



# प्रतिभूति कागज कारखाना, नर्मदापुरम-461005 ( म.प्र. )

( भारत प्रतिभूति मुद्रण तथा मुद्रा निर्माण निगम लिमिटेड की इकाई )

भारत सरकार के पूर्ण स्वामित्वाधीन

मिनीरत्न श्रेणी - 1 सीपीएसई एवं आई.एस.ओ. 9001 : 2015, 14001:2015, 45001:2018, 50001:2018 एवं आईईसी 17025:2017 प्रमाणित

## SECURITY PAPER MILL, NARMADAPURAM - 461005 (M.P.)

(A Unit of Security Printing & Minting Corporation of India Limited)

Wholly Owned by Government of India

Miniratna Category - I CPSE & ISO 9001 : 2015, 14001:2015, 45001:2018, 50001:2018 & IEC 17025:2017 Certified

CIN : U22213DL2006GOI144763, GSTIN : 23AAJCS6111J3ZE



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### INVITATION FOR EXPRESSION OF INTEREST (EOI)

1.	Name of the organization	:	Security Paper Mill, Narmadapuram Madhya Pradesh 461005.
2.	Type of the organization	:	A Miniratna Category-I CPSE and Wholly owned by Government of India
3.	EOI Reference No.	:	EOI/QCD/25-26/921
4.	EOI Title	:	Expression of Interest (EOI) for Procurement of Quality Control Device
5.	Category	:	Non-Security, Non Transferable
6.	Sub-category	:	R&D (CAPEX)
7.	Date of Annoucement	:	20.11.2025
8.	Last date for submission	:	23.12.2025 before 11.00 hrs.
9.	Tender Open Date	:	23.12.2025, 03.00 PM
9.	Technical Specifications and Quality Requirement	:	Attached As Anneuxre I & II
10.	Eligibility / Pre-qualification criteria:	:	Attached As Anneuxre III
11.	Procurement Process	:	Open
12.	Specimen Response letter to EOI	:	Mr. Biplab Basak (Manager (Material) & Material Head)
13.	Submission of EOI	:	<p>Tenderer shall ensure that their EOI tender, duly sealed and signed. Complete in all aspects as per instructions contained in the EOI tender, are dropped in the tender box located at the address given below on or before the closing date and time indicated in the tender, failing which the EOI tender will be treated as late and rejected.</p> <p>The bid is to be submitted in single sealed envelope duly superscribed with our EOI reference No. with date and due date on the top of the sealed envelope and be addressed to - The Chief General Manager, Security Paper Mill, Narmadapuram -461005 (M.P.)</p>

			<p>The EOI tender duly prepared as per requirement, should reach this office by Registered Post/ Courier Services/ Drop box only, on or before the due date prescribed. EOI Tenders received by Fax/Email will not be accepted and summarily be rejected.</p>
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*(Handwritten signature)*  
 28/11/25

(Biplab Basak)  
 Manager (Material) & Material Head  
 For Chief General Manager

**Technical Specifications**

Quality Control Device (QCD) shall have following technical specifications:

1. QCD shall be able to perform-

- 2-dimensional magnetic measurement of the printed intaglio and numbering inks with "soft" and "hard" magnetic features on banknote paper.
- The magnetic measurement of the embedded/non-embedded security thread.
- There should be a provision to set and save templates of the sample note size and area of measurement.
- The measurement of security thread with "HiCo-LoCo MultiCode" property.
- QCD shall measure in physical magnetic measurement units (i.e. nWb/m or nTm) that can be used directly for quality control.

2. QCD shall consist of

- Scanning unit
- Power supply unit
- HiCo-LoCo magnetizer unit
- specialized software for carrying out testing of banknotes and threads
- PC (including windows 10 or latest OS, touch screen, keyboard and mouse)
- test sample for calibration with validity of minimum one year
- necessary accessories required to run the instrument for at least one year
- Online training

3.QCD should work under 230 V ( $\pm 5$  %) supply voltage and 50 Hz mains frequency as per Indian electrical supply standard.

4. Device should be capable of operating under 15-30 °C temperature and 30-85 % relative humidity (non-condensing).

5.The results of the measurements of the device should be given numerically and graphically on the connected PC. The device should store at least 100 nos. of the measurement results. The user should be able to define the area to measure the total magnetic signal.

6.The device should give a warning if the measurement result is out of the defined limits for the ink and security thread controls.

7. User interface and user guides should be in English/Hindi language.

8.Format of Banknotes: QCD must be able to measure the magnetic signal of existing Indian currency notes i.e. Rs. 10, 20, 50, 100, 200 & 500. It shall be able to scan the whole bank note in single measurement cycle. System shall be capable of measuring the magnetic signal of bank note sample up to following dimensions in one goes automatically.

- Sample Size (Max.): 100 mm x 200 mm
- Sample Thickness (Max.): 0.25 mm

9. Measurement Values:

- Hard magnetic properties of banknotes: Remanent magnetic moment in  $10^{-12} \times Tm^3$
- Soft magnetic properties of banknotes: Integrated magnetic layer susceptibility in  $10^{-12} \times m^3$
- Hard magnetic properties of print control strips: Remanent magnetization times layer thickness in  $10^{-9} \times Tm$
- Soft magnetic properties of print control strips: Layer susceptibility in  $10^{-6} \times m$

10. Measurement Values of Coded Security Threads:

a.Hard Magnetic Measurement Values:

- Flux: Auxiliary variable calculated from the integrated magnetic moment and the geometric expansions.
- Differentiation of the high and low coercive parts: The relative part of the remanent magnetic moment should be 0-100 %
- Typical measurement error:  $< \pm 2\%$  (dependent on the magnetic properties of the magnetic pigments used (hysteresis))

b.Geometric Measurement Values:

- Code length:  $> 4$  mm; the measurement area must include the code completely
- Accuracy of measurement of the code length:  $\pm 0.1$  mm

- Bit length:  $> 2$  mm; the measurement area must include the bit completely. Bit and gap lengths  $< 2$  mm can also be measured.
- Accuracy of measurement of the bit length:  
 $\pm 0.1$  mm (for bit lengths  $> 4$  mm)  
 $\pm 0.15$  mm (for bit lengths  $\leq 4$  mm)
- Gap length:  $> 2$  mm; the measurement area must include the gap completely
- Accuracy of measurement of the gap length:  $\pm 0.1$  mm

## 11. Measurement Limits:

### a. Soft Magnetic Measurement:

Two-dimensional resolution (HWHM):

- Along drum circumference: 1.3 mm
- Perpendicular to it: 2.2 mm
- Electromagnetic irradiation (50 Hz):  $< 0.3$  A/m

Layer susceptibilities in single point measurement (without integration):

- Noise:  $0.15 \mu\text{m}$

Layer susceptibilities in integration across regions of interest (ROI, approx.  $40 \times 70 \text{ mm}^2$ ) typical value of banknotes, averaged over integration range is  $0.2 \mu\text{m}$ :

- Noise, after blank measurement:  $0.003 \mu\text{m}$
- Upper linearity limit: Approx.  $40 \mu\text{m}$
- Reproducibility:  $\pm 5\%$

### b. Hard Magnetic Measurement:

Two-dimensional resolution (HWHM):

- Along drum circumference: 0.5 mm
- Electromagnetic irradiation (50 Hz):  $< 0.3$  A/m

Remanent magnetic moment (normal measurement mode: Measurement of thin strips in the direction perpendicular to the drum circumference). Typical value of security threads 150-1500 nTm:

- Lower measurement limit: 13 nTm
- Upper measurement limit The integrated magnetic moment of broad structures as given by the QCD is too low:  $> 2000$  nTm
- Typical value of hard magnetic serial numbers (OCRB-S1):  $0.15 \text{ pTm}^3/\text{digit}$
- Lower linearity limit for serial numbers (OCRB-S1):  $0.03 \text{ pTm}^3/\text{digit}$

Remanent magnetic moment (in measurement of print control strips). Typical value of print control strips 80 nTm:

- Lower measurement limit: < 10 nTm
- Reproducibility:  $\pm 5\%$

**Other Requirements:**

1. Documents : Firm shall provide Certificate of calibration, Instruction & maintenance manual in English language.
2. Firm shall clearly mention make and model of quoted product and shall submit OEM detailed broacher for quoted model along with bid document.
3. Firm shall supply a USB Flash Drive with application Software, necessary Drivers, software license key (if any) & soft copy of User manual.
4. Warranty and certificate of manufacture:
  - a. The successful- bidder shall submit a certificate of manufacture along with Warranty for a period of minimum three (03) year from the date of commissioning.
  - b. Firm shall provide remote technical support as and when required during warrantee period without any extra cost.
  - c. The successful bidder shall give a certificate for best workmanship, design, quality of material used and satisfactory performance.
  - d. The warranty shall make the successful bidder liable for replacement of defective and failed parts at own expense. The warranty shall also be extended to the replaced parts from the date of effective use and the successful bidder shall arrange to take back the defective or failed part at own cost.

**INSTALLATION & COMMISSIONING**

The QCD shall be ready for use and all the system shall be plug and play and there should be no need of installation and commissioning.

The PC being supplied with instruments shall have Pre Installed software required for smooth operation of instrument and firm should provide any update/ patch free of cost for at least 5 years from acceptance.

**Quality Control Requirements**

**1. QUALITY ASSURANCE:**

Supplier shall ensure that all equipment supplied meets the specified technical and quality requirements as per the given technical specifications and standards. All items must undergo thorough quality assurance and inspection prior to dispatch to confirm compliance with our specifications.

**2. INSPECTION:**

Inspection reports, test certificates, and any relevant quality documentation should accompany each shipment.

**3. PACKING:**

All equipment must be packed securely to prevent damage during handling and transportation, using appropriate materials and labeling for easy identification.

## **Annexure-III**

### **Check list of documents for Eligibility/ Pre-qualification criteria**

- i) Letter of interest.
- ii) Company profile and catalogues.
- iii) The vendor should be OEM or authorized dealer of original manufacturer of Quality Control device.
- iv) For authorized dealers, vendor shall provide valid authorization certificate issued by OEM for the current year along with bid.
- v) Firm should provide reference list of similar kind of invites i.e. Development/ supply of QCD device form within the last 10 years in any process industry.
- vi) Audited annual reports for the last three financial years i.e. 2022-23, 2023-24 and 2024-25.
- vii). The firm has to submit sealed and signed Capacity and Capability Assessment form with proper data. (as per attached format).
- viii). Firm may be called for their detail presentation regarding their manufacturing of tendered/ Development item along with the development cost at SPM, Narmadapuram.

CAPACITY and CAPABILITY ASSESSMENT FORM							
	Questionnaire					Firm Response	Committee Observation
<b>A</b>	<b>Technical Capability</b>						
1	Total annual production capacity of the plant. (Documentary evidence to be provided).						
2	Number of item/product making lines available.						
3	Details of machines for making the item/product						
	Sr.No.	Machine Type	Machine Make	Machine Speed, if applicable	Machine Capability		
	a)						
	b)						
	c)						
<b>B</b>	<b>Manufacturing Process</b>						
1	Details of available SOP for manufacturing process.						
2	Brief Details of Manufacturing Process from Raw Material to Finished Product.						
	2a. Technology used						
	2b. Is there any SPM used? (Special Purpose equipment/machinery). If yes, details.						
	2c. Lab testing facilities available along with standards followed.						
	2d. Process parameters and their controls to achieve the quality.						
3	Is there any hazardous material used in the process / during manufacturing?						

<b>C</b>	<b>Quality Control</b>		
1	Online/offline quality control system deployed		
2	Any specific verification system and procedures for finished products?		
3	Conditioning facility required for Laboratory test, If applicable		
4	Details of third-party verification of produced material and stock control, if any.		
5	Is there any SOP available for online / offline quality control.		
<b>D</b>	<b>General</b>		
1	Details of Manpower employed a) Technical/Supervisory b) Skilled Worker (Permanent) c) Skilled Worker (Casual) d) Administration		
2	Is the plant certified by ISO or equivalent bodies? If yes, provide details?		
3	Contingency plan for breakdown?		
4	Is any activity outsourced? If so, list of activities outsourced.		
5	Details of Raw Material & its Quality Assurance/Control.		
6	Whether the factory premises is in complete possession of the bidder by way of lease which is current or ownership?		
	6a. Factory area (in Sq. meters) & its adequacy		

	6b. Production		
	6c. Storage of raw material		
	6d. Bonded room facility		
<b>E</b>	<b>Experience</b>		
1	Documentary evidence for past experience, if any,		
2	Annual quantities of item/product supplied in the last five years (documentary evidence to be provided).		

Member 1

Member 2

Member 3

Authorised  
Representative of  
Bidder/Firm

Signature  
Name  
Designation  
date

Signature  
Name  
Designation  
date

Signature  
Name  
Designation  
date

Signature  
Name  
Designation  
date

