise application of knowledge, and this is what we translate into every project we undertake.

Our Key Achievements and Capabilities:

1. Global Supply Network and Partnerships:

We are proud of our extensive strategic partnership network, collaborating closely with a number of leading global manufacturers and companies in advanced manufacturing processes. These partnerships enable us to supply advanced military equipment, weapons, and systems to numerous armies and regular forces, with a particular focus on the Arabian Gulf region and Africa.

2. Engineering Expertise in Infrastructure:

Our engineering expertise is evident in our proven track record of constructing and maintaining over 175 diverse firing ranges. Our expertise encompasses all types of ranges, from enclosed and open ranges to advanced tactical ranges and simulation systems.

3. A Trusted Client Base:

Our clients' trust extends across diverse and critical sectors. We proudly serve clients from government entities, major private companies, and numerous sovereign entities in several countries, providing them with tailored solutions to meet their stringent requirements.

Our Vision and Future Projects:

We are not resting on our laurels; we are investing heavily in shaping the future of defense. Our current strategic priorities focus on:

1. Drones: We are currently working diligently to develop drones with advanced combat and tactical capabilities, and we plan to establish a large, integrated manufacturing facility for this purpose, which will be a cornerstone of this vital sector.

2- Advanced Ammunition: We are preparing to establish a state-of-the-art factory for the production of smart and advanced ammunition, in cooperation with leading international experts. This industry will be localized in an Arab country.

Attracting Talent: Over the coming years, we aim to attract and nurture a large group of young inventors and innovators from several countries, with the goal of providing them with a platform to present unique military solutions and inventions that will shift the balance of power.

Partners and Suppliers

Strength in the defense industry is not built in isolation, but rather through robust strategic alliances and an integrated operational framework.

At Maknoon Shooting, we are proud that our partners in the defense and armament solutions sector comprise a select group of the world's leading companies and international experts.

We are not merely project implementers; we act as a strategic bridge connecting global innovation with regional needs.

This global network not only gives us a technological edge but also ensures our clients in the Arabian Gulf and Africa direct access to the latest defense technologies.

Therefore, we invite leading global military manufacturers and suppliers to approach us to become their partners and their trusted gateway to rapidly growing and demanding markets via our email.

Our doors are open for collaboration across all military and security fields, from weapons systems and tactical training to advanced simulator technology and war games. Our alliances are the cornerstone of our ability to deliver superior and reliable solutions.

Why partner with Maknoon Shooting?

1. Market Access: Deep experience and understanding of the needs of the Gulf and African markets.
2. Registration & Compliance:
3. Ability to register products and tenders with government and sovereign entities.
4. Local Expertise: A local team and the ability to provide technical support and maintenance.
5. Trusted Client Base: Strong relationships built with defense ministries and security agencies.

Innovators and Experts

Excellence in the modern defense world is built on minds before equipment. It's a constant race for innovation that relies on strategic thinking and technological boldness.

From this perspective, Maknoon Shooting doesn't consider itself just a company, but an integrated system that actively seeks to attract the best experts and inventors from around the world. We believe that exceptional ideas need an exceptional environment to grow and become a tangible reality.

Why Maknoon Shooting?

Joining us means becoming an integral part of the Maknoon Shooting family and a key partner in the success of this entity. We provide you with the platform, resources, and support necessary to transform your expertise and inventions from mere theories into effective solutions that shift the balance of power.



Sustainability and Social Responsibility



At Maknoon Shooting, we believe that our social responsibility transcends traditional concepts. It lies at the heart of our mission. We recognize that we operate in a vital and influential sector, and that our commitment extends beyond providing superior defense solutions to becoming an integral part of building a secure and sustainable future for the communities we serve.

Our sustainability is not measured solely by our environmental impact, but also by our ability to create safe environments, develop a capable workforce, and maintain an unwavering commitment to professional ethics.

The Pillars of Our Responsibility:

1. Ethical Responsibility and Absolute Compliance:

We prioritize integrity and legal compliance. Maknoon Shooting adheres to the highest standards of governance and transparency and operates in accordance with all international conventions and treaties governing the defense industry. The trust of our sovereign and governmental clients is built upon our impeccable record and rigorous ethical commitment.

2. Building National Capabilities (Knowledge Localization):

We believe that true sustainability stems from building local capabilities. Our social responsibility lies in

“knowledge transfer,” not merely “supplying equipment.” Our projects to establish factories (such as drone and ammunition factories) aim to localize advanced technology, create specialized jobs, support national economies, and enable our partners to achieve self-sufficiency.

3. Investing in Human Capital (Safety and Development):

Our primary responsibility is preserving lives. We achieve this through:

- a. **Advanced Training:** Our training programs and facilities enhance the efficiency of our forces, ensuring they perform their duties with the highest levels of safety and professionalism.
- b. **Nurturing Innovators:** As mentioned in the “Experts and Inventors” section, attracting and nurturing talent is a direct investment in a future that offers smarter and safer solutions.

4. Environmental Sustainability in Operations:

We recognize our responsibility to the planet. In all our operations, from engineering and constructing facilities to future manufacturing processes, we are committed to implementing environmentally friendly practices. We work to reduce our carbon footprint, manage resources responsibly, and ensure that our infrastructure projects adhere to the highest environmental standards.

Security Consulting

In a world where threats are becoming increasingly complex and risks are intertwined, from operational and physical risks to cyber threats, Maknoon offers its security consulting services as a trusted strategic partner.

We specialize in designing and implementing integrated and flexible security systems. Our goal is not only to counter threats but also to anticipate them, ensuring the protection of your human, physical, and informational assets. We guarantee business continuity in the most challenging circumstances and develop systems to combat terrorism and organized crime, providing advance warning before events occur.

Our Vision:

To be the leading choice for governments, institutions, and major corporations by providing them with proactive and innovative security solutions that enable them to grow and thrive in a safe and stable environment.

Our Core Services:

We offer a comprehensive suite of consulting services that combine field experience, strategic analysis, and cutting-edge technologies. These services include:

* Providing all types of security and combat consulting, guidance on the best weaponry for security situations and operations, and arming various types of police forces.

* **Risk Assessment and Crisis Management:**

* Conduct comprehensive threat and vulnerability assessments.

* Develop crisis management and emergency response plans.

* Develop business continuity planning strategies to mitigate the impact of incidents.

* **Critical Infrastructure and Facilities Security:**

* Design and review security plans for corporate headquarters, factories, oil facilities, and airports.

* Consulting on the latest surveillance, access control, and physical security technologies.

* **Security Intelligence and Threat Analysis:**

* Provide periodic reports on geopolitical and security risks in client operating areas.

* Conduct due diligence investigations to support investment and partnership decisions.



* Integrated Cybersecurity:

- * Assess the strength of cyber defenses and develop information security policies.
- * Raise awareness and provide training on social engineering and phishing risks.
- * Respond to cyberattacks and mitigate their damage.

* VIP Protection and Executive Security:

- * Planning and implementing security protocols for the safe travel and movement of executives.
- * Assessing personal risks and providing advice on preventative measures.

Our Distinctive Methodology:

At Maknoon, we believe that true security stems from a holistic vision. With our operational presence and team spanning several countries, we offer our clients a unique perspective that combines a deep understanding of local environments with expertise in international standards.

This combination enables us to deliver practical and applicable solutions that are compatible with diverse cultures and regulations.

Military Consulting

Based on a deep understanding of the evolving global geopolitical landscape and the rapid technological advancements in the defense sector, Maknoon is proud to offer its specialized Military Consulting division.

We provide high-level strategic expertise and practical, innovative solutions tailored to empower our partners to meet current challenges and prepare for future demands.

Our Vision:

To be the most trusted strategic partner for government and defense institutions in the Middle East, Europe, and Africa, by providing accurate analytical insights and integrated solutions that contribute to enhancing defense capabilities, achieving strategic superiority, and protecting national interests.

Our Core Services:

We offer a comprehensive portfolio of consulting services covering all aspects of modern military and security operations, including:

1. Armament Consulting and Defense Systems Modernization.

- * Needs assessment and identification of technical and operational requirements.
- * Comparative studies of the latest global systems (land, sea, air, and air defense).
- * Technical and technological support in procurement negotiations, supply contracts, and technology transfer.

2. Advanced Training and Capacity Building Programs:

- * Designing and implementing specialized training programs for special forces and combat units.
- * Developing modern tactical and strategic curricula.
- * Consulting on the establishment and development of military training and simulation centers.

3. Strategic Planning and Military Doctrine Development:

- * Analyzing threats and assessing security risks at the national and regional levels.
- * Contributing to the formulation and updating of combat doctrines to align with the nature of modern warfare.
- * Developing national defense and cybersecurity strategies.



4. Integrating Modern Defense Technologies:

- * Consulting on the integration of command, control, and communications (C4I) systems.
- * Providing solutions in the field of drones and counter-drone technologies.
- * Consulting on the application of artificial intelligence solutions in intelligence analysis and operations.

Our Methodology:

At Maknoon, we combine field military experience with deep analytical insight. Thanks to our extensive network of strategic experts and retired military personnel from around the world, and our operational presence spanning the Middle East, Europe, and Africa, we possess a unique understanding of the region's dynamics and challenges, enabling us to deliver effective and tailored solutions to each client.

Our Core Values:

1. **Absolute Confidentiality:** We adhere to the highest standards of confidentiality and protect our clients' information.
2. **Reliability:** We provide consulting services based on accurate data and objective analysis.
3. **Innovation:** We continuously strive to deliver solutions that reflect the latest advancements in technology and military thinking.
4. **Partnership:** We work as part of our clients' teams to achieve their shared objectives.

Technical and Engineering Consulting

From a mere idea to a successful project... This is where the journey begins, laying the intellectual foundation for the success of all types of military projects, whether they be military factories, programs, or even training projects.

For example, establishing a world-class firing range is a complex process that goes beyond simple construction. It's an integrated system where civil engineering, ballistic physics, aerodynamics, and safety and security intersect, in addition to a deep understanding of training doctrines and operational requirements.

Any error in the foundational "intellectual" phase of a project can lead to disastrous failure or exorbitant costs in the future.

From this perspective, Maknoon offers its technical and engineering consulting services, not as a secondary service, but as the first and most crucial step for any entity considering entering this field. We act as the "mastermind" and strategic partner, ensuring that every decision made is based on sound scientific principles and thorough studies.

- Transforming "Want" into "Scientific Vision":

Many organizations begin with a "want" (we want a shooting range), but they may lack the expertise to transform this desire into a clear "vision." Our consulting role is to ask the right questions based on in-depth studies:

- * What is the strategic objective of the range? Is it for basic training, advanced tactical training, sports, or recreation?
- * What is the nature of the forces or users? And what calibers will they use?
- * What is the nature of the proposed site and the engineering and environmental challenges it presents?

The answers to these questions determine the entire project's trajectory.

- Avoiding the "Cost of Ignorance":

Investing in expert consulting at the outset saves millions in the long run. Our expertise prevents clients from making fatal mistakes such as:

- * Constructing a range that doesn't meet the actual training needs of the forces.
- * Choosing inadequate protection systems for the caliber used, posing a safety risk.
- * Neglecting ventilation or soundproofing requirements, rendering the range unusable later.

* An inefficient design leading to high operating costs.

* Designing customized solutions for each sector:

Our studies and consultations are not standardized, but rather tailored to meet the unique needs of each entity:

- **For the military and police:** We focus on aligning the design with the combat doctrine. We ensure that every element of the field serves a specific training objective, emphasizing durability and the ability to withstand heavy use.

- **For sports organizations:** We ensure that all specifications, from distances to target types and lighting, conform to international federation standards (such as ISSF), qualifying the field to host official championships.

- **For investment and entertainment projects:** We focus on feasibility studies, visitor experience, and operational efficiency.

We design the field to be attractive, safe, and profitable.

What does our consulting service include?

Our consulting service is a comprehensive process that begins with the initial concept and ends with ready-made implementation plans:

* Site study and suitability assessment.

* Defining objectives and designing the training program to be implemented at the field.

* Selecting the most appropriate technologies and equipment based on objectives and budget.

* Developing a conceptual and engineering design for the site and all its facilities.

* Preparing all the detailed engineering drawings necessary to begin construction.

Employing **Maknoon Consulting services** guarantees that your project will be built on a solid foundation of science and experience. We don't just offer opinions; we provide meticulous studies, engineering calculations, and the culmination of 25 years of experience. This is the step that transforms your project from a mere "building" into a successful, efficient, and sustainable "strategic asset."

Feasibility Studies

Engineering Success Before Laying the Foundation Stone: The Most Critical Stage in a Project's Lifecycle.

The success or failure of any military factory producing equipment and weapons, or a strategic training facility, with investments potentially reaching millions, is not determined during the construction phase, but rather months beforehand, during the planning and feasibility study phase. The most crucial decision any military or security entity can make is not who will build the factory, but who will design and plan it on paper. From this perspective, Maknoon offers its consulting services and feasibility studies, not as a preliminary step, but as the fundamental step and the primary guarantee for the success of the entire project.

Strategic Importance: Why Start with a Study from Maknoon?

* **Transforming Vision into an Actionable Action Plan:**

Take shooting range projects as an example, where the need often begins with a "vision" or an "operational requirement" (such as: "We need to enhance the efficiency of counter-terrorism forces"). Our role is to transform this vision into a comprehensive engineering, financial, and training roadmap.



We answer the crucial questions:

- * **What is the optimal project size to achieve the objective?**
- * **Is a closed assault training range the priority, or an open tactical shooting range?**
- * **What type of equipment best suits the combat doctrine and the nature of the forces being trained (Special Forces, Infantry, Police)?**
- * **What protection systems ensure the safety of the site, equipment, and personnel, based on the terrain and the calibers used?**
- * **Optimal resource utilization and avoidance of costly mistakes:**

Our feasibility study acts as an insurance policy against wasted resources. Our extensive experience prevents common and costly errors, such as building a range larger than necessary, purchasing equipment unsuitable for training objectives, or neglecting protection requirements that could lead to future disasters. We guarantee that every pound spent translates directly into real training capability, maximizing return on investment.

- * **Designing customized and future-proof solutions:**

We don't use pre-made templates. Every study is the product of an in-depth analysis of each client's unique situation. Most importantly, we don't just design for the present, but for the future. Our shop drawings encompass not only the site but also all associated civil works (administrative buildings, control rooms, service areas, access roads), taking into account the potential for future expansion or the easy addition of new technologies.

- * **Providing a strategic document for decision-makers:**

Ultimately, we deliver a comprehensive and integrated document to the client. This study is not just paperwork; it is a strategic tool that leadership can use to:

- * **Make decisions based on clear scientific and engineering data.**
- * **Allocate budgets accurately and confidently.**
- * **Tender the project to contractors with precise technical specifications that leave no room for interpretation.**

Armed Forces Training:

At **Maknoon**, we recognize that the concept of military power for regular armies has evolved.

Battle is no longer limited to direct confrontations, but has expanded to include hybrid and asymmetric warfare. This requires conventional units (infantry, armor, artillery) to possess a flexible mindset and adaptability comparable to special forces. For this reason, we have designed advanced training programs, supported by artificial intelligence, that aim not only to enhance efficiency but also to reshape the military thinking of armed forces commanders and officers to ensure their dominance in future theaters of operation.

Our Specialized Training Programs for the Armed Forces

We act as a strategic partner to armies to enhance their combat readiness through scientifically designed programs that meet the precise requirements of each branch:

1. Infantry & Armored Corps:

- * **Objective:** To transform units from mere firepower into a smart maneuver force.
- * **Programs:** We train them in asymmetric warfare tactics in diverse environments (urban, desert), and how to organically integrate infantry and armored operations for maximum effectiveness. We use realistic scenarios inspired by modern conflicts to test their ability to deal with ambushes, improvised explosive devices (IEDs), and guerrilla warfare threats.

2. Artillery Corps:

- * **Objective:** To transition from traditional fire support to "smart artillery."
- * **Programs:** We focus on joint operations planning and management, where artillery officers are trained to use the latest command and control software to achieve immediate integration with forward-deployed units in the field (infantry and armor), providing precise and decisive fire support at the right moment.

3. Staff & Command:

* **Objective:** To build leaders capable of strategic thinking and managing complex battles.

* **Programs:** Through AI-powered wargaming, we pit commanders against an intelligent and adaptive “digital enemy.” They are trained in leadership and battle management, developing combat doctrines that are more flexible and responsive to change, honing their ability to make sound decisions under extreme pressure.

What makes our programs unique is the combination of human expertise and technological excellence:

* **A world-class team of trainers:** Our team includes staff officers and generals from leading global militaries, possessing real-world experience in leading conventional units in modern conflicts, ensuring the transfer of invaluable practical knowledge.

* **Artificial intelligence as a training partner:** We utilize our proprietary AI software to analyze unit performance during training, propose new scenarios, and identify tactical weaknesses, making each training course a unique and personalized developmental experience.



Police and Special Forces Training

Control Engineering and Enforcing the Rule of Law

At Maknoon, we recognize that the role of the modern police officer has transcended the traditional concept of law enforcement to become that of a crisis manager, risk analyst, and protector of society in the face of complex and evolving challenges, from organized crime to managing angry crowds. Therefore, we have designed advanced security training programs, powered by artificial intelligence, aimed at building a modern police officer who possesses not only tactical prowess but also operational wisdom and the ability to make sound decisions under pressure to maintain community safety.

Our Specialized Training Programs for Police Agencies

We offer customized training solutions for each unit to ensure that the acquired skills perfectly match the nature of their field missions:

1. SWAT Teams and Special Police Forces:

* **Objective:** To hone elite police officers to execute high-risk missions with minimal collateral damage.

* **Programs:** We focus on raid and entry techniques in realistic urban environments. Teams are trained in close-quarters combat (CQB), focusing on “seconds and millimeters” in close-quarters combat scenarios, with an intensive emphasis on hostage rescue and engaging armed individuals in sensitive locations, all while strictly adhering to the legal rules of engagement.

2. Public Security and Riot Control Units:

* **Objective:** To enable forces to control challenging situations firmly and professionally, and maintain public order.

* **Programs:** We offer advanced courses in crowd control and crisis management. We use AI-powered simulators to study crowd dynamics and train commanders on the best tactics for dispersing, negotiating, and controlling crowds, minimizing escalation as much as possible.

3. Criminal Investigation and VIP Protection Units:

* **Objective:** To develop proactive and preventative skills among investigators and protection teams.

* **Programs:**

* **VIP Protection:** Training teams to think like the attacker, analyze potential threats, and design dynamic and effective protection plans.

*** Critical Infrastructure Security:** Applying the latest scientific methodologies in risk assessment and designing integrated security plans for strategic sites.



Maknoon's Distinctive Footprint in Police Training

What sets our programs apart is our deep understanding of the distinct nature of police work compared to military work:

*** Trainers with Global Police Backgrounds:**

Our team includes experts and retired leaders from the world's finest tactical police units (such as European and American SWAT teams), ensuring that training aligns with international best practices in law enforcement.

*** Artificial Intelligence for Realistic Simulation:**

We utilize our exclusive AI-powered software to design scenarios that simulate complex crimes or security crises, allowing officers to test their plans and tactics in a secure virtual environment before applying them in real-world situations.

Special Forces and Special Operations Training

Here, the goal is to hone the "spearhead" to be capable of executing the most complex and sensitive missions behind enemy lines and in hostile environments.

Target Units: Counter-Terrorism (CT) teams, Hostage Rescue (HRT) teams, Special Reconnaissance teams.

Training Philosophy: Focus on pinpoint accuracy, decisive speed, harmonious teamwork, and the ability to make critical decisions in fractions of a second.

Available Training Programs:

Advanced Urban Combat (CQB):

We don't teach assaults; we teach "space control." We use our interactive, zigzag shooting houses to train teams in room and corridor clearing tactics, both dynamically and methodically.

Hostage Rescue (HRT):

Our "zero-mistake" program. We use our live-fire simulators and interactive scenarios to train teams in surgical engagement, immediate friend-versus-enemy and hostage differentiation, and crisis management with minimal casualties.

Advanced Tactical Marksmanship:

Transforming the fighter from a "precision marksman" to a "tactical fighter." Training includes marksmanship from inside and outside moving vehicles, marksmanship under physical and psychological stress (using combat simulation systems), and engagement from unconventional positions.

Unconventional Warfare and Special Reconnaissance:

Specialized programs to train units to operate behind enemy lines, conduct reconnaissance missions, build networks, and carry out special operations in hostile and complex environments.

Security Companies Training

The goal is to transform security officers from mere “guards” into proactive “risk managers,” capable of protecting the world’s most valuable assets.

Target Units: VIP Protection teams, Critical Infrastructure Security teams (oil, gas, airports), and Armed Response Teams.

Training Philosophy: Focus on prevention and containment, risk assessment, strict rules of engagement, and absolute professionalism in response.

Available Training Programs:

VIP Protection/Executive Protection:

A comprehensive training program that transforms the officer into an “intelligent human shield.” The training covers proactive planning (Advance Work), risk analysis, defensive formation tactics (Rings of Security), medical evacuation, and procedures for responding to an attack on a convoy.

Critical and Strategic Infrastructure Security:

Programs designed for security managers and field teams on how to secure complex infrastructure. We use wargaming to test contingency plans against various attack scenarios (infiltration, insider attack, drone attack). Judgmental Training: Using simulated shooting ranges, we place security officers in realistic scenarios that require a swift decision to escalate or de-escalate a situation. This ensures that the use of force is always a last resort and legally justified.



In-Field Training

Transforming Infrastructure into Real Combat Capability

Having a state-of-the-art shooting range is only half the equation.

The true value of any infrastructure, no matter how advanced, lies in the training methodology employed and the human expertise that manages it. Recognizing this fact, Maknoon offers training and training operations management services, designed to ensure maximum strategic return from the ranges we establish or develop. We don’t just hand over the keys; we provide the “mind and expertise” that unlocks the range’s full potential.

The Importance of the Service:

1- Transfer of Global Expertise and Application of Best Practices:

Our trainers are not just operators; they are international experts from diverse military backgrounds (special forces, elite units). They bring with them the latest training doctrines and scientific methods in marksmanship and tactics from around the world. Their presence ensures the application of world-class training, breaks the routine, and introduces new methods that significantly raise performance levels.

2- Ensuring Absolute Objectivity and Integrity of Results:

This is the ultimate value of our services. The presence of a neutral training team from “Maknoon” completely eliminates any possibility of manipulating shooting results or assessments, whether intentionally or unintentionally, among colleagues within the unit. This ensures that the reports reaching leadership are a true and honest reflection of the combat readiness level of individuals and units, allowing for strategic decisions based on accurate and reliable data.

3- Maximizing Return on Investment (ROI):

Investing in a state-of-the-art shooting range is a significant investment. Our service ensures that every technology and feature in this field, from control systems to mobile robots, is utilized to its full potential and in a scientifically sound manner, guaranteeing that the client receives the maximum possible training value for their investment.

4- Continuous Development Based on Analysis:

Our trainers do not implement a fixed program. Instead, they continuously analyze trainees' performance, identify systemic and individual weaknesses, and then design and modify training scenarios to address these weaknesses, creating a continuous cycle of improvement and development.



Maknoon's Methodology in Managing the Training Process:

We follow a structured process that ensures optimal results:

1- **Assessment and Planning Phase:** Before training begins, our team meets with the unit leadership to understand its strategic objectives and assess the trainees' current level. Based on this assessment, a customized training program is designed.

2- **Field Implementation Phase:** Maknoon trainers manage the entire field, implement the training schedule, and provide direct guidance to individuals, focusing on correcting errors and gradually building skills.

3- **Evaluation and Reporting Phase:** Using field technology systems (such as LOMA and computerized reporting), our trainers collect and analyze objective performance data and provide detailed periodic reports to leadership outlining progress and future recommendations.

Maknoon's Capabilities and Service Requirements

Our Capabilities:

1- **A Team of Elite Trainers:** We possess a vast database of internationally certified trainers from distinguished military backgrounds, enabling us to select the most suitable expert for each type of force.

2- **A Scientific Training Methodology:** We have developed our own training methodologies, based on scientific principles for performance analysis and skills development.

3- **Full Technological Integration:** Our unique ability to understand every detail in the fields we operate allows our trainers to utilize available technology in the most effective way possible.

Service Requirements:

1- **Strategic Partnership:** The service requires a partnership and complete trust with the contracting entity's leadership.

2- **Clear Objectives:** Defining the desired training objectives from leadership to ensure the most appropriate program design.

3- **Implementation powers:** Granting the "Maknoon" team the necessary powers to manage the training schedule and implement the approved evaluation standards.

Train the Trainer Programs

Building the Next Generation of Field Training Leaders

At **Maknoon**, we believe that true strength lies not in possessing the most advanced shooting range in the world, but in having a human mind capable of unleashing its full potential. Therefore, we offer a strategic alternative to our direct training management: our advanced Train the Trainer Programs. These courses are not just training; they are a “transfer of authority,” where we transfer our global expertise and deep technological knowledge to your officers, transforming them from mere “users” of the range into professional and independent “training leaders and managers.”

Strategic Importance: Why Invest in Trainer Training?

1- Creating a “Force Multiplier”:

By training and qualifying one officer to become a **Maknoon-certified trainer**, you are not just training an individual, but creating a “core of expertise” capable of training hundreds, even thousands, of soldiers throughout their career. It is the most sustainable and effective investment in military human capital.

2- Transitioning from Operation to Leadership:

We train officers to be like “conductors” in the field. They not only learn how to operate a target, but also how to design a complete training symphony, integrating target movement, sound effects, and tactical scenarios, and leading trainees through it to achieve maximum training benefit.

3- Ensuring Optimal Technology Use:

The “**Maknoon**” range is a complex technological system. Our courses ensure that your instructors understand every aspect of this technology, from the main control room and our exclusive software to how to analyze the data provided by the evaluation systems. This ensures that none of the advanced capabilities you have invested in are wasted.

Our Training Methodology:

Building the Comprehensive Instructor

We refine the instructor in all aspects through a comprehensive curriculum:

Theoretical Aspect: Teaching the scientific foundations of marksmanship, the psychology of learning under pressure, and how to build muscle memory in trainees.

The Technical Aspect: Intensive practical training in managing and operating all components of the range, from the smallest target to the central control and evaluation software. They learn how to design scenarios, troubleshoot problems, and interpret data.

Leadership: They learn the art of training, how to work with trainees of varying abilities, provide constructive feedback, and enforce strict safety standards.

AI Leap:

Uncovering Hidden Weaknesses

In a pioneering move, we’ve integrated AI systems into our analytical programs to act as an additional, infallible “expert eye.” Our system analyzes thousands of data points from each training session to uncover patterns that might go unnoticed by humans:

For Trainees: AI can detect a recurring, subtle error by a shooter, such as a slight tilt of the weapon at a specific angle just before firing, and alert the instructor to focus on correcting this point.

For Instructors (and this is the most important feature): The system analyzes the instructor’s own performance. Do they spend more time with high-achieving trainees and neglect struggling ones? Are the scenarios they design varied enough, or do they repeat the same patterns? Do their assessments match the numerical data? This tool helps us refine the coach himself and provide him with feedback to develop his training style.



Armament

Maknoon understands that military and security superiority begins with possessing the appropriate firepower and the most advanced defense systems.

For this reason, we offer integrated and reliable armament solutions, specifically designed to enhance the operational capabilities of armies and police forces, enabling them to enforce security and protect national interests with absolute efficiency.

Our armament methodology is based on three fundamental pillars:

A Global Agency Network:

As authorized agents and representatives of a group of the world's leading arms manufacturers, we provide our clients with direct access to the latest defense technologies. Our strong partnerships enable us to supply all types of weapons, from small arms and individual weapons to heavy weapons systems and advanced combat platforms, while guaranteeing quality and reliability.

Trusted International Mediation:

We act as a trusted strategic mediator for many countries, facilitating complex procurement processes and ensuring smooth procedures between governments and manufacturers. Our deep experience in this field guarantees our clients efficient and confidential transactions, in full compliance with applicable international laws and regulations.

Specialized Armament Consulting:

Our role extends beyond mere supply. We provide in-depth armament consulting to help our partners make informed decisions.

Our team of experts analyzes operational needs, the nature of threats, and available budgets to deliver precise recommendations on the best and most suitable weapons and systems for each type of force (Special Forces, Infantry, Air Force, Navy, Counter-Terrorism Units, etc.).



Manufacturing

Maknoon Transforms from Engineering Training Environments to Building the Tools of the Future of Defense

Maknoon's significance lies not merely in being a service or solutions provider, but in its integrated manufacturing capabilities.

We believe that controlling the manufacturing process, from initial concept and research to the final product, is the cornerstone of delivering innovative, reliable, and secure solutions.

For us, manufacturing is not just a stage in the value chain; it is the engine that drives our entire vision.

Proven Legacy: Mastering Integrated Training Systems

For decades, we have demonstrated our deep expertise by manufacturing a comprehensive training system unmatched in the region. Our in-house manufacturing capabilities give us a unique advantage, ensuring seamless integration between different components.

We Build:

Digital Brains: By developing military and civilian software, simulators, and wargaming systems, we build the "brains" that manage the most complex training scenarios.

Physical Bodies: By manufacturing shooting ranges and all their components, from smart target mechanisms and mobile robots to ballistic protection systems, we build the "body" with which forces interact.

This integration of software and hardware manufacturing ensures our clients receive seamless, highly efficient, and fully customizable systems to meet their most precise requirements.

A New Horizon: Strategic Expansion Towards Advanced Defense Systems

Building on our established expertise in electronics, software, and precision engineering, Maknoon is taking a giant strategic step today to become a major player in the manufacturing of operational defense systems.

In a move aimed at enhancing defense capabilities and contributing to strategic self-sufficiency, we have established partnerships and alliances with major global industrial entities. These partnerships aim to localize, develop, and manufacture a range of cutting-edge defense systems.

While maintaining the strict confidentiality required for these strategic projects, we can indicate that our current efforts are focused on the planning, research, development, and programming phases of pioneering projects, including:

- * Unmanned aerial systems (military drones).
- * Various other advanced equipment and munitions.

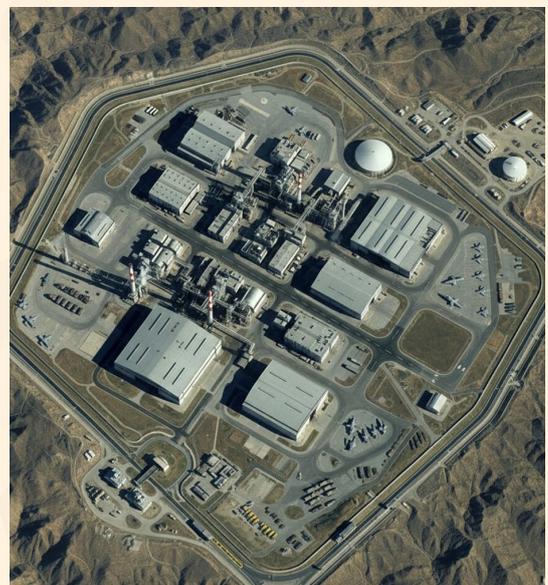
The Strategic Importance of Our Manufacturing Vision

This new direction is not merely an expansion of production lines, but rather the embodiment of a deeper vision:

1- From Simulating Reality to Creating It: Our extensive experience in simulating the most minute details of combat gives us a unique understanding of the requirements of real-world defense systems, enabling us to design and manufacture more effective tools.

2- An Engine of Innovation: We are establishing ourselves as a research and development hub, attracting the best minds and collaborating with leading entities to be at the forefront of defense technology.

3- A Partner in National Security: Believing in the importance of technological sovereignty, we aim to be a strategic industrial arm that contributes to strengthening our nations' defense capabilities and reducing dependence on foreign entities.



Integrated Simulators

Simulation and Virtual Reality Systems

In a world of rapidly accelerating technological development, simulation and virtual reality systems are emerging as essential tools for achieving operational readiness, mitigating risks, and maximizing performance efficiency. At the heart of this evolution stands **MAKNOON Media for Simulation & VR Systems**, established in 1998 as a leading company and subsidiary of **MAKNOON**.

We are proud to be the first entity specializing in this advanced technological field in the Middle East and Africa. For over 25 years, we have established ourselves as a trusted strategic partner for both the military and civilian sectors, committed to our mission of being pioneers in real-time simulation and virtual reality solutions in Egypt and the Middle East region.

Our comprehensive technical capabilities include:

- **Application and Software Development:** Designing and engineering customized real-time simulation applications, built on powerful software engines to meet the most demanding requirements.
- **3D Modeling:** Building massive libraries of high-resolution digital models of personnel, equipment, weapons, and various vehicles.
- **Building Realistic Virtual Environments:** Modeling terrain, urban theaters, and cities using satellite imagery and Geographic Information System (GIS) data to create an immersive and realistic training environment.
- **Simulator Manufacturing and Integration:** The ability to build and assemble integrated hardware-in-the-loop simulator systems and connect physical components to the virtual environment.
- **Artificial Intelligence (AI) Simulation:** Developing intelligent behaviors for personnel and units within the virtual environment, creating realistic and unpredictable training scenarios.

Portfolio of Integrated Solutions and Products

Based on our technical capabilities, we offer a wide range of simulators serving diverse sectors:

- 1- **Flight Simulators:** For fixed-wing aircraft and helicopters.
2. **Maritime Simulators:** For simulating navigation bridges (FBMS), dynamic positioning systems (DP), electronic charts (ECDIS), and maritime communications (GMDSS), as well as shipboard firefighting simulations.
3. **Land Driving Simulators:** For cars, tanks, armored military vehicles, and trains.
4. **Tactical Shooting Simulators:** For professional training on various types of light and medium weapons.
5. **Industrial Equipment Simulators:** For offshore cranes and port cranes.
6. **Maintenance Simulators:** For training in the disassembly, assembly, and repair of complex equipment.
7. **Sensor Simulators:** For radars, infrared (IR) systems, and night vision goggles (NVGs).



Wargaming

Shaping the Future Theater of Operations in a Virtual Environment

Given the rapidly evolving nature of modern conflicts and the increasing complexity of theaters of operation, traditional training and field maneuvers, however important, are no longer sufficient to encompass all potential variables and risks.

From this perspective, **Maknoon** offers wargaming systems as a crucial scientific and strategic tool, representing a virtual laboratory for decision-making and testing combat doctrines—a matter of utmost importance and complexity for powerful armies.

It is not merely a simulation; it is an advanced tactical and strategic simulation environment built on mathematical models and artificial intelligence algorithms, designed to empower commanders to engage in warfare before it begins.

The Scientific and Technical Basis of the System:

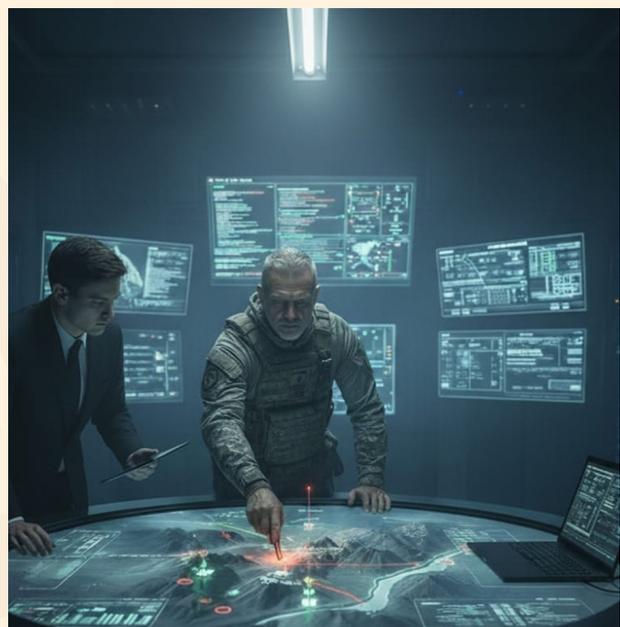
The “**Maknoon**” war games systems rely on a simulation engine that models hundreds of dynamic variables affecting the course of battles, including:

- **Topography and Weather Conditions:** The impact of terrain and weather on unit movement and sensor performance.
- **Unit Capabilities:** Accurate modeling of each unit’s capabilities (range, speed, firepower, armor) based on real-world data.
- **Logistics and Supply Chains:** Simulating the impact of fuel, ammunition, and supply consumption on the continuity of combat operations.
- **Command, Control, and Communications (C4I):** Testing the effectiveness of the command structure, information flow, and the impact of electronic warfare.
- **AI Opponent:** Using advanced algorithms to create a virtual opponent that makes unpredictable decisions and reacts to the player’s plans, simulating the “fog of war” and uncertainty of real combat.

The Strategic and Operational Importance of Wargaming for Modern Armies:

The true value of Wargaming lies in its ability to provide a risk-free environment for achieving vital objectives:

1. **Testing Combat Doctrines and Validating Plans:** It allows commanders and staff officers to test operational plans against multiple and potential scenarios, identifying weaknesses and gaps before implementing them in the field, thus significantly increasing the success rate of missions.
2. **Developing Commanders’ Skills and Refining Decision-Making:** The system places commanders at various levels (tactical, operational, strategic) under the pressures of battle, forcing them to make critical decisions under time constraints and limited information. This is a skill that can only be acquired through experience and intensive practice provided by the virtual environment.
3. **Resource Optimization:** This is the direct benefit I mentioned. By conducting dozens of electronic maneuvers at a low cost, training objectives that previously required:
4. **Reducing Financial Costs:** Significant savings in fuel expenses, equipment maintenance, and live ammunition.
5. **Time and Effort Saving:** Complex maneuvers that previously took weeks of logistical preparation can now be executed in days.
6. **Preservation of Lives and Equipment:** Human and material losses that could result from real-world training accidents are avoided.



7. Enhanced Joint Operations: The system provides an ideal platform for training various branches of the armed forces (land, air, sea, and air defense) to operate in coordination and harmony, and to test the interoperability of their different systems.

8. International Compatibility: Fully compatible with global connectivity protocols (HLA & DIS), allowing for integration with other simulation systems in joint exercises.

9. Support for Standard Military Codes: Ability to use tactical codes for both Eastern and Western blocs (NATO APP-6/GOST).

10. Full Arabic Language Support: Arabic-language control, management, and reporting interfaces facilitate use by commanders in the region.

11. Post-Mission Review and Analysis (AAR) System: Accurate recording of all events and decisions, with the ability to replay scenarios for performance analysis and tactical development.

Strategic Areas of Use:

Command and Staff Training.

Planning and Management of Air, Naval, and Unmanned Aircraft (UAS) Operations.

Simulating Border and Crossing Security and Counterterrorism Scenarios.

Disaster Response Planning, Relief Operations, and Fourth-Generation Warfare.

Military Software

Military Software Systems and Customized Digital Solutions

In an era where information is a powerful force and digital sovereignty is a cornerstone of national security, Maknoon offers specialized military software development services to build a secure and efficient digital infrastructure. We understand that off-the-shelf solutions do not meet the unique and complex requirements of modern military and security operations.

Therefore, we don't just sell software; we build integrated systems specifically designed to meet your needs.

Our Development Methodology:

- **Custom-Built:** We conduct a thorough analysis of each client's and each military unit's requirements—whether command and control (C2), intelligence, logistics, or special operations. Based on this analysis, we design and build a unique software system that precisely meets those requirements.

- **Security by Design:** Security is not an added feature; it is the foundation of every line of code we write. We use advanced encryption protocols, a robust infrastructure, and rigorous development methodologies to ensure absolute protection against cyberattacks and threats.

- **Absolute confidentiality:** We guarantee complete confidentiality for the project from planning through delivery and maintenance. All client information and data are treated as sovereign information and are subject to the highest levels of protection and privacy.

- **Interoperability:** We design our systems to seamlessly integrate with your existing platforms and systems, ensuring a unified flow of information and enhancing the efficiency of joint operations.



Target Robots

In the **Maknoon** training doctrine, we believe that a fighter must train as they will fight. On the real battlefield, the opponent is neither stationary nor moving in a predictable manner. Based on this principle, we have developed and integrated one of the world's most advanced training systems across all our shooting ranges: the Tactical Autonomous Robotic Systems (TARS). These robots are not merely moving targets; they are semi-intelligent adversaries, designed to break all traditional training patterns and place the trainee in confrontation with an unpredictable opponent.

Scientific and Military Importance: Why Moving Robots?

1- Breaking Predictive Loops:

Scientifically, when the human mind is trained on targets that appear and move in a repetitive pattern (even a complex one), it begins to anticipate movement and react based on that anticipation rather than a genuine response. The robots we develop move randomly and interactively, forcing the trainee's mind to remain in a constant state of "tactical alertness," analyzing movement, aiming, and firing based on real-time and changing data, just like in a real engagement.

2. Simulating an Aggressive Adversary:

Unlike targets that move laterally, our robots are programmed to perform aggressive behaviors. The robot can directly attack the shooter's position, maneuver to take cover, or move laterally while firing (virtually). This forces the trainee to cope with the pressure of an adversary closing the distance and posing an immediate threat, which is vital training for close-quarters combat scenarios.

3. Training in Shooting and Performing Under Physical Pressure:

Hunting or maneuvering against a robot that moves unpredictably forces the trainee to move and shoot simultaneously (shoot on the move), and to manage their breathing and effort, adding a layer of physical realism that stationary targets do not provide.

Maknoon's Role in Development and Innovation:

Our leadership in this field lies not only in the use of robots, but also in their in-house design and development to meet the most precise training requirements.

1- Behavioral AI Development:

The robot's "brain" is created by our engineers. We develop software that empowers robots to move randomly, simulate basic tactics, and interact with the trainee's position, making each training scenario a unique and unrepeatable experience.

2- Robust Platform Engineering:

We design and manufacture the robots' physical structures to operate in the harshest open and closed field conditions. Our robots feature an armored structure to protect critical components, robust drive systems (wheels or tracks) for traversing various terrains, long-lasting batteries, and a modular target carrier capable of holding wooden stakes or mannequins while stationary or in motion.

3- Seamless Integration with Field Systems:

Our robots are not separate units, but rather an integral part of the field ecosystem. They are centrally controlled from the control room, and their movements can be integrated with the appearance of fast targets and sound and light effects to create a cohesive and harmonious combat scenario.



International and Military Public Relations

International Affairs and Defense Diplomacy



In a world where interests are intertwined and challenges are increasing, the importance of strategic dialogue and building bridges of trust between countries and governments is paramount.

Recognizing this reality, Maknoon established the International Affairs and Defense Diplomacy Department as its specialized arm for managing high-level relations and playing a constructive and effective role on the international stage.

We do not see ourselves as just a company, but as a strategic partner for countries, operating in the delicate space where diplomacy intersects with security and defense.

Our Mission and Vision:

- **Building Bridges and Neutral Mediation:** We act as a neutral and reliable bridge of communication to bring together the perspectives of governments and countries. Through our diplomatic channels and deep understanding of the complex geopolitical landscape, we contribute to defusing tensions and facilitating constructive dialogue to resolve disputes.
- **Facilitating Strategic Partnerships:** We play a pivotal role in establishing and activating fruitful partnerships. Whether military partnerships to enhance joint defense capabilities, training programs to exchange expertise, or government agreements to strengthen economic and security cooperation, we pave the way for sustainable alliances.
- **Defense Diplomacy:** We believe that military cooperation is one of the most powerful tools for building trust. We dedicate our efforts to creating joint initiatives such as military exercises, defense technology exchanges, and security policy coordination, which enhance regional and international stability.

Why Maknoon for this role?

- **Confidentiality and Reliability:** Our name, **Maknoon**, reflects the essence of our work.

All our actions and initiatives are conducted with absolute confidentiality and full respect for the sovereignty of our clients and partners.

- **Global Network:** Thanks to our presence and extensive network across the Middle East, Europe, and other regions, we possess a unique understanding of international dynamics and the ability to act effectively.

- **Neutrality and Objectivity:** As a non-governmental organization, we can offer a neutral perspective and propose innovative solutions outside of traditional diplomatic frameworks.

Shooting Ranges

Our History and Services in Shooting

Shooting Range Engineering: From Strategic Concept to Operational Readiness

A Quarter Century of Leadership in Training Technology:

For over 25 years, **Maknoon** has been at the forefront of the live-fire training infrastructure engineering and manufacturing sector.

We specialize in designing and equipping electronic and simulated shooting ranges, both indoor and outdoor, for the military, security, sports, and recreational sectors.

Our core mission is to enhance the combat readiness and skill performance of forces by providing our clients with integrated training systems and innovative solutions that align with the latest training doctrines and international standards.

We don't just build ranges; we design integrated training environments that ensure operational superiority. Our Integrated Project Implementation Methodology (End-to-End Solutions)

We adopt a comprehensive "turnkey" methodology that covers the entire project lifecycle to ensure the client's objectives are achieved with the highest efficiency and quality:

1. Consulting and Strategic Design Phase:

- **Needs Analysis:** We conduct in-depth studies to understand the training requirements and combat doctrines of each force (Armed Forces, Police, Special Forces, Counter-Terrorism).
- **Preliminary Design:** Based on the analysis, we determine the most suitable solutions, whether for open or closed fields, the type of systems targeted, and ballistic protection requirements.

2. Engineering and Civil Works Phase:

- **Preparation of Execution Drawings:** We provide detailed engineering drawings for all civil and construction works, including buildings, embankments, and fortifications.
- **Construction Execution:** We undertake the execution of all civil works according to the highest standards of quality and safety.

3. Systems Supply, Integration, and Operation Phase:

- **Manufacturing and Supply:** We manufacture and supply all field equipment, from target systems to control units.
- **Installation and Integration:** Our technical team handles the installation and integration of all equipment into a comprehensive central control system.

4. Training and Knowledge Transfer Phase:

We conduct specialized training courses for technical and operational personnel on the management and maintenance of all field components.

5. Technical Support and After-Sales Services Phase:

We are committed to providing full technical support and comprehensive maintenance services, and supplying spare parts for a minimum of 10 years to ensure continuous operation at peak efficiency.

Our Core Technical and Manufacturing Capabilities:

Our strength lies in our ability to manufacture a wide range of advanced systems, including:

1. Intelligent Interactive Target Systems:

We manufacture all types of target mechanisms to meet various training scenarios:

- * **Infantry and Armored Targets:** Fixed, Moving, Pop-up, and Rebound.
- * **Rotating Targets:** Single and Pair (with a Hostage) for target discrimination training.
- * **Multi-Purpose Targets:** Combining recoil and rotation movements to provide complex scenarios.
- * **Suspended Monorail Systems:** For executing highly complex mobile attack scenarios.
- * **Sport Shooting Targets:** Systems compliant with the International Shooting Sport Federation (ISSF) standards for pistol and rifle competitions.

2. Control and Command Systems:

We develop centralized computer control systems, fully supporting Arabic, and operating via wired or wireless (short and long range) communications, with advanced software for recording and analyzing shooting results.

3. Battlefield Effects Simulation:

To add realism to training, we provide:

- * Audio and visual simulators for gunfire, artillery, and explosions.

- * Smoke generators and vibration bases to simulate field conditions.

4. Integrated Ballistic Protection Systems:

We provide scientifically designed protection solutions for enclosed and open ranges to safely absorb projectile energy, including:

- * Protection for walls, ceilings, and floors. Advanced Bullet Traps (Inclined, Vertical, and Rubber Strip)



Specialized Solutions and Services

In addition to new projects, we offer specialized services including:

1. Upgrading and Developing Existing Shooting Ranges:

We upgrade traditional shooting ranges and convert them into smart, wirelessly controlled electronic systems, increasing their efficiency and reducing operating costs.

2. Operation and Maintenance (O&M) Contracts:

We provide trained technical and administrative staff to operate and maintain existing ranges, ensuring 100% operational readiness.

3. Shooting Club Establishment Studies and Consultations:

We offer comprehensive consulting services for establishing sports shooting clubs, from planning to supplying equipment approved by international federations.

4. Simulators and Training Aids:

We manufacture and supply laser and live-fire shooting simulators, as well as all necessary training aids such as shooting tables and shooter skill testing equipment.

Closed Electronic Shooting Ranges

With the global shift of military operations towards urban environments (Urban Warfare) and asymmetric warfare, the need for specialized tactical training focused on close-quarters combat (CQB) has become paramount.

The closed electronic shooting ranges designed and implemented by Maknoon represent the ideal scientific solution to these requirements. They provide a secure, isolated “tactical laboratory” where the individual and collective skills of special forces and security personnel can be honed to the highest levels of precision and professionalism.

The Engineering and Scientific Principles Governing Our Designs

We don't simply build a firing space; we engineer an integrated system based on precise scientific principles that ensure absolute safety and maximum training realism:

1. Total Ballistic Integrity:

Every component of the range (walls, ceilings, floors, bullet traps) is designed to withstand and contain the full energy of the ammunition used, preventing any dangerous ricochet or penetration.

- We use specialized materials such as ballistic steel (AR500/AR550) and high-density rubber blocks, with engineering designs that ensure projectiles are safely guided into bullet traps.

2. Environmental & Health Control:

Ventilation System (HVAC):

The range is equipped with a specialized laminar airflow ventilation system designed to draw lead dust and gunpowder vapors away from the shooters' area and pass them through high-efficiency particulate air (HEPA) filters, ensuring a healthy and safe working environment that meets international standards.

3. Acoustic Management:

We use soundproofing materials to reduce noise levels within the range, protect the hearing of trainees, and prevent noise disturbance to the surrounding areas.

4. Tactical Lighting Systems:

The range is equipped with fully programmable LED lighting systems that allow for the simulation of various field conditions such as daylight, dusk, total darkness, and low light. Strobe lights can also be added to increase the difficulty and realism of training.



Types of Military Indoor Ranges and Target Systems

At Maknoon, we offer several models of indoor ranges, each designed to meet a specific training objective:

Type 1: Basic Tactical Marksmanship Ranges

Description: Consists of multiple individual shooting lanes, designed to focus on honing basic and advanced marksmanship skills.

Target Types: Includes stationary targets that can be programmed to pop up or rotate to reveal friend or foe positions.

Calibers Used: Primarily designed for pistol calibers (such as 9mm) and short rifles.

Target Forces: Ideal for basic training for all forces and routine skills maintenance exercises.

Type 2: Interactive Combat Fields in Built-Up Areas (CQB “Shoot Houses”)

Description: A modular design consisting of multiple rooms and corridors that can be reconfigured to simulate a building or facility.

Target Types: In addition to fixed and rotating ground targets, this type features overhead monorail target systems. These systems allow targets to move dynamically through rooms, emerging from behind corners and doorways, realistically simulating enemy movement.

Capacities Used: Designed to withstand assault rifle calibers (such as 5.56mm and 7.62mm) used in assault operations.

Target Forces:

- * Special Operations Forces
- * Counter-Terrorism Units
- * SWAT Teams
- * Rapid Response Forces

Type 3: Surround Shooting Ranges (360-Degree Ranges)

Description: An advanced design that allows the trainee or team to engage targets in all directions (360 degrees) without being confined to a single firing lane, providing maximum realism in simulating ambushes and unexpected encounters.

Target Types: Utilizes an intensive mix of ground targets and ceiling-mounted target systems to present threats from all angles.

Calibers Used: Designed to withstand all calibers up to medium sniper rifles and requires the highest levels of ballistic protection.

Target Forces: Designed for the most elite units in the armed forces and security services.



Open Electronic Shooting Ranges

Building Realistic Theaters of Operation for Group Training

Moving from Individual Skill to Integrated Unit Combat Power

If closed ranges are the “laboratory” where individual skills are honed, then open electronic ranges are the “theater of operations” where these skills are integrated within a collective tactical framework.

Maknoon specializes in designing and engineering these expansive and complex training environments, which aim to train units (from platoon to battalion level) to execute combat missions in conditions that simulate the real battlefield, focusing on the principles of “fire and maneuver” and joint operations.

The Engineering and Technical Principles of Our Field Systems

Creating an effective open range requires overcoming unique technical and environmental challenges, where our solutions excel:

* Long-Range Command and Control (C2) Infrastructure:

All components of the range, which may be spread over an area of square kilometers, are connected by a robust and secure radio (RF) communications network. This network allows the control tower to instantly monitor hundreds of targets and receive performance data from them, providing a comprehensive view of the training exercises. Our systems fully support Arabic and feature a user-friendly and intuitive interface.

* Durability and Environmental Sustainability:

All target mechanisms and electronic units are designed to withstand the harshest weather conditions (heat, dust, rain) and have achieved international protection ratings (IP Rating). We also utilize independent power solutions for remote targets, such as solar panels with batteries, to ensure continuous operation without the need for complex electrical infrastructure.

*** Ballistic Security Design for Large Areas:**

We apply rigorous scientific standards in field design, including the construction of berms, backstops, and the precise delineation of Surface Danger Zones (SDZs) to ensure that all projectiles, even heavy calibers, are contained within the field boundaries with 100% safety.

Types of Military Open Training Ranges and Their Equipment

We offer a variety of solutions ranging in complexity to meet all training needs:

Type 1: Multi-Purpose Training Range (MPTR)

Description: A basic range designed to train individuals and small units in marksmanship from various distances (starting from 100 meters and reaching 1500 meters or more).

Objectives: Contains fixed infantry targets and pop-up armor, distributed at different distances, to train personnel on using various ranges of light, medium, and sniper weapons.

Calibers: Light weapons (5.56mm, 7.62mm), medium machine guns, and sniper rifles.

Forces: All branches of the armed forces and police for basic and advanced training.

Type 2: Field Firing Range

Description: An advanced range that is not confined to fixed firing lanes but utilizes the natural terrain of the area. This type is designed to train small units (platoons and companies) in combat tactics.

Targets: A mix of stationary and moving infantry targets on linear and curved paths, as well as stationary and moving armored targets, forcing the attacking force to apply tactics of firing, movement, and communication between its personnel.

Calibers: In addition to light weapons, heavy machine guns (such as .50 BMG) and anti-tank weapon simulators are used.

Forces: Infantry units, mechanized infantry, and special operations forces.

Type 3: Vehicle Gunnery Range

Description: A range specialized in training armored vehicle crews (tanks, armored personnel carriers) to engage targets from a moving or stationary position.

Targets: Full-scale armored targets (2D or 3D), stationary and moving at varying speeds, sometimes equipped with thermal imaging for night training.

Calibers: Weapons of medium and heavy combat vehicles (such as 25mm, 30mm, and even 120mm cannons for tanks).

Forces: Armored Corps, mechanized infantry units, and border guard forces.

Type 4: Combined Arms Live-Fire Training Area (CA-LFX Area)

Description: The most complex and integrated solution, representing a miniature theater of operations that allows multi-branch units (infantry, armor, engineers) to train in a comprehensive operation.

Targets and Equipment: Contains all the types of targets mentioned above, in addition to intensive battle environment simulation systems (mine and artillery explosion simulators, simulated enemy fire sources) to create a comprehensive and realistic combat environment.

Calibers: Includes all conventional calibers used in land warfare.

Forces: Designed to train company and battalion commanders in command, control, and coordination of operations between different weapons.

Zigzag Fields

Zigzag Fields (Tactical Shoot Houses): Mastering Close Quarters Battle (CQB)

The “Zigzag Field,” known globally as a “Shoot House,” is not a traditional shooting range. It is a physical simulation and a fully integrated 3D training environment designed to train individuals and small teams in Close Quarters Battle (CQB) tactics.

The essence of its zigzag design lies in creating a series of interconnected rooms and corridors that lack long, straight lines of sight. This forces the attacking force to employ assault tactics, clear corners, and deal with sudden threats at every turn, just as in real life.

The Engineering Design and Smart Interactive Environment

The training value of these training fields depends on their smart tactical design:

1. Interconnected Rooms and Tactical Doors:

The field consists of a network of rooms connected by doors that may be open, closed, or partially closed. This design forces trainees to apply different techniques to deal with each obstacle, whether it's rapid entry through an open door or applying breaching and clearing procedures for closed doors.

2. Automatic Target Activation System:

To achieve maximum realism and surprise, the field is equipped with a network of hidden sensors (such as motion sensors or laser cutters at entrances). As soon as a trainee enters a new room, these sensors activate a pre-programmed scenario, where targets appear suddenly and immediately, simulating the enemy's reaction to an incursion and preventing the trainee from anticipating the location of threats.

3. Highly Realistic Training Content:

To elevate training from mere shooting to tactical decision-making, we equip the training rooms with a carefully considered mix of targets:

- * Wooden and paper targets: Representing conventional enemy targets.
- * Mannequins in civilian and military clothing: To train trainees to distinguish between friend and foe and innocent civilians, which is the core of Rules of Engagement (ROE) training.
- * Moving robotic targets: These are mobile targets on wheels or rails that can be programmed to move between cover or directly attack the trainee, adding an element of dynamism and unpredictability.

Types of Applications: From skill building to final testing

At **Maknoon**, we offer two versions of these training ranges to cover all phases of training:

Laser Version (Force-on-Force):

Utilizing simulated laser weapons and sensor systems worn by trainees. This version is ideal for foundational training in movement and communication tactics and clearing rooms without any risk. It also allows for team-on-team (force-on-force) drills to enhance competitiveness and realism.

Live-Fire Version:

This is the ultimate test of skills. The entire range is constructed of bulletproof materials (walls, ceilings, and floors covered with ballistic rubber) and includes safety bullet traps.

This type of range allows trainees to use their own weapons and live ammunition, adding the full psychological and physical stress of live-fire to the difficulty of the tactical scenario.

Tactical Importance and Beneficiary Forces:

These ranges are vital for:

- Mastering essential skills for close-quarters combat (clearing corners, moving through doorways, nonverbal communication).
- Developing reaction speed and the ability to make “shoot/don't shoot” decisions in fractions of a second.
- Enhancing coordination and teamwork in a highly dangerous and complex environment.

Beneficiary Forces: These ranges are a primary training facility for elite units, most notably:

- * Special Operations and Counter-Terrorism Forces.
- * Special tactical units within police forces (SWAT teams).
- * Infantry units specializing in urban warfare.
- * VIP protection teams. Urban battlefields and street fighting.



Urban Battlefields and Street Warfare

Engineering Organized Chaos for Dominance in Urban Theaters of Operation

At Maknoon, we understand that modern battles are no longer confined to clearing a single room or building. Fighting has moved to the streets, alleys, and vital infrastructure of cities.

That's why we developed the next generation of training environments: Military Operations in Urban Terrain (MOUT).

These are not just battlefields; they are miniature, integrated theaters of operations—living “tactical villages”—designed and engineered to be a true laboratory for testing unit endurance and decision-making amidst the chaos of urban combat.

Design Philosophy: Building a 360° Comprehensive Threat Environment

The scientific objective behind our designs is to expose the combatant to maximum cognitive and physical load in a safe and organized environment, to “inoculate” them against the stress and fog of real warfare.

We don't just build structures; we build a complete combat ecosystem:

1. A Diverse and Realistic Urban Fabric:

Our “Tactical Village” features a collection of buildings that simulate vital infrastructure (school, hotel, airport, hospital, government building), each designed with its own unique engineering challenges (long corridors, multiple rooms, open courtyards) to test various scenarios, from rescuing hostages in a hotel to securing an airport.

2. A 3D Threat Matrix:

Urban warfare isn't just about the front lines. Therefore, we've distributed threats throughout:

- * **Ground Targets:** Attackers and hostages in the form of interactive mannequins and dummy elements within buildings and on the streets.
- * **Vertical Threats:** Sniper and attacker targets on balconies and rooftops, forcing troops to pay attention to the vertical dimension of the battle.
- * **Mobile Threats:** Attackers in moving vehicles traversing the village streets, simulating mobile ambushes and car bombs.

3- Innovative Training Scenarios: The Exclusive “Maknoon” Mark

What distinguishes our training ranges is transcending the boundaries of traditional training and offering unique scenarios, the product of our own research and innovations to meet the needs of elite units:

4- Engagement from Unstable Platforms:

To simulate airborne operations or engagements from challenging positions, the fighter can ride a moving cable car and fire at ground targets, or hang from ropes stretched between artificial hills and target threats from a suspended position. This tests their stability and shooting accuracy in the most demanding conditions.

5- Operations in Harsh Environments:

The range includes areas specifically designed to simulate harsh conditions, where troops can descend into mud-filled trenches and fire live ammunition, testing weapons effectiveness and the fighter’s ability to perform under physical exhaustion.

6- Maritime Special Operations Simulation:

In a first-of-its-kind innovation, we have incorporated a specialized aquatic training facility. The combatant can descend fully equipped underwater into a glass training tank and engage submerged targets using specialized weapons. This scenario is specifically designed to train frogman and naval special forces units in clearing water obstacles and conducting underwater combat.

User Forces:

These comprehensive training areas are not designed for basic training but rather to hone the skills of the most advanced and specialized units:

- * National Special Operations Forces
- * Elite Counterterrorism Units
- * Military Forces specializing in urban warfare
- * Frogman and Naval Special Forces



Tank and Armored Vehicle Fire

Tank fire is not simply the act of firing a shell; it is a science and a specialized discipline that represents the ultimate test of an armored force’s capabilities. It is an integrated system that tests the complete harmony between the tank crew (commander, gunner, loader, and driver) and the ability of the tank’s advanced Fire Control System (FCS) to achieve a precise first shot in diverse combat conditions. The goal is not just to destroy the target, but to destroy it quickly and decisively to maintain the initiative in the battle.

How is tank fire conducted?

Tank fire training is conducted gradually and progressively in increasing complexity, and is designed to simulate all possible combat scenarios:

Firing from a stationary position at static targets (Static Gunnery):

* **Description:** This is the foundational stage. The tank is positioned in a designated firing position and engages static targets that appear at varying distances.

* **Training objective:** To master the fundamentals of firing, weapon calibration, and to ensure the entire crew understands engagement procedures and the role of each individual.

Engaging Moving Targets from a Stationary Position:

* **Description:** The tank engages moving armored targets moving laterally or diagonally from its stationary position.

* **Training Objective:** To test the ability of the fire control system and the gunner to calculate the required "precedence" to hit a moving target and apply the necessary corrections.

Mobile Gunnery:

* **Description:** The tank moves along a predetermined tactical route and engages stationary targets that appear suddenly.

* **Training Objective:** To test the ability of the tank's gun stabilization system and the crew to achieve accurate hits while moving, which is the core of armored assault tactics.

Complex Scenarios:

* **Description:** This is the pinnacle of training. The tank moves and engages multiple targets, both stationary and moving, that appear in rapid succession from different directions.

* **Training Objective:** To test the ability of the entire crew to manage the battle under high pressure and to distribute roles between the commander (prioritizing and searching for new targets) and the gunner (effective engagement).

What equipment does Maknoon provide?

Field Design and Infrastructure:

* Vast areas with scientifically designed earthworks and rear protection barriers capable of absorbing the immense kinetic energy of tank shells (such as APFSDS).

* Tactical roads and tracks designed for the movement of tanks and armored vehicles.

* A central command and control tower providing a comprehensive view of the field.



Advanced Target Systems:

* **Pop-up Tank Targets:**

Powerful mechanisms capable of lifting and concealing full-size (2D or 3D) armored targets.

* **Moving Tank Targets:**

This is the most important component. We manufacture and install robust robotic platforms or rail-mounted systems capable of moving armored targets weighing hundreds of kilograms at varying speeds and tactics across the field.

* **Thermal Signature Targets:**

To provide realistic training using thermal imaging systems at night.

Command and Control Systems:

* A secure, long-range wireless communications network for controlling all targets from the control turret.

* A centralized program (developed by **Maknoon** and supporting Arabic) that allows instructors to design, execute, record, and analyze complex scenarios and firing results.

What are the available engagement distances?

Modern tanks are designed to fight at long ranges to achieve a tactical advantage. Therefore, the ranges we create are designed to effectively cover these ranges:

* **Short to medium range (800-1,500 meters):** Typically used for coaxial machine gun (MG) training and basic main gun drills.

* **Standard combat range (1,500-3,000 meters):** This is the range at which most advanced firing drills take place, testing the full capabilities of the tank's fire control system.

* **Maximum range (3,000 - 4,000+ meters):** For specialized fields and tank sniper training, where the maximum effective range of modern armament and aiming systems is tested.

Naval Gunnery

Naval gunnery is the science and art of engaging targets from a moving platform (ship) against stationary or moving targets in a three-dimensional environment (sea, air, and land).

The fundamental scientific challenge lies in overcoming the ship's constant motion (roll, pitch, and yaw), as well as calculating complex variables such as target movement, wind speed, and air density, to achieve accurate hits from long distances. It is a test of the capabilities of systems and technology and their integration with the human crew.

Types of Naval Gunnery and Training Methodologies

Naval gunnery is primarily classified based on the nature of the target and the theater of operations:

1. Surface-to-Surface Gunnery:

Description: This involves engaging other naval targets. These targets range from large warships to modern asymmetric threats, which are the most common, such as fast inshore attack craft (FIACs) and pirate boats.

Training Objective: To train crews to quickly detect and maneuver small threats, and to effectively engage them using rapid-fire guns (such as 25mm and 30mm calibers) before they reach danger range.

2. Anti-Air Warfare Gunnery:

Description: This is defensive gunnery against aerial threats such as aircraft, helicopters, drones, and, most dangerously, anti-ship missiles.

Training Objective: This type of gunnery relies on maximum reaction speed. Crews are trained to use Close-In Weapon Systems (CIWS) such as the Phalanx system, and dual-purpose guns (such as 76mm caliber) that can fire fragmentation projectiles to create a "cloud" of fragments to destroy the aerial target.

3. Naval Gunfire Support (NGS):

Description: This is the process of bombarding land targets from the sea to provide fire support for friendly ground forces (such as marines) during amphibious landings or coastal operations.

Training Objective: Absolute accuracy and coordination. Crews are trained to use main guns (such as 127mm caliber) to engage designated land targets based on coordinates provided by ground-based operators, while avoiding friendly fire.

What does Maknoon offer in advanced naval training?

Recognizing the complexity and cost of live naval training, we have developed a comprehensive suite of solutions that combine realistic simulations with advanced target systems:

1. High-Fidelity Naval Simulators:

We create the "sea" within a building.

Our simulators are the ideal, safest, and most cost-effective solution for naval training.

These include:

Full Mission Bridge Simulators: We build a replica of a ship's command bridge, fully integrating fire control systems.

The crew can execute a complete combat mission, from target acquisition to engagement, in a virtual environment that simulates all maritime and atmospheric conditions.

2. Part-Task Trainers:

Specialized simulators for training on a specific weapon system, such as a 30mm gun controller or CIWS, allowing for intensive training on a specific skill.

3. Mobile Maritime Target Systems:

For live-fire training, we manufacture and supply smart maritime targets:

Sea Drones: These represent the pinnacle of technology in this field. We develop fast, remotely controlled robotic boats that can be programmed to execute attacks simulating enemy fast boat tactics, providing naval forces with a realistic adversary for training.

4. Towed Targets:

Cost-effective solutions where a floating target is towed behind another vessel.

5. Coastal Firing Range Engineering:

We provide consulting and engineering services for the design and construction of secure coastal firing ranges. These ranges enable docked vessels or shore-based guns to conduct live-fire training exercises against maritime targets within a defined and secure maritime area.

6. Instrumentation & Analysis Systems:

We provide advanced camera and radar systems for recording and tracking projectile trajectories and impact results during live-fire exercises. We also offer detailed post-mission analysis (AAR) data to help crews understand and improve their performance.



Air Defense Shooting

Air Defense Training Solutions:

Mastering the Art of Protecting the Skies During the Decisive Battle of Seconds

In the world of air defense, battles are not measured in hours or minutes, but in seconds and fractions of a second. It's a complex dance of observation and detection, analysis and identification, decision-making and engagement, all at supersonic speeds.

The air defense officer's task is to conduct this complex technological orchestra with calm and absolute precision.

At **Maknoon**, we don't teach how to press a button; we create scientific environments that cultivate the mindset and skills necessary to win this "battle of seconds."

Advanced Tactical Simulators:

Fighting Air Warfare Without Firing a Single Missile

Simulation is the cornerstone of modern air defense training, and it's where we excel. It's the ideal, safest, and most cost-effective solution.

The Complete "Kill Chain" Simulation:

We don't just focus on engagement; we design simulators that train officers on the entire chain:

Detect & Track: Simulates real radar screens, with targets appearing and disappearing, and employs electronic jamming techniques.

Identify: Trains officers to distinguish between friend and foe (IFF) in a crowded environment.

Engage: A complete simulation of a missile or artillery launch control platform, taking into account all ballistic and aerial variables.

Command and Control (C2 Wargaming) Simulators:

For higher-ranking commanders, we offer strategic simulators (war games) where the officer manages an integrated network of air defense batteries and radars, making target allocation and prioritization decisions in the face of a comprehensive and complex air attack, including drone swarms.

Smart Air Target Systems: A real "adversary" in the sky.

After mastering the skills in the simulators, it's time for the real test.

At **Maknoon**, we manufacture and supply realistic aerial “adversaries” for live-fire training:

High-Speed Target Drones:

We develop fast, maneuverable drones whose radar and thermal signatures mimic fighter jets and cruise missiles, providing a realistic target for air defense missile and artillery systems to test their full capabilities.

Target Drones to Simulate Emerging Threats:

We design slower, smaller, and more stealthy drones to simulate the asymmetric threats that pose the greatest danger today, such as reconnaissance and infiltration drones.

Artificial Intelligence in Service of Training: Building the Digital “Enemy”

To make training more engaging and effective, we utilize artificial intelligence in our simulators:

We develop AI algorithms that generate random and unpredictable aerial attack scenarios. This “digital enemy” learns from the trainee’s tactics and adapts its attack style, ensuring that each training session is a new and different challenge and preventing air defense crews from becoming complacent.



Interactive Target Systems

Automatic Robots

In the **Maknoon** training doctrine, we believe that a fighter must train as they will fight. On the real battlefield, the enemy is neither stationary nor moving in a predictable manner. Based on this principle, we have developed and integrated one of the world’s most advanced training systems across all our shooting ranges: Tactical Autonomous Robotic Systems (TARS). These robots are not merely moving targets; they are semi-intelligent adversaries, designed to break all traditional training patterns and place the trainee in confrontation with an unpredictable opponent.

Scientific and Military Importance: Why Mobile Robots?

1- Breaking Predictive Loops:

Scientifically, when the human mind is trained on targets that appear and move in a repetitive pattern (even a complex one), it begins to anticipate movement and react based on that anticipation rather than a genuine response. The robots we develop move randomly and interactively, forcing the trainee’s mind to remain in a constant state of “tactical alertness,” analyzing movement, aiming, and firing based on real-time and changing data, just like in a real engagement.

2. Simulating an Aggressive Adversary:

Unlike targets that move laterally, our robots are programmed to perform aggressive behaviors. The robot can directly attack the shooter’s position, maneuver to take cover, or move laterally while firing (virtually). This forces the trainee to cope with the pressure of an adversary closing the distance and posing an immediate threat, which is vital training for close-quarters combat scenarios.

3. Training in Shooting and Performing Under Physical Pressure:

Hunting or maneuvering against a robot that moves unpredictably forces the trainee to move and shoot simultaneously (shoot on the move), and to manage their breathing and effort, adding a layer of physical realism that stationary targets do not provide.

Maknoon's Role in Development and Innovation:

We don't just use technology, we create it.

Our leadership in this field lies not only in using robots, but also in designing and developing them in-house to meet the most precise training requirements.

Our role includes:

1- Developing Behavioral AI:

The robot's "brain" is created by our engineers. We develop the software that gives robots the ability to move randomly, simulate basic tactics, and interact with the trainee's position, making each training scenario a unique and unrepeatable experience.

2- Robust Platform Engineering:

We design and manufacture the physical structure of robots to be able to operate in the harshest open and closed field conditions. Our robots feature an armored structure to protect vital components, powerful drive systems (wheels or tracks) for movement across various terrains, long-lasting batteries, and a modular target carrier that can hold wooden stakes or mannequins while stationary or moving.

3- Seamless Integration with Field Systems:

Our robots are not separate units, but rather an integral part of the field ecosystem. They are centrally controlled from the control room, and their movements can be integrated with the appearance of fast targets and sound and light effects to create a seamless and harmonious combat scenario.



Pop-up Targets

At Maknoon, we believe that effective training must simulate a smart, mobile, and unpredictable enemy.

With this in mind, we have manufactured and developed a new generation of target systems that form the cornerstone of all the shooting ranges we create: pop-up targets and the mobile vehicle platforms that carry them.

Pop-up Targets: The Foundation of Rapid Reaction Training

What are pop-up targets?



They are robust electromechanical systems that rapidly and swiftly raise a target (such as an infantryman or vehicle) from a concealed position to a visible position, then retract after being hit or after a pre-programmed time period.

Tactical and Military Importance:

It is the fundamental tool for building a fighter's core combat skills:

1- **Developing Reaction Time:** The sudden appearance of a target forces the shooter to instantly transition from a search and observation state to an engagement state, thus reducing the time required to make a firing decision.

2- Training in Timed Engagement: The target can be programmed to appear for only a fraction of a second, teaching the fighter how to deal with fleeting, fast-moving targets that do not afford the luxury of time for precise aiming.

3- Simulating Stress and Psychological Pressure: The element of surprise generates a natural stress response, training the fighter to perform under psychological pressure similar to what they would face in actual combat.

Versatility:

The strength of our Pop-Up Systems lies in their adaptability to various training scenarios and weapon types:

Calibers Used: Our systems are designed to handle a very wide range of calibers, from small arms (5.56mm and 7.62mm) to heavy machine guns (.50 BMG) and anti-tank weapons, enabling them to elevate targets simulating tanks and armored vehicles.

Used Forces: They are an indispensable training tool for all branches of the armed forces, from basic infantry units to special operations forces requiring rapid reaction training, and even armored and tank crews.

Mobility Vehicles

What is a mobility vehicle?

It is an advanced, remotely controlled robotic platform, often designed as a 4x4 vehicle for enhanced realism. This vehicle is not simply a moving target; it is a smart target carrier, to which a range of Pop-Up Systems are mounted on top.

Advanced Tactical Importance:

It takes training to a whole new level of complexity and realism:

1- Simulating Real Moving Threats: It's the best way to simulate a moving adversary in the field, whether it's an enemy vehicle (like a "tech" vehicle) or infantry advancing toward your position.

2- Training on Leading the Target and Firing at Moving Targets: The gunner learns the complex skill of calculating the lead required to hit a target that doesn't move in a straight line but changes direction and speed unpredictably.

3- Improving Targeting Accuracy and Prioritization: We equip the vehicle with pop-up targets of varying sizes (large and small).

This clever design forces the gunner to:

- Quickly switch between targets and distribute fire.
- Prioritize engagement:
(Should I target the larger, easier target, or the smaller, more dangerous one?).
- Hone accuracy skills by attempting to hit smaller targets on a moving platform.

Suspended Monorail Target Systems

In traditional shooting training, targets were either stationary or moved along a simple linear path (right-left). This type of training, while important, lacks the most crucial dimension of real combat: depth and unpredictable movement. The opponent, in reality, does not move in a straight line, but appears from angles, crosses open spaces, and moves toward or away from you. Hence the strategic importance of the monorail system as an advanced engineering solution for adding a third dimension and realistic movement to training.

What is a monorail system and how does it work?

A monorail system is a target system in which the target-carrying mechanism is suspended from a motorized trolley that moves on a single metal rail (monorail) fixed to the range ceiling. This trolley is centrally controlled from the control room and can be programmed to execute complex movement paths.

Engineeringly, the system features:

* **A powerful and silent motor:** allows for smooth and sudden movement without producing noise that would reveal the target's approach.

* **Variable Speeds:** The target's speed can be programmed to be slow, fast, or change abruptly.

* **Advanced Tracks:** In advanced designs, monorail tracks can be curved or intersecting, allowing for more random and complex movement.

* **Interactive Target Carrier:** The target carrier mechanism is often capable of rotating the target to reveal a "friend" or "enemy" face, adding a decision-making element to training.

Tactical and Military Significance: Why is the Monorail a Game-Breaker?

1. Realistic Human Movement Simulation:

The monorail is the best way to simulate the movement of a real human in a built-up environment. It can make the target appear from behind a corner, cross a doorway or corridor, and then disappear behind another cover. This dynamic movement teaches the fighter vital skills such as "slicing the pie" and quickly engaging passing targets.

2. Training to Engage Moving Targets in Depth:

This is the most important feature. The monorail can move the target directly toward the fighter (to simulate a direct attack) or away from them (to simulate an opponent's retreat). This type of movement presents a completely different challenge, forcing the shooter to deal with a target whose apparent size is constantly changing, requiring different calculations for anticipation and aiming.

3. Freeing Up the Tactical Operational Space:

Since the entire system is suspended from the ceiling, the field floor remains completely open and free of any obstructions. This feature is vital and of paramount importance, as it allows trainees (individually or as a team) to execute "fire and move" tactics freely and safely, advancing within the field and engaging the moving target from different angles without fear of tripping over floor bars.

4. Creating Complex Tactical Scenarios:

The monorail allows for the design of scenarios impossible to execute with other systems. For example, a stationary, fast-moving target can be programmed to appear forward while a monorail target moves laterally at the same time, forcing the fighter to prioritize and deal with multiple simultaneous threats.

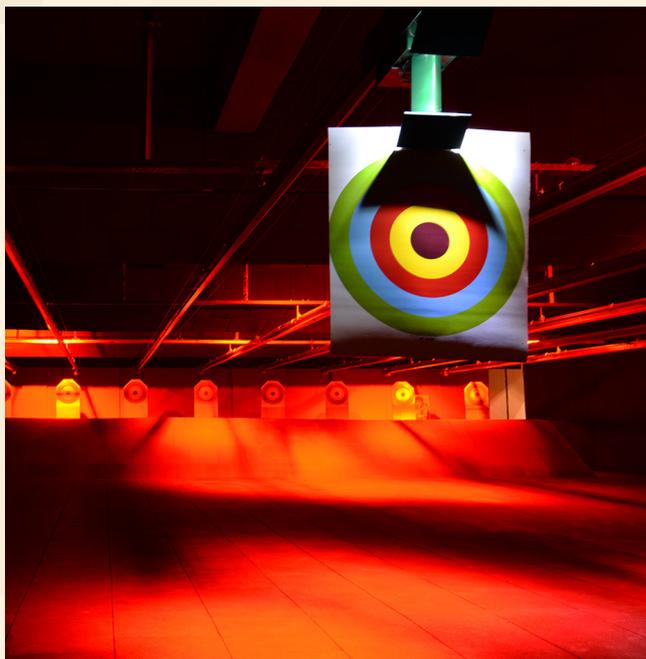
5- Increased Durability and Reliability:

From an engineering perspective, placing the movement mechanism and motors on the roof protects them from direct or ricocheting impacts, significantly reducing malfunctions and extending the system's lifespan compared to ground-based systems, which are always vulnerable.

Applications:

The importance of the monorail is particularly evident in tactical assault houses and advanced enclosed firing ranges, where the objective is to simulate combat in confined spaces and buildings.

The monorail system is not merely a moving target; it is a training tool that transforms a static field into a dynamic theater of operations. At Maknoon, we integrate this technology as a core element in our advanced designs because we believe that training a fighter to handle realistic and unpredictable movements is what gives them the edge in survival and mission success.



The LOMA

(Locality of Miss and Hit) Monitoring and Analysis System

What is the LOMA System?



The LOMA (Locality of Miss and Hit) system is a high-precision acoustic electronic system that serves as the digital “eyes and ears” of the modern shooting range. Its primary function is the immediate and automatic monitoring of the trajectory of each shot with accuracy down to fractions of a millimeter, displaying the location of the hit or miss on a screen in front of the shooter and instructor at the very moment of firing.

This technology transforms shooting from a subjective practice into a precise, data-driven science.

How Does the System Work? (Scientific and Technical Basis)

The LOMA system, manufactured by Maknoon, is based on a precise physical principle: Acoustic Triangulation.

Sensor Array:

A frame is installed around the target area containing a network of highly sensitive acoustic microphones. These sensors are not ordinary; they are specifically designed to capture the shockwave generated by a supersonic bullet as it travels through the air.

Shockwave Detection:

As the bullet passes through the frame, the shockwave arrives at each sensor at a very slight difference in time, depending on the distance between the bullet’s trajectory and the sensor.

Real-Time Calculation:

The system’s central processing unit (CPU) receives these minute time differences (measured in microseconds). Using complex mathematical algorithms, the system performs triangulation to calculate with extreme precision the X, Y coordinates of the bullet’s trajectory relative to the target’s center.

Instant Display of Results:

In less than a second, these coordinates are sent to the display screen (tablet or large monitor) at the shooter’s location. The screen displays an image of the target, a flashing red dot at the exact point of impact, and analytical data such as the hit value, distance from the center, and the distribution of the shot cluster.

Strategic Importance in Training and Qualification

The LOMA system is not just a convenience tool; it’s a revolution in training methodology. Here’s why it’s so important:

- Instant and Objective Feedback:

This is the most important feature. The shooter sees the result of their shot immediately, allowing them to connect the sensation they felt when firing (body position, grip, breathing, trigger pull) with the actual result on the target. This dramatically accelerates the learning process and error correction.

- Unprecedented Training Efficiency:

The system completely eliminates the need to stop shooting and go to the target to check the results. This saves valuable time and allows the shooter to fire a much larger number of shots in the same training session, thus doubling the value of the training.

- Data and Performance Analysis:

The system stores data for each shot, allowing coaches to analyze the shooter's performance over the long term. The system can reveal recurring error patterns (such as shots consistently veering in a certain direction), helping to diagnose and address root causes of problems in the shooter's technique.

- Ideal for long-range shooting:

The system's importance is particularly evident in sniper and long-range shooting, where it is impossible to see the point of impact with the naked eye. The LOMA system provides immediate and accurate confirmation for the shooter, which is crucial in this type of shooting.

- Accuracy and objectivity in competitions:

In sport and military shooting, the system provides accurate and indisputable results, ensuring the highest standards of fairness and transparency.

Shooting Simulators

Interactive Shooting Simulators:

Refining the Fighter's Skills in a Safe Digital Environment

As part of our integrated system for establishing and developing shooting ranges, Maknoon offers a specialized section for interactive shooting simulators, representing a qualitative leap in the philosophy of military and security training.

We do not consider them a substitute for live shooting, but rather the scientific and technical bridge that connects theoretical knowledge with practical application in the field, thus creating a more efficient, confident fighter capable of making sound decisions under maximum pressure.

The Scientific and Technical Basis:

From Mere Simulation to Engineering Human Performance

Scientifically:

The success of simulators is based on the principles of neuroscience and motor training. Effective training is not limited to hitting the target, but also focuses on building correct neural pathways and developing muscle memory for the fundamental skills of shooting (the basics of shooting). Simulators allow trainees to perform hundreds of repetitions of a skill (such as proper grip, aiming, and trigger pull) in an environment free from the sonic stress and recoil of live-fire shooting. This prevents the development of bad habits like "expecting a blast" or "flinching," which are the biggest obstacles for novice shooters.



Technically:

Maknoon simulators are based on an advanced technological architecture that includes:

- Realistic simulated weapons: We use weapon models that are identical to real weapons in terms of weight, balance, and feel, and are equipped with high-precision infrared lasers.
- High-speed tracking systems: Advanced cameras capture the laser spot on the screen in fractions of a second and analyze the aiming trajectory before, during, and after the trigger is pulled.
- Recoil simulation: We equip the simulated weapons with pneumatic or haptic feedback systems to simulate recoil, adding a layer of realism to the training.
- Performance Analysis Software: The system records and analyzes each shot, providing accurate data to both instructors and trainees, including reaction time, aiming stability, weapon movement during trigger pull, and precise impact location.

Military and Tactical Importance: Beyond Target Hit

The value of simulators extends beyond simply teaching accurate marksmanship to the very core of tactical training:

1- **Rules of Engagement (ROE) Training:** Complex interactive scenarios (shoot/no-shoot scenarios) can be programmed, placing the trainee in realistic situations and forcing them to assess the situation and apply the rules of engagement before firing—training that is difficult to implement safely in live-fire exercises.

2- **Judgmental Training:** By incorporating elements of surprise, moving targets, and friend-or-foe distinctions, the trainee is “inoculated” against stress, trained to maintain situational awareness, and made sound decisions in seconds.

3. **Training in Diverse Environments:** Various operational environments that are difficult to replicate in reality can be simulated, such as combat in populated areas (CQB), in low-light conditions, or from within a moving vehicle.

4. **Post-Mission Review (AAR) System:** The simulator provides the instructor with an unparalleled, objective evaluation tool. The entire scenario can be replayed, the trainee’s performance analyzed step-by-step, and accurate, data-driven feedback provided.

Economic Advantage: A Strategic Investment with a High Return

Adopting simulators is a smart economic decision that saves military and security institutions significant sums in the long run:

- **Reducing Ammunition Costs to Zero:** The operational cost per round in a simulator is virtually zero compared to the high cost of live ammunition, allowing for intensive and unlimited training on a smaller budget.

- **Reducing Logistical Burdens:** There is no need to transport ammunition, prepare training areas, maintain targets, or clean weapons after each training exercise, thus reducing the logistical footprint and saving valuable man-hours.

- **Accelerated learning curve:** Trainees can fire hundreds of virtual “shots” in a short training session, a number impossible to achieve in live-fire shooting in the same amount of time, thus speeding up the development of essential skills.

- **Absolute safety:** The absence of live ammunition means no risk of injury or accidents, making training accessible to a wider range of individuals and in multiple locations that do not require the stringent safety features of live-fire ranges.

Laser Simulation Shooting

Simulation shooting ranges are advanced technological training environments that do not use live ammunition at all.

Instead, they rely on laser systems, software, and displays to create interactive virtual scenarios.

These ranges are considered a cornerstone of modern training doctrines, forming the missing link between dry theoretical training and costly and risky live-fire training. At Maknoon, we consider them an indispensable scientific tool for building the correct foundations for the fighter.

How it Works: How does the simulation system work?

The system relies on the precise integration of hardware and software components to create an immersive and effective training experience:

1. **Replica Weapons:** Weapon models that are 100% identical to real weapons in terms of weight, balance, and mechanism of action (such as section movement and recoil) are used. These weapons are equipped with infrared laser emitters (invisible to the naked eye).

2. **Detection and Tracking System:** Strategically positioned, high-speed, high-resolution cameras detect the laser beam’s impact point on the display screen in a fraction of a second when the trainee pulls the trigger.

3. **Computer Unit and Software (The Core Engine):** This is the system’s “brain.” The computer displays the interactive scenario on the screen, and when the camera detects a laser shot, the software immediately analyzes and records it as a hit or miss, with an immediate reaction within the scenario (such as the target falling).

4. Sensory and Analytical Feedback:

- **Recoil Simulation:** The simulated weapons are equipped with pneumatic or mechanical recoil systems to provide a realistic recoil sensation.
- **Immediate Analysis:** The system records all shooting data (reaction time, trajectory, accuracy) and displays it in a detailed report for the instructor and trainee immediately after the scenario concludes (After-Action Review).

Strategic Importance in Modern Training Systems

1- Absolute Safety:

Since no live ammunition is used, it eliminates all training risks, allowing its use in almost any location (even within administrative headquarters) without the need for complex infrastructure.

2- Building Correct Muscle Memory:

It allows new trainees to learn the fundamentals of marksmanship (grip, stance, aiming, trigger pull) and perform hundreds of repetitions without fear or strain from the sound of the explosion and recoil, thus preventing the formation of bad habits.

3- Low Economic Cost:

Operating costs are almost nonexistent, enabling the implementation of a massive training volume at a fraction of the cost of live-fire training.

4- Decision-Making Training:

This is the ultimate value of simulators. They are the only tool that can safely train individuals in situations requiring a decision to engage or not to engage (Shoot/No-Shoot).

Target Forces and Areas of Application

Simulators are suitable for all types of forces but for different training purposes:

- **Recruits and military students:** For foundational training in basic marksmanship skills safely and efficiently.
- **Law enforcement and police forces:** For intensive training on force use scenarios and rules of engagement in urban environments.
- **VIP protection forces:** For training in rapid reaction and close-quarters combat in surprise attack scenarios.
- **Special operations and counter-terrorism forces:** For training on complex assault scenarios, hostage rescue, and specialized training before real missions (mission rehearsal).

Examples of Scenarios Trainees Face

Scenarios range from simple to highly complex and include:

- **Basic Marksmanship Scenarios:** Training on stationary and moving targets at varying distances and speeds to hone shooting accuracy.
- **Judgment Scenarios:**
 - * Confronting a suspect who suddenly draws a weapon or surrenders.
 - * The presence of civilians or hostages near the enemy target necessitates precision and perfect timing.
 - * Dealing with multiple threats that appear simultaneously or sequentially.
- **Integrated tactical scenarios:**
 - * **Building assault:** The trainee advances in a virtual environment and encounters threats emerging from doors and windows.



- * Repelling an ambush: The trainee is subjected to sudden gunfire from multiple directions and must respond and take cover.
- * Securing a checkpoint: Dealing with a vehicle approaching at high speed and refusing to stop, and making the appropriate decision.

Live-Fire Simulation

Integrating Ballistic Realism with Virtual Scenarios

These revolutionary systems represent the ultimate bridge between the virtual simulation world and the physical reality of combat. They combine the psychological and physical stress of using live weapons and ammunition with the mental challenges posed by complex tactical scenarios.

In this type of range, trainees don't shoot at cardboard or steel targets, but rather fire live ammunition at a cinematic display screen showing high-definition video scenarios.

Technical Operation: How is a live shot tracked on a virtual screen?

Operating this system is a complex engineering achievement that relies on the integration of several advanced technologies:

1- Self-Healing Interactive Display Screen:

The screen is not simply a display canvas, but a surface made of specialized polymer and rubber compounds. This material allows a live projectile to penetrate it, then it immediately closes the gap behind it, making it capable of withstanding thousands of shots while maintaining image quality.

2- Live-Fire Hit Detection System:

Behind the self-healing screen, a network of high-tech sensors (often thermal cameras or precision acoustic systems) is installed. When a live bullet penetrates the screen, these sensors pinpoint the point of impact with extreme accuracy in a millisecond, either by detecting the projectile's thermal signature or by identifying the acoustic wave of penetration.

3- Scenario Engine and Instant Response:

The detection system sends precise hit coordinates to the central computer (the system's brain).

The software then performs an instant analysis of the impact location on the virtual target displayed in the video and generates a scenario accordingly (e.g., the opponent falls when hit in a critical area).

4- Full Ballistic Containment System:

Behind the screen and monitoring system is a heavy-duty steel or rubber bullet trap, responsible for absorbing the energy of all projectiles and stopping them safely.

Unique Importance in Advanced Training:

This technology doesn't simply replicate what laser simulators offer; it adds vital training dimensions:

1. Full Immersion and Realism: This is the most realistic training experience available, where the trainee experiences the actual recoil of their weapon, its sound, muzzle flash, and all the psychological pressures associated with live-fire shooting, while interacting with a dynamic storyline.

2. Training with Actual Weapons and Equipment: This allows the soldier to use their personal weapon and actual ammunition that they will use in the mission, ensuring a complete match in performance and weapon handling.



3. **Maximum Stress Reduction:** Combining the pressure of decision-making in a complex scenario with the pressure of handling live ammunition creates a high-stress training environment, the best way to prepare special forces to handle critical situations calmly and effectively.

4. **Infinite Training Flexibility:** Scenarios can be changed at the touch of a button, allowing training for an unlimited number of situations (hostage rescue, raids, ambushes) using the same facility without the need to change any equipment in the field.

Target Forces and Application Scenarios

Due to their advanced technology and cost, these training areas are primarily intended for elite units:

1. **Special Operations and Counter-Terrorism Forces:** These are the primary users of this technology, training for high-risk scenarios that demand extreme precision and the ability to perform under maximum pressure.

2. **Advanced Tactical Police Units:** For scenarios involving active shooters and situations requiring the use of lethal force.

Scenarios:

Includes all scenarios used in laser simulators, but with the addition of ballistic realism, making it ideal for final and advanced training before performing actual tasks.

Virtual Shooting Arenas

Virtual shooting ranges differ from traditional war games:

Simulating engagement between two teams in separate environments

In addition to traditional war games held in a single physical environment, Maknoon offers a more specialized technological solution: the "Virtual Shooting Arena."

This system is based on a unique concept: placing two competing teams in completely separate rooms, where they engage virtually via giant interactive screens.

This system does not aim to simulate movement and maneuvering in a shared physical space, but rather focuses intensively on shooting accuracy, the use of fire and cover, reaction speed, and effective communication within the team against a real opponent appearing on the screen. It represents the purest and most focused engagement experience for tactical shooting skills.

Technical Operation: How are the two rooms connected?

This system relies on precise engineering to connect two separate worlds in a single virtual battle:

1- **System Structure:** It consists of at least two identical rooms, each equipped with realistic cover and firing positions, a video camera system, and a massive interactive display screen covering an entire wall.

2- **Live Streaming:** Cameras in Room A film Team A, their positions, and movements behind cover, and this image is streamed live to the giant screen in Room B. Simultaneously, the reverse occurs, with Team A seeing a live feed of Team B on their screen.

3- **Interactive Engagement:** The scenario begins with both teams in a state of readiness. When the "battle" begins, members of each team engage by firing directly at images of the opposing team members displayed on their screens.

4- **Hit Tracking and Results Application:**

In the laser version: Simulated laser weapons are used. Upon firing, a high-precision tracking system determines the laser's impact point on the screen.

In the live-fire version (the most advanced application): The screen is made of a special self-healing material, and behind it is a thermal or acoustic detection system that pinpoints the exact location of the live bullet penetration.

In both cases, the central system's "brain" immediately processes the hit, identifies the "hit" from the opposing team, and then sends a signal to the other room to notify the "hit" (via an audible or visual alarm) to leave the combat zone, thus taking them out of the game.

Tactical and Military Importance:

This type of training offers unique value not provided by other systems:

1. **Complete focus on the fundamentals of engagement:** Due to the absence of complex movement and maneuvering, the trainee can focus entirely on the two most important skills: rapid, accurate shooting and the proper use of cover for protection.

2. **Long-range engagement simulation:** This system is ideal for simulating engagement scenarios between two separate locations, such as two teams on the rooftops of opposing buildings, or for training snipers to engage an enemy sniper.

3. **High Psychological Pressure:** Seeing a real opposing team prepare, move, and fire at you (even on a screen) generates far more psychological pressure and realism than facing pre-programmed targets.

4. **Enhanced Teamwork and Communication:** Precise verbal communication within the team ("The target is on the far right, behind the blue screen!") becomes crucial for victory, as team members must coordinate their fire and distribute the targets they see on the screen.

The ultimate goal is to achieve the closest possible simulation of a real firefight, where teamwork, quick reflexes, and accuracy are the keys to survival and victory.

The "War Games Shooting Range" is not a shooting range in the traditional sense, where trainees shoot at stationary targets or screens.

It is a fully integrated tactical training environment that utilizes advanced laser simulation systems to conduct competitive training exercises between two or more teams of fighters (force-on-force).

Simply put, it's about transforming a strategic "war game" from a chessboard or computer screen into a physical reality, where two teams armed with simulated weapons engage each other directly within a built environment that mimics a real theater of operations (such as a building or village).

The goal here is not so much to test individual marksmanship as it is to test the tactics, communication, and teamwork of combat teams under the pressure of facing an intelligent and responsive human opponent.

How it works: How is the field transformed into a war game arena?

These arenas rely on a complex and integrated technological system:

1. Tactical Environment (The Arena):

This is a purpose-built facility, such as a multi-room, multi-corridor "Shoot House" or a simulated urban neighborhood. The environment is equipped with cameras covering all angles.

2. Integrated Trainee Equipment:

Laser Simulation Weapons: Each fighter uses a simulated weapon that fires a coded, eye-safe laser beam (Class 1 Laser) instead of live ammunition.

3. Personal Sensor System:

Each fighter wears a vest and helmet equipped with a suite of laser sensors that cover the body in a 360-degree radius.

4. **Feedback Unit:** When a fighter is hit by an enemy laser beam, the sensor system triggers immediate feedback, which may be audible (alarm), visual (flashing light on the vest), or even by temporarily disabling the "hit" fighter's weapon to simulate being hit and withdrawing from combat.

5. Command & Control Center:

- This is an operations room run by instructors. Its screens display a digital map of the field and show the location and status of each fighter (active, wounded, out of engagement) in real time.

- Instructors can follow the entire "match," monitor the movements of both teams, and evaluate their tactical decisions in real time.

6. Post-Mission Review (AAR) System:

The system records all events (every shot, every movement, every hit). After the exercise, the entire “match” can be replayed from any angle, allowing instructors to analyze team performance accurately and objectively, and definitively identify strengths and weaknesses.

Strategic Importance in Team Training:

This type of training offers benefits that cannot be obtained from any other type of field:

- * Realistic testing of tactics: It allows commanders to test the effectiveness of tactics (such as room-breaking techniques, movement formations) against a resilient opponent who is strategically thinking and maneuvering.
- * Developing Effective Communication: Forces team members to communicate continuously and effectively under the pressure of real combat to survive and achieve the objective.

- * Measuring Team Performance: Provides measurable data on team performance, such as mission completion time, number of casualties per team, and coordination efficiency.

- * Safe Environment for Experiencing Failure: Allows teams to make mistakes and learn from them in a completely safe environment, which is invaluable before applying these tactics in a real mission.

Target Forces and Training Scenarios

These training areas are best suited for small units whose success depends on precise coordination among their members:

- * Special Operations and Counter-Terrorism Teams
- * Police Special Tactical Units (SWAT)
- * Infantry Platoons and Reconnaissance Companies
- * VIP Protection Teams

Examples of Scenarios:

- * Hostage Rescue Mission: The “Attackers” Team vs. the “Terrorists” Team

- * Attack and Defense Scenario: One team defends a specific location while the other attempts to breach it

- * Ambush and Response to an Ambush: Training convoy security teams on how to respond to a surprise attack



Shooting Range Equipment

Ballistic Protection Systems

Integrated Ballistic Protection Systems:

Ultimate Safety Engineering in Shooting Ranges

The foundation of any safe shooting range design, whether enclosed or open, rests on one scientific principle: Total Ballistic Containment.

This principle means that the facility must be designed, both architecturally and physically, to safely absorb and contain every shot fired within it, preventing any ricochet, penetration, or dangerous fragmentation. At Maknoon, we don't treat protection as an added element; it's the architectural and scientific framework upon which the entire range is built.

Shooting Area Enclosure:

Walls, ceilings, floors, and booths

These components form the “safe envelope” that surrounds the shooter and ensures that all stray or ricocheting shots are safely directed.

The Importance of Protecting Walls, Sides, and Ceilings:

This is the first line of defense against stray bullets that may be fired due to human error or weapon malfunction. Its primary function is to prevent projectiles from penetrating field walls and protecting personnel and facilities outside, as well as preventing dangerous ricochets within the field. For this purpose, we use:

Armored Steel (AR500):

It is installed at scientifically calculated angles to safely deflect the bullet towards the main bullet trap instead of ricocheting randomly.

Ballistic Rubber:

We cover hard surfaces with layers of high-density rubber that encapsulate the bullet, preventing fragmentation and drastically reducing recoil, noise, and bullet-laden dust.

The Importance of Protecting Floors:

Protecting the floor prevents bullets that hit the ground from ricocheting upwards and injuring shooters or damaging roof equipment such as lighting and monorails.

The Importance of Shooting Booths:

These booths act as dividers between shooters, and their function is vital for protecting shooters from each other. They prevent spent cartridges from a neighboring weapon from reaching the shooter and, most importantly, prevent any accidental muzzle sweep outside the shooter's designated lane, ensuring that every shot is directed only towards the end of the range.

The Heart of the Range:

Bullet Traps

These are the primary engineering system at the end of the range, designed to receive the largest mass of bullets, absorb their energy, and collect them safely. We offer several types, each with its own characteristics:

Escalator Steel Trap:

* **Description:** A system consisting of a series of highly rigid, armored steel plates inclined at a steep angle.

* **Importance:** When a bullet strikes the inclined surface, its kinetic energy is converted into a downward sliding motion, gradually losing momentum until it falls into a collection container below. This highly durable design is ideal for ranges using high-volume rifle ammunition and high rates of fire, and it boasts a long service life.

Rubber Lamella/Block Trap:

* **Description:** A thick wall composed of vertical blocks or slats of compressed ballistic rubber.

* **Importance:** When a bullet penetrates this wall, the rubber's elasticity and friction gradually absorb its energy and stop it without shattering. This type is the best at reducing the amount of bullet-laden dust in the air. It also significantly reduces noise and prevents any ricochet or shrapnel, making it the ideal choice for tactical training ranges and close-quarters combat.

Protection of Mobile Equipment

* **Importance:** In the field, valuable equipment such as mobile vehicles, robots, and target vehicles are located. We design custom protective shields for this equipment using a combination of materials (steel, high-density rubber, and wood) to protect it from direct or stray bullet impacts, ensuring its continued operation and protecting the client's investment.

Summary: The protection system at Maknoon training ranges is a multi-layered defense system, designed based on meticulous ballistic and engineering studies. From fully encasing the range to ensure containment, to selecting the most suitable bullet trap technology for the type of training and caliber used, we guarantee a training environment that is not only realistic and effective, but also offers the highest possible levels of safety.

- Armored steel
- Bullet traps
- Roof protection
- Floor protection
- Side protection
- Rubber curtains
- Protection for mobile and fixed equipment
- Protection for firing and observation cabins



Battle Environment Simulation Systems

Beyond Shooting: The Art of Immersion in the Reality of Battle

At **Maknoon**, we believe that a fighter is not defeated due to a lack of marksmanship, but rather due to succumbing to the sensory chaos and psychological pressure of real combat.

Based on this principle, we have created and developed battle environment simulation systems. These are not merely additional effects, but rather the “spirit” of the field, breathing life into it and transforming it from a simple shooting range into a living theater of operations, pulsating with danger and tension.

Our goal is not only to train the body in shooting, but also to inoculate the mind and psyche against the shock and fog of war.

Scientific Significance: The Science of Stress Inoculation

What we do has a deep scientific basis. When a person is exposed to sudden danger, the body releases a massive dose of adrenaline, causing an accelerated heart rate, narrowed vision (tunnel vision), and loss of fine motor skills.

Training in a calm environment does not prepare the fighter for this biological shock.

Our systems are deliberately designed to trigger this physiological response in a safe and controlled environment. By repeatedly exposing trainees to this “structured stress,” we achieve the following:

- **Building Mental Resilience:** The mind becomes accustomed to functioning, thinking, and making sound decisions amidst sensory chaos, rather than freezing.
- **Testing True Abilities:** Under the pressure of adrenaline, each individual’s true capabilities are revealed. Do they remain calm? Do they follow the correct procedures? Do they communicate with their team? This is where the true fighter is distinguished from the mere good marksman.

Orchestra of Chaos: How does “Maknoon” create the atmosphere of battle?

We orchestrate a complete symphony of effects that assault all of the trainee’s senses, immersing them in the moment:

1- Auditory Effects (Sounds of Battle):

We create a three-dimensional soundscape. The trainee hears the distant explosions of artillery, the whizz of bullets overhead, the roar of approaching armored vehicle engines, and the sound of helicopters hovering in the sky. This forces them to learn how to focus and communicate in a noisy and chaotic environment.

2- Visual Effects (War Fog):

Tactical Lighting: We use war-colored lighting (red and green) and strobe lights to simulate explosions and confuse the trainee’s vision.

3- **Smoke Generators:** We fill the field with thick smoke that obscures visibility, forcing the team to rely on verbal communication and move as a cohesive unit to traverse the unknown.

4- **Sensory and Physical Effects (Battle Earthquake):**

This is Maknoon's most innovative touch. The vibrating bases we install under the feet of individuals or vehicles simulate the violent shaking caused by a nearby explosion. This not only tests the marksman's ability to remain steady and aim while the ground shakes beneath them, but also adds a layer of direct physical shock that raises adrenaline levels to their peak.

We also have other effects that we add for Maknoon clients and reveal only upon contract signing.



Shooting Training Aids

An effective tactical fighter, capable of performing under extreme pressure, is at heart a marksman with impeccable fundamentals. Before a fighter can learn to maneuver and fire, they must master the precise science of placing the first shot exactly where it belongs.

With this in mind, at Maknoon, we offer a comprehensive range of training aids. These are not mere accessories, but scientific tools designed to build, refine, and perfect fundamental shooting skills.

The Methodological Importance of Our Training Aids

Each tool we offer serves a specific scientific objective in a shooter's development journey:

1- **Achieving Weapon Zeroing and Perfect Alignment:**

No shooter can be accurate if their weapon is not accurate. Weapon zeroing is the process of perfectly aligning the sight point with the actual point of impact at a specified distance.

2. **Weapon Stabilization Braces:** These are precision-engineered devices that completely stabilize the weapon, eliminating human factors (hand shake, breathing) from the zeroing equation. This ensures that any adjustments made to the scope reflect only the weapon's true ballistic performance, resulting in scientific and ideal zeroing.

3. **Angle and Direction Determinants:** Advanced tools used in long-range shooting and calibrating more complex weapons, ensuring accurate performance at various distances and conditions.

4. **Mastering Basic Shooting Positions:** Accuracy comes from stability, and stability comes from proper posture.

5. **Three-Position Shooting Tables:** These provide a stable and standardized platform for trainees to practice and master basic shooting positions (prone, prone, and standing). Using these tables ensures the development of proper muscle memory from the outset, making proper posture an automatic habit for the shooter.

6. **Providing Standard and Realistic Targets:** The target is half the equation for successful shooting. Production of all standard shooting targets: We manufacture all types of targets, from standard paper targets used in military and sports qualifying competitions to 3D targets and realistic images (of civilians, hostages, and enemies) made from durable materials (wood, plastic, sheet metal) to withstand field conditions. This variety allows for training in everything from basic accuracy to target discrimination scenarios.

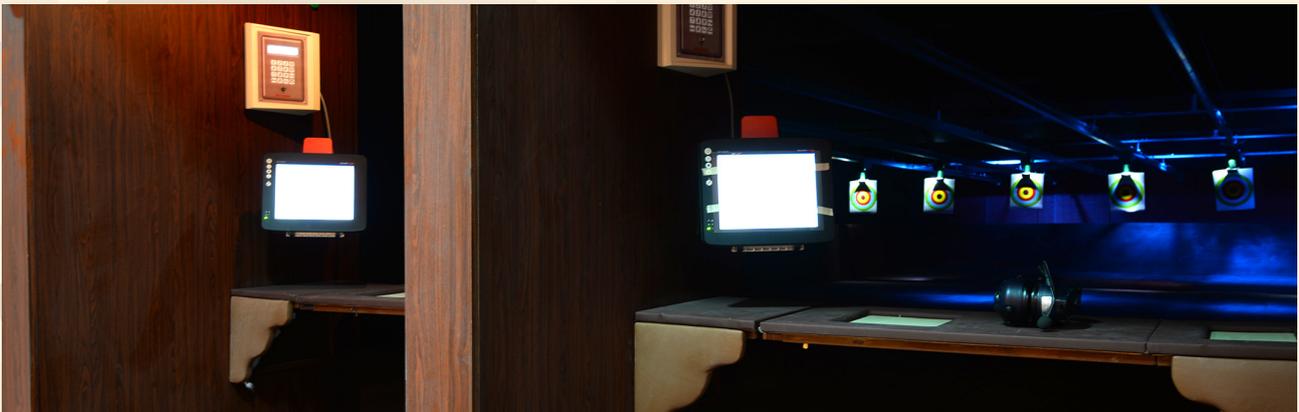
7- Advanced Diagnosis and Analysis of Shooter Errors:

This is the pinnacle of training aid technology, where we provide a “digital doctor” for the shooter’s personality.

Computerized Shooter Skills Testing Devices: These are advanced diagnostic systems that use precise sensors (mounted on the weapon) to analyze what the shooter does in fractions of a second before, during, and after the trigger pull. These devices can identify the most subtle human errors invisible to the naked eye, such as:

- **Trigger jerk: An uneven trigger pull.**
- **Flinching: Involuntary body movement before firing.**
- **Irregular breathing.**
- **Inconsistent aiming.**

The device provides the coach with an immediate report, transforming the training process from guesswork to accurate scientific diagnosis.



Advanced Ventilation Systems

Advanced Ventilation Systems in Indoor Shooting Ranges: The Science of Maintaining a Safe and Healthy Training Environment

The Hidden Threat in Shooting Ranges

In any indoor shooting range, the danger isn't limited to projectiles. There's another enemy, hidden and silent: contaminated air. With every shot fired, a dangerous mixture of fine particles is released into the air, primarily lead dust from the projectile's contact with the barrel and the primer, along with gunpowder combustion byproducts like carbon monoxide and other gases. As mentioned, repeated inhalation of this contaminated air leads to serious and chronic illnesses, most notably lead poisoning, which damages the nervous system.

For this reason, the ventilation system at **Maknoon Shooting Ranges** is not simply air conditioning or exhaust fans. It's a comprehensive aerodynamic engineering system designed to prioritize the health of shooters and instructors. **The Vital Importance of an Effective Ventilation System**

1- Protecting User Health: The primary goal is to ensure that the shooter's and coach's breathing zone remains clean and free of contaminants at all times.

2- Improving Visibility and Performance: Dense smoke can obstruct vision and affect the shooter's accuracy and ability to see the target clearly, which an effective ventilation system eliminates.

3- Compliance with International Standards: Designing and installing a professional ventilation system is a fundamental requirement for achieving global occupational health and safety standards, which we adhere to in all our projects.

Scientific and Engineering Calculations:

How Do We Design a Ventilation System?

The design of a ventilation system is not done randomly, but rather relies on precise scientific calculations that ensure the achievement of two main objectives:

- Extracting contaminated air
- renewing it with clean air.

The First Principle: Laminar Airflow

This is the most important scientific principle. We don't mix the air within the range. Instead, we design the system to create an "air curtain," or wall of clean air, that moves smoothly and steadily (without turbulence) behind the shooters, pushing all contaminants ahead of it towards the shot traps at the end of the range, where the intake (exhaust) vents are located. This ensures that any smoke or lead dust is immediately pushed away from the shooter and never returns.

The second principle: Air Change Rate (ACH)

This metric determines how many times the total air volume within the range is replaced with fresh, clean air per hour.

According to international occupational health and safety standards (such as the National Institute for Occupational Safety and Health - NIOSH) guidelines, enclosed shooting ranges require a very high air change rate due to the density of contaminants.

The precise engineering calculations performed by our team, based on the size of the range, the number of shooting lanes, and the type of ammunition used, aim to achieve a rate that ensures the total air volume in the entire range is changed at least 25 to 30 times per hour.

Third Principle: Negative Pressure

We design the range to have a slightly negative atmospheric pressure compared to the surrounding areas. This means that air always flows into the range when the doors are opened, not the other way around, preventing any contaminated air from escaping the shooting area.

Fourth Principle: High-Efficiency Filtration (HEPA Filtration)

The air drawn from the range is laden with bullets and cannot be released directly into the environment. Therefore, it is passed through a series of filters, most importantly HEPA filters, which capture 99.97% of fine particles before the clean air is expelled.

In conclusion:

At **Maknoon**, we treat ventilation systems with the same seriousness as ballistic protection systems. They are an integral part of range safety.

Through our precise calculations and advanced designs, we ensure that every breath a trainee takes within our ranges is clean and safe, allowing them to fully concentrate on their training while maintaining their long-term health.

Command and Control Systems

Remote Control Systems

Remote Control and Management Systems: The Digital Brain of Modern Shooting Ranges

In traditional shooting ranges, target operation and training management were manual, slow, and limited in scope.

Today, thanks to the systems we design and develop at Maknoon, managing shooting ranges, whether enclosed (measured in meters) or open (spanning kilometers), is a centralized process managed from a single control room.

We provide the "central nervous system" of the range, a Command and Control system that transforms the range from a static space into a dynamic, intelligent, and interactive training environment.

The Strategic and Military Importance of Centralized Control Systems

*** Total Control and Enhanced Safety:**

* **Importance:** This is the highest priority. The system gives the Range Master a comprehensive view and complete control over every element within the range from a single screen. With the touch of a button, they can immediately halt all activities in the event of an emergency, raising safety standards to the highest possible level and preventing accidents.

* Enhanced Realism and Training Complexity:

* **Importance:** Real battles are neither simple nor predictable. Our systems allow trainers to become true “battle directors.” They can design highly complex training scenarios that would be impossible to execute manually, such as:

* Simultaneous activation of multiple targets (infantry, armored vehicles, robots) in different locations.

* Linking the appearance of a specific target to an audio or visual effect to simulate a battle environment.

* Programming a tactical sequence of events, where engaging one target triggers the activation of another.

* Operational Efficiency and Increased Training Return:

* **Importance:** Time and resources are the most valuable assets. Remote control systems completely eliminate the need for personnel in the field to change or repair targets between firing rounds.

This leads to:

* A significant reduction in operational manpower.

* A substantial increase in actual firing time (effective training time), as transitions between different scenarios occur in mere seconds.

* Accurate Recording and Scientific Analysis of Performance:

* **Importance:** Effective training relies on objective evaluation. Our systems not only manage the field but also accurately record every event: each shot fired, shooter reaction time, the order of targets engaged, and hit results. This data is compiled into detailed reports, providing instructors with a scientific tool for conducting post-mission reviews (AARs) and accurately and objectively identifying strengths and weaknesses.

Maknoon Solutions: Flexibility and Adaptability

We understand that every field has its own unique challenges, so we offer flexible control solutions:

* **For enclosed and divided fields:** We use short-range wired or wireless (Wi-Fi) communication networks to ensure a stable and reliable connection.

* **For vast open fields:** We design and install secure long-range wireless communication networks (RF networks) capable of covering areas spanning square kilometers, ensuring that the control signal reaches the most remote target in the field without any delay or interruption.



Integrated Control Rooms

In **Maknoon’s engineering philosophy**, we don’t consider the control room merely a place to operate equipment. Rather, we design and build it to be a miniature Tactical Operations Center (TOC), a command and control (C2) point from which every inch of the training theater is managed with precision and absolute control.

It is the secure environment where trainers and commanders gather to observe and direct training, and, most importantly, transform raw data from the field into measurable insights for performance improvement.

Security and Control Architecture: A Fortified Command Environment

Full Ballistic Protection:

Importance: The safety of personnel is our top priority.

The control room is designed as a fully fortified environment, with bulletproof walls and glass windows, and a strategic location that provides the best possible view of the field. This ensures

complete protection for field management, trainers, or any VIP visitors, allowing them to observe live training with absolute safety.

Total Situational Awareness:

Importance: You can't control what you can't see. The room is equipped with multiple display screens that stream live footage from a network of strategically distributed surveillance cameras throughout the range. This provides the manager with a comprehensive view of every shooting lane, every trainee, and every target, allowing for effective monitoring of adherence to safety standards and training guidance.

The Digital Heart: The "Maknoon" Control and Analysis System

This is the core of the control room, where all the range's technological capabilities are concentrated:

Central Control Software:

Importance: It is the "cockpit" from which the operator manages everything. Using Windows-based computers, we developed exclusive control software with a user-friendly graphical interface and full Arabic language support. Through this software, the instructor can design and execute the most complex scenarios with the touch of a button: activating pop-up targets, moving vehicles and robots, operating the monorail, and activating battle atmosphere effects simultaneously.

Performance Analysis Platform:

Importance: Transforming training from an art to a science. The software not only controls but also collects, analyzes, and compiles the shooting results for each trainee. It records reaction time, accuracy, and recurring errors, presenting them in printable reports and statistics. This provides the instructor with an objective and accurate data-driven evaluation tool.

Flexible and Secure Communications Infrastructure:

Importance: Ensuring continuous control in diverse environments. We design communication solutions based on the nature of the field:

Short-range wired or wireless communication: For enclosed and divided fields to ensure rapid data transmission.

Long-range radio (RF) communication units: For open tactical fields, these are secure and jam-resistant networks that ensure the control signal reaches the farthest target, kilometers away.

Communications and Battle Management Center

The control room also serves as the communications center, containing:

1- Communication Devices: Intercom systems for direct and clear communication with instructors in the field and with gunners in their compartments.

2-Battle Atmosphere Control Units: Physical and software control units for managing and synchronizing audio-visual effects (sound, smoke, lighting, vibration) with the training scenario to enhance realism.



Logistics for Shooting Ranges

Spare Parts

Technical Support and Spare Parts Provision:

Ensuring the Operational Sustainability of Shooting Ranges

Beyond Installation:

A Commitment to Continuity and Readiness

At **Maknoon**, we believe that our relationship with our clients doesn't end with project delivery; it begins from that moment. The true value of any advanced technological system, especially in the military sector, is measured not only by its initial operational performance but also by its ability to operate efficiently and reliably over many years. Therefore, we consider spare parts provision not merely an after-sales service, but a fundamental pillar of our manufacturing philosophy and a strategic commitment to our partners.

The Strategic Importance of Spare Parts Availability

The unavailability of spare parts is more than just a logistical inconvenience; it poses a direct threat to combat readiness and return on investment:

- 1- Readiness Killer:** A shooting range that is out of service due to a simple malfunction that cannot be repaired because a spare part is unavailable means the suspension of training plans, delays in unit qualification, and a direct decrease in combat readiness.
- 2. Investment Depreciation:** Investing millions in advanced infrastructure becomes worthless if it turns into mere "high-tech scrap" due to the inability to maintain it.
- 3. External Dependence:** Relying on foreign manufacturers who may face supply difficulties or discontinue production of a particular model creates uncertainty and leaves the customer at the mercy of circumstances beyond their control.

Maknoon's Approach: Manufacturing for Sustainability

Recognizing these challenges, we have built a business model that ensures the continuity of our customers' operations:

- 1. Commitment to Local Manufacturing and Standardization:** Because we manufacture a significant percentage of our components (pop-up mechanisms, trolleys, control systems) in-house, we have complete control over our spare parts inventory. We do not rely on a complex external supply chain, ensuring the constant and rapid availability of parts.
- 2. Guaranteed Long-Term Compatibility:** We are committed to providing spare parts for all our equipment and products, giving our customers peace of mind and the confidence that their investment is protected for years to come.

Maknoon: A Solution for Industry Problems: From Manufacturer to Repair Expert

Market experience has revealed a recurring and serious problem:

Many clients own advanced shooting ranges from other manufacturers, but these ranges become completely inoperable due to a lack of technical support or spare parts from the original manufacturer.

This is where Maknoon's role as an expert capable of solving complex problems has emerged. Many clients have turned to us not only to purchase our products but also to find solutions for problems with ranges we didn't manufacture.

Our engineering team studies these malfunctioning systems, designs and manufactures customized replacement parts, or even develops new compatible control units, to bring these ranges back to life.

In short: **Maknoon's** commitment to providing spare parts reflects our deep understanding of what "operational readiness" means. We don't just sell equipment; we sell a guarantee of continuity and reliability. Our ability to solve problems with systems made by others is the greatest proof of our deep engineering expertise, which has established us not only as a reliable supplier, but also as an indispensable strategic partner and expert in the military training industry.

Supplying Companies and Armies

From Integrated Execution to Technological Partnerships

Recognizing the diverse needs and capabilities of our clients, from militaries with their own engineering arms to defense construction companies, Maknoon offers flexible engineering supply and partnership services. This service goes beyond the “turnkey” model, focusing on a philosophy of partner empowerment. We make our exclusive products and technologies, the product of 25 years of research and development, available to enhance their projects and elevate their standards to a world-class level. We aim not only to build the best training facilities but also to disseminate the best training technology everywhere.

What do we offer in our supply service? (Components of Excellence)

We supply all the essential components that constitute the “brain and muscle” of a modern shooting range. These are the same systems we use in our own projects, ensuring the highest levels of quality and reliability:

1- Ballistic Protection Systems:

This includes all types of protection, and high-density ballistic rubber blocks and squares for safe bullet absorption.

2- Dynamic Target Systems:

This includes all our leading products: pop-up mechanisms, mobile target carriers, and suspended monorail systems that add a unique tactical dimension.

3- Command and Control Systems:

This includes central control devices and, most importantly, the exclusive operating and evaluation software developed by Maknoon, which enables the design of complex scenarios and the precise analysis of trainee performance.

Flexible Partnership Models: Solutions to Suit Every Need

We offer this service through three levels of collaboration, designed to suit each client’s specific capabilities:

- Integrated Supply and Installation:

In this model, Maknoon’s specialized team supplies all equipment and systems and handles the entire installation, integration, and testing process. This option is ideal for clients who want to ensure perfect execution according to Maknoon’s highest standards without burdening their own teams.

- Supply with Technical Supervision:

This is the partnership and empowerment model. We supply all equipment and then send a team of our experts and engineers to supervise the client’s team (whether from the Army Corps of Engineers or another contracting company). Our experts provide technical guidance, ensure adherence to correct installation standards, and transfer expertise to the client’s team. This model is ideal for building local capacity.

- Specialized Consulting Services:

When a client purchases our equipment and assigns the installation to a third party, Maknoon can act as the expert consultant. We review engineering plans, provide recommendations, and conduct site visits to ensure our products are installed correctly, guaranteeing optimal performance and a long lifespan. This option protects the client’s investment and ensures quality execution.

Strategic Importance of the Service

For Armies: This service enables military engineers or engineering corps to construct and develop their own training grounds using the best available global technology, while ensuring standardized technical specifications across all their training facilities.

For Businesses: It enables construction and defense contracting companies to integrate high-quality, reliable components into their projects, enhancing their competitiveness and ensuring the satisfaction of their end clients.

Integrated Management and Operation

Transforming the facility into an effective and sustainable strategic asset

Owning a world-class, state-of-the-art shooting range is a significant achievement, but the real challenge lies in managing and operating it daily with the same level of precision and professionalism with which it was built.

A shooting range is a living entity that requires technical expertise, a training doctrine, rigorous safety management, and an operational vision to achieve its objectives.

From this perspective, Maknoon offers integrated management and operation services, the ideal solution for entities that wish to ensure their facilities—whether military, police, sports, or recreational—operate to the highest international standards of efficiency and achieve their strategic goals without burdening their core staff with complex operational tasks.

The Strategic Importance of Expert Management

Why entrust the management of your shooting range to **Maknoon**?

Because expert management achieves what traditional management cannot:

1- Achieving Maximum Operational Uptime:

Our specialized team implements rigorous preventative maintenance programs and addresses malfunctions immediately, ensuring that the field is operational nearly 100% of the time. This means no canceled training exercises and uninterrupted troop training and visitor flow.

2- Implementing a Scientific and Standardized Training Methodology:

We don't just operate the equipment; we manage the entire training process.

Our certified trainers ensure the implementation of effective training programs and the scientific and objective evaluation of trainees' performance, guaranteeing the best possible training outcomes.

3- Enforcing Uncompromising Safety Standards:

Safety is our top priority. Having a professional management team at **Maknoon** means strictly implementing international safety protocols, training all users on them, and ensuring that every piece of equipment is safe to use, thus preventing accidents and protecting lives and assets.

4- Economic Efficiency and Resource Optimization:

Our experience in field management allows us to optimize all aspects of operations, from training scheduling to energy and material management, and maintenance, leading to long-term reductions in operating costs.

What does expert management achieve with Maknoon?

When **Maknoon** takes over management, we assume full responsibility for:

- * Technical and Technological Management:
- * Performing all routine and emergency maintenance.
- * Managing and updating software and control systems.
- * Ensuring the optimal performance of all complex equipment (robots, monorails, simulators).
- * Managing Training Operations (for military, police, and sports fields):
 - * Developing training schedules in coordination with the relevant leadership.
 - * Providing professional and certified trainers.
 - * Implementing and evaluating training programs and submitting periodic performance reports.
- * Commercial and Operational Management (for recreational fields):
 - * Managing reservations and customer service.



- * Operating all recreational and service facilities (restaurants, shops, games).
- * Implementing marketing strategies to attract visitors and increase revenue.
- * Managing staff and ensuring an exceptional visitor experience.

Technical Supervision and Monitoring

Supervision and Monitoring Services: Ensuring Operational Excellence and Building Self-Reliance
A Smart Partnership Model for Efficiency and Expertise

At **Maknoon**, we understand that some of our clients have the human resources and want to take charge of the day-to-day operations of their facilities while maintaining our professional standards. Therefore, we designed the “Supervision and Monitoring” service.

This service is not simply a lower-cost version of full management; it is a strategic partnership model aimed at “embedding Maknoon’s expertise within the client’s team.”

We provide an expert mentor and guide who works alongside your team to ensure the implementation of global best practices, achieve maximum operational efficiency, and build sustainable self-reliance.

The Core Concept: How does supervision differ from full management?

In the full management model, the Maknoon team handles all executive tasks. In the supervision and monitoring model, the client’s team performs the day-to-day tasks (operations, basic maintenance, and training), while the expert Maknoon supervisor acts as a “mentor and quality assurance” He doesn’t drive the vehicle; instead, he sits in the co-driver’s seat to ensure the driver is on the right track and performing at peak efficiency.

The Role of the “Maknoon” Supervisor: Tasks and Responsibilities

Our assigned experts perform high-level strategic tasks that guarantee the success of the operation:

1- Monitoring & Auditing:

The supervisor applies a scientific methodology to monitor all aspects of the operation. He evaluates the client’s team performance based on predefined Key Performance Indicators (KPIs), including safety standards, preventive maintenance schedules, training effectiveness, and equipment condition.

2- Mentorship & Knowledge Transfer:

The supervisor acts as an expert mentor to field leaders and local trainers. He doesn’t just identify errors; he teaches them why our practices are the best and explains the scientific and technical aspects behind each procedure, significantly enhancing their expertise.

3- Standards Enforcement:

The “Maknoon” supervisor is the ultimate authority on the application of internationally recognized safety and operational standards. It ensures no compromises or shortcuts are taken that could affect personnel safety or equipment efficiency. It acts as a permanent “quality monitor.”

4- Strategic Performance Reporting:

The supervisor provides regular, objective reports to the client’s senior management. These reports not only cover the field situation but also include a scientific evaluation of the team’s performance and proposals for development and improvement, providing decision-makers with a clear and unbiased view of their investment.

Strategic Benefits for the Client:

1- **Cost-Effectiveness:** Accessing the essence of Maknoon’s global expertise and standards at a lower cost than full management contracts, as it



relies on the client's operational staff.

2- Capacity Building: Over time, the client's team gains the experience and confidence to manage the field independently and with high efficiency. This is an investment in human capital.

3- Quality Assurance and Peace of Mind: This service provides management with the assurance that their facilities are managed according to the highest standards and that an expert is monitoring and ensuring that performance remains on track.

Shooting Range Maintenance and Development

Maintenance and Technical Support Services: Ensuring Continuous Readiness and Protecting Training Assets

At **Maknoon**, we believe that opening a new shooting range is not the end of the project, but rather the beginning of a long-term partnership.

The true value of any training facility lies not only in its technological advancements at the time of its construction, but also in its ability to operate with the same efficiency and reliability year after year. Based on this principle, we have established an integrated maintenance and technical support services sector, not as an added service, but as an integral part of our commitment to ensuring the operational sustainability of our clients' assets.

The Strategic Importance of Professional Maintenance for Clients

An effective maintenance program is not merely a routine procedure, but a paramount strategic necessity:

1- Ensuring Combat Readiness: An inoperable range means postponed training plans and units not receiving the necessary training, which directly impacts the combat readiness of the forces.

Maintenance ensures that the range is ready for operation at any time.

2- Protecting Capital Investment: Shooting ranges represent substantial investments. Regular preventive maintenance extends the lifespan of complex equipment (mechanisms, robots, control systems) and protects this investment from deterioration, ensuring maximum return.

3- Maintaining Safety Standards: Neglected equipment can cause accidents.

Maintenance ensures that all systems, from ballistic protection to target mechanisms, operate safely and reliably.

4- Avoiding High Costs: The cost of scheduled preventive maintenance is always significantly lower than the cost of emergency repairs resulting from major and sudden breakdowns.

Maknoon's Integrated Maintenance Solutions: From A to Z

We offer flexible service models to meet all our clients' needs:

1- Comprehensive Maintenance and Operation Contracts (Preventive & Corrective Maintenance):

This is the integrated solution. We provide highly qualified and trained technical personnel at our facilities, who assume full responsibility for the health of the field. Our team implements a rigorous schedule of preventive maintenance (daily, weekly, monthly, semi-annual, and annual) for every component of the field. In the event of any emergency malfunction, it is repaired immediately to ensure uninterrupted training. Our goal is to maintain equipment at 100% operational efficiency around the clock.

2- Orphaned Systems Support:

This service showcases our exceptional engineering expertise. The global market is full of advanced shooting ranges that are completely out of service because the companies that manufactured them have closed or no longer provide technical support and spare parts.



At **Maknoon**, we don't turn a blind eye to this problem. We have become the last resort for these companies, where our engineering team:

- * Study and analyze the "orphaned" systems and understand their operation (Reverse Engineering).
- * Manufacture and supply custom spare parts that are no longer available on the market.
- * Upgrade and develop outdated control systems with Maknoon's latest software, giving these ranges a "new mind."

This service transforms a client's dormant investment into a valuable asset that returns to full operational capacity.

3- On-demand maintenance and spare parts supply:

For customers who have their own maintenance teams, we offer a service to supply original spare parts for all our products, with the possibility of sending our experts to carry out complex repairs or provide technical advice when needed.

Feasibility Studies for Shooting Ranges

Consulting and Feasibility Study Services: Engineering Success Before Laying the Foundation Stone

The success or failure of a strategic training facility, with investments that can reach millions, is not determined during the construction phase, but rather months beforehand, during the planning and study phase. The most important decision any military or security entity can make is not who will build the range, but who will design and plan it on paper. From this perspective, Maknoon offers its consulting services and feasibility studies, not as a preliminary step, but as the fundamental step and the first guarantee for the success of the entire project.

Strategic Importance: Why Start with a Study from Maknoon?

1- Transforming Vision into an Actionable Action Plan:

The need often begins with a "vision" or an "operational requirement" (such as: "We need to enhance the efficiency of counter-terrorism forces"). Our role is to transform this vision into a comprehensive engineering, financial, and training roadmap.

We Answer the Critical Questions:

- * What is the optimal project size to achieve the objective?
- * Is a closed assault training range the priority, or an open tactical shooting range?
- * What type of equipment is best suited to the combat doctrine and the nature of the forces being trained (Special Forces, Infantry, Police)?
- * What protection systems ensure the safety of the site, equipment, and personnel, based on the terrain and the calibers used?

2- Optimal Resource Utilization and Avoiding Costly Mistakes:

Our feasibility study acts as an insurance policy against wasted resources. Our extensive experience prevents common and costly errors, such as building a range larger than necessary, purchasing equipment unsuitable for training objectives, or neglecting protection requirements that could lead to future disasters. We guarantee that every pound spent translates directly into real training capability, maximizing return on investment.

3- Designing Customized and Future-Proofing Solutions:

We don't use pre-made templates. Every study is the product of an in-depth analysis of each client's unique situation. Most importantly, we design not just for the present, but for the future. Our detailed engineering drawings encompass not only the site but also all associated civil works (administrative buildings, control rooms, service areas, access roads), taking into account the potential for future expansion or the easy addition of new technologies.

4- Providing a strategic document for decision-makers:

Ultimately, we provide the client with a comprehensive and integrated document. This study is not merely a collection of papers; it is a strategic tool that leadership can use to:

- * Make decisions based on clear scientific and engineering data.

* Allocate budgets accurately and confidently.

* Tender the project to contractors with precise technical specifications that leave no room for interpretation.

Entertainment and Sports Arenas

Entertainment Arenas Complex

Maknoon Integrated Entertainment Complexes: A World-Class Destination, a Comprehensive Adventure and Thrill Experience

First: In the modern world of entertainment, success no longer lies in offering a single activity, but in creating a “comprehensive destination” where visitors can enjoy an unforgettable, holistic experience.

Based on this global trend, and drawing on our unparalleled expertise in designing some of the world’s most advanced shooting ranges, Maknoon presents its revolutionary vision for the future of entertainment and investment: integrated entertainment complex projects.

We are not simply building an amusement park or a shooting club; we are creating a tourist and economic landmark, designed to be the vibrant heart of adventure for young people, the ideal resort for families, and a leading investment opportunity that meets and exceeds the demands of the global market.

Investment Perspective: A Pioneering Project with Unparalleled Potential

Maknoon complexes represent a unique investment opportunity, built on a scientific market study and solid economic foundations:

- Leading a New and Innovative Market:

Globally, the trend is now towards “tactical recreation” and “immersive experiences.”

We are not just following this trend, but leading it by combining the excitement of safe shooting sports with the luxury of world-class resorts, creating a new category that attracts a wide and diverse range of visitors.

1- Diversified and Strong Revenue Streams:

The project is designed to achieve financial sustainability through diversifying income streams. Revenues are not limited to shooting and recreation activities, but extend to luxury hospitality (villa and chalet rentals), the food and beverage sector (international restaurants), retail (stores), corporate and individual event organization, and upscale resort activities such as horseback riding, fishing, and bird hunting, in addition to equipped camping areas for recreation.

2- Full-Day Destination = Maximum Return:

The complex is intelligently designed to keep visitors and their families occupied for a full day. Having activities to suit thrill-seeking fathers, relaxing mothers, and fun-loving children guarantees higher attendance, repeat visits, and increased average visitor spending.

Second: The Heart of Adventure - A World of Shooting Experiences Bringing Together the Best of the World

With our military expertise, we have studied and drawn inspiration from the best and most successful recreational shooting models worldwide, bringing them all together in one place, while adding our own innovative touch to ensure an unparalleled experience. Here’s a detailed look at the world of adventure awaiting our visitors:

1- Classic and Sport Shooting Ranges: For Precision and Professionalism Enthusiasts

To cater to authentic shooting enthusiasts and athletes, we offer an experience comparable to the finest international shooting clubs:

2- Olympic Shooting Ranges: Ranges designed according to the strictest standards of the International Shooting Sport Federation (ISSF), making them eligible to host official championships.

3- Pistol and Rifle Ranges: Indoor and outdoor shooting lanes equipped with the latest electronic technologies (such as the LOMA system) for practicing precision shooting at distances of 25 and 50 meters.

4. Air Compression Shooting Ranges: The ideal starting point for learning the art of precision

shooting in a calm and safe environment for all ages.

5. Skeet and Trap Shooting Ranges: Experience the elite sport where shooters test their focus and reaction speed against flying clay targets.

6. Tactical Experience and Thrill Shooting Ranges: For an adrenaline rush.

This category doesn't just sell a "shooting opportunity," but an immersive and thrilling "experience," similar to the most famous tourist attractions in Las Vegas.

3. Paintball & Airsoft Arenas: Realistic battlegrounds designed with military expertise, allowing teams to engage in exciting tactical and strategic competitions.

4. CQB Experiences: A safe and entertaining version of military "storming houses," where teams can experience the thrill of storming and clearing rooms using laser or airsoft weapons.

5. Iconic Weapons Experience: We offer a unique opportunity to experience firing historical and iconic weapons, all under the supervision of our expert instructors and with the highest safety standards.

6. Historical Shooting Experience: We dedicate a space for history enthusiasts to experience shooting classic weapons from different eras, from World War II rifles to weapons from the Old West, in a unique cultural and entertainment experience.

7- Family Entertainment Centers: For Safe Group Adventures

As a destination for the whole family, we've ensured safe and innovative activities suitable for all ages.

8- Archery: A sport that combines mental focus, tranquility, and precision in a safe and enjoyable environment.

9- Laser Tag Arenas: A futuristic adventure for the whole family in mazes filled with lights and sound effects.

10- Archery Tag Competitions: The latest trend in group entertainment, an innovative blend of the fun of dodgeball and the skill of archery using safe foam-tipped arrows.

11- High-Tech Virtual Arenas: A Gateway to the Future

Here, **Maknoon's expertise in programming and simulation shines**, as we present the future of recreational archery today:

Interactive Video Simulators: Giant screens that react to laser fire, taking you on exciting adventures like facing zombies or engaging in space combat. This innovation culminates in "The Interactive Smart House," which transforms the space into a living, breathing entity that reacts to every shot, creating an experience akin to stepping into a realistic video game.

12- VR Arcades: Utilizing cutting-edge technology, players don VR headsets to fully immerse themselves in stunning digital worlds and experience imaginative shooting scenarios with maximum immersion.

Third: Beyond the Shooting Line - A Complete Luxury and Recreation Resort

Because we are building a comprehensive destination, the experience extends into a world of luxury and comfort for all family members:

Entertainment and Fun: Bumper cars, a haunted house designed with state-of-the-art effects, ice skating rinks, refreshing swimming pools, and a complete amusement park to ensure children's enjoyment.

Luxury Hospitality: Luxurious villas and day-trip accommodations, designed with a concept exceeding five stars to provide the utmost privacy and luxury.

Upscale amenities: International restaurants and shops, a grand mosque with a unique architectural design, a private rest area for nannies and nursing mothers, expansive areas for equipped camping and



recreation, and massive parking for unparalleled convenience.

In conclusion: The Maknoon Guarantee

Maknoon Entertainment Complexes represent our vision for the future of entertainment, where our military expertise in precision and safety meets our passion for innovation and creating unforgettable experiences.

It is a project designed to be a leading entertainment and economic landmark, a destination that sets a new global standard for adventure, excitement, and luxury.

Olympic Shooting Ranges

Olympic Shooting Ranges: The Engineering of Ultimate Precision for the “Millimeter Battle”

Olympic shooting ranges are not just places to shoot; they are “precision laboratories” designed to rigorous engineering standards that allow no margin for error. Unlike tactical shooting, which focuses on reaction speed and decision-making, Olympic shooting is a pure sport focused on a single objective: achieving a perfect hit in the center of the target from fixed distances and in specific shooting positions.

Every aspect of these ranges, from lighting to range to target acquisition systems, is controlled and monitored by the International Shooting Sport Federation (ISSF). It is a “millimeter battle” that demands absolute mental and physical stability from the shooter, and a perfectly engineered facility that ensures a level playing field.

The Role of “Maknoon”:

From Military Expertise to the Engineering of Precision Sports

Our military expertise may seem far removed from Olympic sports, but the opposite is true. Our deep expertise in precision engineering, software, and ballistic systems enables us to build these state-of-the-art shooting ranges.

What we do at Maknoon:

ISSF-Compliant Design Consulting:

We provide sports organizations and Olympic committees with consulting services for designing ranges that are 100% compliant with the International Shooting Sport Federation (ISSF) regulations, ensuring their eligibility to host international championships.

Turnkey Implementation:

We handle the entire project, from precise civil works that guarantee accurate dimensions to the installation of specialized lighting and ventilation systems (for enclosed ranges), and the construction of shooting towers and trap stations.

Supply and Installation of Approved Technology:

We supply and install ISSF-approved Electronic Scoring Targets (EST) systems. These highly accurate systems detect hits instantly and display the score on screens for shooters and spectators.

Skeet & Trap Shooting Range Setup:

We install and program automatic clay launchers, audio systems, and precisely adjust shooting angles and trajectories according to skeet and trap shooting rules.

Strict Technical and Engineering Specifications for Olympic Shooting Ranges:

Specifications vary significantly depending on the type of competition:

- 10-meter (Air) Shooting Ranges:

Type: Indoor (enclosed) exclusively.

Weapons: 4.5mm air rifles and air pistols.

Engineering Specifications:

Distance: Exactly 10 meters from the line of fire to the target.

Targets: Electronic target systems (EST) that detect hits with an accuracy of up to 0.1mm.

- 25-meter (Pistol) Shooting Ranges:

Type: Indoor or outdoor. **Weapons:** Rapid Fire Pistol and Sporting Pistol.

Engineering Specifications:

Target System: This is the biggest challenge. Targets must be able to rotate 90 degrees. In rapid fire competitions, targets appear to the shooter for a few seconds (e.g., 3 seconds) and then disappear. This requires a highly precise mechanical and electronic system to ensure all targets rotate at the exact same moment.

- 50-meter Ranges (Rifle and Pistol):

Type: Exclusively outdoor.

Weapons: 3-position rifle (Prone, Standing, Kneeling) and free pistol.

Engineering Specifications:

Targets: Electronic (EST) systems for remote hit detection.

-Skeet and Trap Shooting Ranges:

Type: Exclusively outdoor, requiring very large areas for the landing zone of the skeet and shotgun shells. **Engineering Specifications:**

Trap Shooting Ranges: Consists of 5 shooting stations in a nearly straight line, and a forward bunker containing 15 launchers that fire clay targets away from the shooter at specific angles and speeds.

Skeet Shooting Ranges: Consists of 8 shooting stations arranged in a semicircle, with two towers (high and low) on either side of the range that launch clay targets across the shooter's path in fixed, intersecting trajectories.

Ethics and Compliance

- Confidentiality

At **Maknoon Shooting**, we understand the sensitive nature of the defense and national security sector. Absolute confidentiality is not just a policy for us; it is an integral part of our operational philosophy.

We handle all our clients' information, project data, and technical details with the highest levels of security and professionalism. Protecting the secrets of our governmental and sovereign partners is the foundation of the trust we value, and it is an absolute and non-negotiable commitment.

- Confidentiality

- Code of Conduct

1. Our Commitment to Absolute Integrity

At Maknoon Shooting, our reputation is our most valuable asset. It is built not only on technical excellence but also on a solid foundation of absolute integrity.

This Code of Conduct is the compass that guides every decision we make and every action we take. It defines the behavioral standards that are binding on all members of the **Maknoon family**, from senior management to every employee, and extends to our partners and suppliers. We don't just adhere to these rules; they are an integral part of who we are.

2. Our Core Principles of Conduct:

* Supreme Compliance with the Law:

We have a zero-tolerance policy for any violation of the law. We strictly adhere to all local and international laws and regulations governing the defense industry, including export controls, anti-corruption measures, and anti-money laundering regulations.

* Integrity in Business:

We conduct all our business with absolute honesty and fairness. We categorically reject all forms of bribery, corruption, or any dishonest practices. Our relationships with clients, suppliers, and partners are built on transparency and mutual trust.

* Confidentiality and Information Security:

(As detailed in the Confidentiality section), we protect the sensitive information of our clients, partners, and company with the highest security standards, and we consider its preservation a moral and legal obligation.

* Avoiding Conflicts of Interest:

All employees and partners must act in the best interests of **Maknoon Shooting** and our clients. We categorically avoid any personal, financial, or other interests that may conflict with our professional responsibilities and disclose any potential conflicts immediately.

* Professionalism and Work Environment:

The safety of our people and clients is our top priority. We maintain a safe and secure work environment, treat all individuals (internal and external) with respect and appreciation, and foster a culture of excellence and mutual respect.

3. Responsibility and Reporting:

This code of conduct is not just a document; it is our pledge and commitment. We expect every member of our team to adhere to these standards. We encourage and require anyone who witnesses a potential violation of this code or any ethical concerns to report them immediately through the designated channels, without fear of repercussions.

- Compliance Information

Maknoon Shooting understands that working in the defense sector requires more than good intentions; it requires a robust and effective compliance program. We are committed to ensuring that our work is conducted in full compliance with all applicable laws, regulations, and ethical standards.

Our compliance program is designed to be both proactive and preventative, and is based on the following:

1. Compliance with International and Local Laws:

We strictly adhere to all laws and regulations in the countries where we operate, including (but not limited to):

- * **Trade and Export Controls:** Full compliance with all international and local export and import regulations relating to defense materials and technologies.

- * **Anti-Corruption and Bribery:** We maintain a zero-tolerance policy towards any form of bribery or corruption, in compliance with relevant international and local laws.

- * **Anti-Money Laundering:** We implement rigorous Know Your Customer (KYC) procedures and fully cooperate with financial regulations to prevent any illegal practices.

2. Ongoing Training and Awareness:

Compliance is a collective responsibility. Therefore, we provide regular training programs for all our employees and key partners to ensure they fully understand our legal and ethical obligations and are equipped with the knowledge necessary to make sound decisions.

3. Internal Monitoring and Auditing:

We don't rely on passive compliance. Instead, we conduct regular internal monitoring and auditing to assess the effectiveness of our compliance program, identify any potential risks, and take immediate corrective action when necessary.

4. Secure Reporting Channels:

We promote transparency and accountability. We provide clear and secure reporting channels (a dedicated hotline or email) to enable employees and partners to report any concerns or potential violations of our Code of Conduct or compliance policies, with a guarantee of absolute confidentiality and no risk of retaliation.





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