SDL is defining the state of the art for lightweight stabilized remote weapon systems (RWS). These systems provide operators with effective range and hit probability overmatch from safer locations. SDL’s RWS are precision response solutions that combine IS&R and lethal capabilities with low collateral damage.

Leveraging decades of experience in precision optical and spacecraft pointing systems, SDL has developed and demonstrated a remotely-operated, lightweight, stabilized turret called the Precision Weapon Platform (PWP) system that can accommodate weapons, energy sources, active or passive sensors, and other payloads. Remotely operated, a single person can control the system using a laptop computer. This system includes compatibility with current battle networks and precise geo-referencing capabilities for correlation of the target with other assets. The shock tolerance, light weight, and small size of the system make it compatible with many platforms and payloads. Potential platforms include unmanned air systems (UAS), ground vehicles, watercraft, buildings, and mobile towers. Payloads could include sniper rifles, machine guns, less lethal systems, laser designators, and passive sensors.

Precise, closed-loop stabilization using an on-board inertial measurement unit (IMU) minimizes the effects of disturbances, such as wind and host vehicle motion, to maintain pointing accuracy throughout the mission. Ballistic offsets and hit probabilities are automatically calculated several times a second based on current meteorological conditions. All these capabilities, combined with an intuitive operator interface, make the PWP a precise, point-and-shoot solution.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>22” diameter x 28” height</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLATFORM WEIGHT</td>
<td>75 lbs (34 kg)</td>
</tr>
<tr>
<td>PAYLOAD WEIGHT</td>
<td>To a maximum of 35 lbs (15.9 kg)</td>
</tr>
<tr>
<td>POWER</td>
<td>24 V, 300 W (typical)</td>
</tr>
<tr>
<td>DEMONSTRATED</td>
<td>.338 Lapua Magnum sniper rifle</td>
</tr>
<tr>
<td>PAYLOADS</td>
<td>M240H</td>
</tr>
<tr>
<td>FUTURE PAYLOADS</td>
<td>M249, M134, non-lethal weapons</td>
</tr>
<tr>
<td>OTHER CAPABILITIES</td>
<td>Full geolocation</td>
</tr>
<tr>
<td>BALLISTICS</td>
<td>Real-time, long-range ballistic correction with a point and shoot interface</td>
</tr>
<tr>
<td>VISIBLE CAMERAS</td>
<td>Situational awareness and scope view</td>
</tr>
<tr>
<td>THERMAL CAMERA</td>
<td>Cooled MWIR thermal weapon sight</td>
</tr>
</tbody>
</table>

**CURRENT CAPABILITIES**

- Sniper system on UAV and manned rotorcraft (ARSS)
- Sniper system on tower (TowerHAWK)

**CURRENT DEVELOPMENT**

- UH-60 Blackhawk Remote Door Gunner (RDG) system
The PWP represents cutting-edge RWS technology. Further capabilities are currently being developed in cooperation with the U.S. Army’s Aviation Applied Technology Directorate (AATD).

In the Autonomous Rotorcraft Sniper System (ARSS) application, SDL optimized the PWP system for a .338 Lapua Magnum sniper rifle. ARSS represents a long-range, low collateral damage, precision engagement capability from manned and unmanned rotorcraft. Flight testing demonstrated excellent performance from a hovering rotorcraft.

In the TowerHAWK application, SDL optimized the PWP system for a .338 Lapua Magnum sniper rifle with overwatch force/asset protection in mind. This system provides Forward Operating Bases (FOB) and Combat Outposts (COP) with a precise, long-range response capability that any soldier can operate without being exposed to enemy fire. Testing at extended ranges has demonstrated the unmatched performance of the TowerHAWK system.

SDL is developing a Remote Door Gunner (RDG) system that will link the two UH-60 Blackhawk M240/M134 door gunner stations for remote operation from inside the aircraft. As with the ARSS and TowerHAWK applications, weapon hit probability will be improved while simultaneously enabling one crew member to control either weapon station from the relative safety of the aircraft cabin.

The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressed or implied, of the Aviation Applied Technology Directorate or the U.S. Government.

AMRDEC is part of the U.S. Army Research, Development and Engineering Command, which has the mission to develop technology and engineering solutions for America’s Soldiers. AMRDEC employs nearly 11,000 civilian scientists, researchers, and engineers.

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