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**BRIEF OF PROJECT FOR AIP IN MAKE-II CATEGORY:
AUTOMATED INFANTRY MORTAR SYSTEM**

Name of Proposal

1. Automated Infantry Mortar System (AIMS)

User Directorate in SHQ

2. Directorate General of Infantry (Infantry-5)

Brief Description

3. The Infantry Mortar presently in service is manually operated, indirect firing weapon system. Each Infantry Battalion is authorised six 81mm Mortar as Battalion support weapon to provide indirect fire support. The Mortar is an antiquated equipment introduced into service in 1980. The accuracy of the system depends on the proficiency of the crew. The human errors get compounded resulting in loss of surprise (first salvo effect), wastage of ammunition as well as inadequate fire support. The system also has limitation of range and rate of fire. The number of personnel required to operate Mortars is also large.

4. Automated Infantry Mortar System (AIMS) is planned to be developed incorporating AI & Robotics solution to remove human intervention and enhance accuracy, range and rate of fire. AIMS will be mounted on a wheeled platform and operated by a crew of two persons. The MFC tasks will be performed by a TAS (Target Acquisition System) which will obtain geospatial data of the target. TAS should be capable of passing this data of Mortar system over secured high speed network. The Mortar system will automatically compute and apply the data on the Mortar. An auto loader will feed the Mortar bombs and fire at the rate as per effect desired on the target.

Op Justification

5. The existing 81mm Mortars require Mortar Fire Controller (MFC) to direct the mortar fire. The MFC observes the target at Observation Post (OP) end and calculates required data manually and passes it to the Mortar Position Controller (MPC) over radio/ line. The MPC then converts this data for application on mortars and passes the same to Mortar detachments. The Mortar detachments apply this data on Mortar and fire the Mortar. Further corrections on fire are also applied on the system in similar manner till the fire is effective on target.

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6. As the system is mostly reliant upon proficiency of the crew, the human errors often get compounded, resulting into loss of surprise and wastage of ammunition. The number of personnel required to operate a Mortar is also large. Automated infantry Mortar System aims to take 'Man out of Loop', digitise and automate data collection, transmission and application thus reducing errors enhancing accuracy, range and rate of fire. The system can be operated by a crew of two soldiers.

7. **Tentative Quantity.** The system will replace in service 81mm Mortar for units in plains & deserts.

8. **Approximate Cost.** To be ascertained in Feasibility Study.

9. **Technical Parameters**

(a) **Crew.** 02.

(b) **Platform.** Versatile system which can be mounted on 4 x 4 high mobility light vehicle and operated manually independent of the system.

(c) **Range.**

(i) Maximum Range Not Less Than 7 Km.

(ii) Minimum Range Not More Than 200m.

(d) **Calibre.** 81mm.

(e) **Maximum time to fire first round.** 10 seconds.

(f) **RoF.** Min 15 rounds/ min.

(g) **Should have following components:-**

(i) 81 mm Mor mounted on 4 x 4 High Mobility Veh.

(ii) Target Acquisition System.

(iii) Auto loader to load ammunition.

(iv) Digital link between TAS and Mortar system over high speed network.

(v) Digital Compass and Ballistic Data calculator.

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10. **Indigenous Content.** Minimum 50%

11. **Additional Information.**

(a) Similar system in use in other armies are as under:-

(i) **KMS-114.** South Korea has indigenously upgraded 81mm Mortar system (State of art digital tech) which can auto calculate and transmit firing data resulting in enhancement in speed and accuracy.

(ii) **EIMOS.** Truck mounted mortar system developed by Spanish Defence Coy.

(iii) **Spear Mk-2.** Vehicle mounted mortar system developed by M/s Elbeit System.

(iv) Photographs of the same are att at **Appx 'A'**.

(b) **Garuda 105 V2.** M/s Bharat Forge has developed indigenous veh mounted 105mm gun. Specification of the eqpt are att at **Appx 'B'**.

12. **Contact Details.**

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