9 mm FRANGIBLE AMMUNITION

INTRODUCTION:

There is an increased threat of close quarter battles. The use of standard handgun ammunition is not advisable due to the sensitivity of the facilities and risk of collateral damage. Also the standard ammunition of Pistol has lead core protected by copper jacket. There was a need to develop new lead free ammunition which should be capable to incapacitate a human threat but at the same time it should disintegrate into pieces upon hitting a hard surface and in doing so, the small fragments quickly lose their kinetic energy and pose minimal threat to secondary targets (No ricochet or over-penetration) so no possibility of collateral damage. This means that full-power frangible bullets can be shot at target all the way up to muzzle contact without any worries that the bullet or case will ricochet and potentially hurt either the shooter or others. Also the strength of the Frangible Bullet should be such that it should be able to withstand the pressure inside the barrel i.e. it should remain intact but at the same time it should be frangible enough upon hitting a hard target.

A frangible bullet is one that is designed to disintegrate into tiny particles upon impact to minimize their penetration for reasons of range safety, to limit environmental impact, or to limit the danger behind the intended target. These bullets fragment into number of small pieces on impact on any hard target like metallic objects, walls, concrete structures etc. therefore, they disintegrate upon contact with a surface harder than the bullet itself.

TBRL has designed and developed 9mm Frangible bullets for 9mm Pistol. A frangible metal bullet comprises a plurality of metal particles joined together by a binder. The metal particles and the binder forming material are compacted together into the Shape of the bullet and then heated to the treatment temperature for a time sufficient to form an effective amount of the transient liquid phase of the binder forming material and then cooled to form the bullet. An effective amount of the transient liquid phase of the binder is that amount sufficient to adhere the metal particles into a coherent body when the transient liquid phase of the binder forms at least one inter metallic compound.

Interested Industries are requested to forward their Expression of Interest (EoI) to Director TBRL, Chandigarh with a copy of Director DIITM, DRDO HQ on following address:-

To,

Director
Terminal Ballistic Research Laboratory (TBRL)
Sector-30, Chandigarh-160030
Phone: 0172-2307100, 2657674
Fax: 0172-2657506

Email ID: **director[dot]tbrl[at]gov[dot]in**

Copy to

Director
Directorate of Industry Interface & technology Management (DIITM)

Room No. 447, DRDO Bhawan, DRDO HQrs, Rajaji Marg, New Delhi-110011
Phone: 011-23013209/23015291
Fax: 011-23793008

Email: **diitm[dot]hqr[at]gov]dot]in**

Industries are requested to enclose supporting document in EoI as per Appendix 'D' of DRDO Policy and Procedure for ToT available at **https://www.drdo.gov.in/sites/default/files/inline-files/drdo%20Policy%20%26%20Procedure%20%20for%20ToT.pdf**

FORMAT FOR APPLICATION FOR EXPRESSION OF INTEREST

1.	Name and full address of the organization	
2.	Management structure	
3.	Contact Person with designation	
4.	Contact numbers (Tel, e-mail, FAX etc)	
5.	Current operation area of work	
6.	Turnover for last three years	
7.	Approval Registration with any Government agency	
8.	Details of expertise available in the production of ammunition	
9.	Regular manpower available on pay roll	
10.	Quality assurance/ quality control facility	
11.	Similar work done for any government agency	
12.	Any other credentials in the subject/relevant area	
13.	Acceptance of TBRL Terms and Conditions	