



## **Product No. 3**

# **Invitation for Expression of Interest (Eoi) for Commercialization of ‘Biometric-based Exploder’**

### **1.0 Background**

CSIR-Central Institute of Mining and Fuel Research (CSIR-CIMFR) has developed and patented a ‘Biometric-based Exploder’ for use in opencast and underground mines. The digital electronic exploder is a blasting exploder with the ability to fire thirty or more shots in series with inbuilt high voltage firing control circuit, high capacity rechargeable battery and a finger print authentication unit. The present invention uses fingerprint detection sensor to authorize shot firer for blasting in mines. If fingerprints are verified, the smart exploder activates the firing button with an authentication message on LCD screen and in case of unsuccessful verification, the exploder remains internally locked. The intelligent exploder can store twenty fingerprints in its internal memory to avoid misuse of the system by the unauthorized person. Block diagram of the device is illustrated in Fig. 1. Tentative technical specification and feature of the device are given below.

### **2.0 Technical Specification**

- a) Maximum circuit resistance is 200 Ohm with cable
- b) Firing current is 1.2 A
- c) Firing tension is 500 V
- d) Duration of firing current is 4 mili-seconds

### **3.0 Feature of the Developed Device**

- a) Finger print authentication for the authorized shot firer
- b) Inbuilt circuit continuity tester
- c) Battery strength indicator
- d) Internally discharged with no residual energy, when battery not adequately charged or if the firing has to be cancelled at any stage
- e) Double push button switch for firing





- (ii) A lump sum licensing fee needs to be paid by the selected firm before signing the licensing agreement for commercialization of the system. Minimum lump sum premium shall be Rs. 5.00 lakh.
- (iii) Royalty rate to be paid by the selected firm based on percentage of selling price (excluding taxes) of the system during commercialization period. It should be minimum of 3%.
- (iv) Fabrication of first set of the device should be completed within 6 (six) months from the date of signing the agreement.
- (v) Licensing agreement would be valid for 5 years and which may be renewed based on mutual consent.
- (vi) The technically qualified firm offering maximum lump sum premium and royalty will be selected for licensing agreement.

## **7.0 Expression of Interest**

The interested firm should submit their EoI in two bids (Technical and Financial Bids) separately with all necessary information and documents.

- a) The bid prepared by the firm as well as all correspondence and documents relating to the bid exchanged by the technical partner shall be written in English language only. The bidder shall bear all costs of translation, if any, to the English language and all risks of the accuracy of such translation, for documents provided by the technical partner.
- b) The firm shall have to submit the documentary evidences to support the eligibility criteria mentioned from point 5.0 sl. (i) to (ii).
- c) The firm should also furnish the detailed documents of legal name & address, year of registration, PAN/TIN/GST details and financial standing (audited balanced sheet report & Income Tax).
- d) CSIR-CIMFR requires that the firm should observe the highest standard of ethics during execution of such contracts.
- e) The last date & time for receipt of proposal is 31.05.2018 at 5:00 PM (IST).

## **8.0 Submission of EoI**

The interested firms should submit their EoI to:

The Head, BDIL,  
CSIR-Central Institute of Mining and Fuel Research,  
Barwa Road, Dhanbad – 826015  
Jharkhand, India