

Telephone : 011-23333570
Fax : 011-23792508

Directorate General of Mechanised Forces (DGMF)
General Staff Branch
Integrated HQ of Ministry of Defence (Army)
Defence HQ PO, New Delhi – 110011

A/36026/FRCV Gen/ GS

10 Jun 2015

**REQUEST FOR INFORMATION FROM VENDORS FOR DESIGNS FOR A
FUTURE READY COMBAT VEHICLE FOR INDIAN ARMY**

1. The Indian Army is planning to design and develop a new generation, state-of-the-art combat vehicle platform for populating its Armoured Fighting Vehicle fleet in the coming decade. This vehicle, which will be called the Future Ready Combat Vehicle (**FRCV**), will form the base platform for the Main Battle Tank which is planned to replace the existing T-72 tanks in the Armoured Corps. It is also planned to subsequently develop other need-based variants on this platform.
2. The FRCV is planned to be a Design and Development project, to be executed in three stages as under:-
 - (a) Design Stage.
 - (b) Prototype Development Stage.
 - (c) Production Stage.
3. The details of all stages are given at **Annexure 'A'**. With a view to identify probable designers/ design bureaus who can undertake the Design Stage of the FRCV Project, interested parties are requested to forward information on the work they can undertake. The broad specifications are given at **Annexure 'A'**. In addition, the responders are also requested to furnish details as per the pro-forma at **Annexure 'B'**.
4. The requested information may please be forwarded to the under mentioned address by **31 Jul 2015:-**

**FRCV Cell
Directorate General of Mechanised Forces
Sena Bhawan, Integrated HQ of MoD (Army)
DHQ PO, New Delhi-110011.
Fax : 011-23792508.**

Director FRCV
For Officiating DG Mechanised Forces

Annexure 'A'

(Refer to Para 3 of DGMF letter No
A/36026/FRCV Gen/GS dt 10 Jun 2015)

DESIGN AND DEVELOPMENT OF FRCV**Background**

1. The Indian Army is seeking development of futuristic combat vehicle for induction by 2025-27. This fighting vehicle needs to be developed on a modular concept as part of a family of combat vehicles. The Tracked Main Battle Tank will be the primary/base variant and the entire project will be called the **Future Ready Combat Vehicle (FRCV)**.
2. A 'Future' Combat Platform design must cater for 'future' battlefield environment and technological possibilities. To address the future battlefield scenario and the envisaged force profile in the coming years, the FRCV needs to be developed on a modular concept with a high degree of flexibility in a manner that, as a tank platform, it can address the varying requirements of different terrain configurations. At the same time it can provide the base on which a 'Family of Vehicles', catering to the operational needs of various arms of the Army, can be developed.
3. The following variants are planned to be developed on the FRCV platform:-
 - (a) Tracked Main Battle Tank - **Primary variant**.
 - (b) Tracked Light Tank.
 - (c) Wheeled Version.
 - (d) Bridge Layer Tank (BLT).
 - (e) Trawl Tank and Mine Ploughs.
 - (f) Armoured Recovery Vehicle (ARV).
 - (g) Self Propelled Artillery Gun/Howitzer.
 - (h) Air Defence Gun/Msl System.
 - (j) Artillery Observation Post Vehicle.
 - (k) Engineer Reconnaissance Vehicle.
 - (l) Armoured Ambulance.

FRCV Development Process

4. In this process, the development of FRCV will be in three separate stages, namely Design stage, Prototype Development stage and Production stage. The Design Agency and Developing Agency (DA) can be separate entities. The best design will be chosen and given to nominated DA(s) for production of the prototype(s). The selected prototype will be given to Production Agency(s) (PAs) for bulk production. Details of the three stages are as under:-
 - (a) **Design Stage**. In this stage, there will be a FRCV Design Competition for selecting the best design. Established tank designers will be invited by means of a global RFP (Request For Proposal), wherein the broad design philosophy for the FRCV will be given out, along with the detailed guidelines for conduct of the Competition. The participants will be asked to submit detailed designs based on the FRCV design philosophy. The evaluation and selection of the best design will be carried out by a **Design Selection Committee**, under the aegis of DGMF, which will have members

selected from amongst domain experts and representatives of concerned defence agencies. The selection will be based on detailed and comprehensive Evaluation Criteria.

(b) **Prototype Development Stage.** The selected design will be given to nominated DAs. These DAs will then develop the design and produce their respective prototypes. There will be close involvement of the User (Service HQ) and the Design Agency with the DA(s) during the development of the prototype(s).

(c) **Production Stage.** After the prototypes are successfully trial evaluated, the approved design will be given to one/ two nominated Production Agencies (PAs) for bulk production.

Broad Framework of the Design Competition

5. While the detailed guidelines and the operational requirements/design philosophy of the FRCV will be articulated later, the broad framework of the proposed Design Competition is as under:-

(a) The Design Competition will be open to tank design bureaus/ agencies from within and outside the country, and will be conducted in two stages.

(b) In the first stage, based on the operational requirements and design philosophy given out, participants will submit broad concept designs, giving out the outline configuration and layout of the platform. These will be evaluated and shortlisted by the Design Selection Committee, under the aegis of DGMF.

(c) In the second stage, shortlisted participants will be asked to submit detailed designs of the FRCV platform on a common software platform. The detailed designs will be evaluated by the Design Selection Committee. The best design(s) will be shortlisted in order of innovative design and suitability for Indian Army. The winning design(s) will carry suitable cash prize(s).

(d) The winning design(s) will become the sole property of the Indian Army.

6. The agency/bureau whose designs are selected will require to continue to work on the project through the prototype and the Limited Series Production (LSP) stages. For this, a separate contract will be drawn. The agency/bureaus participating in this competition will mandatorily have to give an undertaking to this effect while applying for the competition.

Brief Description of FRCV

7. The FRCV will be a fighting vehicle platform that will be required to conduct sustained continuous operations by day and night in all weather conditions in terrain and temperature ranges obtaining on India's Western borders.

8. The design should be modular and compact to enable strategic, operational and battlefield mobility, as also facilitate up-gradation, easy replacement/ repair of assemblies and production of variants. The FRCV platform should enable creation of variants for employment in various operational roles in all terrain by varying its configuration and/ or weight/ armour envelopes.

9. The salient operational characteristics of the FRCV are as under:-

- (a) **Dimensions.** The FRCV should be in the 'Medium Tank' category whose physical dimensions should facilitate transportability over existing terrain, in-service military bridges and major civilian infrastructure (including bridges) in the border areas (on either side of the Western border).
- (b) **Crew.** The number of crew members should be such that they can perform their designated tasks, and operate all on-board systems without hindrance and without any overlapping of duties/ responsibilities.
- (c) **Fire Power.**
- (i) Should be well matched to contemporary MBTs in engagement ranges, all-weather day/night fighting capability, depth of penetration and variety of ammunition.
 - (ii) Should have very high accuracy [High FRHP (First Round Hit Probability)] and very high lethality [High SSKP (Single Shot Kill Probability)], at par with contemporary MBTs.
- (d) **Protection.**
- (i) Should provide very high all-round protection, including ballistic, active and any other form of anti-armour technologies, to ensure survivability in the contemporary and future battlefield.
 - (ii) Should incorporate signature reduction technologies.
 - (iii) High response evasion/ anti-detection system.
- (e) **Mobility.**
- (i) Should have adequately high power-to-weight ratio to enable all on-board systems to be run simultaneously, without disrupting the agility and mobility of the vehicle.
 - (ii) Should have high operating range, comparable to contemporary MBTs.

Annexure 'B'

(Refer to Para 3 of DGMF letter No
A/36026/FRCV Gen/GS dt 10 Jun 2015)

INFORMATION PRO FORMA FOR RESPONDERS TO RFI

General Information

1. **Name of the Agency/ Bureau/ Designer.**

(Profile, in brief, to be attached)

2. **Type (Give specific details).**

3. **Contact Details.**

Postal Address: _____

City: _____ State/ Country: _____

ZIP/PIN Code: _____ Tele: _____ Fax: _____

URL/ Web Site/ E-mail: _____

4. **Local Branch/ Liaison Office in Delhi/ NCR (if any)/ India.**

Name & Address: _____

City: _____ State: _____ PIN Code: _____

Tele: _____ Fax: _____

5. **Details of Previous Experience.**

(a) Year of Establishment/ Registration: _____

(b) Earlier projects undertaken (if any):

<u>Name of Agency/ Firm/ Country</u>	<u>Project Undertaken</u>	<u>Year</u>	<u>Present Status Of Project</u>

6. **Membership of Any Industrial/ Technical Associations.**

<u>Name Of Organisation</u>	<u>Membership Number</u>

7. Any other relevant information: _____

8. **Questionnaire.**

(a) What is your estimate of the approximate expenditure likely to be incurred in preparing the design?

(b) What is the approximate time period which will be required to prepare the design?

(c) What details would be needed in the FRCV design philosophy to enable the design to be prepared?

(d) What is the approximate amount of prize money for the winning design which will adequately motivate your organisation to participate in the competition?

(e) What would be your most preferred model for conduct of the competition such that maximum transparency and a level playing field is maintained?