

REQUEST FOR
EXPRESSION OF INTEREST (EOI)
FOR SHORTLISTING OF
bidders for “Multi Modal Biometric
Authentication for Login and / or Step-
up for Mobile Banking Transactions”

STATE BANK OF INDIA

Request for EOI No.:
SBI/GITC/MS&MB/2018-19/25
Dated: 18.05.2018

Mobility Solutions & Mobile Banking Dept.
GLOBAL IT CENTRE,
SECTOR-11, CBD BELAPUR,
NAVI MUMBAI-400614 (MAHARASHTRA)

Important dates and activities

1	Date of issue of the EOI	18.05.2018
2	Last Date and time for submission of bidder Queries	03.06.2018
3	Date & time for Pre-Bid Conference	01.06.2018 at 03:00 pm
4	Place for Pre-Bid Conference	Ground Floor Conference Room, C – Wing, State Bank Global IT Centre, State Bank of India, Sector – 11, CBD Belapur, Navi Mumbai – 400614.
5	Last Date and Time for submission of bids along with supporting documents	11.06.2018 at 14:00 hrs
6	Date, Time and Address for opening of bids	11.06.2018 at 16:30 hrs Ground Floor Conference Room, C – Wing, State Bank Global IT Centre, State Bank of India, Sector – 11, CBD Belapur, Navi Mumbai – 400614.
7	Address for submission of Hard copy of EOI	Mobility Solutions & Mobile Banking Dept., State Bank Global IT Centre, Ground Floor, 'C' Wing, Sector – 11, CBD Belapur, Navi Mumbai – 400614.
8	E-mail id for submission of soft copy of Pre-Bid queries / Comments on EOI / EOI response document	dgm.itmb@sbi.co.in
9	Contact officials for any clarification.	Mr Sumanta Panda, Deputy General Manager (MS & MB) Ph No: 022-27574895
10	Presentation Dates	18.06.2018 to 30.06.2018

1. Introduction:

State Bank of India (SBI) is the largest Bank with a network of more than 25000 branches spread across India. The Bank also has presence in 36 countries across the globe. The Bank offers wide range of products and services to both Corporate and Retail Customers. The Bank also has one of the largest network of more than 59,000 ATMs spread across geographical locations. Bank also provides services to its customers through alternate channels such as Internet Banking, Debit Cards, and Mobile Banking etc. To expand further reach, Bank is also forging ahead with cutting edge technologies and innovative new banking models.

SBI invites Expression of Interest (**EOI**) from companies/firms (**Applicants**) wishing to be considered for short listing for participating in bidding process of the proposed procurement of Multi Modal Biometric Authentication (Recognition of Finger / Face / Voice) for Login and / or authentication of transaction (Financial / Non financial) for Mobility channel transactions (Mobile Banking / Wallet / UPI, etc.), hereinafter referred to as the **solution**. The State Bank of India is planning to implement the proposed solution in State Bank of India hereinafter collectively referred to as State Bank of India (SBI) or the Bank. The proposed solution should be compatible to various mobile banking products, such as Mobile Banking, Wallet and UPI and to be provided by a Bidder as described in the Scope of work in Annexure – C

Please note, this is the first stage of a multi-stage procurement process. The objective of this Request for EOI is to identify and pre-register eligible applicants who are interested in providing the proposed solution and have suitable capacity, capability and experience.

2. Background

The Bank has various mobility channel to offer banking facilities and payment solution for the use of customers. Transactions are being posted after verifying through 2 factors authentication (2FA). State Bank of India wants to introduce biometric authentication for its mobile banking customers in order to combat identity theft and fraud cases. All customers having smart phone irrespective of the operating system should be able to use this feature. The solution for biometric authentication or transaction and /or in any other stage during journey of transaction.

Expression of Interest (EOI) are invited in sealed envelope superscripted as “**Expression of Interest – Multi Modal Biometric Authentication (Recognition of Finger / Face / Voice) for Login and / or authentication of transaction (Financial / Non financial) for Mobility channel transactions (Mobile Banking / Wallet / UPI, etc.)**”. The applicant may offer solution supports for one or all biometric authentication viz. finger, face, and voice.

- a. From the applicants who meet the eligibility criteria as set out in **Annexure-‘A’**,
- b. Who have solution in line with the technical parameters as set out in **Annexure-‘B’** and
- c. Who have solution can handle the scope of work as set out in **Annexure-‘C’** and
- d. Agree to abide by the terms and conditions contained in this request for EOI document.

Sealed envelope containing complete set of hard copy of EOI and a soft copy thereof (in a CD/DVD) should be submitted by Post or delivered in person at the below mentioned Office:-

The Dy. General Manager (MS & Mobile Banking),
State Bank Global IT Centre, Mobile Banking Department,
Ground floor, C - Wing, Sector-11, CBD Belapur,
Navi Mumbai – 400 614. Phone: 022-2757 4895

3. Applicant’s Eligibility Criteria:

This process is open to all applicants who fulfil the eligibility criteria as set out in **Annexure-‘A’** of this document. The applicants should furnish information on the lines of Annexure-A in their EOI proposal.

4. Earnest Money Deposit

1. There will be no Earnest Money Deposit required for EOI.
2. However, Bank reserves the right to modify the Earnest Money deposit requirements at the time of floating RFP.

5. Technical Parameters of the solution/Scope of Work:-

The applicant should describe how their solution will fulfil the requirements as desired in **Annexure ‘B’** of this document. The applicants should furnish information on the lines of Annexure-B in their EOI proposal.

6. Proposed Solution and Approach & Methodology

The bidder should give details about:

- i.* Proposed solution will be implemented in State Bank of India. The proposed solution should be able to give 100% success rate and compatible with Kony platform. It should able to cover the scope as detailed in Annexure – C.

- ii. Proposed solution meeting requirements as mentioned in Annexure B. Response for Annexure should be structured in Standard Fit, Work-around or Customization.
- iii. Architecture covering hardware/ software/ OS/ middleware/database, etc. as per specific requirement of the project
- iv. Proposed Approach and Methodology for accomplishing the project objective
- v. Deployment methodologies (integration/migration/data conversion, etc.)
- vi. Proposed timeline for accomplishing the project objective
- vii. Proposed Project Management approach including team and governance structure
- viii. Tentative Fixed and recurring expenses for the proposed solution to be provided.
- ix. Security aspect of the solution should take care of Regulatory compliance of India, adopt Global best practices and meet security guidelines of network and ISD (Information Security Deptt of the Bank).

7. Process before submission of EOIs:-

- i. **Raising of queries/clarifications on Request for EOI document:** The applicants requiring any clarification on this document should submit their written queries on or before 03.06.2018 to:

Deputy General Manager (MS & Mobile Banking)
State Bank Global IT Centre,
Ground Floor, 'C' Wing, Sector – 11,
CBD Belapur, Navi Mumbai – 400614
Ph No: 022-27574895

- ii. **Modification in Request for EOI document:** At any time prior to the deadline for submission of EOIs, SBI may modify any part of this document. Such change(s) if any may be in the form of an addendum/corrigendum and will be uploaded in Bank's website - <http://www.StateBankofIndia.com> or <http://www.sbi.co.in>. All such change(s) will automatically become part of this Request for EOI and binding on all applicants. Interested applicants are advised to regularly refer the Bank's URLs referred above.
- iii. **Extension of date of submission of EOIs:** Request for extension of date for submission of EOIs will not be entertained. However, the Bank at its discretion may extend the deadline in order to allow prospective applicants a reasonable time to take the amendment/changes, if any into account.

- iv. **Pre bid meeting:** SBI may, at its sole discretion, organize a briefing session to respond to the queries received by the scheduled date and time from the applicants. The date, time and location of the meeting is given on Page 2 of EOI. All clarifications will be e-mailed to the applicants who raise queries and participate in briefing session subsequently. Any change in Pre bid meeting date shall be communicated through SBI website(s).

8 Format and Signing of EOI:

- i. The applicant should prepare EOI as desired in this Request for EOI document.
 - a. EOI should be typed and submitted on A4 size paper, spirally and securely bound and with all pages therein in serial order.
 - b. All pages of the EOI should be signed by only the authorized person(s) of the company/firm. Any interlineations, erases or overwriting shall be valid only if the person(s) signing the EOI authenticates them. The EOI should bear the rubber stamp of the applicant on each page except for the un-amendable printed literature.
 - c. Contact detail of the authorized signatory and an authorized contact person on behalf of the applicant is to be provided as under:-

Particulars	Authorized signatory for signing the EOI	Authorized contact person.
Name		
Designation		
Email id		
Landline		
Mobile No.		
Fax No.		
Address		

- ii. The applicants should demonstrate in EOIs that they meet all parameters given in **Annexure-‘A’** and **Annexure ‘B’** of Request for EOI.
- iii. In case any discrepancy is observed between hard and soft copy, the hard copy will be considered as the base document.

9 Last Date for submission of EOI:

The last date for submission of EOI is 11.06.2018 up to 14:00 Hrs. In case the designated day happens to be a holiday; the next working day will be deemed as the last date for submission of EOI.

10. Process after submission of EOIs:

- i. All EOIs received by the designated date and time will be examined by the Bank to determine if they meet criteria/terms and conditions mentioned in this document including its subsequent amendment(s), if any and whether EOIs are complete in all respects.
- ii. On scrutiny, the EOIs found NOT in desired format/illegible/incomplete/not containing clear information, in view of SBI, to permit thorough analysis or failing to fulfill the relevant requirement will be rejected for further evaluation process.
- iii. SBI reserves the right, at any time, to waive any of the requirements of this Request for EOI document if it is deemed in the interest of SBI.
- iv. If deemed necessary, the Bank may seek clarifications on any aspect of EOI from the applicant. If a written response is requested, it must be provided within 03 working days beyond the response received, if any will not be considered. However, that would not entitle the applicant to change or cause any change in the substances of their EOI document already submitted. Bank may also make enquiries to establish the past performance of the applicants in respect of similar work. All information submitted in the application or obtained subsequently will be treated as confidential.
- v. After examining the EOI, some or all of the applicants may be asked to make presentation of the solution and demonstrate proof of concept.
- vi. SBI may shortlist the applicants who fulfil the eligibility criteria, have solution as per the requirement of the Bank and are agreeing to abide by the terms and conditions of the Bank. Bank's judgment in this regard will be final.
- vii. Bank may issue a Request for Proposal (RFP) to shortlisted applicants for inviting technical and indicative commercial bids for next process of procurement. However, please note that short listing of applicants should not be treated as a contract for the proposed work.
- viii. Applicants will be advised about short listing of their EOIs or otherwise. However, applicants will not be provided with information about comparative position of their EOIs with that of others.
- ix. Nothing contained in this EOI shall impair the Bank's Right to issue 'Open Tender' on the proposed solution.

11. Terms & Conditions

- i. Lodgement of an EOI is evidence of an applicant's consent to comply with the terms and condition of Request for EOI process and subsequent bidding process. If an applicant fails to comply with any of the terms, its EOI may be summarily rejected.
- ii. Wilful misrepresentation of any fact in the EOI will lead to the disqualification of the applicant without prejudice to other actions that the Bank may take. The EOI and the accompanying documents will become property of SBI. The applicants shall be deemed to license, and grant all rights to SBI, to reproduce

the whole or any portion of their product/solution for the purpose of evaluation, to disclose the contents of submission to other applicants and to disclose and/or use the contents of submission as the basis for EOI process.

- iii. SBI reserves the right to accept or reject any or all EOIs received without assigning any reason therefore whatsoever and the Bank's decision in this regard will be final. No contractual obligation whatsoever shall arise from the EOI process.
- iv. Any effort on the part of applicant to influence evaluation process may result in rejection of the EOI.
- v. SBI is not responsible for non-receipt of EOIs within the specified date and time due to any reason including postal delays or holidays in between.
- vi. SBI reserves the right to verify the validity of information provided in the EOIs and to reject any bid where the contents appear to be incorrect, inaccurate or inappropriate at any time during the process of EOI or even after award of contract.
- vii. Applicants shall be deemed to have:
 - a. examined the Request for EOI document and its subsequent changes, if any for the purpose of responding to it.
 - b. examined all circumstances and contingencies, having an effect on their EOI application and which is obtainable by the making of reasonable enquiries.
 - c. satisfied themselves as to the correctness and sufficiency of their EOI applications and if any discrepancy, error or omission is noticed in the EOI, the applicant shall notify the Bank in writing on or before the end date/time.
- viii. The vendor shall bear all costs associated with submission of EOI, presentation/Proof of Concept (POC) desired by the Bank. Bank will not be responsible or liable for any cost thereof, regardless of the conduct or outcome of the process.
- ix. Applicants must advise the Bank immediately in writing of any material change to the information contained in the EOI application, including any substantial change in their ownership or their financial or technical capacity. Copies of relevant documents must be submitted with their advices. For successful applicants, this requirement applies until a contract is awarded as a result of subsequent bidding process.
- x. Shortlisted applicants must not advertise or publish the same in any form without the prior written consent of SBI.
- xi. Brief overview of the proposed procurement/scope of work given in this document may be further elaborated, viz., more details may be included in the Request for Proposal (RFP) document to be issued as a result of evaluation process of EOIs.

- xii. SBI shall have the right to cancel the EOI process itself at any time, without thereby incurring any liabilities to the affected Applicants. Reasons for cancellation, as determined by SBI in its sole discretion include but are not limited to, the following:
 - a. Services contemplated are no longer required.
 - b. Scope of work not adequately or clearly defined due to unforeseen circumstance and/or factors and/or new developments.
 - c. The project is not in the best interest of SBI.
 - d. Any other reason.

12. Disclaimer:

SBI is not committed either contractually or in any other way to the applicants whose applications are accepted. The issue of this Request for EOI does not commit or otherwise oblige the Bank to proceed with any part or steps of the process.

Subject to any law to the contrary, and to the maximum extent permitted by law, SBI and its directors/officers/employees/contractors/agents and advisors disclaim all liabilities (including liability by reason of negligence) from any loss or damage, cost or expense incurred or arising by reasons of any person using the information and whether caused by reasons of any error, omission or misrepresentation in the information contained in this document or suffered by any person acting or refraining from acting because of any information contained in this Request for EOI document or conduct ancillary to it whether or not the loss or damage arises in connection with any omission, default, lack of care or misrepresentation on the part of SBI or any of its officers, employees, contractors, agents or advisors.

Please Note: Since this is not a Request for Proposal (RFP), commercials are not required to be submitted at this stage.

Annexure - 'A'

Eligibility Criteria

Sr. No.	Eligibility Criteria	Compliance (Yes/No)	Supporting documents to be Submitted
A	General Conditions		
1	The bidder can be an Indian firm/ company registered under Companies Act or any global firm can apply through their Indian partner.		Copy of the Certificate of Incorporation issued by Registrar of Companies or equivalent authority, if not registered in India and full address of the registered office. Copy of partnership agreement, in case global firm is applying through Indian partner.
2	Bidder should have the solution for providing solution to implement Multi Modal Biometric Authentication (Recognition of Finger / Face / Voice) for Login and / or authentication of transaction (Financial / Non financial) for Mobility channel transactions (Mobile Banking / Wallet / UPI, etc.).		The details to be provided as per Annexure-'B'.
3	The company/firm should be profit making organization for last three (03) years.		Audited Balance Sheet for the last Three (03) years should be enclosed.
4	The bidder must have an average turnover of minimum Rs.10 Crore during financial year(s) 2015-16, 2016-17 and 2017-18.		Copy of the audited financials and/or Certificate of the Chartered Accountant for preceding three years if audited financials is not available for FY 2017-18, a provisional P&L Account duly certified by the Chartered Accountant of the Firm/Company may be furnished.
5	Bidder should have min. net worth of Rs.5.00 crore in each of the last three financial years.		Copy of Audited Balance sheets/Company CA's certificate required.
6	The company/firm should not have been declared		Self Declaration to be provided

	ineligible for corrupt and fraudulent practices by the Govt. of India / State Governments / Any Regulatory Agencies/ PSU/ Private Company.		
7	The bidder should be profitable organization for at least two out of last three financial years 2015-16, 2016-17 and 2017-18.		Copy of the audited financials and/or Certificate of the Chartered Accountant
8	Bidder should have experience of minimum two years in providing the service/ solution.		Copy of the order and / or Certificate of completion of the work. The bidder should also furnish user acceptance report.
9	Client references/Biometric Authentication related projects implemented in BFSI sector and contact details (email/ landline/ mobile) of customers for whom the Bidder has executed similar projects during the past three years. (Start and End Date of the Project to be mentioned) in the past (At least 2 client references are required).		Names/ Address of organizations (at least 3 Public/Private Sector Banks/Financial Institutions) where Mobile Banking services has been implemented.
10	Past/ recent litigations, disputes, if any (Adverse litigations could result in disqualification, at the sole discretion of the Bank)		Brief details of litigations, disputes, if any are to be given on Company's letter head.
11	Length of existence of the bidder would be minimum 3 years		Length of existence of bidder should be mentioned.
12	Bidders should not have been blacklisted for deficiency in service by TRAI or any Public Sector Bank during the last 3 years.		Bidder should specifically confirm on their letter head in this regard.

Technical Specification / Parameters

The bidders, while proposing their solution, must ensure compliance with the following technical specifications: RBI Guidelines for Image Acquisition and Verification

The minimum requirements for image acquisition & verification should be the Setting Level 31 as defined in the ISO/IEC 19794-4, (RBI guidelines) which is mentioned in the below mentioned table:

- Gray scale finger image data may be stored, recorded, or transmitted in uncompressed – bit packed form.
- The resolution of the image data formatted and recorded for interchange should be the scan resolution of the image.
- Each record shall pertain to a single subject and shall contain an image record (consisting of single view) for each of one or more fingers, multiple fingers (single image records).
- The values for the capture device Id may be coded in the General Record Header.
- Live-scan plain Finger Impression type should be used.
- Platform agnostic
- interoperability - Smartphone, tablet, laptop or desktop
- Existing live implementations
- Support any fingerprint scanner
- Integrate with existing SSO solution
- Enterprise wide perpetual license
- Ability to support 10 mio user base upgradable to 20 mio
- Solution based on premise deployment model
- Protection from client side vulnerabilities - Secure the fingerprint auth framework at client side, Confused Authorisation attacks, Fingerprint Data Storage Vulnerability, Fingerprint Sensor Exposure Vulnerability, Pre-embedded Fingerprint Backdoor
- Except the scanner driver, there should not be any requirement for loading any software/ license while plugging the scanner at the end of the users.
- The scanner driver should be API enabled to ensure compatibility with any application.
- The captured image / file of finger / face / voice will be stored at client server and validation will be from server only.

S. No	Specification	Requirement
1	Fingerprint template Compliance for minutiae data	ISO 19794(2)
2	Fingerprint template Compliance for image resolution	ISO 19794(4)

3	Image Acquisition Requirements	Setting level 31 or higher
4	Scan resolution pixels/centimetre (ppcm)	197
5	Scan resolution pixels/inch (ppi)	500
6	Pixel depth (bits)	8
7	Dynamic range (gray levels)	200
8	Certification	Preferably EFTS/F. Additional weightage would be provided to EFTS certified solutions for technical evaluation
9	Enrolment and Verification	Live Finger Scan capture
10	Impression type	Live-scan plain / Live-Scan Contactless may be considered for verification.
11	Light source dependability	No
12	High Resistance	To shock, abrasion and water. Minimum IP 54 rating.
13	Algorithm should include	Image Quality Determination and Feature Generalization
14	Encryption of fingerprint template	Using unique foreign key
15	Image acquisition and storage	According to RBI guidelines
16	USB connectivity	Yes
17	Capture mode	Plain live scan capture
18	Capture mode	Auto capture with built-in quality check (must incorporate NIST quality considerations)
19	Power	Through device
20	Software API	Interface API and Data Dictionary to be shared with the bank and documentation to be provided to enable seamless integration with MBS or any other system.
21	Device and Supplier – to be STQC Certified?	Preferably yes. Copy of STQC certificate to be provided with current validity.
22	Technical Support Office	All over India

- The supplier must ensure that the final digital template (minutiae) should be in ISO 19794-2 format and the fingerprint image in ISO 19794-4 format.
- The supplier must provide the Driver SW along with the SDK/API, to facilitate integration of the device Driver SW in a secured manner with the Bank's back-end Server side SDK. The security should ensure defence against MITM/MOTM/MOTW/replay attacks.
- The solution must return the response to any login attempt within 3-5 seconds
- Biometric Device/Solution should preferably have firmware-level encryption facility and Live Finger Detection capability.

- Biometric Device / Solution should have the feature of De-duplication of Finger Print Capture.
- Biometric solution proposed should be capable of working under cluster with high availability network load balancing.
- The supplier would be required to provide Proof of Concept for the integration of algorithm with the Mobile Banking application and load testing and performance of Biometric fingerprint scanner and algorithm within 15 days of information from the Bank. The load testing should successfully establish handling of concurrent login attempts by the number of users indicated in Scope of Work.
- The solution should be capable of providing various MIS and audit trail reports for login by users and transactions made using biometric login, as and when required by the Bank/Bank's internal / External auditor.
- Biometric solution proposed should be capable of working under cluster with high availability network load balancing

State Bank of India wants to introduce finger print biometric authentication for its mobile banking customers in order to combat identity theft and fraud cases. All customers having finger print embedded smart phone irrespective of the operating system should be able to use this feature.

The fingerprint and Touch ID sign-in capabilities should provide eligible SBI smart phone customers with a secure and convenient way to log into the mobile banking app using their fingerprint. This feature should allow access to the most common functionality of the mobile app without the additional need for a password. Finger print biometric authentication would also be required at the time of confirming financial transaction over a mobile app.

In order to use the finger print authentication feature, the customer would have to register their finger print at the server through Banks's existing Mobile Banking application. The finger print details captured should be encrypted using strong encryption methods and should be transmitted to server through secured channel.

Authentication of Finger print will always be done at the server. No personal detail and finger print details of the customer should be stored at the local memory of Mobile device. In case if the finger print does not work, customers should be able to revert to their existing password to sign in to the app. The customers then can delete/deregister the finger print at the server and set it up again if they wish to register for Finger print login.

The provided solution should follow a standard development process to ensure that it meets functional, security, performance & regulatory requirements of the Bank.

The Vendor should comply with Bank's IS Security policy in key concern areas relevant to the RFP. Some of the key areas are as under:

- Responsibilities for data and application privacy and confidentiality

- Responsibilities on system and software access control and administration
- Custodial responsibilities for data, software, hardware and other assets of the Bank being managed by or assigned to the Vendor
- Physical Security of the facilities
- Physical and logical separation from other customers of the Vendor
- Incident response and reporting procedures
- Password Policy of the Bank
- Data Encryption/Protection requirement of the Bank

Security requirement of the Bank will be shared with the successful bidder.

Scope of Work:

(A)

- 1) Biometric Authentication Solution includes Centralised Application Software, System Software, and necessary APIs/SDKs to integrate with Bank’s applications.
- 2) The proposed solution should provide a secure and convenient way to customers to log into the mobile app and / or perform transactions using one or more of the above biometrics.
- 3) The solution should offer flexibility and ease of use for end users w.r.t. re-enrolment and or change of pass phrase in case of voice biometrics.
- 4) The fingerprint solution should be compatible and interoperable with Fingerprint Scanners of different variety and make/model.
- 5) Proposed solution able to provide protection from client side vulnerabilities such as secure the biometric framework at client and server side, Confused Authorisation attacks, Fingerprint Data Storage Vulnerability, Fingerprint Sensor Exposure Vulnerability, and Pre-embedded Fingerprint Backdoor etc.
- 6) Proposed solution should be able to detect liveness aspect of biometric and prevent replay and impersonation attacks through synthetic voice, playback, high quality biometric inputs etc.
- 7) Voice solution should support major Indian languages with subtle slangs and noisy environments.
- 8) Voice solutions should also define performance with 2G/3G data connectivity environments.
- 9) Response time for enrolment and / or authentication in the proposed solution should not exceed 2-3 seconds.
- 10) The entire combination of all the above components should work seamlessly as an end-to-end solution.
- 11) The solution must be Channel agnostic and Platform agnostic and should be able to integrate with existing enterprise backend systems.
- 12) Biometric solution proposed should be capable of working under cluster with high availability network load balancing.
- 13) The platform should support installation on any of the standard operating systems like Windows / UNIX / Linux / AIX / Solaris.
- 14) The platform should support variety of commercially available application servers like Web logic, Web sphere, etc.
- 15) Platform should support for virtualisation at the application infrastructure level.
- 16) Proposed solution should be based on on-premise deployment model
- 17) The selected bidder may be asked to do Proof of Concept (PoC) for the integration of proposed solution with the Bank’s Mobile Banking application. Customization of the application software, deployment and its integration with the Mobile Banking and / or other solutions has to be done by the bidder at no additional cost to the Bank. Due technical assistance from respective IT partners of Bank’s applications shall be provided for this purpose. The successful bidder will have to ensure that the biometric solution offered, accepted and implemented does not in any way disturb or degrade the

performance of either the Server or App UI functioning of the Bank's existing applications.

- 18) Details of hardware technical specification (including system software/OS) purported to be used for the software solution should be submitted along with the technical bid.
- 19) The solution should allow horizontal and vertical scaling, to meet the load that may increase from time to time.
- 20) The bidder should specify, technical response section the network bandwidth requirement for the implementation of biometric solution.
- 21) The bidders, while proposing their solution, must ensure compliance with RBI Guidelines for Image Acquisition and Verification specifications.
- 22) POC of the proposed solution should be completed within 30 days from the date of shortlisting.

2. Expectation from Participants / Bidders:

- a) Bidder need to provide presentation to the SBI on the communicated date as a part of eligibility criteria evaluation at his own cost. Bidder's presentation will be assessed on the basis of following parameters (indicative in nature):
 - Understanding of the project objectives
 - Plan of action for implementing the project
 - Past experience
 - Organization Details/In Mumbai
- b) Detailed presentation should cover Technical Requirements (Software/Hardware)
- c) Security features of the proposed solution
- d) Licensing cost and model.
- e) POC showcase
- f) Share R&D and support centre details.
- g) Unique features of application.
- h) Pros & Cons of Alternate Permanent Account Number (PAN) and Tokenization approach or any other approach. Dependencies if any?
- i) Site visit show case of product implementation if possible
- j) Hardware requirements including scalability, middleware etc.
- k) Deployment methodologies
- l) Integration with enterprise backend systems
- m) Security aspect of the solution should be taken care as per Regulatory compliance of India and Global best practices and security guidelines.
- n) Details of credentials to be shared wherever the solution is implemented.

(B) Brief requirement is as under:

Bank intends to procure and implement Biometric Authentication Solution in Mobile Banking spread across different mobile platforms such as android and iOS. Biometric

Authentication Solution includes Centralised Application Software, System Software/OS, and necessary APIs/SDKs to ensure compatibility and interoperability of the Application Software with Fingerprint Scanners of different variety and make/model. The Application Software should be able to work with any mobile fingerprint scanning device, as long as the latter is compliant with ISO 19794-2 standards for fingerprint minutiae and ISO 19794-4 for the fingerprint images.

II. The entire combination of all the above components should work seamlessly as an end-to-end solution

III. The proposed solution should be able to support 10 mio user base upgradable to 20 mio. The Bank reserves its right to increase or decrease the quantity or add to or delete from the requirement any item on account of increase in number of users or any change in solution implementation architecture. Such change if any, will be advised to all the bidders.

IV. The Solution must be Channel agnostic and Platform agnostic and should be able to Integrate with existing Bank's Single Sign on (SSO) solution.

V. Client machines will be accessing the Software Application through a Web browser (Internet Explorer 6.0 / 8.0 / Mozilla Fire Fox, etc.) where the finger print devices are connected. The client machines could be thin clients/desktops currently working on Windows XP/Windows Vista/Windows7, which should be supported by the proposed Biometric Solution. The centralized, backend application will receive live finger print information from the client machines. The live finger print information received will be compared with the respective finger print template stored in the database and send a YES / NO response. Application should also be compatible with any other web browsers suitable to future technology.

VI. The centralized backend application would be required to be installed at the Bank's Centralized Data Centres as well as at the Disaster Recovery Sites. The solution should be configured for operations from both the sites and the Software Licenses should be provided accordingly. The Servers should be configured as an Active – Passive cluster at the primary Data Centre and the Disaster Recovery Site. Required cluster licenses for both the sites should be included in the overall software cost, which should be bundled in the cost of the biometric devices proposed.

VII. Bidder should load front-end software / packages required to be loaded at client machines in order to run the browser based application. There should not be any application level dependency at branch apart from biometric device connectivity.

VIII. Provision should be made register the finger print of atleast 2-3 fingers of a user and to store them in the central server under the unique user-id. The user must be able to login with any of the finger print of his/her choice which should be validated and authenticated. The solution should support interoperability i.e. the user should be able to login through - Smartphone, tablet, laptop or desktop.

IX. Proposed Solution should be based on premise deployment model

X. Proposed solution able to provide protection from client side vulnerabilities such as Secure the fingerprint auth framework at client side, Confused Authorisation attacks, Fingerprint Data Storage Vulnerability, Fingerprint Sensor Exposure Vulnerability, Pre-embedded Fingerprint Backdoor

XI. Customization of the application software and its integration with the Mobile Banking solution has to be done by the bidder at no additional cost to the Bank. Due technical assistance from respective IT partners of Mobile Banking applications shall be provided for this purpose. The successful bidder will have to ensure that the biometric solution offered, accepted and implemented does not in any way disturb or degrade the performance of either the back-end or front-end functioning of the Mobile Banking solution of Bank.

XII. Bidder should size necessary Hardware (Servers) requirements for porting the application software depending on the number of users and peak time of operations for mobile banking.

XIII. Details of hardware technical specification (including system software/OS) purported to be used for the software solution should be submitted in a separate sheet along with the technical bid. The application and system software should carry a warranty of 1 year from the date of commissioning.

XIV. Bidder should provide an enterprise wide perpetual license for the biometric application, with unlimited user license and for unlimited instances. Biometric application software should not require any other licenses like Client Access Licenses (CAL) etc., to run the application at mobile device.

XV. Hardware should be suitably sized for bank to ensure smooth biometric login and authentication with 50,000 concurrent users during peak working hours. Provision should be kept at the time of sizing for at least 25% growth in number of users over the next 5 years. In case, the Hardware specification or the software ability to handle the said load is found to be insufficient, the bidder will have to bear the cost of upgrade the hardware or software.

XVI. The bidder should ensure an uptime of 99.5%, calculated on a quarterly basis and Hardware and Software have to be sized accordingly.

XVII. The Bank reserves the right to conduct an inspection of any of the existing live installations of the bidder, as mentioned in the Technical Bid.

XVIII. The bidder should specify in the RFP technical response section the network bandwidth requirement for the implementation of biometric solution.

XIX. Biometric solution should work within the bank's existing network bandwidth capacity, which could be based on Leased Line, MPLS, CDMA, VSAT, RF or any other suitable networking technology/method adopted by the Bank.