**PROGRAMMABLE, PRE-FRAGMENTED, PROXIMITY AMMUNITION (3 P) AMMUNITION FOR 40 MM L-70 GUN**

1. **Brief Description.** With the increase in air threat envelope and multiplicity of air threat platforms, there is a requirement to enhance the lethality and accuracy of the present air defence ammunition of L70 gun system. The ammunition should have multi target handling capability along with capabilities of air burst, proximity, point detonation and variable and programmable provisions.

2. **Estimated Quantity**. Approximately 3,30,000 rds over a period of twelve years.

3. **Operational & Technical Parameters**.

 (a) **Operational Parameters**.

 (i) **Target**.The ammunition should be suitable for variety of targets, to include aircrafts, Helicopters, UAVs and soft skinned vehicles.

(ii) **Range**.The ammunition should, if possible, enhance the range of the round. It should be capable of achieving 3-6km ranges for the aerial targets**.**

(iii) **Pre-fragmented**. To increase the lethality and hit probability, the munition should be pre-fragmented. The fragments design should be such as to cause maximum damage to the aerial/ground target. The fragments should be of desired metal and shape so as to achieve maximum destruction to the target.

(iv) **Lethality**. The munition should have adequate lethality to damage the intended target (ground or air).

(v) **Programmable**. The ammunition should have a system to ascertain the range and distance of target through its integrated system. It should be able to modify distance to be travelled before the ammunition is armed. The facility of programming the fuze should be with an aim to detonate the munition at the calculated range in the intended area.

(vi) **Proximity**. The proximity feature should be integrated into the munitions to enhance hit probability. The miss distance should be minimum and the fuse should be so designed to at least cover 4m distance from the target.

 (vii) **Air Burst**. The munitions should be capable of air burst for neutralising the ground targets. Air burst will ensure damage to target by causing blast in and around it as per the time set on the fuse keeping in mind the nature and size of the target in the operational area.

 (viii) **Impact**. Ammunition should be capable to achieve blast on impact. It should have an effective impact fuse.

(ix) **Armour Piercing**. To ensure the multiple use of munitions against varied targets, it should have the armour piercing capability of minimum 100 mm thick armour of the target. This can also be combined with the delayed fuse to achieve penetration.

(x) **Calibre**. The fuze or the programmable munitions should be able to fire from the existing gun calibre i.e 40mm.

(xi) **System Configuration**. The system should be designed to support the programmable ammunition to take inputs of target parameters from Laser Range Finder sight fitted on Upgraded L/70 Guns or from Fire Control Radar.

(xii) **ECM**. The programmable fuze should not be affected by the Electronic Warfare en-route the flight time. Electronic Counter Counter Measures (ECCM) should be inherent in the ammunition fired.

 (b) **Tech Parameters**.

(i) **Size**. The pre-fragmented programmable proximity round should be developed for use with the QF 40mm L/70 Gun system. The fuze size should fit the 40 mm calibre of L/70 gun.

(ii) **Type**. Fixed type fuze or screwed type fuze. The programmable projectile fuze should be compatible with the existing L/70 gun ammunition.

(iii) **Dimension**.The dimension of the programmable, pre-fragmented, proximity ammunition should be in accordance to the 40mm L70 Gun.

(iv) **Weight**.The weight of the programmable, pre-fragmented, proximity ammunition should be such, that it should not alter the firing capability of the QF 40 mm L70 Gun.

(v) **Shelf Life**. A minimum shelf life of ten years and above should be provided in its original container.

(vi) **Terrain & Climatic Conditions**. Should be able to withstand the operating and storage extremes in terms of terrain and climatic conditions existing in India.

4. **Tentative Timeline**. As per Chapter III of DPP 2016.

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