MOOG | DEFENSE | WEAPON SYSTEMS

Credit: Leonardo DRS

Credit: Department of Defense

RIwP®

RECONFIGURABLE INTEGRATED-WEAPONS PLATFORM

MOOG

PROVEN CAPABILITY AND CAPACITY TO HOST MAXIMUM MULTI-DOMAIN LETHALITY PAYLOADS

The RIwP family, consisting of Standard RIwP and Lightweight RIwP, is a proven, modular, and scalable remote turret providing unmatched capacity to host multi-domain payloads for current and future ground-combat platforms. It offers air defense, anti-armor, or multi-mission capabilities via world-class precision medium-caliber direct fire weapons, missile/rocket effectors, and indirect fires.

Designed to be weapon, sight, and platform agnostic, RIwP accommodates firepower growth to support future mission requirements. With survivability in mind, the Standard RIwP allows the warfighter to reload while under armor. The below illustration depicts popular configurations to meet the full spectrum of turret-related missions with the Standard RIwP Base Assembly being the centerpiece to build tailorable and reconfigurable "plug-and-play" weapons solutions.

Please contact us for Lightweight RIwP configurations.

RIwP ADVANTAGES

Credit: U.S. Army/Maj. Robert Fellingham

PROVEN CAPABILITY

RIwP is the centerpiece for the Army's Maneuver Short Range Air Defense Increment 1 (SGT Stout) program, the Army's mobile Counter-Unmanned Aerial Systems (C-UAS) program, and is supporting numerous other government operational needs.

FIELD RECONFIGURABLE

RIwP allows for pre-planned mechanical, electrical, and software interfaces to support the swapping of payloads. Payloads can be changed in minutes with organic maintenance personnel and minimal lift capability.

Credit: U.S. Army/Maj. Robert Fellingham

SURVIVABILITY

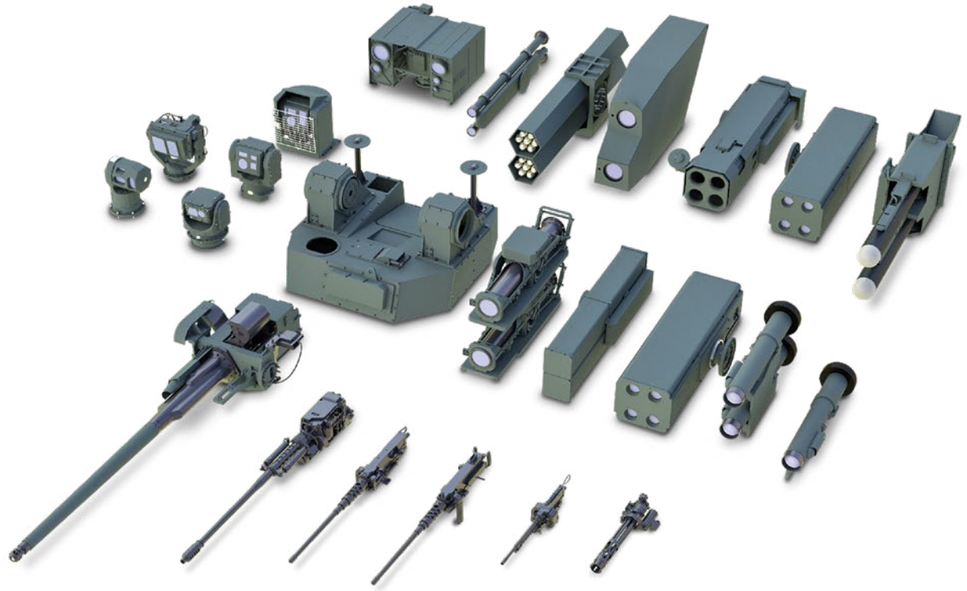
The design for Standard RIwP allows the warfighter to reload the direct fire weapons from inside the vehicle under full armor protection. Options for add-on armor are available.

COMMONALITY

The RIwP family of turrets shares 85% commonality of subcomponents with all configurations. This minimizes logistical footprint size and sustainment costs, maximizing training efficiency, reducing total cost of ownership, and allowing forces to do more with less.

PAYLOAD AGNOSTIC

RIwP has the ability to support a wide range of weapons and sights. RIwP can be built to fit your mission's purpose from air defense, anti-armor, to multi-mission situations. It can be fully customized and reconfigured in the field. Build your RIwP with current payloads today, knowing this remote weapon station can accommodate firepower growth to support future mission needs.



DIRECT FIRE CAPABILITIES

The Standard RIwP is designed for reload under armor for direct fire ammunition to allow for continuous fire.

Primary armament (100-250 ready rounds typical)	.50 cal: M2
	25mm: M242
	30x113mm: XM914
	30x173mm: Mk44, XM813
Secondary armament (250-500 ready rounds typical)	5.56mm: M249
	7.62mm: M240, M134
	.50 cal: M2
	Grenade launcher: Mk19

MISSILE CAPABILITIES

Missiles on the Standard RIwP are reloaded under partial cover from vehicle hatch for added protection.

Stinger	StarStreak HVM
APKWS (70mm rocket)	Starstreak LMM
Coyote	Switchblade 600/300
SPIKE ER2	Brimstone
TOW	JAGM
Javelin	Mistral
HELLFIRE	TALON
DAGR	Other laser guided missiles

SIGHT CAPABILITIES

RIwP features independently stabilized sights for gunner/commander. Sights can be armored for additional protection.

MX-GCS	IBAS
RV-TAS	PASEO
S3	PAAG

ADDITIONAL PAYLOADS

RIwP has the ability to integrate additional payloads outside of direct fire and missile capabilities.

Direct radar integration	Laser dazzler/designator
Tethered and untethered drone integration	Situational awareness camera
Directed Energy (DE)	Passive sensors
Electronic warfare effectors, including Counter-UAS defeat	Shooter detection system
	Smoke/projectile grenades
Meteorological sensor	Other non-lethal effectors

PLATFORM AGNOSTIC

RIwP can be easily integrated both mechanically and electrically onto the majority of tactical and fighting vehicle platforms using the RIwP Base Assembly. The unique design allows for multiple direct fire, missile, sight, and other payloads all on the same system increasing platform firepower, effectiveness, and warfighter mission overmatch.

- Wheeled vehicles such as Stryker, MATV, MRAP, JLTV, Boxer, and Commando
- Tracked vehicles such as AMPV and M113
- Robotic combat vehicles
- Containerized platforms

PROTECTION

The Standard RIwP offers base armor up to STANAG Level III for crew compartment with vehicle design. Sights and missiles can also be up-armored for additional protection.

SYSTEM CAPABILITIES

MISSION EQUIPMENT PACKAGE

RIwP has the ability to integrate full mission equipment capabilities including C2 and direct radar integration to fire control. The system is capable of using fiber-optic, Ethernet, remote control, and Hunter/Killer operational structures. Additional enabling capabilities include Slue-to-Cue, PABM/PROX rounds, IFF integration, non-line of sight tracking, and smoke/projectile grenades. RIwP's easily reconfigurable platform allows for easy integration of future capability requirements.

FIRE CONTROL SYSTEM

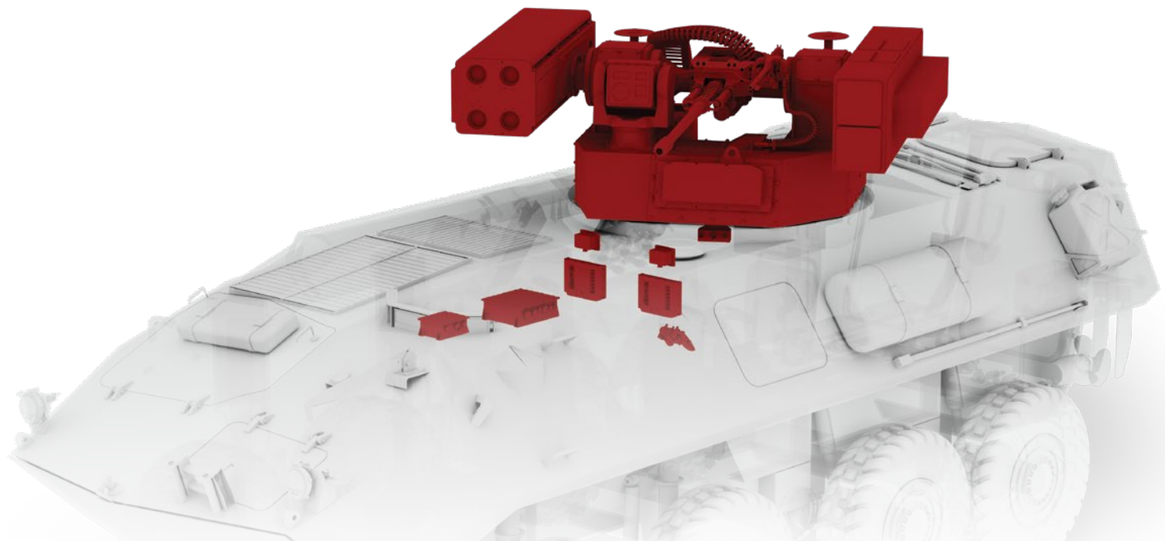
RIwP's proven and tested weapons system solution provides highly accurate sighting and firing allowing gunners to engage targets under all operational scenarios; stationary/stationary, moving/stationary, stationary/moving, and moving/moving without halting to set, after receiving a cue from an on-board or off-board sensor.

TARGET ACQUISITION SYSTEM

RIwP's sensors and cameras allow for a large array of significant detection, recognition, and identification capabilities integrating with EO/IR, Optical, HD day, and HD thermal cameras. The system allows the for ability to switch between a broad range of Field of View's (FOV's) during operation including panoramic FOV's. The system also hosts auto-scan capabilities, laser range finder/ laser designator, high accuracy gimbal stabilization, meteorological sensor inputs.

WEAPON CONTROL SYSTEM

Features	Specifications	
	Azimuth	**Elevation**
Range	360° continuous rotation	-20° to +60° (optional +80°)
Minimum speed	0.15 mrad/s	0.20 mrad/s
Maximum speed	1 rad/s	
Acceleration	1 rad/s^2	
Firing stability	≤ 0.3 mrad (1Ω)	
Backup	Manual (degraded performance alternative)	



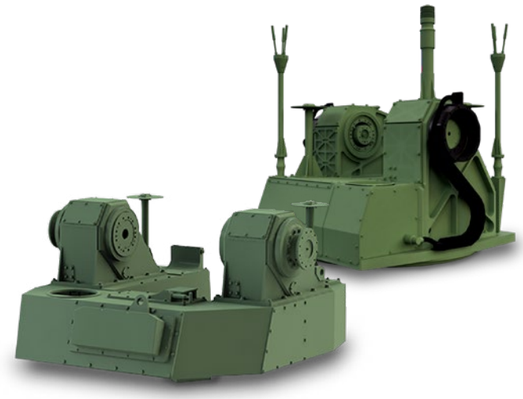
INTERFACE INFORMATION

ELECTRICAL INTERFACE

RIwP operates on a 28 VDC supply per MIL-STD-1275.

POWER REQUIREMENTS

Features	Specifications
Quiescent	0.25 kW
Scanning	0.70 kW
Target engagement	3.20 kW (16 kW peak)



MECHANICAL INTERFACE

The RIwP family mounts on a standard 1 meter NATO bearing with zero intrusion into the cabin. See RIwP cut sheet for architectural and dimensional drawings.

BASE WEIGHT WITHOUT PAYLOADS

Features	Specifications
Standard RIwP	2500 lbs (1134 kg)
Lightweight RIwP	1070 lbs (485 kg)

COMMUNICATIONS INTERFACE

RIwP has the ability to provide communication links to C2 and other system interfaces via ethernet.

USER INTERFACE

The RIwP crew station is a common user interface that is streamlined for the warfighter. A control station is used to turn the system on and arm the weapons. A touch screen display allows the user to easily select targets for tracking. The easy-to-use hand controller rounds out the user interface with the look and feel of a video game controller.

FACILITY CAPABILITIES

Moog has demonstrated turret production capacity to meet the combined needs of current production, development, and sustainment programs.

- Moog Agile Center of Excellence for the concept, design, rapid prototyping, and sustainment of Turreted Weapon Systems in Santa Barbara, CA
- Moog Turret Assembly Center (MTAC): Dedicated Turret Production Center of Excellence in Salt Lake City, UT
- Moog has delivered turrets at twice the current production rates
- Safe, efficient, and reliable build areas
- Comprehensive testing ensures product quality

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