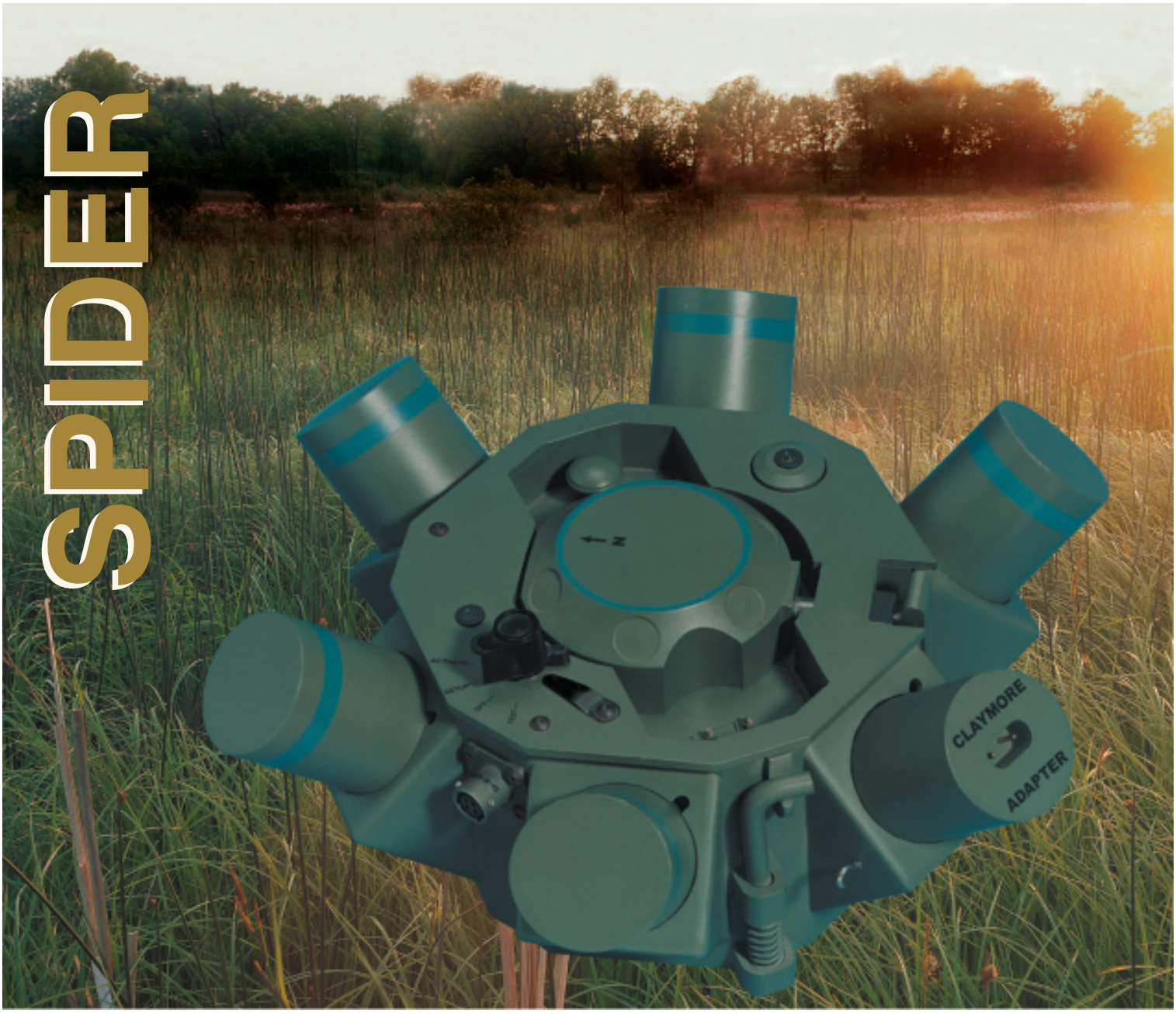


Force protection for 21st century conflicts

Working with the U. S. Army's Armament Research, Development and Engineering Center and the Project Manager of Close Combat Systems, Textron Systems and Alliant Techsystems have joined forces to develop a new weapon system for force protection consistent with 21st Century warfare. Spider's innovative design is both effective and affordable, making it the most suitable humanitarian alternative for anti-personnel landmines.

As an Objective Force anti-personnel component, Spider protects forces and shapes the battlefield, while minimizing risk to friendly troops and non-combatants. Spider warns of dismounted enemy approach, disrupts infiltrations, enhances effects of friendly weapons and permits selective engagement. When all components are emplaced, the "man-in-the-loop" discriminates between combatants and civilians. The system's launch-on-command design allows safe and rapid deployment, recovery, reload and redeployment, as well as immediate harmless friendly passage or counter-attack. Spider is designed for storage, transport, rough handling and use in military environments throughout the world.

ATK ALLIANT TECHSYSTEMS

TEXTRON Systems

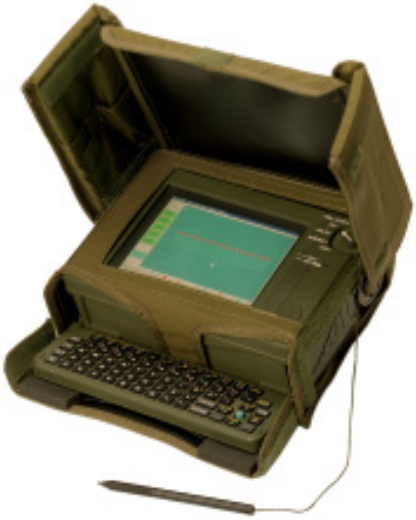
System Operation

Munition Control Unit (MCU)

The MCU has a pedestal base with a built-in communications module and connectors for up to six lethal or non-lethal devices. On operator command, it autonomously deploys trip wires corresponding to the six-launch azimuths of the grenades, which can be individually launched outward from its base to intercept intruders.

Each of the six ports can be equipped with a grenade or replaced with a connector that enables the on-command operation of other ordnance – both lethal (such as hand-emplaced M18 Claymores) and non-lethal.

The replaceable battery provides the MCU a field life in excess of 30 days, during which it can communicate with an operator either directly or through a field relay, or self-neutralize on command. The MCU can be safely and rapidly recovered, reloaded and relaid.

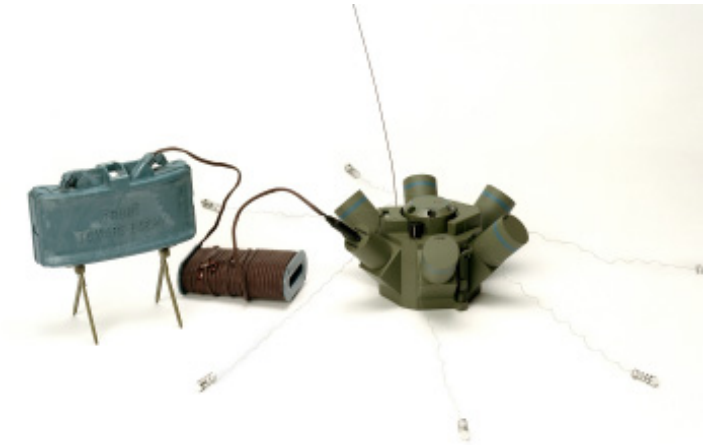


Remote Control Unit (RCU)

The RCU is a standard rugged laptop computer, equipped with a touch-screen that provides man-in-the-loop (MITL) control of MCUs in the field. Its communications module covers a range of 1,500 meters, and enables the operator to command the launch of individual or collections of grenades or other connected lethal or non-lethal ordnance.

Repeater Units

Communications repeater modules can be placed between the RCUs and the MCUs to extend the effective communications range of the system. The repeater maintains communication with the multiple MCUs in the field as well as the RCU used by the operator.



Rapid and Safe Deployability, Recovery, Reload and Redeployability

Imagine the following battlefield scenario:

MCUs are hand emplaced and oriented appropriately. Tactics, techniques and procedures (TTP) provide appropriate densities and laydowns to accomplish various tactical objectives. When all of the MCU locations have been loaded into the RCU, the operator is able to "fight the field."

When ready for final use, the operator remotely commands the deployment of the six automatic trip wires. When a trip wire is pulled, a signal is sent from the sensing MCU to the RCU. Based on that signal, the operator's own observation of the field, and on other situational awareness and guidance from the chain of command, the operator may direct the detonation of the grenade[s] associated with the trip wire detection. The operator can choose to allow a number of intruders to penetrate further into the field to execute a delayed ambush of multiple MCU grenades, or position a Claymore to cover a series of MCUs. No munition is detonated except on command of an MITL operator.

Following the engagement, every MCU can be safely recovered. The soldier quickly removes the expended trip wire container and checks the remaining power in the battery. At the resupply truck, the soldier replaces any expended grenade and trip-wire canisters and draws new batteries as required, allowing the MCU to be rapidly employed again.

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