

AFV PROTECTION AND COUNTER MEASURE SYS FOR ARMoured FIGHTING VEHICLES

1. **Brief Description.** Contemporary combat vehicles have on-board protective cum warning systems to warn the crews of impending attacks and create physical interference between the vehicle and the hostile threat, thereby enhancing survival. The existing fleet of 'A' vehicles in service with the Indian Army does not offer the crew, these enhanced protection measures as on date. There is thus a need to install a modern active protection system on all Armoured Fighting Vehicles (more than 3000) of the Mechanised Forces to significantly enhance their survivability.

2. **Broad QR/Specifications.** The broad QR/Specification for the intended active protection system are as under :-

(a) **Physical Characteristics.**

(i) Should be light in weight and not adversely affect existing agility/mobility of the vehicle. The complete **weight added** due to fitting the system should be **less than 1000 kg**.

(ii) Should be mountable on tanks without interfering with other systems or their functioning and ergonomics of the crew.

(iii) Should not necessitate the removal of essential fitment items.

(iv) Components fitted outside must be military grade and protected against splinters and small arms firing.

(b) **Operational Characteristics.**

(i) The system should deflect or destroy hostile attacks to protect against threats from guided missiles, RPG/RL and projectiles fired up to velocity of 1000 m/sec. The system should have provision for future upgrades to degrade KE projectiles. The percentage of protection against each type of ammunition must be at least as under :-

(aa) RPG/ RL (From a min dist of 75 m)-80%.

(ab) ATGM - 80%.

(ac) HEAT round from 125mm tank gun-70%.

- (ii) Should function when static or on the move and should be capable of all weather, day and night operations.
- (iii) Should give warning when lased on by incorporation of laser warning devices.
- (iv) Should provide a protective arc in azimuth of 360 degrees and in elevation at minimum of minus 6⁰ to plus 20⁰.
- (v) Should be capable of detecting **more than one direction of attack** in case near simultaneous hostile threat (**minimum of 0.4 second gap**) and neutralize up to two threats.
- (vi) Should have multi launcher capability/ auto loading to address threats from different direction simultaneously.
- (vii) The fitting of the system should **not affect sealing of combat vehicle for deep fording and NBC protection**. The sub system fitted externally should be waterproof for fording.
- (viii) The system should be capable of continuous **operation for at least eight hours**.
- (ix) Should withstand the climate and durability tests as per **JSS : 55555**.
- (x) The system should have high safety against accidental activation and the dangerous zone for dismounted troops operating in the vicinity should **not exceed 50m radius** from the tank.
- (xi) System should be capable of withstanding variation/ fluctuation of **electric voltages as per MIL 1275 B**.
- (xii) The **normal power consumption** of the system (excluding peaks) **should not exceed 1 KW** and the operating voltage of the system should be compatible with tank batteries.

3. **Categorisation.** **The recommended categorization – Make-I.**