

# **Smart Weapons Market Assessment, By Weapon Type [Missiles, Munitions, Rockets, Other], By Guidance System [Radio Frequency Guided, Electro-Optical Guided, Laser Guided, Others], By Launch Platform [Land, Naval, Airborne, Multi-Platform], By Autonomy [Manual, Semi-Autonomous, Autonomous], By Region, Opportunities and Forecast, 2016-2030F**

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## **Abstracts**

Global smart weapons market size was valued at USD 20.02 billion in 2022, expected to reach USD 30.12 billion in 2030, with a CAGR of 5.24% for the forecast period between 2023 and 2030. Throughout history, the enduring human drive for survival has perpetuated conflict. Modern warfare has evolved from traditional long drawn land battles and trench warfare styles to modern combat methods, such as integrating land naval and airborne forces, enhanced communication, and developing smart weaponry. Though lacking a universally accepted definition, these weapons share characteristics that set them apart. They are guided, autonomous, and reliant on advanced electronics and sensors offering enhanced precision.

The Stockholm International Peace Research Institute (SIPRI) Yearbook 2023 reveals that 56 states were engaged in armed conflicts, marking a 5-state rise from 2021. It aligns with a 0.42 percent decrease in global peacefulness, continuing a nine-year trend of declining global peace. The surging global conflicts and collective efforts against terrorism have driven up the need for smart weapons. These armaments effectively minimize collateral damage, making them a preferred choice for nations looking to minimize casualties. While they may come at a higher cost than conventional arms, their efficiency justifies their cost premium.

Furthermore, their reputation as powerful and feared deterrents enhances their military significance. Militaries worldwide emphasize the integration and interoperability of smart weapons across various platforms, fostering the demand. Smart weapons featuring advanced electronics, sensors, and AI capabilities, streamline tasks, enhance decision-making, and reduce human intervention. These advancements in smart weaponry contribute to improved defense systems, perpetuating a cycle of ongoing weapon development. Thus, the ever-advancing electronic warfare landscape and the drive for more advanced weaponry fuel the growth of smart weapons market.

### Global Conflict Surges the Demand for Smart Weapons

While the world witnessed a notable increase in armed conflicts, significant regional disparities in violence endured. In Africa, a region marked by the Ethiopian civil war, two successful coups, and three unsuccessful coup attempts in 2022, continued to have the highest number of armed conflicts. Although some regions, like Afghanistan and Yemen, saw a decline in violence, Ukraine faced a substantial upsurge, and Myanmar experienced a nearly twofold increase in fatalities. This deterioration in global peace and the escalation of wars and armed conflicts are contributing to a growing demand for smart weapons in a world grappling with mounting instability, underscoring the importance of advanced weaponry.

In May 2023, the IDF Navy successfully conducted a series of multi-tier interception tests using the naval version of the Iron Dome system, known as 'C-Dome'. The achievement was a collaborative project involving the Israeli Navy, Israel Missile Defense Organization (IMDO), and Rafael Advanced Defense Systems. Furthermore, following the terrorist attack in October, Israel decided to go to war against Hamas, to support and enhance the air defense capabilities of its ally, the United States Pentagon delivered the initial inventory of Tamir interceptors' missiles to Israel. Rafael Advanced Defense Systems to produce these missiles in Israel with components from RTX Corp in Arizona. Thus, such Heightened international wars and conflicts drive the demand for advanced smart arms.

### Precision-guided Munitions Stimulate the Smart Weapons Market's Development

The smart weapons market is experiencing significant growth driven by the increasing demand for precision-guided munitions. As conflicts worldwide become more complex and urbanized, there is a heightened need for weaponry that can deliver accurate and effective results while minimizing collateral damage. Smart munitions, armed with innovative technologies like guidance systems, sensors, and artificial intelligence, can

adapt their course dynamically, ensuring precision and accurate target acquisition. Manufacturers of precision-guided systems have developed advanced hybrid PGM systems for improved accuracy and mission flexibility. For example, AL TARIQ's PGM kits can incorporate GNSS/INS with laser or infrared guidance and automatic target recognition, delivering exceptional operational adaptability to air forces. These precise munitions streamline military operations by reducing the variety of required weapons while maintaining multiple guidance options for each weapon release.

In February 2023, HALCON, an EDGE Group entity and a regional leader in guided weapons systems, secured a contract valued at approximately USD 272 million with the United Arab Emirates (UAE) Armed Forces to provide AL TARIQ-LR (long-range) precision-guided munitions (PGMs). This contract signifies a significant development in the field of guided weapons.

### Governments Regulations

Global government regulations are vital for preserving international peace and security. They effectively curtail conflicts, restrict illicit arms trade, and prevent weapons from reaching unauthorized hands, ensuring stability and upholding human rights. Compliance and enforcement of these regulations represent a collective effort to attain and maintain global tranquility, thereby reducing the human and economic toll of violence and war. Additionally, it nurtures cooperation among nations, fostering trust and shared responsibility, crucial for a peaceful world.

Lethal weapons such as Missiles are increasingly prevalent in conflicts. Missile control is mainly a product of bilateral pacts between the former Soviet Union/Russian Federation and the United States, with limited multilateral endeavors. The Arms Trade Treaty and the United Nations Register of Conventional Arms cover conventional missile trade. Initiatives like the Missile Control Technology Regime (MTCR) and Hague Code of Conduct Against Ballistic Missile Proliferation (HCOG) aim to restrict missile proliferation. Security Council Resolution 1540 (2004) mandates export controls, encompassing mass destruction weapon delivery systems. The absence of a binding global missile accord being persistent. In October 2023, 35 MTCR member states will convene in Montreux, Switzerland, to establish export guidelines for ballistic missiles, cruise missiles, drones, and related components.

### Intelligent and Autonomous Weapons to Upsurge the Smart Weapons Market

Modern warfare has evolved into a realm of electronic devices and data immersion.

Advanced munitions, armed with sophisticated electronic sensors, seamless communication systems, and innovative artificial intelligence, are ushering in autonomous systems that deliver unparalleled precision, adaptability, and refined target acquisition. These munitions dynamically adjust their flight paths to ensure they hit intended targets with pinpoint accuracy. Smart weapons are adept at filtering unwanted signals in complex environments and precisely identifying specific targets among numerous potential threats on the battlefield. The implementation of AI at different intelligence levels, from narrow intelligence (ANI) for specific tasks to general intelligence (AGI) matching human abilities, and superintelligence (ASI) surpassing human capabilities, enhances military capabilities for various tasks and advanced missions.

In May 2023, the United States Air Force awarded Lockheed Martin a USD 443.8 million contract for additional AGM-158C Long-Range Anti-Ship Missiles (LRASM). These missiles are designed to target high-priority enemy assets, including aircraft carriers and troop transport ships. LRASM utilizes autonomous targeting systems, eliminating the need for external support like GPS or data links. They can communicate and coordinate with one another through a datalink, allowing multiple missiles to work together for a synchronized attack. It reflects the surging demand for intelligent and autonomous weapons that has propelled the expansion of the smart weapons market, equipping military forces worldwide to excel in modern warfare.

### Cross platform Integration Spurs Development of Smart Weapons Market

Modern military forces increasingly emphasize seamless integration across their land, naval, and air branches, giving rise to a heightened demand for advanced smart weapons that can operate across various platforms without needing separate training and induction procedures. In addition, nations are forming alliances like NATO, the Quad, and UN peacekeeping forces to promote global and regional peace, facilitating resource sharing and joint military exercises to enhance interoperability. Smart arms play a pivotal role in these alliances, enabling allied groups and forces to utilize common smart weaponry, thereby bolstering their operational and tactical capabilities.

Taking cues from evolving conflict dynamics, ten NATO Allies have launched a collaborative effort in October 2023. This Concept Stage initiative aims to develop a versatile and adaptable Ground-Based Air Defense (GBAD) system to counter air threats across different ranges, including short, short, and medium distances. It features a shared Command and Control framework and modular design for tailored GBAD force packages to meet specific operational requirements.

## Impact of COVID-19

The global pandemic, while severe, did not erase the enduring 'security dilemma' faced by nations concerning their adversaries and their very survival. Some entities navigated the challenging economic climate by upholding defense agreements with other countries, while others shifted their focus to developing COVID-related equipment like ventilators, personal protective gear, and masks to support both their governments and their survival during the crisis. For instance, in 2021, RMD secured contracts for critical programs, bolstering its financial performance, and laying the groundwork for future expansion. These initiatives included the Lower Tier Air and Missile Defense Sensor (LTAMDS), the Qatar National Advanced Surface-to-Air Missile System (NASAMS), and a strategic partnership with Northrop Grumman to develop the Missile Defense Agency's (MDA) Next Generation Inceptor (NGI).

## Impact of Russia-Ukraine War

Russia, the world's second-largest arms exporter, faced challenges in defense production following its 2022 invasion of Ukraine and subsequent sanctions. The conflict in Ukraine increased European demand for military equipment and ammunition, while global supply chain disruptions affected arms sales, especially in Western countries with complex supply networks. In October 2023, Russia introduced the Sarmat, a powerful intercontinental ballistic missile capable of carrying multiple nuclear warheads. Delays in production were linked to financial difficulties faced by Russian aerospace organizations and contractors due to the United States sanctions dating back to 2014. The Russia-Ukraine war exposed global contradictions, where commercial interests sometimes overshadowed peace calls. Despite sanctions, some European Union member states continued to export military equipment to Russia.

## Key Players Landscape and Outlook

The global smart weapons market thrives due to an ongoing cycle of internal and external conflicts, coupled with technological advancements. As global conflicts rise, nations seek innovative technology to bolster their capabilities, and the collective fight against terrorism further drives the industry's growth. Companies are innovating with sensor-equipped and AI-based weapons, enhancing control and situational awareness for operators. They are strengthening ties with existing partners and navigating relationships with various national allies and adversaries to supply both sides. Recent events, like the Russia-Ukraine war and Israel-Hamas conflict, have revealed supply

chain vulnerabilities that companies are actively addressing. These factors collectively contribute to the growth of the arms and ammunition market.

For instance, the remarkable performance of the United States made M142 HIMARS multiple rocket launchers in Ukraine has attracted the interest of several European nations, leading to increased demand for HIMARS. In April 2023, German defense company Rheinmetall and the United States defense giant Lockheed Martin joined forces to introduce GMARS, intended to replace Germany's aging MARS 2 multiple launch rocket system. In the same month Turkish drone manufacturer Baykar revealed Kemankes, a new AI-enabled smart cruise missile/loitering munition at the Teknofest 2023 exhibition in Istanbul. This advanced weapon can engage high-value targets from secure distances using an AI-assisted optical guidance system for precise target identification and engagement.



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