

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

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

भारत सरकार के पूर्ण स्वामित्वाधीन

(मिनीमल श्रेणी-1 सीपीएसई एवं आई.एस.ओ 9001:2015, 14001:2015, 45001:2018, 50001:2018 एवं आई.ई.सी.17025:2017 प्रमाणित

SECURITY PAPER MILL, NARMADAPURAM - 461005 (MP)

(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 & IEC17025:2017 Certified

CIN:U22213DL2006GOI144763, GSTIN: 23AAJCS6111J3ZE



Tel. No.: 07574-255259, Fax No.07574-255170, E-mail: gm.spm@spmciil.com, Website: <http://spmarmadapuram.spmciil.com>

No. EOI/ LAB/QCD/1251

Dated: 11.01.2024

EXPRESSION OF INTEREST (EOI)

For

Design, Supply, Erection and Commissioning of 01 No. of Instrument for measuring the intensity of hard and soft magnetic pigment on banknote (in printed ink or thread)

Security Paper Mill, Narmadapuram, a unit of SPMCIL wholly owned by Govt. of India, Ministry of Finance invites Expression of Interest (EOI) from the reputed firms for Design, Supply, Erection and Commissioning of 01 No. of Instrument for measuring the intensity of hard and soft magnetic pigment on banknote (in printed ink or thread).

(1) Scope of Work	<p>The Instrument shall have following</p> <ul style="list-style-type: none">• 2-dimensional magnetic measurement of the printed intaglio and numbering inks with "soft" or "hard" magnetic features on banknote paper,• The magnetic measurement of the embedded/non-embedded security thread,• The magnetic thread qualify assurance (code format, code length, element length, length of spaces between elements) of the embedded/non-embedded security thread,• The measurement of security thread with "HiCo-LoCo MultiCode" property <p>The Instrument shall measure in physical magnetic measurement units that can be used directly for quality control.</p> <p>The Instrument shall consist of</p> <ul style="list-style-type: none">• scanning unit,• power supply unit,• HiCo-LoCo magnetizer unit,• specialized software for quality control of banknotes and threads,• PC (including touch screen, keyboard and mouse),• test sample for calibration with validity more than one year• necessary accessories <p>The Instrument should works under 230 V (± 5 %) supply voltage and 50 Hz mains frequency as per indian electrical supply standered .</p> <p>Device should be capable of operating under 15-35 °C temperature, and 30-85 % relative humidity (non-condensing).</p> <p>The results of the measurements of the device should be given numerically and graphically on the connected PC. The device saves the measurement results. The user is able to define the area to measure the total magnetic.</p> <p>The device should gives a warning if the measurement result is out of the defined limits for the ink and security thread controls.</p> <p>User interface and user guides should be in English language.</p> <p>Format of Banknotes:</p> <ul style="list-style-type: none">• Max. size: 100 mm x 200 mm• Max. Thickness: 0,25 mm <p>Measurement Values:</p>
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- Hard magnetic properties of banknotes alongwith:
Remanent magnetic moment in $10^{-12} \times Tm^3$ in nwb/m or in both units. The instrument shall provide unit of measurement in nwb/m.
- 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 $10^{-6} \times m$

Measurement Values of Coded Security Threads:
Hard Magnetic Measurement Values:

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

Geometric Measurement Values:

- Code length:
> 4 mm; the measurement area must include the code completely
- Accuracy of measurement of the code length:
 ± 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. However, the specified accuracy is then not reached.
- Accuracy of measurement of the bit length:
 ± 0.1 mm (for bit lengths > 4 mm)
 ± 0.15 mm (for bit lengths ≤ 4 mm)
- Gap length:
> 2 mm; the measurement area must include the gap completely
- Accuracy of measurement of the gap length: ± 0.1 mm

Due to the expansion of magnetic fields, the measurement area must be selected such that it extends at least 5 mm beyond the geometric expansion of the structures. Magnetic structures less than 5 mm from the edge of the banknote shall not be evaluated

Measurement Limits:
General:
The measurement limits given below relate to the printed ink/thread quality control device in a state of thermal equilibrium and assume that a blank measurement is carried out before soft magnetic measurements.

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 μm

Layer susceptibilities in integration across regions of interest (ROI, approx. 40 x 70 mm²)
Typical value of banknotes, averaged over integration range is 0.2 μm :

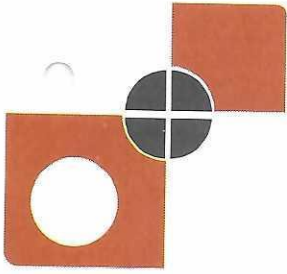
- Noise, after blank measurement: 0.003 μm
- Upper linearity limit: Approx. 40 μm
- Reproducibility: $\pm 5\%$

Hard Magnetic Measurement:
Two-dimensional resolution (HWHM):

- Along drum circumference: 0,5 mm
- Electromagnetic irradiation (50 Hz): < 0.3 A/m

	<p>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:</p> <ul style="list-style-type: none"> • Lower measurement limit: 13 nTm • Upper measurement limit The integrated magnetic moment of broad structures as given by the instrument is too low: > 2000 nTm • Typical value of hard magnetic serial numbers (OCRB-S1): 0.15 pTm³/digit • Lower linearity limit for serial numbers (OCRB-S1): 0.03 pTm³/digit <p>Remanent magnetic moment (in measurement of print control strips). Typical value of print control strips 80 nTm</p> <ul style="list-style-type: none"> • Lower measurement limit*: < 10 nTm <p>Strips with a remanent magnetic moment below the lower measurement limit can deliver a minimum signal (< 10 nTm). In measurements above the lower measurement limit this signal may not be deducted as offset from the measured intensities.</p> <ul style="list-style-type: none"> • Reproducibility: ± 5% <p>Name of the Instrument: Magnetic Signal Analyser</p>
(2) Interested firm may submit the following credentials.	<ol style="list-style-type: none"> 1. Letter of interest. 2. Company profile and catalogues. 3. Reference list of similar kind of development/supply of complete one Instrument for measuring the intensity of hard and soft magnetic pigment on banknote (in printed ink or thread) within the last 10 years in any pulp industry or paper industry. 4. Audited annual reports for the last three financial years including FY 2022-23. 5. Certificate of company incorporation. 6. GST Certificate.
(3) Last date and time of receipt information.	The firm may visit SPM, if desired, and submit their EOI to "The Chief General Manager, Security Paper Mill, Narmadapuram" up to 09.02.2024, 11.00 AM.
(4) Opening date and time of EOI	09.02.2024, 03.00 PM


 (Vikas Kumar)
 Manager (Material)
 For – Chief General Manager



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क्र. ईओआई/लेब/क्यूसीडी/1251

दिनांक: 11.01.2024

इच्छा की अभिव्यक्ति (ईओआई)

बैंकनोट (मुद्रित स्याही या धागे में) पर कठोर और नरम चुंबकीय वर्णक की तीव्रता को मापने के लिए

01 उपकरण का डिजाइन, आपूर्ति, निर्माण और कमीशनिंग

प्रतिभूति कागज कारखाना, होशंगाबाद, (एसपीएमसीआईएल की एक इकाई) जो वित्त मंत्रालय भारत सरकार, के पूर्ण स्वामित्वधीन है, इच्छुक एवं प्रतिष्ठित फर्मों से बैंकनोट (मुद्रित स्याही या धागे में) पर कठोर और नरम चुंबकीय वर्णक की तीव्रता को मापने के लिए 01 उपकरण का डिजाइन, आपूर्ति, निर्माण और कमीशनिंग हेतु इच्छा की अभिव्यक्ति (ईओआई) आमंत्रित करता है ।

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(2) इच्छुक फर्म निम्नलिखित प्रमाण प्रस्तुत कर सकती है	<ol style="list-style-type: none"> 1. अभिरुचि पत्र 2. कंपनी प्रोफाइल और कैटलॉग 3. पिछले 10 वर्षों के भीतर समान तरह पूर्ण रूप से विकास एवं आपूर्ति की गई हो बैंकनोट (मुद्रित स्याही या धागे में) पर कठोर और नरम चुंबकीय वर्णक की तीव्रता को मापने के लिए 01 उपकरण किसी पल्प इण्डस्ट्री एवं पेपर इण्डस्ट्री में की संदर्भ सूची। 4. पिछले तीन वित्तीय वर्षों का वार्षिक ऑडिट रिपोर्ट FY 2022-23 सहित । 5. कंपनी निगमन का प्रमाण पत्र 6. जीएसटी प्रमाण पत्र
(3) प्राप्ति की अंतिम तिथि और समय।	<p>फर्म यदि चाहें तो एसपीएम का दौरा कर दि. 09.02.2024, को सुबह 11.00 बजे तक अपना ईओआई "मुख्य महाप्रबंधक, प्रतिभूति कागज कारखाना, होशंगाबाद" को जमा कर सकती है ।</p>
(4) ईओआई के खुलने की तिथि एवं समय	<p>दिनांक 09.02.2024, अपराहन 03.00 बजे</p>


 (विकास कुमार)
 प्रबंधक (सामग्री)
 हेतु मुख्य महाप्रबंधक