REQUEST FOR PROPOSAL

FOR SELECTION AND ENGAGEMENT OF VENDOR FOR PROVIDING SOFTWARE SOLUTION, SERVICES, SETUP & IMPLEMENTATION OF BIG DATA LAKE FOR

STATE BANK OF INDIA

RFP No: SBI/GITC/IDSPM/2017/2018/411 Dated: 09/08/2017

Name of the Department: IDSPM
STATE BANK OF INDIA
ADDRESS: IDSPM DEPARTMENT
4TH FLOOR, TOWER NO.4,
BELAPUR STATION BUILDING,
STATE BANK GLOBAL IT CENTRE,
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MAHARASHTRA

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Acronyms and Definitions

As used in the Document	Description
AMC	Annual Maintenance Contract
ATM	Automated Teller Machine
ATS	Annual Technical Support
Bank	State Bank of India (Domestic, Foreign branches/subsidiaries) combined
BDL	Big Data Lake
Bid	The Bidder's written reply or submission in response to this RFP.
Bidder	Vendor/ OEM/ Applicant// Bidder/ Service Provider – An eligible entity/firm submitting a Proposal/Bid in response to this RFP.
BG	Bank Guarantee
Business units	Branches, Extension Counters, Service Units, Corporate Offices, Head Offices, Zonal Offices, Regional Offices, Other Back Offices/ Offices and any new branches/offices
CBS	Core Banking Solution
CV	Curriculum Vitae
DC	Data Centre
DLP	Data Loss Prevention is a strategy for making sure that users do not send sensitive or critical information outside the corporate network
DR	Disaster Recovery Centre
DWH	Data Warehouse
EMD	Earnest Money Deposit
FM	Facilities Management
IDSPM	Integrated Data, Strategy ,Processing and Management
ITB	Instructions to the Bidder
MAF	Manufacturers' Authorization Form
NDA	Non – Disclosure Agreement
Near Real Time	Near real time refers to processing data as and when available with an acceptable processing time of a few minutes. For BDL, the bank expects near real time processing to be completed in less than 10 minutes.
OEM	Original Equipment Manufacturer
Project	The Bidders' delivery of the services, deliverables, supply, installation, testing and commissioning, integration of computer hardware / software and services with support under Warranty and annual maintenance contract, if required for the contract period.
Project Cost	Project cost would be initial cost/ onetime cost/ fees / development Cost/ installation cost/ commissioning

As used in the Document	Description
	cost/ integration cost with existing systems/ customization cost/ training cost / technical assistance
Project Team	The set of persons who will be deployed by the Bidder for the implementation of this project including those whose details will be provided by the Bidder as experts in Annexure 23.
Project Site	Locations where supply and services as desired in this RFP document are to be provided.
Proposal	The Bidder's written reply or submission in response to this RFP.
Real Time	Refers to streaming data / data as and when available at the source. These data items need immediate processing on BDL system and the expected response times are a few seconds. That is, data is processed as and when it is acquired / available. For BDL, the bank expects real time data processing be completed in less than 10 seconds.
RFP	Request for Proposal
RPO	Recovery Point Objective
RTO	Recovery Time Objective
Solutions/Services/work/System	"Solution" or "Services" or "Work" or "System" or "IT System" means all services, scope of work and deliverable to be provided by a Bidder as described in the RFP and include services ancillary to the development of the solution, such as installation, commissioning, integration with existing systems, provision of technical assistance, training, certifications, auditing, maintenance and other obligation of the Supplier covered under the RFP.
Service	Any person engaged by the product owner to service the customer complaints, feedback, etc.
SLA	Service Level Agreement
The Contract Price/Project Cost	Price payable to the Vendor under the Contract for the full and proper performance of its contractual obligations.
The Equipment/Product	All the software, it's all components, associated software/firmware/operating software which the Vendor is required to supply to the Bank under the Contract.
The Services	Services ancillary to the supply of the equipment/product, such as transportation, transit insurance, installation, commissioning, customization, integration, provision of technical assistance, training, maintenance and other such obligations of the Vendor covered under the Contract.
Vendor/ Service Provider	Successful Bidder found eligible as per eligibility criteria set out in this RFP, whose technical bid has been accepted and whose price as per the commercial

As used in the Document	Description
	bid/reverse auction to be conducted is the lowest and to whom notification of award has been given by Bank.

1. Schedule of Events

SCHEDULE OF EVENTS		
Sl No	**Particulars**	**Remarks**
1	Contact details of issuing department (Name, Designation, Mobile No., Email address for sending any kind of correspondence regarding this RFP)	Deputy General Manager (IDSPM) IDSPM Department State Bank of India 4th Floor, Tower No:4, CBD Belapur Railway Station Complex, Sector-11, CBD Belapur, Navi Mumbai – 400614 dgm.idspm@sbi.co.in Alternate Ids : da.shukla@sbi.co.in raman.kumar4@sbi.co.in rajnikanta.dungdung@sbi.co.in
2	Bid Document Availability including changes/amendments, if any to be issued	- RFP may be downloaded from Bank's website - https://www.sbi.co.in procurement news from **09/08/2017** to **08/09/2017**
3	Last date for requesting clarification	Up to **5PM** on **17/08/2017** All communications regarding points / queries requiring clarifications shall be given in writing or by e-mail
4	Pre - bid Meeting at (venue)	From **3PM to 5PM** on **21/08/2017** at Red conference room, State Bank of India; 4th Floor, Tower No:4,

		CBD Belapur Railway Station Complex, Sector-11, CBD Belapur, Navi Mumbai - 400614	
5	Clarifications to queries raised at pre-bid meeting will be provided by the Bank.	On **24/08/2017**	
6	Last date and time for Bid submission	**5PM** on **08/09/2017**	
7	Address for submission of Bids	Deputy General Manager (IDSPM) IDSPM Department State Bank of India 4th Floor, Tower No:4, CBD Belapur Railway Station Complex, Sector-11, CBD Belapur, Navi Mumbai – 400614	
8	Date and Time of opening of Technical Bids	**6PM** on **08/09/2017** Authorized representatives of vendors may be present during opening of the Technical Bids. However, Technical Bids would be opened even in the absence of any or all of the vendor representatives.	
9	Opening of Commercial Bids	On a subsequent date which will be communicated to such Bidders who qualify in the Technical Bid.	
10	Reverse Auction	On a subsequent date which will be communicated to such Bidders who qualify in the Technical Bid.	
11	Tender Fee	Amount Rs 50,000 Non-refundable by means of a DD or Bankers' cheque payable at Mumbai in favour of State Bank of India	
12	Earnest Money Deposit	Rs. 10 lacs	Validity period from the date of Bid opening –six months

13	Performance Bank Guarantee	Rs.(10% of the cost of the project)	Validity period from the date of purchase order up to end of the contract plus claim period of 3 months
14	Price validity from the date of price discovery	Within 6 months	
15	Contact details of agency appointed for conducting Reverse Auction	M/s e-Procurement Technologies Ltd, A-801, Wall Street - II, Opp. Orient club, Nr. Gujarat College, Ahmedabad - 380 006, Gujarat state, India. Phone: +91 7941072514/515 Auction Website: https://sbi.abcprocure.com	
16	Delivery schedule/ Timeline for Software Solution:	Refer Annexure 15	
17	Terms of payment	Refer section 9 of this document	
18	Delivery locations	Rabale Data Centre, Navi Mumbai	
19	Damages/Penalty with respect to delays	A sum equivalent to 0.5% per week or part thereof of Contract Price subject to maximum deduction of 10 % of the Contract Price for delay of each week or part thereof.	
20	Transition Penalty **(Refer Para 11.16 & Annexure 21a - Para 8)**	Rs.10% of the contract value	

2. Invitation to bid

i. **State Bank of India** (herein after referred to as **'SBI/the Bank'** is having its Corporate Centre at Mumbai, various other offices (LHOs/ Head Offices/ Zonal Offices/Global Link Services, Global IT Centre, etc. of State Bank of India and branches/other offices, other exchange companies available at various locations and managed by the Bank (collectively referred to as **State Bank Group or 'SBG'** hereinafter). This Request for Proposal (RFP) has been issued by **the Bank** on behalf of **SBG** for procurement of *SOFTWARE SOLUTION, SERVICES, SETUP & IMPLEMENTATION OF BIG DATA LAKE*

ii. In order to meet the Software Solution/ service requirements, , the Bank proposes to invite tenders from eligible vendors as per details of **scope of work**

and other requirements mentioned in **Section 6**, **7, 8 ,9 and 10 Annexure 3 & Annexure 4** of this RFP document.

iii. Bidder shall mean any entity (i.e. juristic person) who meets the eligibility criteria given in **Section 4** of this RFP and willing to provide the Software Solution/ service as required in this bidding document. The interested Bidders who agree to all the terms and conditions contained in this document may submit their Bids with the information desired in this bidding document (Request for Proposal).

iv. Address for submission of Bids, contact details including email address for sending communications are given in given in **section 5** of this RFP document.

v. The purpose behind this RFP is to seek a detailed technical and commercial proposal for procurement of the Software Solution/ service desired in this document. The proposed Software Solution/ service must clearly state the requirement of desired commodity hardware for setup and implementation of Data Lake. The proposed software solution / service should also integrate with Bank's existing infrastructure seamlessly.

vi. This document shall not be transferred, reproduced or otherwise used for purpose other than for which it is specifically issued.

vii. Interested Bidders are advised to go through the entire document before submission of Bids to avoid any chance of elimination. The eligible Bidders desirous of taking up the project for supply of proposed Software Solution/ service for SBI are invited to submit their technical and commercial proposal in response to this RFP. The criteria and the actual process of evaluation of the responses to this RFP and subsequent selection of the successful Bidder will be entirely at Bank's discretion. This RFP seeks proposal from Bidders who have the necessary experience, capability & expertise to provide SBI the proposed Software Solution/ service adhering to Bank's requirements outlined in this RFP.

viii. Bidders desirous of taking up the project for supply of above solution for SBI are invited to submit their technical and commercial proposal in response to this RFP. The criteria and the actual process of evaluation of the responses to this RFP are independent of any RFP evaluation process and subsequent selection of the successful Bidder will be entirely at Bank's discretion. This RFP seeks proposal from Bidders who have the necessary experience, capability & expertise on requisite solution, adhering to SBI's requirement outlined in this RFP.

ix. This RFP is not an offer by State Bank of India, but an invitation to receive responses from the Bidders. No contractual obligation whatsoever shall arise from the RFP process unless and until a formal contract is signed and executed by duly authorized official(s) of State Bank of India with a selected Bidder.

3. Introduction

3.1. Overview

State Bank of India (SBI) is the largest Bank with a network of over 23000+ (Twenty Three Thousand) branches for SBI spread across India. The Bank has presence in 36 (thirty-six) 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 networks of more than 55,000 (fifty-five thousand) ATMs spread across geographical locations. State Bank Group

(SBG) comprising of SBI, Banking and Non-Banking Subsidiaries and Joint Ventures is the largest financial conglomerate of India.

3.2. Purpose

State Bank of India (SBI) is keen on embarking on a Big Data Analytics journey and gain an advantage over its competitors in terms of innovation, time to market, user delight, cost of service, despite its behemoth size and scale.

Current model of data processing focuses on reporting needs and captures data needed for end of day reports / credits - debits / assets - liabilities etc. There is a potential of losing out on important insights / patterns in data from this approach. It also means that analysts will not be able to use an exploratory / experimental workbench for data analysis.

There is an increasing trend globally in large Banks to use customer data in near real time from their mobile click-stream / touch-stream data, purchase patterns to make customized offers / improve service experience.

With data at SBI growing at an astronomical rate, a robust, horizontally scalable and cost effective infrastructure for data storage and processing is the need of the hour. The ability to handle complex data from semi-structured and unstructured data sources, in addition to the conventional structural data processing, maximizes value potential and quality of services in the financial sector. Operational efficiency in the digital age is one of the factors that determines a Bank's growth. By managing petabytes of data efficiently, SBI has the potential to be a trend setter for smart data management globally. Empowering representatives of Bank at every level with analytics, thus standardizing and speeding up the decision-making process, will be a natural outcome of smart data management

To this end, The State Bank of India is requesting Request for Proposal (RFP) for implementation of a unified, scalable, central Big Data Lake solution as a storage and processing infrastructure, which can serve as one true and up-to-date source of data for Reporting, Business Intelligence, Advanced Analytics and AI requirements at SBI. Proposed system should also reduce the analytical and reporting burden on source systems currently experience.

Bidders interested in participating in this offer are required to respond to this document in detail and communicate their eligibility, technical qualification and product specification information. The same will be used in evaluating bidders' responses based on which final Bidder will be selected.

4. Eligibility and technical criteria

i. Bid is open to all Bidders who meet the eligibility criteria as given in **Annexure 29: Bidder's Eligibility Criteria** and Functional & technical criteria as given in **Annexure 3 & Annexure 4** of this document. The Bidder has to submit the compliance documents substantiating eligibility criteria (**Annexure 29**), Functional Requirement (**Annexure 3**) and Technical Requirement

(**Annexure 4**) as mentioned in this RFP document. Bidders have also to submit Bill of Material (BOM) as given in **Annexure 2.**

(a) If any Bidder submits Bid on behalf of Principal/OEM, the same Bidder shall not submit a Bid on behalf of another Principal/OEM under the RFP.

(b) Either the Bidder on behalf of Principal/OEM or Principal/OEM itself is allowed to Bid, however both cannot Bid simultaneously

Prime Bidders need to comply with all the eligibility criteria mentioned in this section. Non-compliance by the bidders to any of these criteria shall result in an outright rejection of the Bidder‘s proposal. The Prime Bidder is expected to provide proof for each of the points for eligibility evaluation.

- The Minimum Eligibility Criteria will have to be met by Prime Bidder and/or Consulting Partner.
- Prime Bidders, who are interested in providing services as briefly explained above and meeting the following Eligibility Criteria may respond to this RFP.
- Photocopies of relevant documents / certificates, duly stamped and signed must be submitted as proof in support of the claims made. At relevant clauses, Copy of the Credential Letter or Copy of Purchase order or Email Confirmation from the client’s executive or an Undertaking from the bidder on the bidder’s letterhead confirming the implementation along with the contact details of client’s representative will be accepted by the Bank.

- The Bidder shall also submit **PRE-CONTRACT INTEGRITY PACT** along with technical Bid as prescribed by the Govt. of India **(Annexure 28**) duly signed by the Bidder on each page and witnessed by two persons. The agreement shall be stamped as applicable in the State where it is executed. Bid submitted without PRE-CONTRACT INTEGRITY PACT, as per the format provided in the RFP, shall not be considered.
  - Prime Bidder shall submit a self-declaration of implementation details (for all the credentials submitted) on Prime Bidder letterhead.
  - Telephonic confirmation from the clients shall be obtained during eligibility criteria evaluation. Once the credential is verified and found fit for evaluation, a detailed site visit during technical evaluation phase may be conducted by the Bank’s Evaluation Committee. The Prime Bidder is required to arrange for the telephonic call or email conversation or video conferencing or site visit or any other interaction as required by the Evaluation Committee for verifying the references.
  - Prime Bidder must comply with all the above-mentioned criteria. Non-compliance of any of the criteria will entail rejection of the offer summarily. The Bank reserves the right to verify /evaluate the claims made by the Bidder independently. Any decision of the Bank in this regard shall be final, conclusive and binding upon the Bidder.
  - Bank will enter into agreement with the Prime Bidder, though the Tender conditions are also applicable to other members as per Tender terms.

- The prime Bidder and the consulting partner should meet all the eligibility conditions mentioned above to qualify for the technical evaluation.
- Each Prime bidder should submit only one bid. In case, it is observed that Prime Bidder has submitted more than one bid, all such bids submitted by Prime Bidder will be summarily rejected.
- There will be no scoring involved in the Eligibility Bid evaluation.
- The decision of the Bank would be final and binding on all the bidders to this document. The Bank may accept or reject an offer without assigning any reason what so ever.
- The EMD DD or Bank Guarantee of the non-qualified Bidder(s) will be returned post completion of Phase1evaluation.
- The technical and commercial bid documents of the non-qualified Bidder(s) will be retained by the Bank.
- Documentary evidence must be furnished against each of the above criteria along with an index. All documents must be signed by the authorized signatory of the bidder. Relevant portions, in the documents submitted in pursuance of eligibility criteria, should be highlighted

5. Instructions for Response to RFP

5.1. Disclaimer

i. The information contained in this RFP document or information provided subsequently to Bidder(s) whether verbally or in documentary form/email by or on behalf of State Bank of India (Bank), is subject to the terms and conditions set out in this RFP document.

ii. This RFP is not an offer by State Bank of India, but an invitation to receive responses from the eligible Bidders. No contractual obligation whatsoever shall arise from the RFP process unless and until a formal contract is signed and executed by duly authorized official(s) of State Bank of India with the selected Bidder.

iii. The purpose of this RFP is to provide the Bidder(s) with information to assist preparation of their bid proposals. This RFP does not claim to contain all the information each Bidder may require. Each Bidder should conduct its own investigations and analysis and should check the accuracy, reliability and completeness of the information contained in this RFP and where necessary obtain independent advices/clarifications. Bank may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information in this RFP.

iv. The Bank, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the RFP and any assessment, assumption, statement or information contained therein or deemed to form or arising in any way for participation in this bidding process.

v. The Bank also accepts no liability of any nature whether resulting from negligence or otherwise, howsoever caused arising from reliance of any Bidder upon the statements contained in this RFP.

vi. The issue of this RFP does not imply that the Bank is bound to select a Bidder or to appoint the Selected Bidder or Concessionaire, as the case may be, for the Project and the Bank reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

vii. The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding Document. Failure to furnish all information required by the Bidding Document or to submit a Bid not substantially responsive to the Bidding Document in all respect will be at the Bidder's risk and may result in rejection of the Bid.

viii. The Bidder shall bear all its costs associated with or relating to the preparation and submission of its Bid including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Bank or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the Bank shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the Bid, regardless of the conduct or outcome of the Bidding Process.

ix. It is to be noted that no changes shall be accepted in the Terms and Conditions and Model SLAs (Annexure 21) of the Bank.

5.2. Understanding RFP requirements

Bidders before submission of response must carefully go through the entire RFP document and understand the project scope, requirements, terms and conditions and other information furnished in the RFP. Failing to furnish all the information required as per the RFP or submission of incomplete or conditional response to RFP will be at the risk of the bidder and such bids are liable to be rejected.

The Bidders can submit only one bid. Each Bidder can propose only one set of Data Lake Solution.

The Bidders must propose industry standard tools/applications/products for all the areas of the DATA LAKE SOLUTION, that have been implemented in large Banking organizations and which are compatible with the DATA LAKE SOLUTION as a whole.

5.3. Executive Summary of the Bidders' Response

The bidder must furnish synopsis of their responses to the RFP in the Executive Summary, not exceeding 15 pages. The bidder must give a brief write up relating to their capability, past experience as well as those of other consortium members OEMs in implementing a Data Lake Solution.

The Data Lake Solution is defined as the entire solution for end to end implementation of a Data Lake that includes the layers of Data Ingestion, Data Storage, Data Discovery, Data Access, and Analytics.

Before proposing the Data Lake Solution, the Bidder is expected to go through the business requirements in detail, understand them and suggest a solution which delivers the business requirements as needed by the Bank within the time frame stipulated by the Bank. The Bidder must define suitable architecture of the Data Lake Solution in line with the requirements as per the details given in the RFP factoring all the business, functional and technical requirements. The bidder must also suggest proper and optimal solutions for software, data model, data ingestion components, data stores, data analytics, data quality, master data management (MDM) within the Data Lake, metadata management, data access, data classification & encryption, integration with existing data warehouse, methodology for capturing data warehouse changes in data lake on real time basis, backup and recovery, etc.

The details of the products offered with reference to the RFP along with brochures and benchmarking results are also to be enclosed as applicable. The details of their past implementation and current use are also to be given. The Bidder must give clear and unambiguous details of suitable tools/software/utilities/solutions that it is proposing for data ingestion, data storage, data analytics, data quality, master data management, metadata management, data access, data classification & encryption, integration with existing data warehouse, methodology for capturing data warehouse changes in data lake on real time basis, backup and recovery, etc. The tools/software/utilities/solutions proposed must be supported open source. Vendor should take full responsibility of open sources tools/software and should satisfy the SLA conditions. However, if any tool/software required for data lake solution proposed, is not available in supported open source, bidder may suggest proprietary tools/software. The tools/software/hardware/utilities/solutions should have the capability for handling the functional & non-functional requirements as well as the scope of work. All known and pertinent limitations, constraints, compatibility issues, versioning issues, etc. of all tools/ software/ hardware/ utilities/ solutions must be clearly informed by the Bidder.

The Bidder must propose technical architecture of the Data Lake solution which is in tune with the business requirements of the Bank.

5.4. Earnest Money Deposit (EMD)

i. The Bidder shall furnish EMD for the amount and validity period mentioned in this document.

ii. EMD is required to protect the Bank against the risk of Bidder's conduct.

iii. The EMD may be in the form of a Demand Draft or Pay Order or Bank

Guarantee [on the lines of **Annexure 11**]**,** issued by a Scheduled Commercial Bank in India, other than State Bank of India, drawn in favour of State Bank of India payable at Mumbai. In case, SBI is the sole Banker for the Bidder, a Letter of Comfort from SBI would be acceptable.

iv. Any Bid not accompanied by EMD for the specified amount as mentioned elsewhere in the RFP will be rejected as non-responsive.

v. The EMD of the unsuccessful Bidders shall be returned within 2 weeks from the date of Bid finalization.

vi. The EMD of successful Bidder will be discharged upon the Bidder signing the Contract and furnishing the Performance Bank Guarantee for the amount and validity as mentioned in this RFP) which should be strictly on the lines of format placed at **Annexure 10.**

vii. No interest is payable on EMD.

viii. The EMD may be forfeited:-

a) if a Bidder withdraws his Bid during the period of Bid validity specified in this RFP; or

b) if a Bidder makes any statement or encloses any form which turns out to be false / incorrect at any time prior to signing of Contract; or

c) if the successful Bidder fails to sign the contract or furnish Performance Bank Guarantee, within the specified time period in the RFP/Purchase Order.

ix. If EMD is forfeited for any reasons mentioned above, the concerned Bidder may be debarred from participating in the RFPs floated by the Bank/this department, in future, as per sole discretion of the Bank.

x. Bidder to submit the EMD of Rs. 10,00,000/- (Rupees Ten Lakhs Only) as Bid Security in the form of Demand Order or Bank Guarantee (BG) in favour of State Bank of India, payable at Mumbai.

xi. The Demand Order/ Bank Guarantee will be valid for period of 180 (one hundred eighty) days initially, and such other extended period in the future, as Bank may decide for, owing to extension of the RFP selection process

xii. EMD may be forfeited in the event of withdrawal of bid during the period of bid validity or if successful Bidder fails to sign the contract in accordance with the terms & conditions and other requirements specified in RFP or any act of Bidder not in line with contract obligations.

xiii. EMD (Demand Draft/ Bank Guarantee) should be kept in the envelope containing technical bid. Any bid not accompanied with the requisite EMD shall be treated as non-responsive and is liable to be rejected.

xiv. The EMD of the unsuccessful bidders will be returned as early as possible. Successful Bidder's EMD will be returned upon the Bidder signing the contract and submitting the required Performance Bank Guarantee.

xv. No interest is payable on the amount of EMD. In case, SBI is the sole Banker for the Bidder, a Letter of Comfort from SBI may be accepted.

5.5. Performance Bank Guarantee

i. Performance Bank Guarantee [PBG] of the amount with validity period specified in this RFP strictly on the format at Annexure 10 is to be submitted by the finally selected Bidder. The PBG has to be issued by a Scheduled Commercial Bank other than SBI and needs to be submitted within the specified time of receipt of formal communication from the Bank about their Bid finally selected. Purchase Order will be released only after receipt of the Performance Bank Guarantee. In case, SBI is the sole Banker for the Bidder, a Letter of Comfort from SBI may be accepted.

ii. The PBG is required to protect the interest of the Bank against the risk of non-performance of the successful Bidder in respect of successful implementation of the project which may warrant invoking of PBG, also if any act of the supplier results in imposition of Liquidated Damages then also the Bank reserves the right to invoke the PBG.

iii. The selected bidder would be required to submit a performance Bank Guarantee to the Bank for an amount equivalent to _10_% of order value within _15_ days of purchase order issue date. The bank guarantee will be valid for period of __3_ years and such other extended period as the Bank may decide for due performance of the project obligations.

iv. The Bank guarantee should be issued by any scheduled commercial Bank, other than SBI. A format for BG is attached as per Annexure 10.

[In case, SBI is the sole Banker for the Bidder, a Letter of Comfort from SBI may be accepted.]

5.6. Others

The Bidder must also give brief description of the following:

1. The proposed implementation methodology in the phases defined for carrying out and for completion of the project as per the time schedule given in the document.
2. Bidder's plan and methodology on extending post implementation maintenance and support for the project during the contract period. Bidder should give the details of the resources (quantity, quality and experience)

which they shall deploy at the site and support the Bank shall get under AMC and ATS. These resources should have minimum experience of 3 years each.

3. The Bidder must use SBI's independent testing agency, along with details of number, quality and experience of resources as part of the Data Lake Solution offer for assisting the Bank in testing of the base version, developments, data migration assurance and other releases for production. Bank reserves the right to select the proposed agency for testing.
4. Training: The bidder must give a training schedule and furnish training facilities and trainers credentials.
5. The Bidder must indicate in the Executive summary the total development time that includes studying of the source systems, understanding source data formats, data profiling, data cleansing, unit testing, system testing, placing into production and documentation.
6. The Bidder will be the single point of contact/reference to the Bank. The Bank will enter into agreement with the selected Bidder only. However, the Bidder as well as other partners must confirm to the Bank that they are willing to enter into back to back agreement that is in conformity with the deliverables and other service/uptime commitments the bidder makes to the Bank in its response to the RFP. If requested, the Bidder must share a copy of these back to back agreements with the Bank. Bidders have to confirm the same as per **Annexure 1** – Bid Covering Letter.
7. The Bidder must furnish the details of the other partners, with whom he proposes to join to undertake the Data Lake Solution implementation in the Bank. The Bidder against the name of such partners must also furnish the details of the products/services such OEMs/SMEs/Other Consortium partners will offer as per **Annexure 6** - Bidder Details
8. The resources to be deployed by the Bidder & its Partners must also have experience in studying existing databases/Bank's systems and in gathering the requirements and in supply/installation/integration/implementation of the solution including the design and construction of the Data Lake Solution suitable to the Bank.
9. The Bidder is expected to deliver the Data Lake Solution as per the intent of the RFP.
10. The bidder should ensure involvement of global resources who have executed the project are a part of the team. The Bank will not accept bids where credentials for the purpose of eligibility and technical scoring are proposed on global Banks but teams / resources are all local. The bidder will have to have the global resources on board.
11. The bidder if not a consulting firm has to tie up with a reputed global consulting organisation for the purpose of the bid and the consultant will be required to be associated with the Bank throughout the life cycle of the project in terms of defining the strategy, use cases, data scientists, implementation and support.
12. Number of minimum vendor personnel to be employed in DATA LAKE needs to be defined. However additional resources may be employed on

T&M basis to cater any additional requirements of Data Lake e.g. addition/modification of new/existing data sources, implementation of new use cases etc. Cost terms for such T&M resources should be fixed at the time of Proposal submission, and should hold good throughout the engagement period.

13. The proposed Data Lake solution is required to be scalable. For hardware & software components to be added to scale the Data Lake (for example, to enhance storage or computation), the Bidder must submit along with this proposal the minimum configuration and unambiguous cost terms, which should hold good throughout the engagement period. The Bidder will be responsible for all hardware/ software/ utilities/ tools/ solutions/ operating processes compatibility issues, and for ensuring that the overall system runs as expected throughout the engagement period.

5.7. Definitions:

In this connection, the following terms shall be interpreted as indicated below:

i. **"The Bank"** 'means the State Bank of India (including domestic branches and foreign offices) and subsidiaries.

ii. **"Bidder/Service Provider/System Integrator"** means an eligible entity/firm submitting the Bid in response to this RFP.

iii. **"Bid"** means the written reply or submission of response to this RFP.

iv. **"The Contract"** means the agreement entered into between the Bank and the Vendor, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

v. **"Vendor/Service Provider"** is the successful Bidder found eligible as per eligibility criteria set out in this RFP, whose technical Bid has been accepted and who has emerged as L1 Bidder as per the selection criteria set out in the RFP and to whom notification of award has been given by the Bank.

vi. **"The Contract Price/Project Cost"** means the price payable to the Vendor under the Contract for the full and proper performance of its contractual obligations.

vii. **Software Solution/ Services/ System – "Software Solution" or "Services" or "System"** means all software products, services, scope of work and deliverables to be provided by a Bidder as described in the RFP for setup and implementation of Data Lake and include services ancillary to the development of the solution, such as installation, commissioning, integration with existing systems, provision of technical assistance, training, certifications, IS security compliance, auditing and other obligation of the Vendor covered under the RFP.

viii. **Annual Maintenance Contract (AMC)** - It would be the annual cost of maintenance of Software Solution / Service.

6. Scope of Work

6.1. Key Drivers of the Data Lake Solution at the Bank

Some of the key drivers of implementation of Data Lake at the Bank are as follows:

- The Bank would like to apply advanced techniques like Machine Learning within fraud and risk to improve models and allow acceleration towards more real-time analysis and alerting.
- Data Science at the Bank is expected to lead to strong, observable and benchmarked business returns (not just cost takeout) in the broader market.
- The data at the Bank is expected to grow at an annual rate of 50%. The existing legacy platforms at the Bank may not be able to deal with the data surge. There is hence a need to find a more complete and comprehensive data solution, to manage compliance mandates, and to integrate data governance, lineage and other compliance aspects more deeply with big data platforms. The Data Lake at SBI is expected to serve as a converged regulatory and risk data hub.
- SBI is increasingly looking at IoT data for ATM or mobile Banking. It may involve multiple streams of activity in real-time. For example, real-time, multi-channel activities can use IoT data to offer the right offer and advice to retail banking customers at the right time. SBI can also embed their services into the device at client touch points.
- Enterprise data warehouse needs storage and compute offload. The Data Lake is expected to hold historical data also for any ad-hoc analysis. The Data Lake will be superset of existing Enterprise data warehouse. Data ingest pipelines for new existing source systems, required data transformations and data organization should be taken up by Data Lake.
- Optimize total cost of operations for data management, organization, and analytics, enable Bank to streamline data driven decisions.
- Data management and processing using commodity hardware and supported open source software.

6.2. Requirements for the Data Lake Solution

This section defines the requirements for the Bank's Data Lake Solution.

Term	Description
Requirements	Informational requirements for analytical needs for the Data Lake.
Data Ingestion	The process of absorbing data into the Data Lake from different sources.
External Data Sources	Data sources which are external to the Bank. This includes data from the third parties or data available on the Web
Data Discovery	The process of searching for patterns or specific items in a data set. Data Discovery may leverage statistical and data mining techniques to accomplish these goals.
Data Preparation	The process of collecting, cleaning and preparing the data for analysis.
Analytical Layer	An ecosystem of management and operational frameworks that performs all pre-requisite functions needed to deliver end-user analysis through shared data, metadata, computations, calculations, business rules and controlled access.

6.3. Guiding Principles

The following are the key guiding principles governing the overall solution:

- Data is an asset and owned by the Bank
- Data may be structured, semi-structured, and unstructured. It may come from internal or external sources. It may come in batches, incremental additions or real-time feeds. E.g. Bank's source systems, web logs, IoT data, GPS & spatial data etc.
- There should be no limitation on the type and format of data ingested
- Data needs to be stored in a cost effective, scalable and reliable manner, in a single, central, integrated repository that serves as one true source for all data
- Computation needs to be highly efficient, scalable, configurable and reliable. Computations may be batch, iterative, transactional, near real time or real time
- Software needs to be supported open source and Vendor should take full responsibility of open sources tools/software and should satisfy the SLA conditions.
- Need for an integrated data repository resulting in one true source for all data by converging all data sources
- Lake should work well with existing enterprise data management paradigms, tools and methods.

- An ecosystem of configurable software tools should cater to data ingestion, data cleansing, data transformations, data management, data access, hidden patterns and trend discovery. The ecosystem should support all software.
- Robust metadata management functionalities should ensure data lineage, quality and integrity and compliance
- Data Lake should identify, analyze and enhance the quality of the Bank's data asset
- Data available with the Bank should be leveraged in an "as is where is" condition by the Bidder.
- It should not become necessary to make any changes to upstream or downstream applications or systems because of building the big Data Lake.
- Scalable System: In the event of addition of new node, existing data should be rebalanced (auto-balanced).
- Cache Implementation: For higher data availability.
- Heterogeneity: Intermixing of different types of drives
- High availability: No single point of failures
- Snapshots: For restoring system to previous checkpoint
- Data Compression: For both structured and unstructured data
- Data Virtualization: Provision for data extraction / fetching using Data virtualization layer in order to process data by combining data form DWH, Data Lake or other data sources without actual copying data from the original source.
- Data Encryption: Should not impact performance

6.4. Detailed Scope of Data Lake Solution at the Bank

The following sections provide the detailed scope of the Data Lake solution to be implemented at the Bank.

6.4.1. Define Data Lake Strategy

To ensure success, a Data Lake should be driven by a strategic approach, with a clear idea of the business benefits that the Data Lake is expected to drive. A successful Data Lake design should be built around measurable and anticipated business outcomes that in turn should be aligned to the business goals. However unique the business goals may be, they should be tethered to the foundation and development of the Data Lake venture.

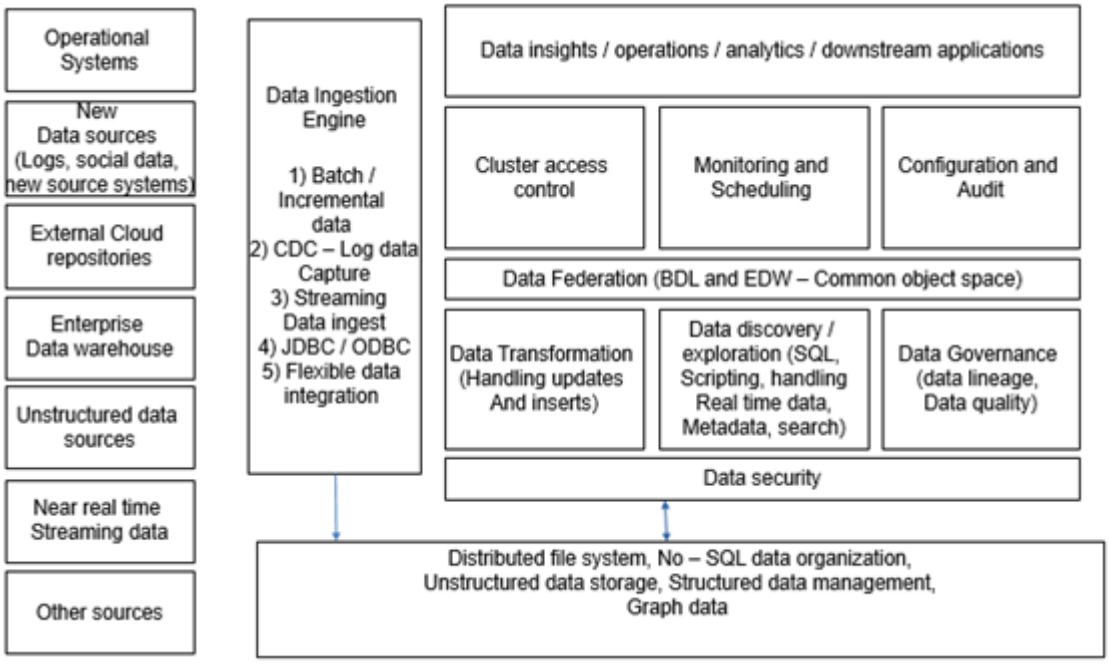
- Cost effective way to acquire, store, combine and enhance huge volume of structured and unstructured internal and external data
- Ability to perform real-time, near real-time analytics on huge volume of data
- Reduce operational expenses by leveraging IoT data
- Next generation advanced analytics and visualizations to produce accurate, actionable and timely insights.

- Optimize total cost of operations for data management, organization, analytics and enable Bank to streamline data driven decisions

Detailed Requirement study should identify to what extent the Data Lake should be used, who will provide data and who will consume the data. It is crucial to pose the right questions and collect the right datasets.

6.4.2. Define the Data Lake Architecture

The enterprise data warehouse, discovery-oriented environments, highly specialized analytic and operational technologies coexist in a Data Lake. The following diagram represents the high-level architecture of a Data Lake solution.



The architecture should clearly define the implementation strategy for the below areas:

1) Data ingestion framework catering to various formats
2) Layers of data storage required and type (SQL, NO-SQL, GRAPH etc.)
3) Data processing framework
4) Data federation between DWH and DATA LAKE
5) ETL / ELT into DATA LAKE
6) Metadata management
7) Information life cycle management
8) Ability to search for data
9) Data governance, security and access management (data classification & encryption)
10) Downstream data consumption
11) Real time, near real-time analytics
12) Framework for data movement to DR site
13) Methodology to capture data warehouse changes in BDL in real time.
14) Methodology to reconcile data with source systems
15) Data reporting

General functional and technical components of the Data Lake solution architecture are discussed in detail in this section and the Appendixes/Annexure. These should be studied carefully and validated by the Bidder, Consulting Partners and back-to-back strategic Big Data partner if any.

6.4.3. Benefit Realization

A comprehensive benefit management approach should ensure continual focus resulting in greater yielded value of the Data Lake initiative at the Bank.

In their response, the Bidder should provide details of the strategy and approach they will use to ensure that the expected benefits from the Data Lake are realized.

6.4.4. Evolution of the Data Lake

When the Data Lake will be implemented in the Bank for the first time, it will start with Data Warehouse Project (DWH) data as whole data from DWH to be migrated to Data Lake. As it gradually evolves, old &new data sources will also get added and metadata need to be built up.

The Bidder should propose detailed strategies on their concept of the Data Lake evolution roadmap. It should also propose processes and criteria on how it will make sure that the fundamental goals of ambiguous and competing terms eventually converge into a shared understanding within and across business domains.

The Bidder should also provide details on how they plan to achieve the following:

- Evolution of the Data Lake from statistics to empirical data science driven insights to systematizing “analytical intuition” throughout the organization.
- Retention and scaling of the Data Lake after the current raw data is consumed into the Data Lake - process for meeting future needs of the Data Lake.
- Process for connecting new data sources into the Data Lake. The Bank can make available limited information about expected future data sources and requirements.
- Strategies for managing the compute and memory resources of the Data Lake in such a way as to get time efficiencies while reducing data duplication and data movements across the enterprise.
- Processes for developing future data discovery solutions, use cases or descriptive / predictive / prescriptive applications on the Data Lake.
- Processes on how new data sources consumed into the Data Lake in future can be used to add value to existing Use Cases. Just as an example, consider a “golden record” that unifies

customer data across all time periods and across all channels, including point-of-sale transactions and website traffic.

6.4.5. Promoting User Adaption of the Data Lake

Data Lakes won't deliver their full value unless the user base for the Data Lake expands far beyond users with programming skills. Further, users accustomed to using easy-to-use, high-performance databases and data warehouse may reject a supported open source Data Lake if it requires too much training or behaviour modification to use.

Hence it is very important for the Bidder to clearly lay out the strategies, mechanisms and processes by which they will promote, measure and advance the adoption of the Data Lake by the users of the Bank.

6.4.6. Avoiding Common Pitfalls & Challenges of Data Lakes

Data Lake implementations come with several pitfalls and challenges. Examples include ensuring lasting value for procured hardware resources; seamlessly handling version changes of open source components and bringing new supported open source software components in to use; accelerating the time frames for Extract – Transform – Load of the Source System / DWH data into the DATA LAKE; integrating structured, semi-structured, unstructured data sources in a seamless manner; handling potential future movement of Data Lake partially or fully on to the cloud; accommodating rapid changes in governance, policy and security guidelines; reducing vendor dependence and achieving self-sufficiency for successful lake management within the lake; Maintaining a very efficient mechanism for converting business requirements into implementation of new analytics use cases on the Data Lake; etc.

In its proposal, the Bidder must clearly mention all known and common pitfalls of Data Lake implementations, including but not limited to the above list, and describe clearly how they plan to successfully address and mitigate these pitfalls and challenges.

Functional Requirements

The Data Lake Solution at State Bank should be able to deliver the following functionalities in the various Business Units of the Bank. The solution should be built using best practices / state of the art in the software, engineering and big data analytics space

6.4.7. Functional requirements- Software

- Unified, horizontally scalable, central, parallel processing Big Data Lake for storage and processing

- Data Lake implemented using commodity hardware and supported open-source software
- Upstream: All existing data on DWH will need to get copied into the Data Lake. All incremental updates in DWH should also be made available to Data Lake in online real-time mode. In addition, many current and future data sources will only feed into the Data Lake, not into the DWH. However, some source systems will keep ingesting into DWH. Data Lake setup will have landing and staging layers, and hence will support daily data ingest from all Source Systems. Data Lake should be capable of real-time data ingestion and very low-latency processing.
- Downstream: All current applications using DWH will need be able to use data from the Data Lake. Suitable standard interfaces need to be provided for new downstream applications to be added in the future.
- Overall, the Data Lake needs to be a superset of DWH from the time of roll-out. The Data Lake will be one true source for all data requirements of the Bank. DWH and the Data Lake will run in parallel.
- Data federation will also be required.
- Any change in schema/structure on the source systems should generate a prompt alert on the Data Lake.
- Business Functionalities: There should be a provision for minimum 2000 users accessing DATA LAKE ecosystem concurrently without impacting its performance in the first year of operations and should have capability to increase further in the coming years. More information on indicative user's growth rate refer to Annexure 14.
- Integration / Migration Requirements with existing systems

  a) Requirements of data conversion.

  b) Specific requirement related to Transition/migration from one platform (Data Warehouse) to another platform (Data Lake) without any additional cost to the Bank.

- DATA LAKE should have capacity to run 30,000 jobs per day including complex jobs.
- Proposed DATA LAKE should have the flexibility to eventually go on the Cloud (public/private) if needed.
- Over 99.9% uptime requirement
- The proposed solution should have cluster monitoring and management tools
- Proposed solution should have a framework in place to monitor/handle hardware failures or corruption in underlying file system level
- Proposed solution should enable exact point-in-time recovery of files or directories in the cluster from accidental deletions or corruption due to user or application error

- Upstream data should be used in as-is, where-is format. Downstream applications should not require any major changes when their source is changed to the Data Lake.
- Any change in business logic in DWH source systems during ETL migration to BDL – these new changes need to be implemented by bidder in less than a week's time in BDL

6.4.7.1. Ingestion

- Capable of ingesting data from any source system currently implemented in the Bank, or any future standard source systems that the Bank will decide to use.
- Capable of ingesting structure, semi-structured, unstructured, real-time data, IOT data, etc in any standard format onto the Data Lake irrespective of number of columns and size of the table.
- Capable of ingesting data via flat-files, ODBC/JDBC sources, DB-links, messaging queues or APIs etc. with high throughput and low latency
- Should have an easy to use GUI based framework to configure sources to DATA LAKE, select table/columns and rows of data to be ingested.
- Robust data ingestion framework should be in place to
    - Perform one time full load from DWH to DATA LAKE
    - Ingest incremental data from DWH to DATA LAKE on daily basis
    - Ingest incremental data from any new source configured
    - Should be configured to ingest data from the existing data sources directly into DATA LAKE. List available in **Annexure 16**.
    - It should be possible to pre-define logic for every process, defining how the data should be selected for ingestion from source systems/operational files
    - Ingestion subsystem should allow to configure ingestion processes from single / multiple source system, single / multiple files, single / multiple operational input files
    - Any new standard source system/table identified by the Bank in the future should be easily configurable to ingest data, at a specific frequency (e.g., from batch ingestion every day to real-time ingestion), on a business requirement basis.
- As data is incrementally ingested from DWH to DATA LAKE, changes done in DWH through ingestion and / or updation should be reflected in DATA LAKE in real time basis.
- Reconciliation should be maintained periodically and on an on-going basis by the vendor by generating logs/reports for

- Validation between Source systems and DATA LAKE
- Validation between DWH and DATA LAKE

- DATA LAKE should be able to ingest incremental data from sources like the INVM file (investor master file in Oracle database in the Core Banking System) through change data capture (CDC) processes and/or scraping log extracts. Ingestion subsystem should have failure, retry, alert, frequency and escalation logic defined
- Ingestion subsystem should generate detail logs for auditing and troubleshooting
- Ingestion subsystem should log failure or reject records.
- Bidder should provide clear technical architecture diagrams for ingesting structured / semi-structured / unstructured data, batch / interactive / real-time data, internal / external data. Bidder should specify clearly the supported open source software components to be used in their ingestion subsystem, the specific capabilities and limitations of these components.
- Vendor should list out all types of risks they expect from the ingestion subsystem (e.g., dropping of data packets during ingestion, security loopholes, unprotected personally identifiable information, etc.) along with mechanisms and processes they would implement for mitigating such risks.
- **This condition of vendor listing risks and mitigation plans is applicable to all components, modules and subsystems, not just the data ingestion subsystem.**

We provide below recent daily and monthly data volumes for ingestion into the current DWH, to provide an idea of the requirement for your calculations. These are only indicative numbers of the usage; data lake ingestion requirements will be not only higher in volume but also have far more variety compared to these numbers.

Source systems data inflow to the existing DWH staging database

Sl No	Source system	Monthly Data Flow Volume Jun-17 (GB)
1	Archived log extract CBS (SBI) + TF (SBI)	[SBI-CBS :4127*30(monthly size) +TF(SBI) :11 GB *30]= 1,24,140
2	Flat file extract for SBI INVM	[month end file (1.05 TB) + Daily file 90GB*30]=3,750
3	Flat file extract from ATM, INB, PSG, and SBI Card	[631 GB monthly + [~20GB per day * 30 = ~600] load for file ATM , INB base]=1,231
4	Contribution from other source systems like DMAT, CMP, SBI Life, LOS, etc. (Figures	Monthly 204GB

	adjusted as data capture frequency is daily / weekly/monthly)	

ETL Load Data volume			
Sl No	**ETL**	**Monthly Volume Jun-17 (GB)**	
1	Via CDC (CBS + TF)	120,113	
2	TBM	3000	
3	INVM (Deposit Master Table)	5,500	
	Flat Files (a) ATM (b) INB (c) PSG (d) Subsidiaries	~656.7	
5	Staging to GDM	43,000	
6	Staging to DWH	90,500	
7	ADM and GDM	64,500	
8	Risk	100	
9	CIBIL	86.55	This is the current folder size
10	Ad-hoc (RBI, Compliance, and BU)	12,000	
11	Inspection and Management Audit Extracts	200	
12	Provision for New Marts	5000	e.g. KRI, Bank to provide input

6.4.7.2. Data Storage

- Vendor should define effective number of data storage layers in DATA LAKE between data ingestion and data consumption
- Vendor will define the type of storage to opt for in DATA LAKE (SQL, NO-SQL, GRAPH etc), and provide for each one details of the capacity requirements, hardware needs if any, supported open source components to be used, skill requirements, etc
- Vendor should define the effective default replication factor (no less than 3) considering the size of the lake and efficiency and speed desired. On individual data sources, the Bank may request for non-default replication factors.
- Vendor should list out comprehensively the types of risks they expect from the storage subsystem (e.g., loss of data blocks due to insufficient replication, data corruption, problems of insufficient storage during operations, inefficient retrieval of blocks or files, etc).

For each such risk, they should describe the processes and mechanisms that would be put in place to avoid and/or mitigate the risk.

6.4.7.3. Data Processing framework and workflow management

- Require a data processing framework to perform the required ETL on DATA LAKE capable of supporting all the data transformations used in the Bank to apply the required business logic
- Framework should allow joining multiple sources/tables/inputs etc.
- Framework should be able to put the processed data in a predefined area separate from the raw data, while minimizing data replication.
- Framework should be capable of performing validation checks pre- and post-processing.
- Have a workflow management and scheduling solution to schedule data transformation, data acquisition or data delivery jobs
- Should have failure, retry, alert and escalation logic defined
- Should have audit and error logs for auditing and troubleshooting
- Framework should give significant advantage (at least doubling) in speed compared to comparable jobs on DWH
- Should have comparable capabilities that an industry standard ETL tool provides like GUI, fault tolerance, troubleshooting and job restart etc.

6.4.7.4. Data Federation

- Requires data federation to be setup to ensure seamless data access to the users and reports between DWH and DATA LAKE
- The bidder should also specify the bandwidth needed to enable data federation between DWH and BDL. It should be noted that DWH, BDL and DR sites will be at different locations (Belapur, Rabale and Hyderabad)

6.4.7.5. Metadata Management

Industry standard metadata management is required on DATA LAKE to prevent it from becoming a data swamp

- Capturing and indexing of information about the data as it enters the Data Lake.
- Should have archiving, backup, purge and recovery policies defined
- Maintain data versioning
- Data lineage
- Patterns and trends
- Data modelling capability
- Auditing capability

- Data dictionary
- Data quality rules
- Ownership and relationship definitions
- Maintenance of golden field / record / table

6.4.7.6. Information life-cycle management

- A robust solution that defines policies/framework that govern creation, distribution, usage, maintenance and disposition of information on DATA LAKE.
- It should be strongly coupled with the metadata management and data governance policies

6.4.7.7. Ability to search for data

- Ability to search for object space, tagged data sets, specific fields or raw text

6.4.7.8. Data governance, security, administration and access management

Without Data Lake governance process or tools put in place to organize, monitor and track data sets, the Data Lake can soon turn into a data swamp, with users losing track of what data is there. Users can also loose trust in the data because they don't know where the data is coming from. Data Governance will help the Bank to track exactly what data goes into the Data Lake, how it is transformed, who accessed it, and where it ultimately ends up. It will cover multiple disciplines, from metadata tagging and privacy setting to compliance reporting and access control. The solution should clearly highlight the how value creation and risk management outcomes are achieved and measured.

The solution proposed by the bidders should detail out processes and steps to carry out the following functions:

- Provide traceability – it should be possible to track and visualize any data transformation or any rule applied to data in the lake.
- Provide trust – The system should be able to ensure the users that they are accessing data from the right source of information.
- Provide auditability – the solution should record any access to the data to satisfy compliance audits. For example, it should be able to check on who touched the data, when did they touch it, is there a chain of custody issue, is there transparency in terms of data privacy and protection etc.
- Enforce security and privacy – Data inside the Data Lake will be accessed by only authorized users. Data at rest/in-motion should be encrypted
- Automate security policies and compliance reports
- Capability to classify and store (personal identifiable information) sensitive data in encrypted /masked form and should have capability

to decrypt/unmask such information in Data Lake when required by only authorized ID's.

- Provide administrative and security management facilities
- Should provide for DATA LAKE portal displaying all reports, Dashboard, Data dictionary, applications running in DATA LAKE, data sourcing department (upstream applications), Data sharing departments (downstream applications), information about interfacing applications, login to portal details, list of missing files from source systems, status of all applications / interfaces running on DATA LAKE along with memory, disk and CPU usage, status of DATA LAKE clusters, hardware status/software status etc. with need based access.
- Monitor privileged users
- Capability to define clear roles and access management rules to user ID's

6.4.7.9. Downstream data consumption

- Approximately 500 Cognos reports will need to be migrated to work with the DATA LAKE.
- Should support bulk data and targeted data extracts via statistical tools and AP interfaces
- DATA LAKE should have supported open source / proprietary statistical and machine learning tools configured for analysis and reporting
- Should have capability to easily connect with any downstream applications currently used at the Bank

6.4.7.10. Real time analytics

- DATA LAKE should have capability to ingest data in real-time
- Capable to perform in-memory processing and equipped with tools to perform analytics on real-time data in real-time/near real-time.

6.4.7.11. Disaster recovery site and other environments

- Vendor is required to setup functional DR to start with. Functional DR should have capability to replicate jobs, scripts, models, snapshots, metadata, all software requires to manage and maintain PR cluster. However, Bank at later stage may take a call for setting up a full scale 100% DR of PR.
- Vendor should provide the framework for online real-time replication from production DATA LAKE setup to DR DATA LAKE setup, such that RTO(2 hrs) & RPO is ideally zero.
- The bidder should specify the bandwidth requirements to achieve the 2 hrs RTO between the production and DR site. This should be arrived at taking into account only for the functional DR.
- Development and UAT environments are to be set up at the PR site in addition to the PRDATA LAKE and DR DATA LAKE.

6.4.7.12. Software Change Management framework

- Vendor should provide a robust change management framework to track versioning, change history with date and user information, track migration of code from development to production, security.
- It should allow easy configuration of the environment to the production version for debugging and troubleshooting

6.4.7.13. Benchmarking of Data Lake Performance

Bidders are required to provide **benchmark execution times** they can commit for the Data Lake on the following tasks. **These times can be used by the Bank in bid evaluation and comparison**. Selected bidder will be required to **achieve actual performance within 5% of the numbers** they committed, on real-world data sets that the Bank will provide as per the description listed below.

Data Set Description:

- 4 transactional tables of 100 million records or more each, each with at least one Boolean variable
- At least one table has one or more text fields as part of a composite key
- At least one table with a five-part composite key
- Two reference tables with 5-level hierarchical data (e.g., branch-region-area-division kind of structure), with at least 1,000 distinct entries at leaf level which will serve as foreign key reference to a transactional table with 100 million+ records
- Each transactional table having 64 or more columns, of which 12 or more columns are alphanumeric, 4 or more are date, 4 or more are categorical variables with 20 or more distinct values(e.g., industry classification), 4 or more are continuous variables (e.g., account balance)

Benchmark Performance:

In your response to the RFP, please include as a table with the execution times you can commit to achieve on the proposed data lake for the following operations:

- Find records with numeric key match
- Find records with alphanumeric key match
- Find records with 5-part composite key (numeric + alphanumeric) match
- Find records with referential foreign-key match
- Find records with sub-string match
- Sort
- Distinct / duplicate identification
- Distinct with composite key
- Outer join between two transactional tables with numeric key match
- Outer join between two transactional tables with composite key match

- Find ten highest/lowest values from a numeric, continuous variable
- Find average, highest, lowest and count of 8 numerical, continuous variables grouped by four categorical variables
- Generate percentile distributions of a numeric, continuous variable
- Generate frequency distribution of a category variable
- Find random sample of 20,000 records from transactional table
- Generate all-node roll-up of numerical variable by category variable hierarchy from transactional table where transactional table has data only at leaf level
- Outlier identification (+/- six-sigma) of continuous, numeric variable
- Time for data quality audit – missing/blank/null values, dispersion (90% or more records have the same value for a particular variable),
- Find pair wise correlations of category variables across two different tables
- Determine Multi-co linearity (VIF, Condition indices)
- 10-fold cross-validation – for a random sample of 1 million transactional records
- Ingestion of 10 million records into transactional table without index update
- Ingestion of 10 million records into transactional table with index update
- Scatter matrix construction

  Optional:
- Time series prediction
- Information value computation
- Logistic Regression model – with minimum six independent variables and R2 or χ^2 or better and GINI coefficient of 0.6 or better – for a random sample of 1 million transactional records
- 6-level Decision Tree – for a random sample of 1 million transactional records
- Clustering with minimum 6 clusters and 6 or more input variables – for a random sample of 1 million transactional records
- Neural Network – for a random sample of 1 million transactional records

6.4.7.14. Resource requirements

- Vendor should have resources available as per the profile mentioned in **Annexure 23**.
- Number of minimum vendor personnel to be employed in DATA LAKE need to be defined along with stating cost of requirement of personnel on T&M basis as and when new requirements on Data Lake come, like addition of new data sources/implementation of new use cases.

- Proposal should define the exact number and types of resources needed on-site
- Below are the typical roles and experience levels that the vendor is expected to have available in their resource pool:

Sl.no	Resource Profile	Tentative experience
1	Program Manager	10+ yrs
2	Project manager	10+ yrs
3	Relationship manager	10+ yrs
4	DWH SME	10+ yrs
5	Big Data SME	6+ yrs
6	Big Data Solutions Architect	6+ yrs
7	Sr. Data Architect	10+yrs
8	Sr. Big Data Engineers	5+ yrs
9	Big Data Engineers	4+ yrs
10	Team leader(s)	6+ yrs
11	Data Engineer(s)	4+ yrs
12	ETL Experts	4+ yrs
13	Data Scientists	4+ yrs
14	Principal Data Scientist	10+ yrs
15	Sr. Data Scientists	6+ yrs
16	Reporting and Visualization Experts	6+ yrs
17	Test Architect	10+ yrs
18	Testing Lead	8+ yrs
19	Test Engineers	5+ yrs
20	Release manager	10+ yrs

6.4.8. Functional Requirement – Use Cases

To derive value and ROI from the DATA LAKE following 6 use cases should be delivered with DATA LAKE:

6.4.8.1. Use Case 1 - Customer-Customer Relationships and House holding

Millions of our customers are connected by family relations, work relations or social relations. These relations can be inferred from data that Bank already holds for these customers. For example, two retail customers' A and B may be connected by relationships like "A is the spouse of B", "A is the parent of B", "A is the sibling of B", "A lives in the same house as B", etc. Even when there is no family relation, social relations may hold, like "A and B are neighbors", "A lives in the same community as B", and "A and B work in the same department at the same office". Likewise, a retail customer A and a corporate customer B may be connected by work relations like "A has been working for B for xx years", "A worked for B for xx years, yy years ago".

In this use case, Bidder should build a Big Data Analytics solution to identify a reasonably large set of family, work and social relations among all SBG customers. Relations extracted from data should be stored back, and should be available along with that customer's data, so that it can impact all decision making with that customer

Identify related customers on the basis of fuzzy matches and heuristic algorithms, including, but not limited to

a) Customers with significant overlaps in the PII data (Name, DoB, ID docs, Addresses, Phone numbers, email IDs) should be flagged as two CIFs for the same customer.
b) Customer with the same last name & address as belonging to the same household
c) Customers who are joint holders or signatories on each other's accounts
d) Customers who have standing instructions to pay one account from another
e) Customers who have guarantee/ nominee/ appointee/ trustee/ power of attorney relationships.
f) Customers who are directors/ promoters of the same companies
g) Customers who are auditors/ accountants of a corporate entity
h) Customer who share the same relationship with another customer (e.g., Customer A is Customer B's guarantor and Customer C's guarantor, then not only are Customer A and B related, A and C are related too, the system must also establish relationship between B and C too)

Each household must be assigned a unique, persistent ID. Two output data sets shall be created, containing

- Household ID and ID of Customer belonging to the household
- Customer ID, relationship of related customer, ID of the related customer respectively.

6.4.8.2. Use Case 2 - Real-time Identification of Fraudulent transactions on digital channels (POS, SWIFT, ACH)

Identify "Out of Pattern" digital transactions to be flagged as suspicious, for automatic reversal – based on past customer transaction history, including time and location where transaction was initiated, merchant type where transaction was executed, beneficiary identity

6.4.8.3. Use Case 3 - Credit Performance Monitoring by Vintage Cohorts

Track performance of loan accounts by product, by period of approval, and characteristics at the time of application approval to monitor the efficacy of credit scores, and to calculate return on risk adjusted capital, return on Basel-III capital and Risk adjusted yield

6.4.8.4. Use Case 4 - Social Media sentiment analysis and Logging of complaints.

SBI with over 350 million customers globally must deal with a lot of complaints. The proposed solution should be able to analyse the text of tens of thousands of customer emails and bucket them in appropriate sentiment buckets – Very Angry, Angry and Neutral, in near real time. This would allow the customer representative to service the irate customers faster allowing better service and customer delight.

Data warehouse use cases to be added are as under:

1) Data ingestion by reading archival logs
2) Data federation between existing data warehouse and BDL
3) Methodology to capture data warehouse changes in BDL in real time.

Scan Facebook and Twitter streams to automatically identify customer complaints (as opposed to general remarks or appreciative comments), match it to a specific customer (on the basis of Social media identity, phone number, account number or other details available as part of the message) and automatically generate a complaint directed to the home branch of the customer for the issue to be resolved.

6.4.8.5. Use Case 5 – Credit Scoring of first-time borrowers

First time borrowers have no credit history available. Hence, the scoring of credit applications for such borrowers has to be based on other information gathered from the customer at account opening, or from transaction history of the customer's Savings/Current account.

6.4.8.6. Use Case 6 – Generation of Preventive Maintenance Schedule for ATMs

Generate preventive maintenance schedule for ATMs based on monitoring of ATM machine logs, cash withdrawal patterns, electricity/voltage stability, ambient temperature maintained to improve overall ATM up-time to above 95% in Metro and Urban locations, and to above 90% in Rural and Semi-Urban locations.

6.4.9. Functional Requirements - Hardware

6.4.9.1. DATA LAKE Sizing

As far as sizing is concerned, we propose to keep provision for 100% additional growth of data in addition to the present data volume growth as we have to bring new source systems into Data Lake. The details as given under

Present DWH data size (uncompressed)	**1250 TB**
Present data growth annual	**600TB**

Adding 100% extra growth for considering future new source systems like LOTUS and CRM & sourcing of semi-structured and unstructured data	**600TB**
Net per year growth	**1200TB**
Total Data volume to be handled in the first year of operation (1250+1200) TB	**2450 TB**
Total Data volume to be handled in the third year of operation (2450+1200+1200) TB	**4850 TB**
Another 1000 TB proposed for UAT and DEV environment	**1000 TB**
Total Data Base size for which Data Lake is proposed	**5850 TB**
Big Data technologies provide data replication. Average of about 3*[1] copies/ block is considered reasonable for data replication	**17550TB**
Big Data infra assumed to provide for average 50% compression rate	**8775 TB**
Assuming that 50% of data lake does data storage and the other space is used for computational processes and intermediate data, total storage capacity expected for the DATA LAKE is approximately	**17550 TB**

Hence, by the end of the 3rd year, the data lake size is required to be able to grow to a total storage capacity of approximately **18PB**. By the end of the 1st year, Data Lake is required to have about **6 PB** total storage capacity.

Bidder is required to provide the further details of the proposed Solution as described in **Annexure 17**of the RPF.

6.4.9.2. Hardware specification and recommendations

Hardware specifications and recommendations to be provided by the selected software solution vendor through this RFP.

The vendor needs to provide the following full requirement for the hardware like Data Lake cluster size, Number and types of Nodes, Configurations of each Node, Network topology, Rack space required, power, space and cooling requirement etc for all the three environments (Production, Development, UAT).

If vendor prefers commodity hardware then he should give full required specification for the same. If vendor prefers appliance/hybrid solution, he should also provide specification for appliance/hybrid solution and commodity hardware then Bank will take the final decision. If the bidder is opting for only appliance then he need not bid for this RFP.

The BDL ecosystem should have state of the art data processing engines that can perform in-memory processing to reduce the time for data transformations and query in case of real time requirements.

[1]As per the Banks requirement default replication factor may be changed

The infrastructure for DATA LAKE should be provisioned keeping in view that there is a requirement for varied workloads on the DATA LAKE:

1) Balanced workload – ETL operations, data processing
2) Compute intensive workloads – Report generation, IoT, real time data and analytics
3) Storage intensive workloads – Storage and archival

As mentioned in the functional scope of RFP, the DATA LAKE is expected to be built on commodity hardware.

The Hardware / software configuration of DATA LAKE should be able to factor the following:

1) At-least 2000 concurrent users (DATA LAKE is expected to have more users and the solution should not be bound by any license model for number of users). Not including API based access
2) At-least 30000 jobs to be run on a daily basis(Internal threads due to parallel processing should not be counted as a separate job)
3) Support of real time, streaming data
4) Support to Unstructured data – Text, Document images, Image, audio and video data
5) User(s) being able to run ad-hoc jobs than the standard set of jobs for the day
6) Both batch and interactive jobs running on the cluster
7) Bandwidth limitations and geographic separation of Source DWH and DATA LAKE and DR sites. Vendor need to specify minimum bandwidth requirement between Belapur(DW) and Rabale(BDL-PR) and also between Rabale (BDL-PR) and CtrlS Hyderabad(DR)

Tentative sizing calculations for production environment is to be provided by the bidder.

The vendor should provide EXACT cluster size needed for production in the 1st year and estimated sizes for 2nd and 3rd years, and provide empirical evidence for the calculation of cluster growth rate.

The bidder also needs to provide the cluster configuration for setting up of functional DR.

6.5. Technical Requirements (TR)

The following section and its sub sections will elaborate the technical scope for SBI's Big Data Lake. The technical scope contains

1) Scope of work
2) Capability of tool (s)

3) Indicative metrics to be achieved

The Big Data Lake must be designed and implemented with the following considerations:

1. The Big Data Lake is built on Commodity hardware, taking into account not only the Bank's current data and processing needs but also the Bank's growing number of sources, unstructured data, next gen, first of a kind use cases. The DATA LAKE should have horizontal scale as a defining design characteristic.
2. The software platform / tool (s) deployed on DATA LAKE should be Supported open source. The choice of tool(s) to satisfy the functional / non-functional requirements for DATA LAKE can be suggested by the vendor to the Bank. It will be vendor's responsibility to ensure that the platform is agnostic to the choice of tools. The Bank may suggest various supported open source tools for experimentation / analysis / integration that the vendor should provision and support.

The general guiding principles of the Big Data Lake to be highly secure, highly scalable, robust, reliable, fault tolerant, supporting concurrent user base hold true. The specifics of each of these items will be discussed in sub-sections of 6.

The technical scope of DATA LAKE covers salient points in each stage of data processing lifecycle. The DATA LAKE goes through the following logical phases in the course of its operationalization.

- **Storage Offload:** DATA LAKE as a storage offload from existing DWH, capturing daily incremental changes and in sync with the DWH. DATA LAKE begins serving data to upstream / downstream systems using data federation.
- DATA LAKE **- Data pipelines** – New data sources and Real time data handling, data capture and processing use cases, DATA LAKE still in Sync with DWH
- DATA LAKE **– Compute offload** - Existing compute / ETL processes on DWH will be migrated to DATA LAKE. DATA LAKE will serve as the single data and compute infrastructure for the Bank
- DATA LAKE – **Analytics / Insights and Reports** – Existing reports and downstream / upstream data needs for visualizations are on DATA LAKE, data analysis - analytic applications deployed on DATA LAKE
- **Operational** DATA LAKE **–** DATA LAKE handling the entire data requirements of the Bank.

6.5.1. Data Ingestion and capture

Data capture and Ingestion for DATA LAKE should satisfy the following criteria:

The number and type of data sources will vary. The mode of data ingest / capture will be different for each data type. The frequency of ingest, mode of data capture can vary across current and new sources of data. The vendor should be on an on-going basis able to implement and support the same. A few scenarios are mentioned below:

1) Historical data load – Snapshot data load from existing data infrastructure to DATA LAKE, incorporate existing DWH's staging and landing environment
2) Incremental data capture – Daily incremental data / updates captured from source systems (tabular data dumps, extracts, log files etc)
3) Real time data capture and Ingestion – Structured, semi-structured and unstructured data (E.g.: Card transactions, Forex data loading, DB Events / extract Logs, machine data, streaming data sources etc
4) Unstructured data like Images, video, Audio, Text data etc from file servers / File transfer API's
5) Semi-structured data – Geographic information, mobile touch stream, internet Banking user logs etc.
6) External data from the web –
7) Incremental data changes (Change data capture) – Daily incremental changes in structured data / DB change logs that needs to be synchronized in lake with existing DWH till the transformations are off-loaded from existing DWH. (Details on DWH transformations is available in following sections)

The data may be available in a stream or batches, and support various protocols for data movement.

The Ingestion layer should be able to do simple field manipulations, JSON parsing, de-duplication and masking functions. More complex operations can be executed using scripts or by calling out to external data services.

The solution should be able to route data from source to multiple data stores. Routine can be simple or complex, with routing rules based on attributes of the data, and with automatic conversion of data types and formats.

The ingestion function should be performed as a low-latency, high throughput, continual process, even when the characteristics of the incoming data change.

Upon ingesting data, users should be able to perform light sanitization on the source data in order to support universally acknowledged policies, such as masking personally identifiable information or using canonical data representations, as well monitoring the inbound data flow for completeness, consistency and accuracy.

The tool (s) used for Data ingest and capture should be easy to use, simple, intuitive point and click utilities that support creating / modifying and scheduling data pipeline jobs.

Data sanity checks, validations and reconciliation of data should be available as part of the data ingest solution.

It should also be possible to monitor ingestion pipelines to ensure that they are not dropping data or that the data is not becoming corroded over time.

The tool(s) of choice should be able to provide audit logs for data validation and tracking data lineage in case of failure.

An alerting, report and monitoring utility about the ingest pipelines should be available as part of the solution. Trigger mechanisms in identifying schema changes at source and packaging data in formats for quick retrieval from DATA LAKE are in scope.

The vendor should be able to design solutions to handle data volumes and complexity in source data. An example workload is provided below (Workloads of this type are in scope of this engagement)

A source system table with ~ 400 columns in an Oracle database generates data of ~ 800 GB on a daily basis. The ingest tools should be able to perform a change data capture on source systems of this nature.

Data engineers should be able to create ingest pipelines, or a logical connection between a source and multiple destinations. It should be possible to move data using an integrated development environment for creating and running pipelines using a visual UI to minimize the amount of custom-coding required.

6.5.2. Storage and Data Formats

The Data Lake Solution for storage should have the following features:

1) Store reliably, efficiently and optimally irrespective of the data type (structured data, flat files, extracts, logs, xml / JSON / BSON type data, text, images, audio, video, sensor data, GIS data etc)
2) The underlying architecture is scalable
3) Storage replication is managed by the platform
4) Data is stored in formats that are suitable and efficient for processing engines to consume
5) Storage should support data compression. It should be possible to perform both fast compression and efficient compression based on data processing needs.
6) The storage layer of lake should support large volume data ingest and transfer seamlessly over the network.
7) The lake should allow for read / write and modify the data stored
8) Storage should be compatible to perform processing operations on whole dataset as well as Individual records or Individual groups.
9) The storage should be horizontally scalable. Redistribution of storage load across the lake should be possible and in-scope of setting up the Data Lake.
10) Ensuring regular health checks, monitoring and alerting about data storage / utilization of storage / failure handling of storage are in-scope of activities

11) The storage system should be robust to handle multiple concurrent access by processing engines / end users

It should be possible to project and view data through multiple modes using the Storage on Data Lake. For instance: The Bank may decide to implement use-cases that project transactions data as a graph data structure. The Storage solution on lake should allow for such projections. Activities of this nature are in scope of the current engagement and Bank will engage with the vendor to provide specific details on such use-cases.
The Data Lake will have storage intensive, compute intensive and balanced workload scenarios. The storage mechanism should serve as a single entity that can be utilized by multiple processing engines or compute nodes designated for a specific purpose in the Lake.

The storage layer should be able to accommodate data used for specific processing needs. For example: Storage is expected to allow data reside in multiple layers. The Lake should be flexible to handle data needs for Staging, direct data ingestion / landing, projections of data, organizing data and aligning it with specific schema type(s) etc. Activities of this nature are in-scope of the current engagement.

6.5.3. Data processing: Transformations

Ingestion pipelines on Data Lake facilitate data capture and storage. In order for the data to be accessible and consumable by businesses / downstream applications, the lake should have robust, highly efficient and parallel execution of data transformation jobs.

One of the core activities in implementing the Data Lake is to operationalize the lake with data processing. The Bank suggests a 3-stage approach to ensure a smooth transition:

1) Initialize Data Lake – Historical data offload, synchronize daily incremental data between DWH and Lake, federate data for data requests by users / downstream applications
2) Implement transformations – Offload ETL jobs to Data Lake, develop reports for downstream consumption, populate marts

Existing reports and extracts generation jobs on DWH should be analyzed and transformed to the Data Lake. The vendor should use preferably off-the-shelf tools and not resort to building from scratch.

Data transformations should be triggered in parallel. The lake should be primed to run multiple transformation jobs in parallel. The DATA LAKE should be able to run ~ 30k jobs in batch or near real time mode every day.

There should be provision to monitor, log and assess the progress of each transformation job. Job design (s) should be re-usable.
There should be a provision organize individual transformations as operators, tie operators to data structures and organize the entire process as a single job.

Organizing jobs, scheduling jobs and triggering jobs should be possible from an easy to use interface. Reports on job status and success / failure / retrigger should be sent to concerned stakeholders on a periodic basis.

The tool(s) used for data transformation should be aligned to data sources and types / formats of data residing on Data Lake/DWH.

The BDL is expected to complete the entire data loading (ETL) operation for changed data from DWH to Data Lake in 2 hrs.

The processing pipelines for ETL jobs also include daily, weekly, monthly, quarterly and annual reports, feeding data structures for downstream consumption. These activities are in-scope for this engagement.

Transformations for this activity can be categorized into the following types:

1. Existing transformations in DWH that needs to be migrated to DATA LAKE
2. New transformations for data sources that are not sourced by DWH
3. Transformations and data processing pipelines for real time data capture

DATA LAKE activity includes all items mentioned above in scope for this engagement. The Bank will engage the vendor to create specific data transformation pipelines based on need basis.

6.5.4. Workflow management and scheduling

It is expected that individual and multiplexed data capture, ingest, organize, process and creating data structures be designed and developed as easy to manage and monitor workflows.

The workflows should be designed using off the shelf tools. The workflow management tool should work with all supported tools / components used underneath for data capture, storage, organization, transformations and updates.

The workflows should work with standard schedulers. Monitoring and management of workflows should be possible from an easy to use interface. Workflow management tool(s) should have connectors / pluggable interfaces to already existing / in-use proprietary software available with the Bank. These could be (and not restricted to) data repositories, reporting tools, data analysis tools and generic interfaces for data transfer.

The Bank currently has ~2000 jobs for generating extracts and reports. This number is expected to grow with evolving use-cases from different business units and availability of data from the lake. The vendor is required to rewrite/re-develop these jobs in DATA LAKE.

Audit, alerting, traceability, recovery and monitoring form critical features that need to be available as part of workflow and scheduling system on the lake. It should be possible to trigger workflows / schedule jobs through User interface or using a command line utility.

6.5.5. Data Discovery & Preparation

Ad-hoc analysis and multiplexing data streams / pipelines from multiple table structures will be expected of the Data Lake. In order to facilitate this, the lake should have tool (s) for data discovery.
The fields / entities of interest should be available for search. The tool(s) should have the capability to extract data from all types of structured/semi-structured/unstructured data

On-demand object creation to blend data from multiple sources (relational, objects in lake, semi-structured data) should be facilitated.

An easy to use web interface and SQL like query capability should be available for authorized users/applications on the lake. For instance: BI reports / dashboards can be consumers of data processing pipelines on the lake. Activities of this nature are in scope of this engagement.

The vendor as mandated by the Bank will streamline ad-hoc reports / visualizations using the data discovery capability or assist business teams build pipelines for analysis using data discovery capability.

6.5.6. Analytics

Rapidly building and deploying scalable analytics solutions on the DATA LAKE is one of the primary outcomes.

The technical scope for Analytics applications in the context of DATA LAKE can be categorized as:

1) Power data / objects to existing analytics models built on proprietary tools.
2) Empower analysts with tool(s) like analytics notebooks to perform interactive data analysis and rapid model building
3) Implementing end to end analytics use-cases as mandated by the Bank

The DATA LAKE solution should be able to provide tool (s) in the analytics layer to perform:

1) Data extraction and preparation
2) Data pre-processing
3) Experimentation and model building
4) Model evaluation, deployment and visualizations

The DATA LAKE should have support to best in class machine learning and analytics frameworks that run on scalable architectures.

DATA LAKE – Analytics solution should have ability to create templates for common data processing / end to end applications, tag data sets and re-use operators across machine learning pipelines.

DATA LAKE – Analytics solution must have capability to utilize in-memory computing, blend tools in analytics notebooks that perform SQL like querying on relational data and unstructured data on DATA LAKE.

The analytics notebooks should be shareable and experiments be replicable across users / teams performing similar analysis.

Analytic queries can be used to provide a summary view of a data set, like cross-referencing other data sets, and ad-hoc computation can be used to support a variety of algorithms, for example, building a search index or classification via machine learning.

6.5.7. Search

Search solution in the context of DATA LAKE should be interpreted as:

1) Free text search across DATA LAKE
2) Search metadata and objects in DATA LAKE namespace
3) Search patterns (keywords + regular expressions)
4) Search datasets and analytics notebooks
5) Search workflows and jobs
6) Search repository of data processing operators
7) Search reports

The DATA LAKE – Search solution should use tool (s) which work with each of the DATA LAKE ecosystem components. Advanced search options should be available for users.

Search interface should be intuitive and results must be relevant

Users / applications should have the provision to index objects and assets created on DATA LAKE.

6.5.8. Metadata & Governance

It should be possible to define metadata to update and access requests as well as schema. Metadata should be available for data, processes and pipeline(s)

Without proper Data Governance, a Data Lake can quickly turn to a “Data Swamp”. In order for the Bank to stay on top of its data’s integrity, confidentiality, and availability needs, the Data Lake Solution should address the following data governance issues:

Reference – The Solution should have the capability to document the source systems along with where it is coming from. It should be possible for track data lineage, audit and log events relevant to process these events. The Bank on a periodic basis will analyze / need reports on this log / event analysis.

Quality – The solution should let the users have an understanding of the quality of the data using data profiling. Data quality refers to sanctity of data at the source, data correctness and validity post transformations, truth of data at the time of access.

Security / Privacy – It should be possible to define policies and rules for implementation and access control in the DATA LAKE. DATA LAKE should support user level, group level and application level authentication and authorization. **The vendor should also implement Data Loss Prevention (DLP) strategy to ensure that end users do not send sensitive information outside the corporate network.** The solution should **be** compliant to Bank's security policies.

Master Data and Metadata Management – The solution should allow users to create Enterprise glossaries to define a consistent and uniform business vocabulary to prevent misinterpretation of data elements. The Metadata to be created using the tool(s) on DATA LAKE can also be technical and provide details of data cleansing, derived data, data mappings etc.

Lifecycle Management – The Solution should be able to manage data from the point of ingest to retirement – including retention, archiving, replication, compression, encryption/decryption and backup / purging. There should be a provision for entire data and application lifecycle to be managed and monitored through an easily usable interface. Data lifecycle should be managed using crisp storage policies.

6.5.9. Disaster Recovery

SBI envisages DATA LAKE to be the single source for all data to be used by downstream systems. In such a case, DATA LAKE becomes a very critical resource to the Bank. In compliance with the IT policies of SBI, Bank need to have DR. However, Bank propose to setup only functional DR to start with. Functional DR should have capability to replicate jobs, scripts, models, snapshots, metadata, all software requires to manage and maintain PR cluster. At later stage Bank may take decision to setup full scale 100% DR. The following features of DR should be incorporated in the DATA LAKE solution:

1) The DATA LAKE – DR solution needs to be set up at a remote location at CtrlS, Hyderabad. The production DATA LAKE and DATA LAKE - DR will be geographically separate.

2) The DR solution should be synced with production DATA LAKE. The SLA for RTO should be maximum 2Hrs as per Bank's defined policy. The proposed solution for DATA LAKE - DR should include data transfer, job synchronization, security considerations and all other features that the production environment possess.

3) In general, for the end user the perception will be that both DATA LAKE and DATA LAKE – DR will be functional on a daily basis. The DATA LAKE – DR will be passive in general, however will be made active as soon as there is an unavoidable or planned/unplanned unavailability of DATA LAKE. (Fully functional DATA LAKE – DR can

either run the jobs and have checkpoints for data synchronization or have a solution by replicating data from DATA LAKE to DATA LAKE – DR)

4) The proposed solution is expected to have a monitoring engine that can determine the health of production DATA LAKE and raise alerts / trigger remedial actions to bring DATA LAKE – DR as the default DATA LAKE for downstream / reports / data processing and end user ad-hoc analysis.

5) Switching over to DATA LAKE – DR can have limited manual intervention. The handover should be soft and no data loss / data corruption can be tolerated. Jobs in transit can be restarted to have minimal impact of data loss.

6) The downstream applications / end users layer to access DATA LAKE should be logically isolated from operational DATA LAKE. This separation will enable switching between environment(s) to trigger DR operation sequence.

7) Jobs developed to be deployed in production, should be deployed both in production and DR. The same applies to any admin activity, security policy and other activities on DATA LAKE

8) The Bank reserves the right to enforce mock up scenarios for failure to ensure that the DATA LAKE – DR solution is working as expected. The vendor should support the Bank to demonstrate such scenarios

9) The solution for DR should cover standard policies and framework to formulate recovery point objectives, data loss prevention and minimal impact to work. A thorough plan / successfully implementing the DATA LAKE – DR is a critical component for completion of this assignment.

6.5.10. Compliance with IS security and Data Encryption

The Vendor shall have to comply with Bank's IT & IS Security policy in key concern areas relevant to the RFP, details of which will be shared with the finally selected Bidder. Some of the key areas are as under:

i. Responsibilities for data and application privacy and confidentiality
ii. Responsibilities on system and software access control and administration
iii. Custodial responsibilities for data, software and other assets of the Bank being managed by or assigned to the Vendor
iv. Physical Security of the facilities
v. Physical and logical separation from other customers of the Vendor
vi. Incident response and reporting procedures
vii. Password Policy of the Bank
viii. Data classification and Data Encryption/Protection requirements of the Bank.
ix. In general, confidentiality, integrity and availability must be ensured.

Encryption of backup

Data encryption applies to the following data on DATA LAKE:

1) Data at rest
2) Data in motion
3) Data available over an API to external sources / applications

The sensitive and personal identification data on DATA LAKE should be encrypted. Standard encryption/decryption techniques / policies should be implemented for this activity. Decryption should be allowed only to selective users/roles.

The vendor team will determine tables / columns that need encryption by discussing with data owners before implementing the solution.

The processing time for data should include time needed for encrypting and decrypting information needed for downstream / report generation. The overall SLA for data processing should be adhered to, keeping data encryption as an important activity.

6.5.11. Cloud Integration and Migration

The scope for Cloud integration and possible migration should be interpreted in the following context:

1) DATA LAKE should be able to consume data from external cloud based infrastructures. For example: Social data and web data can be processed on an external cloud. This data is publicly available data. There should be a solution in place to transfer Insights drawn from this data / results post the data analysis activity to DATA LAKE.
2) Cloud integration / data transfer to and from public/private/hybrid cloud should be available using all standard protocols. (Web requests / secure transfer channels etc)

3) The architecture of DATA LAKE should enable interaction between public cloud and edge servers alone. DATA LAKE cannot be directly exposed to the public cloud.

4) Transfer out of DATA LAKE to public cloud should not be possible by all roles in DATA LAKE. All activities with data transfer from Public cloud should be logged for audit and monitoring.

5) In view of the intent to reduce the hardware footprint (in future), the technical architecture of DATA LAKE solution should be flexible to accommodate provisioning of DATA LAKE on cloud. The Bank understands that there can be differences in services offered by cloud service providers. The DATA LAKE solution architecture should be designed considering as-is infrastructure availability in cloud.

6.6. Other Requirements

6.6.1. Capability

The Data Lake solution should be able to

1) Handle large volume of data, handle variety in data types and accommodate real time streaming data.

2) DATA LAKE / applications on DATA LAKE should be robust to increase in user base. The Bank expects the DATA LAKE to be performance and functionality compliant to at-least 2000 concurrent users, not including API based access. This number is expected to grow and support to such growth in user base is in scope of the current assignment.

3) The system should be capable of handling structured, semi structured and unstructured data which can be visualized using sophisticated reporting and charting tools.

4) The DATA LAKE should use tool(s) already procured by Bank.

For example: If the Bank mandates that the operating system be RedHat Enterprise Linux and RDBMs layer be Oracle, then the vendor should facilitate such a combination for DATA LAKE.

5) Any relevant analytics, data processing and analysis tool(s) as needed by the Bank should be provisioned in DATA LAKE

6) There should be an API layer that allows data consumption in any of the below mentioned access modes for downstream applications

Sl.no	Access Mode	Data format
1	Delimited files	All supported file formats
2	File extracts	All supported file formats (txt, csv, tsv, binary etc)
3	Tables populated in RDBMS, DB Link	Tabular – Specified RDBMS
4	Data access through API	XML/JSON/BSON (E.g.: Data access from No-SQL DB)

5	API providing file access path	Document / file links
6	Direct links	Abstract to end user – Applications will access the DATA LAKE directly

6.6.2. Reliability & High Availability

Reliability for DATA LAKE refers to:

1) Reliability
2) Correctness
3) Recovery

for data and DATA LAKE solution artefacts.

To achieve the above-mentioned reliability metrics, The DATA LAKE solution at SBI should be enabled for exact point-in-time recovery of files or directories in the cluster from accidental deletions or corruption due to user or application error.

The solution should also maintain incremental and differential copies. This can be on traditional storage devices or storage intensive part of the DATA LAKE solution.

While building DATA LAKE on commodity hardware, failure handling should be a design characteristic. There should be tool(s) that can notify, alert and if possible, predict node, disk or application failure.

Necessary corrective action should be in place for each failure. Failure of node, disk or any network component should not affect the functionality of DATA LAKE.

Failure tolerance is not restricted only to server and application failure. Failure of network, hardware, software or nodes are considered failure scenarios in scope.

Standard practices of configuring DATA LAKE for High Availability and storage namespace federation (at least 99.9% - calculated monthly basis) should be implemented. DATA LAKE solution should serve users even when confronted with node failures or network partitions.

6.6.3. Agility

Batch mode of operation on DATA LAKE is one of its features. DATA LAKE is expected to provide data and process agility. Agility is in terms of the following:

1) Near real time availability of data for analysis
2) Quantum of time taken for analysis
3) Ease of incorporating ad-hoc analysis to mainstream use-cases

With increased digitization and steps towards economic transformation, SBI needs to have fast access to the data to analyse the information and

translate that to actions. It's not only about capturing the data but actively using it.
Self-Service data exploration will eliminate the dependency on IT to set up data definitions and structures and should help to guide SBI's agility towards real-time business impact.

The data discovery and data exploration techniques provided in the Data Lake solution should facilitate ad-hoc analysis and on-demand schema generation.

Real-time Analytics with implementation of schema-on-demand requires that when a new data format is brought under the purview of DATA LAKE, no administration effort will be required to build and maintain schema designs. This will help with data agility by allowing users to perform self-service data ingestion and data source management.

SBI DATA LAKE should get quick response, least processing time and higher availability of data required for ad-hoc query purpose or for report generation. It is recommended that these components are built using any tool (s) that support in-memory processing and SQL on DATA LAKE

6.6.4. Scalability

Scalability is defined in the context of DATA LAKE as:

1) Horizontal scaling of nodes in DATA LAKE
2) Application processing scale – More complex jobs on DATA LAKE
3) Supporting scale of input sources both in terms of number of source systems and transaction / event volume of each source system

Based on the estimates of data growth and DATA LAKE utilization, the vendor is expected to submit a capacity planning for initial size of DATA LAKE cluster, timely upgrades / additions to the DATA LAKE.

The Bidder should provide scalability of the proposed technology also keeping in mind new technologies emerging for catering to future needs. The Data Lake Solution should contain capabilities to scale horizontally without disturbing the base architecture or requiring system downtime.

Size of the data may vary after doing the assessment of data coming from various existing sources or from sources as per future needs. The scalability design should ensure that the query response time(s) / time(s) for analysis / transformation does not get negatively impacted with scale.

For example: The Bank estimates the number of jobs to be deployed on DATA LAKE to be in the range of 30k. Increase in the number of standard jobs should not impact ad-hoc jobs / analysis. The design of the DATA LAKE should consider, various workloads and data access patterns and have clear logical boundaries to perform storage, compute and balanced workloads.

6.6.5. Ease of Use

Ease of use refers to:

1) Application users having easy to use interface to monitor and manage data pipelines
2) Analysts having access to analytics notebooks
3) Administrators and project managers having access to single window dashboards that report status of DATA LAKE – DATA LAKE specific job stats, daily jobs metrics, data pipelines, data source rates and reconciliation triggers, hardware and software performance and capacity monitors.
4) System having provisions for easy maintenance and upgrades
5) Interfaces to enable Addition of nodes / patches with minimum impact on DATA LAKE uptime.

6.6.6. Security

Business data in the Data Lake should be stored more securely, with the correct level of access granted to individual users. Some of the security features of the Data Lake solution should include:

1) **Authentication and Identity Management**

A comprehensive identity and access management system should be available for centralized management of users and groups. It should be possible to quickly create and revoke the identity of a user or a service by simply deleting or disabling the account in the directory. Multi-factor authentication is desired as an additional layer of security for user sign-in and transactions.

2) **Authorization and access control**

Role-based access controls should be provided for authorization of account-related and data-related activities.

3) **Data protection**

It should be possible to protect the data in the Data Lake throughout its lifecycle including data in transit and data in store.

Auditing

Auditing or diagnostic logs should be used to log management-related activities or data-related activities. Log management and auditing of all critical activities on DATA LAKE is a critical requirement.

The Bank reserves right to ask the vendor to produce / analyse logs for reporting purposes.

6.7. Project Timelines

A general expected timeline of the Project is given in **Annexure 15**. The Bidder should provide a detailed Project Plan for development and implementation of the data lake including all the Use Cases mentioned in **Section 6.5** – Functional Requirements. The project plan should be comprehensive, visual (e.g., Gantt chart), show all task dependencies and subsequently trackable.

6.8. Software & Hardware Procurement

The Bidder will be completely responsible for supply, installation, configuration, customization and maintenance of the complete Data Lake Solution for the period of the contract. The Bank at a later date will not make any additional payments for the solution provided by the Bidder. Any assumption made for hardware sizing, solution sizing or bandwidth would be the complete responsibility of the Bidder. The Bank at a later date will not accept any plea from the Bidder with respect to the assumptions made by them.

The Bidder needs to provide the details separately in their respective sections as per the format given in Annexure 2 – Bill of Materials.
The Bank will accept standard tools to establish features and functionalities for state-of-art technology to be used to get best performance. The products offered should have comparability in their performance, features and functionalities.

The Bidder shall provide enterprise-wide usage licenses for all software / tools without any limitation to number of named/concurrent users, processing capability or any other component etc. The Bidder should propose and use standard and time tested tools. The successful bidder is required to propose the details of the requirements of the hardware.

Procurement of hardware will be done as per the following overall guidelines. Software / solution vendor needs to recommend year-wise hardware configuration required:

- Bidder should follow the general principle of on-demand expansion of the BDL, with a minimum 1 year horizon, for both PR and DR sites. However, once the initial Production BDL (PR) is setup, no additional hardware should be required for it before the UAT / go live is completed.
- Development and UAT clusters should be set up fully initially.
- Bidder should demonstrate functional DR solution in the presentation for Data Lake. However, in addition to that they can demonstrate solution for having 100% DR for which Bank may take a decision in future if the solution is viable.
- The BDL should be fully scalable. Adding capacity should have only beneficial impact, and no detrimental impact whatsoever on the existing lake, data, applications or jobs

6.9. Implementation Approach

Delivery of the complete Data Lake Solution at the Bank will involve delivery of all the high-level requirements, technical requirements and the Use Cases defined in Section 6.

The following sub-sections provide a high level indicative approach that may be adopted for the delivery of each of the phases of the Data Lake solution at the Bank.

1) Engage
2) Enable
3) Execute

4) Empower
5) Evangelize

6.9.1. Engage

The vendor should focus on following areas and outcomes in this phase

6.9.1.1. Business Understanding

Some of the tasks that can be part of this phase but is not limited to are:

- Understand the business and technical landscape of the project
- Identify the stakeholders and finalize the RACI Matrix
- Facilitate joint workshops and meetings with business and other relevant stakeholders to have a functional understanding of the Use Cases
- Vendor should also walk the SBI team through their SDLC lifecycle and deliverables expected

6.9.1.2. Data Understanding

The activities of the Data Understanding Phase will include the following:

Facilitate workshops with IT to identify the Source Systems from where data will be pulled into the Data Lake.

6.9.1.3. Infrastructure setup

Setup DATA LAKE on the commodity hardware with all the software and applications required for an optimized cluster capable of supporting all the requirements and use cases defined.

6.9.1.4. Data Acquisition

The primary step of the Data Acquisition step is to identify the data to acquire and when to acquire based on the question to be answered. The Bidder need to find out the various available data sets and making decisions about the one which are required to meet the requirements of the Use Case. The sources can be logs from web servers, social media data, data from various internal and external sources etc.

At the end of this phase vendor should provide the following

- A detailed project plan for phase wise execution of the project
- Finalize the deliverables from the vendor
- High level design document for the system/solution be deployed
- A RACI matrix with all the stakeholders involved
- DATA LAKE cluster setup completed and optimized for performance
- Detailed installation guide

6.9.2. Enable

This phase should allow the teams to work with data on DATA LAKE

6.9.2.1. Data Ingestion

This stage will be involving the following steps

1) Develop data pipelines for one time historical data ingestion from DWH into DATA LAKE in to the required schemas.

2) Data pipelines from DWH to DATA LAKE for incremental data that will be coming to DWH via ingestion/updates. These pipelines will replicate incremental data onto DATA LAKE
3) Data pipelines for new sources identified for ingestion to DATA LAKE
4) Reconciliation of data between
    - DWH and DATA LAKE
    - New source and DATA LAKE

6.9.2.2. Data Preparation and Data Wrangling

This step involves identification of the various data quality issues and cleaning/reformatting the data by manually editing it or writing code. This step can be used to find the problems with the data acquisition process, what assumptions can be made and what models can be applied to produce the results. Data can be converted to JSON or any other format.

Exploratory data analysis is a key step as summarization of the clean data can help identify outliers, anomalies and patterns that can be usable in the subsequent steps.

Any new source identified for ingestion will have specific ELT/ETL routines designed as per the business logic needed.

At end of this stage all the reports and jobs will be migrated to Data Lake to generate all kind of existing repots and extracts from Data Lake. However, DATA LAKE will run in parallel to DWH.

6.9.2.3. Governance & Metadata Management

Complete solution of governance and metadata management implemented to organize, monitor and track data sets, user roles and access defined. Required security and privacy policies defined. Setting up of security and compliance reports.

6.9.2.4. Use Case Implementation

6.9.3. Execute

As all the required data is now available in the cluster in the required format, it is an ideal situation to execute use cases identified at the Bank and validate the data for downstream consumption is in valid form

6.9.3.1. Data Federation

Data federation solution need to be implemented by implementing Data virtualisation layer.

6.9.3.2. DR setup

DR site should be up and running the stipulated RTO. Mock trial should be run and confirmed that the required DR SLA's are met.

6.9.3.3. Downstream Reporting

Complete the necessary integration and changes to ensure the successful migration for approx. 500 cognos reports from DWH to DATA LAKE and validate the accuracy of the reports

6.9.3.4. Integration with other applications of the Bank

The Data Lake solution needs to have seamless integration with all the applications currently used at the Bank. The bidder is expected to provide an approach on how solution will integrate with existing/upcoming applications up-stream and downstream.

6.9.4. Empower

DATA LAKE is opened for select number of users in the respective departments to start using DATA LAKE to perform the below activities.

6.9.4.1. Data Discovery

Subject matter experts/Data Scientists/Marketing heads can now use the data in DATA LAKE (previously unavailable to them) In addition to delivery of the defined Use Cases, to discover hidden patterns and trends and derive new insights for the business.

6.9.4.2. Hypothesis and Modelling

This step involves writing, running and refining the programs to analyze and derive meaningful insights from data. Machine Learning techniques may be applied to the data to identify the machine learning model that best fits the business needs. All the contending machine learning models are trained with the training data sets.

6.9.4.3. Evaluation & Interpretation

This step involves evaluation of different evaluation metrics to measure the performance of the machine learning model. The models are measured and compared using validation and test sets to identify the best model based on model accuracy and over-fitting.

6.9.4.4. Deployment

Models will be deployed in the test environment before actually they are deployed to production.

6.9.5. Evangelize

6.9.5.1. Optimization

The final step involves retraining the machine learning model in production whenever there are new data sources coming in or taking necessary steps to keep up with the performance of the machine learning model.

6.9.5.2. Operations/Maintenance

This step involves developing a plan for monitoring and maintaining the Data Lake project in the long run. The model performance and performance downgrade will be monitored in this step.

This step will also include provision of support for any problems reported and resolution of issues.

6.9.5.3. DATA LAKE for Daily Activities

DATA LAKE is opened for all the users to perform their daily activities. All downstream reports and data requirements are full-filled by DATA LAKE. Any new source required will be configured to DATA LAKE. DATA LAKE will serve as one true source for all data and decision can be taken to sunset DWH in future.

6.9.5.4. Use Case Implementation

Vendor's implementation approach should consider the below expectations

- The proposed DATA LAKE setup infrastructure is expected to be in place within three months from the date of acceptance of PO for implementing first Use Case. All existing data / schemas from Data Warehouse (DWH) will be moved to DATA LAKE setup such that DATA LAKE setup will always be superset of DWH till DWH exists in parallel. End of completion of this task will be construed as commencement of DATA LAKE operations.
- Minimum two use cases must be implemented within 5 month from the date of PO.
- DATA LAKE setup is proposed to have landing and staging layer and hence will support data ingest from all Source Systems. However, data ingestion from new Source Systems for new data requirement will be added directly to DATA LAKE whereas DWH will keep ingesting data from existing Source Systems, the way it is working now, till we move all source data ingestion to DATA LAKE setup.
- Vendor requires to migrate all jobs and reports of Data Lake within 8 months from the release of PO so that all types of extracts and reports could be generated from Data Lake as we propose to offload old data more than two years old from DWH to Data Lake.
- All 5 use cases should be implemented within 10 months from the date of PO.
- Vendor requires to migrate all existing source data ingestion including migration of related ETL jobs from DWH to DATA LAKE platform within 9 months from the commencement of DATA LAKE operations.

The above steps are indicative steps in the implementation approach.
The Bidder should provide a detailed implementation approach and detailed description for all the parameters mentioned below:

a) Project requirement assessment, System integration and Customization requirements, testing, deployment, warranty & maintenance, post implementation support

b) SLA management methodology, SLA monitoring console for PMU

c) Highlight the associated risks/problems and plans for mitigation and explain the technical approach it would adopt to address them

d) Methodology for integration with Bank's other modules

e) Planning and Building infrastructure (assessment, design, integration/migration of existing Portal infrastructure)

f) Data Centre hosting detailed architecture of hardware, software including virtualizations, scaling mechanism, BCP, security and network access.

The Bidder should also indicate how they plans to achieve the following:

- On-time delivery without hold-ups

- Collaboration with various stakeholders

Integration of the Data Lake solution with the other existing solutions of the Bank.

6.10. Testing (System Integration Testing & User Acceptance Testing) & Rollout

The Vendor should integrate the software with the existing systems as per requirement of the Bank and carry out thorough system integration testing.

System integration testing will be followed by user acceptance testing, plan for which has to be submitted by the Vendor to the Bank. The UAT includes functional tests, resilience tests, benchmark comparisons, operational tests, load tests etc. SBI staff / third Party Vendor designated by the Bank will carry out the functional testing. This staff / third party vendor will need necessary on-site training for the purpose and should be provided by the Vendor. Vendor should carry out other testing like resiliency/benchmarking/load etc. Vendor should submit result log for all testing to the Bank.

On satisfactory completion of the aforementioned tests, the User Acceptance Test (UAT) letter will be issued to the vendor by the competent authority on the line of **Annexure 27**.

6.10.1. Testing Strategy

The Bank will be outsourcing the testing to its third-party testing provider to carry out the acceptance tests for testing of software, hardware and peripherals, system software, network equipment, if any, other equipment and other IT infrastructure and solution supplied by the Bidder as a part of the Data Lake Solution. The Bidder shall assist SBI in all acceptance tests to be carried out by SBI.
The bidder needs to perform unit testing, system testing and integration testing. The Bidder should provide human resources (at-least 3-4 people) to assist the Bank's third party testing provider (Employed or engaged by the bank) to help execute UAT. The Bidder should also provide desired inputs and outputs for different sub-systems in the BDL. The bidder should provide the bank / testing partner with sample test cases to facilitate a smooth execution of UAT.

The Bidder shall follow the following steps for all packaged applications delivered to meet the scope of work. The Testing overall includes two types of deliverables

1. Testing prepackaged/preconfigured deliverables include packaged analytical applications, etc. The testing steps for this follow the following activities:
    a) Base testing
    b) Gap analysis to gaps

c) Customization process
d) Pre-UAT
e) Deployment
f) Acceptance

2. Testing of developed deliverables for Data Ingestion, Data Storage, Data Transformation and Analytics, Data quality, data discovery, data access, Metadata management scripts, Data governance workflow scripts, security and accessibility scripts, backup and archival scripts and any additional scripts required to meet the requirements for the Data Lake Solution. The acceptance testing of developed deliverables follow the following 3 steps after successful completion of all testing processes namely unit testing, Integration testing and system testing before getting ready for this Pre-UAT
   a) Pre-UAT
   b) Deployment
   c) Acceptance

   Bidder should be responsible for preparing test data, test plan, test cases, solution document, test strategy and also assist Bank for the User Acceptance testing to be done by the external agency proposed by the Bank. These documents will be reviewed by SBI and any suggestions /changes are to be made by the Bidder. The successful completion of testing includes meeting the expected results in all the test cases and satisfying all the requirements of SBI.

   The Bidder will be responsible for maintaining appropriate program change control and version control for all the modifications / enhancements carried out during the implementation / testing phases.

   The Bidder will be responsible for providing and updating system & user documentation as per the modifications.

   In all cases, the Bidder shall have the sole responsibility for bearing all additional charges, costs or expenses incurred in correcting, reworking or repairing the defective or non-conforming software, unless such failure is due to reasons entirely attributable to SBI.

   The Bidder shall prepare and plan the Acceptance testing methodology, which at the minimum include test cases, test data, test strategy, which shall be reviewed by SBI. SBI after review may suggest changes for incorporating in the testing methodology.

   The Bidder shall provide resources for testing. The bidder must indicate the minimum number of resources that he will provide for

testing and such resources should be available till completion of the project.

6.10.2. Delivering Base Version

- The Bidder shall first deliver the base version of the Data Lake Solution and the Bidder will assist the Bank to conduct a preliminary test to ascertain the extent to which the software has met business requirements as furnished in the RFP for delivery of the Use Cases.

- The testing also includes testing to ascertain whether the response time, the bandwidth usage & performance of the application software are as per the expectations of the Bank.

6.10.3. Identifying GAPS

- The Bank and the Bidder shall proceed to arrive at Gaps and the customization required meeting all the requirements of the Bank.
- The Bidder should create a GAP analysis document and deliver to the Bank. The Bank shall review and propose any changes or modifications. The Bidder and the Bank shall agree on the changes before the document can be signed off by the Bank. Once the document is signed off the Bidder can proceed making the customization as laid out in the document.

6.10.4. Customization process

- The Bidder shall ensure that the software provided as a part of the Data Lake Solution meets all the requirements described in detail in this RFP and to carry out all such customization or development work as may be required by the Bank within the total cost proposed by the Bidder.
- The Bidder shall provide all the Use Cases as per the requirements of the Bank. The precise scope of the customization and development work to be undertaken by the Bidder shall be as per the requirements of the Bank as described in the above-mentioned Appendices or Annexure.
- The Bidder shall carry out all the customization related work at the Project Office of the Bank or offsite in case the customization cannot be carried out at the Bank premises.
- The Bank shall be a party to the Functional Specifications requirement sign-off, Installation sign-off, Implementation sign-off, User acceptance test and User acceptance test sign-off.
- The Bidder shall install and commission the software for customization and User Acceptance Test as per Project Plan to be agreed with the Bank failing which the Bidder shall be liable to pay the Bank penalty to be defined as per this RFP.

- The Bidder shall provide all tools, testing instruments, drivers, consumables, etc. required to install and customize and test the software free of any fees or charges or any expenses.
- The Bidder shall document and submit to the Bank all the testing activities, procedures and results.
- The Bidder shall be required to ensure that the software provides interfaces to the other application systems at the Bank as specified in Annexure 16: Sourcing Application Details.
- The Bidder shall provide the Bank weekly progress report on the bugs/problems reported/points taken up with schedule of date of reporting, date of resolving, and status for all kind of bugs and problems whether reported by branch// Head Office or SI staff. In case of disputes relating to resolution of problem relating to any site, the SI is required to send the copy of call report pertaining to each visit of each of the engineer to the said site indicating the purpose of call, when called, when visited, when problem was resolved, how resolved, etc.

6.10.5. Pre – User Acceptance Test

- The Bidder after customizing software as per Gap analysis will deliver the customized software to the Bank for conducting pre – User Acceptance Test in a Non-production environment.
- Acceptance testing shall broadly cover the testing of the Data Ingestion tools, Data Access and Analytics tools, ETL / ELT tools and all such other applications and tools to verify the Data Lake Solution conformity with the functional & technical requirements and the Gap analysis Report, Bandwidth and response time.

6.10.6. Acceptance testing

- During the testing, the Bank will notify the Bidder at regular intervals the Bugs/findings in writing.
- The Bidder shall fix the Bugs and carry out the necessary rectifications wherever necessary and deliver patches/version towards changes effected. The Bank shall test patches / version to ascertain the changes made, bugs fixed and to ensure that there is no regression in the software.
- The Bank shall accept the solution software only after the critical or major bugs are fixed, which is then ready for Production implementation.
- All the testing will be carried out with the resources provided by the Bidder.

6.10.7. Production Implementation

- The Bank or an external testing agency shall carry out verification and validation in production.

- 30 days after successful conclusion of the deployment into the Production environment or after fixing the critical or major bugs whichever is later, the Data Lake Solution shall be accepted by the Bank.
- In the event the solution provided by the Bidder does not meet the acceptance test and criteria, the Bidder would at the discretion of the Bank have to re-perform the services to the satisfaction of the Bank. Non-adherence to the acceptance criteria may result in termination.

6.10.8. Completeness of the Project

- The project will be deemed as completed only after the project scope and requirements are met in full and the Data Lake Solution meets all technical specifications and delivers all the requirements, as per the terms of the RFP.
- The project will be deemed incomplete when the mutually agreed acceptance and completion criteria are incomplete or not met or not fulfilled. The Bank reserves the sole right to accept or reject the acceptance of any product / service in the event the agreed acceptance and completion criteria are not met.

6.11. Training

The Bidder will be responsible for training SBI's employees in the areas of implementation, operations, management, error handling, system administration etc. The Training should at least cover but not limited to the following Areas:

- Functionality available in the solution
- Customization development
- Parameterization
- Data Ingestion Techniques
- Impact analysis
- Auditing techniques
- Advanced User Training
- Advanced trouble shooting techniques
- Deployment if various products/packages as part of the solution
- Techniques of generating various reports from the solution provided
- Advanced trouble shooting techniques
- Deployment of various products / packages as part of the solution
- Development and deployment of new products using the proposed solution
- Using of all the auditing tools being provided
- System and Application administration at branches
- Incidence analysis and reporting
- Backup administration guide
- Archival & Purging – Implementation and Maintenance Guide

The Bank will be responsible for identifying the appropriate personnel for all the training requirements. The Bidder will impart training to all the necessary users on the Data Lake Solution. The Bidder must ensure that proficient personnel conduct the training at the training centres to be identified by the bidder in Mumbai. There

will be no cost payable by SBI for the application, database and operating system software installation at such training sites / centres. The training hardware at the data Centre should at a minimum support 25 concurrent users. The Bidder will be responsible for providing the users with the requisite training material in both hard and soft copies for the core team/implementation training, technical training, end-user training and train the trainers. The onus of preparing the training material will be on the Bidder. The Bidder should provide training to personnel identified by SBI on functional and technical details of the Data Lake Solution. The Bidder should also provide the following trainings:

- Core Technical Training
- End User Training
- Top Management/Executive Training
- Train the Trainers

Training should include training aids such as online tutorials, hard copies/books and soft copies of the manuals, etc.

6.12. Phase-wise Deliverables

The list of deliverables at various phases will include the following:

Name of the Phase	Deliverables
Analysis	Functional Analysis Document Business Requirements Document Gap analysis Document
Design	Design Document
Development	Development standards Document
Testing	Testing Strategy Document Test Cases UAT sign-off documents

6.13. CV Requirements

The vendor should provide Team CVs with relevant experience and who can work on the implementation of the Data Lake for SBI.

The vendor team needs to possess deep and relevant subject matter knowledge in the business areas outlined in the scope section, hands-on experience and documentable Data Analytics experience based on the Hadoop platform.

The vendor should have at least 200 resources on its rolls across areas like Analytics, Data Sciences and Data warehouse / Data Lake Implementation.

The following will be evaluated positively for each individual resource and for the entire team:

- Level of seniority and dedication to the project
- The degree of hands-on experience and operational experience from relevant projects, which ideally cover business challenges similar to what the Bank faces
- Ability to create business value in a complex organizational context
- Completeness of the team and cultural fit

Also, vendors are advised to focus on strong CVs in the following areas who have experience in Banking domain.

- Engagement Management
- Data Scientists
- Big Data Architect
- Data Modeller
- BI Visualization Expert
- Banking Subject Matter Expert – Retail Banking
- Banking Subject Matter Expert – Corporate Banking
- Banking Subject Matter Expert – Regulatory requirements & compliance
- Banking Subject Matter Expert – Payments
- Banking Subject Matter Expert – Risk Management

The vendors should only include CV's of consultants who will be part of the proposed on-site team and form project governance team.

7. Bidding Document

7.1. Cost of bidding

The participating Bidders shall bear all the costs associated with or relating to the preparation and submission of their Bids including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstration or presentations which may be required by the Bank or any other costs incurred in connection with or relating to their Bid. The Bank shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder regardless of the conduct or outcome of the bidding process.

7.2. Clarification and amendments on RFP/ Pre-Bid Meeting

i. Bidder requiring any clarification of the bidding Document may notify the Bank in writing **strictly as per the format given in Annexure 20**at the address/by e-mail given in this document within the date/time mentioned in the schedule of events.

ii. A pre-Bid meeting will be held on the date and time specified in the schedule of events which may be attended by the authorized representatives of the Bidders interested to respond to this RFP.

iii. The queries received (without identifying source of query) and response of the Bank thereof will be posted on the Bank's website or conveyed to the Bidders.

iv. SBI reserves the right to amend, rescind or reissue the RFP, at any time prior to the deadline for submission of Bids. The Bank, for any reason, whether, on its own initiative or in response to a clarification requested by a prospective Bidder, may modify the bidding Document, by amendment which will be made available to the Bidders by way of corrigendum/addendum. The interested parties/Bidders are advised to check the Bank's website regularly till the date of submission of Bid document specified in the schedule of events/email and ensure that clarifications / amendments issued by the Bank, if any, have been taken into consideration before submitting the Bid. Such amendments/clarifications, if any, issued by the Bank will be binding on the participating Bidders. Bank will not take any responsibility for any such omissions by the Bidder. SBI, at its own discretion, may extend the deadline for submission of Bids in order to allow prospective Bidders a reasonable time to prepare the Bid, for taking the amendment into account. Nothing in this RFP or any addenda/corrigenda or clarifications issued in connection thereto is intended to relieve Bidders from forming their own opinions and conclusions in respect of the matters addresses in this RFP or any addenda/corrigenda or clarifications issued in connection thereto.

v. No request for change in commercial/legal terms and conditions, other than what has been mentioned in the RFP or any addenda/corrigenda or clarifications issued in connection thereto, will be entertained and queries in this regard, therefore will not be entertained.

vi. Queries received after the scheduled date and time will not be responded/acted upon.

7.3. Contents of bid documents

i. The Bidder must thoroughly study/analyze and properly understand the contents of this RFP document, its meaning and impact of the information contained therein.

ii. Failure to furnish all information required in the bidding document or submission of Bid not responsive to the bidding documents in any respect will be at the Bidder's risk and responsibility and the same may finally result in rejection of its Bid. SBI has made considerable effort to ensure that accurate information is contained in this RFP and is supplied solely as guidelines for Bidders.

iii. Nothing in this RFP or any addenda/corrigenda or clarifications issued in connection thereto, is intended to relieve Bidders from forming their own opinions and conclusions in respect of the matters contained in RFP and its addenda, if any.

iv. The Bid prepared by the Bidder, as well as all correspondences and documents relating to the Bid exchanged by the Bidder and the Bank and supporting documents and printed literature shall be submitted in English.

v. The information provided by the Bidders in response to this RFP will become the property of SBI and will not be returned. Incomplete information in Bid document may lead to non-consideration of the proposal.

7.4. Bidding Process/Opening of Technical Bids:

i. All the technical Bids received up to the specified time and date will be opened for initial evaluation on the time and date mentioned in the schedule of events available in this document. The technical Bids will be opened in the presence of representatives of the Bidders who choose to attend the same. However, Bids may be opened even in the absence of representatives of one or more of the Bidders.

ii. In the first stage, only technical Bid will be opened and evaluated. Proposals of such Bidders satisfying eligibility criteria and agree to comply with all the terms and conditions specified in the RFP will be evaluated for technical criteria/specifications/eligibility. Only those Bids complied with technical criteria shall become eligible for commercial Bid opening and further RFP evaluation process.

iii. The Bank will examine the Bids to determine whether they are complete, required formats have been furnished, the documents have been properly signed, EMD for the desired amount and validity period is available and the Bids are generally in order. The Bank may, at its discretion waive any minor non-conformity or irregularity in a Bid which does not constitute a material deviation.

iv. Prior to the detailed evaluation, the Bank will determine the responsiveness of each Bid to the bidding Document. For purposes of these Clauses, a responsive Bid is one, which conforms to all the terms and conditions of the bidding Document in toto, without any deviation.

v. The Bank's determination of a Bid's responsiveness will be based on the contents of the Bid itself, without recourse to extrinsic evidence.

vi. After opening of the technical Bids and preliminary evaluation, some or all the Bidders may be asked to make presentations on the Software Solution/service proposed to be offered by them.

vii. If a Bid is not responsive, it will be rejected by the Bank and will not subsequently be made responsive by the Bidder by correction of the non-conformity.

7.5. Technical Evaluation:

i. Technical evaluation will include technical information submitted as per technical Bid format, demonstration of proposed Software Solution/services,

reference calls or site visits, wherever required. The Bidder may highlight the noteworthy/superior features of their Software Solution/ services. The Bidder will demonstrate/substantiate all claims made in the technical Bid to the satisfaction of the Bank, the capability of the Software Solution/ services to support all the required functionalities at their cost in their lab or those at other organizations where similar Software Solution/ services is in use.

ii. During evaluation and comparison of Bids, the Bank may, at its discretion ask the Bidders for clarification on the Bids received. The request for clarification shall be in writing and no change in prices or substance of the Bid shall be sought, offered or permitted. No post Bid clarification at the initiative of the Bidder shall be entertained.

v. The evaluation will also take into account:

a. Software Solution/ services offered by the Bidder to any noticeable bank in India. The Bidder should furnish the details.
b. Does the proposed Software Solution handles the projected volumes and offers a proven solution to meet the requirements
c. Does the Software Solution offered by the Bidder is a complete system as a project and has not integrated with third party solutions.
d. Upgradation (s) assurance by the Bidder as per requirement of the Bank for the duration of the project. In case of upgradations, the Bank will have right to renegotiate the rates (depending upon prevailing rates) and go in for higher configurations (as per technological developments at that time)
e. Capability of the proposed solution to meet future requirements outlined in the RFP.
f. Support on open platforms and solution based on latest technology (both software and hardware).
g. Bidder support facilities: Support requirement like online support/ email support/ offline support, time period
h. Bidder will support the Bank as required in peak days of business (month-end and start of the month) and during switching over process from PR to DR and vice versa.

7.6. Evaluation of Price Bids and Finalization:

i. The envelope containing the Commercial Bids of only those Bidders, who are short-listed after technical evaluation, would be opened.

ii. All the Bidders who qualify in the evaluation process shall have to participate in the online reverse auction to be conducted by Bank's authorized service provider on behalf of the Bank, details of which are given in this RFP document.

iii. Shortlisted Bidders shall be willing to participate in the reverse auction process and must have a valid digital signature certificate. Such Bidders will be trained by Bank's authorized service provider for this purpose. Bidders shall also be willing to abide by the e-business rules for reverse auction framed by the Bank

/ Authorised service provider. The details of e-business rules, processes and procedures will be provided to the short-listed Bidders.

iv. The L1 bidder will be selected on the basis of lowest price quoted in the Reverse Auction process.

v. The successful Bidder is required to provide price confirmation and price breakup strictly on the lines of **Annexure 2a** within 48 hours of conclusion of the Reverse Auction, failing which Bank may take appropriate action.

vi. Errors, if any, in the price breakup format will be rectified as under:

(a) If there is a discrepancy between the unit price and total price which is obtained by multiplying the unit price with quantity, the unit price shall prevail and the total price shall be corrected unless it is a lower figure. If the Bidder does not accept the correction of errors, the Bid will be rejected.

(b) If there is a discrepancy in the unit price quoted in figures and words, the unit price in figures or in words, as the case may be, which corresponds to the total Bid price for the Bid shall be taken as correct.

(c) If the vendor has not worked out the total Bid price or the total Bid price does not correspond to the unit price quoted either in words or figures, the unit price quoted in words shall be taken as correct.

(d) The Bidder should quote for all the items/services desired in this RFP. In case, prices are not quoted by any Bidder for any specific product and / or service, for the purpose of evaluation, the highest of the prices quoted by other Bidders participating in the bidding process will be reckoned as the notional price for that service, for that Bidder. However, if selected, at the time of award of Contract, the lowest of the price(s) quoted by other Bidders (whose Price Bids are also opened) for that service will be reckoned. This shall be binding on all the Bidders. However, the Bank reserves the right to reject all such incomplete Bids.

7.7. Bid preparation and submission

i. The Bid is to be submitted in two separate envelopes. One of the envelope is to be prominently marked as '**Technical Proposal for supply of _____ in response to the RFP No: SBI/GITC/IDSPM/2017/2018/411 Dated: 09/08/2017_____.** This envelope should contain following

documents and **properly sealed**:

(a) Bid covering letter/Bid form on the lines of **Annexure-1** on Bidder's letter head.
(b) Earnest Money Deposit (EMD) as specified in this document.
(c) A letter on Bidder's letter head: -
  (i) Mentioning details of EMD submitted, technical competence and experience of the Bidder
  (ii) Certifying that the period of the validity of the Bid is as per terms of this RFP.
  (iii) Confirming that the Bidder has quoted for all the items/services mentioned in this RFP in their commercial Bid.
  (iv) Confirming that they agree with all the terms and conditions mentioned in the RFP.

  (v) Specific response with supporting documents in respect of Eligibility Criteria as mentioned in **Annexure 29and technical eligibility criteria on the lines of Annexure 12 and Annexure 13.**

(d) Bidder's details as per **Annexure 6** on Bidder's letter head.
(e) Bidder should provide licensing details of Software / Database / Middleware / Operating System / Third Party Software etc
(f) Any deviations sought from technical criteria/specifications given in RFP.
(g) Audited balance sheets and profit and loss account statement for last three years

(h) A copy of board resolution or power of attorney showing that the signatory has been duly authorized to sign the Bid document.
(i) Detailed explanation of functioning of Software Solution.

ii. A second sealed envelope prominently marked as **Indicative Price Proposal for supply of _____ in response to the RFP No: SBI/GITC/IDSPM/2017/2018/411 Dated: 09/08/2017.This envelope should contain <u>only indicative price Bid</u> strictly on the lines of Annexure 24**. The Indicative Price must include all the price components mentioned. Prices are to be quoted in <u>Indian Rupees</u> only.

iii. Bidders may please note:

a. The Bidder should quote for the entire package on a single responsibility basis for Software Solution/ services it proposes to supply.

b. A soft copy (Word format) on a CD should also be kept in a separate envelope within the envelope of technical Bid. Voluminous documents should be submitted only on CDs.

c. While submitting the Technical Bid, literature on the Software Solution/ service should be segregated and kept together in one section / lot in a separate envelope.

d. Care should be taken that the Technical Bid shall not contain any price information. Such proposal, if received, will be rejected.

e. The Bid document shall be complete in accordance with various clauses of the RFP document or any addenda/corrigenda or clarifications issued in connection thereto, duly signed by the authorized representative of the Bidder and stamped with the official stamp of the Bidder. Board resolution authorizing representative to Bid and make commitments on behalf of the Bidder is to be attached.

f. Bids are liable to be rejected if only one (i.e. Technical Bid or Indicative Price Bid) is received.

g. Prices quoted by the Bidder shall remain fixed for the period specified in this document and shall not be subjected to variation on any account, including exchange rate fluctuations and custom duty. **A Bid submitted with an adjustable price quotation will be treated as non-responsive and will be rejected.**

h. If deemed necessary the Bank may seek clarifications on any aspect from the Bidder. However that would not entitle the Bidder to change or cause any change in the substances of the Bid already submitted or the price quoted.

i. The Bidder may also be asked to give presentation for the purpose of clarification of the Bid.

j. The Bidder must provide specific and factual replies to the points raised in the RFP.

k. The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract.

l. All the enclosures (Bid submission) shall be serially numbered with rubber stamp of the participating Bidder. The person or persons signing the Bids shall initial all pages of the Bids, except for un-amended printed literature.

m. Any inter-lineation, erasures or overwriting shall be valid **only** if they are initialed by the person signing the Bids.

n. The Bid document shall be spirally bound.

o. The Bank reserves the right to reject Bids not conforming to above.

p. The two NON-WINDOW envelopes shall be put together and sealed in an outer NON-WINDOW envelope.

q. All the envelopes shall be addressed to the Bank and deliver at the address given in this RFP and should have name and address of the Bidder on the cover.

r. If the envelope is not sealed and marked, the Bank will assume no responsibility for the Bid's misplacement or its premature opening.

The technical bid should consist of the following:

i. Earnest Money Deposit as specified in this document
ii. Bid covering letter/Bid form on the lines of **Annexure-1**on bidder's letter head mentioning
   a) Details of EMD submitted, technical competence and experience of the bidder
   b) Certifying that the period of the validity of the bid is 180 days from the target date of submission of bid
   c) Confirming that the bidder has quoted for all the items/services mentioned in the bid in their commercial bid
   d) Confirming that they agree with all the terms and conditions mentioned in the RFP
   e) Specific response with Supporting documents in respect of Eligibility Criteria as mentioned in **Annexure 29, Annexure 12 & Annexure 13.**
iii. Bidders information as per **Annexure 6** on bidder's letter head.
iv. Audited balance sheets and profit and loss account statement for last 3 years
v. A copy of board resolution or power of attorney showing that the signatory has been duly authorized to sign the tender document.
vi. Bidder should provide detail explanation of functioning of Software / Hardware / Firmware / Network / Database / Middleware / Third Party software etc
vii. Bidder should provide detail requirements of software, hardware, network bandwidth etc\
viii. Bidder should provide licensing details of Software / Database / Middleware / Operating System / Third Party Software / firmware etc
ix. Response to all points of the Technical evaluation format as per **Annexure 12 and Annexure 29.**

1) Bidder should submit indicative commercial bid as per **Annexure 13** of the bid document. Indicative Commercial bid should comprise of one hard copy and one soft copy (Word/Excel format). Hard copy of commercial bid should be a complete document and placed in a sealed envelope super-scribed as "INDICATIVE COMMERCIAL BID". The soft copy of the commercial bid should be submitted on a CD sealed in an envelope marked as "SOFT COPY OF INDICATIVE COMMERCIAL BID". These two sealed envelopes should be placed in a single sealed envelope super scribed as "Indicative Commercial bid for _____".

2) The bids should be submitted in 2 separate envelopes one for Technical Bid (super scribed as "Technical bid for _____") and other for Commercial Bid (super scribed as "Indicative Commercial bid for _____".

7.8. Bid Currency

Prices shall be expressed in Indian National Rupees only.

7.9. Bid Prices

The prices should be specified only in "Indicative Commercial Bid" and must not be specified at any other place in the bid document. The quotes prices and taxes, duties & statutory levies such as Service Tax, VAT/Sales Tax, Octroi, NMMC cess etc should be specified separately.

Note: If any taxes to be paid by the Bank, same should be mentioned explicitly

7.10. Revealing of Prices

The rates and/ or prices in any form or for any reasons should not be disclosed in the technical or other parts of the bid except in the commercial bid, failure to do so make the bid liable to be rejected. Before opening of commercial bid, if price revision is envisaged by the bank, revised commercial bid may be required to be submitted in a separate sealed envelope.

7.11. Pre-Bid Meeting

SBI may, at its sole discretion, organise a pre-bid meeting, to resolve any queries, bidder may have. Any further information will be provided to all bidders on SBI website as corrigendum. *Any clarification on queries raised by bidder in case of Limited Tender Enquiry (LTE) or Open Tender Enquiry (OTE) will be provided to the bidders in writing or will be published on SBI's website as corrigendum.* The exact date, time and location of the pre-bid meeting will be communicated to each bidder through SBI website.

7.12. Period of Validity of bids

a. Bids shall remain valid for 180 days from the date of reverse auction. A Bid valid for a shorter period is liable to be rejected by the Bank as non-responsive.

b. In exceptional circumstances, the Bank may solicit the Bidders' consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A Bidder is free to refuse the request. However, in such case, the Bank will not forfeit its EMD. However, any extension of validity of Bids will not entitle the Bidder to revise/modify the Bid document.

c. The Bank reserves the right to call for fresh quotes at any time during the Bid validity period, if considered, necessary.

7.13. Late submission of bids

Any bid received by the Bank after target date and time prescribed at Schedule of Events will be rejected and /or returned unopened to the bidder at his risk and responsibility

7.14. Bid integrity

Wilful misrepresentation of any fact within the Bid will lead to the cancellation of the contract without prejudice to other actions that the Bank may take. All the submissions, including any accompanying documents, will become property of SBI. The Bidders shall be deemed to license, and grant all rights to SBI, to reproduce the whole or any portion of their product for the purpose of evaluation, to disclose the contents of submission to other Bidders and to disclose and/ or use the contents of submission as the basis for RFP process.

7.15. Format and Signing of Bid

1) The bidder should prepare submission as per minimum eligibility criteria, Technical Bid, Indicative Commercial Bid and other requested information.

2) All pages of the Bid document should be serially numbered and shall be signed by the authorized person(s) only. The person(s) signing the bid shall sign all pages of the bid and rubber stamp should be affixed on each page except for an un-amended printed literature. The bidder should submit a copy of board resolution or power of attorney showing that the signatory has been duly authorized to sign the tender document.

3) Any interlineations, erasures or overwriting shall be valid only if the person(s) signing the bid sign(s) them.

4) In case of any discrepancies between hard and soft copy, the hard copy will be considered as base document.

5) Bid should be typed and submitted on A4 size paper *[font times new roman 12]*, spirally bound securely and in serial order. Bidders responding to this RFP shall submit covering letter included with the bid and compliance certification statement required for submission of a proposal.

7.16. Deadline for submission of bids

The bid should be addressed to State Bank of India at following address up to the time and date mentioned at 1. **Schedule of Events**:

Address:
IDSPM Department
State Bank of India
4th Floor, Tower-4, Belapur Railway Station Complex,
Secto-11, CBD belapur,
Navi Mumbai – 400614
Maharashtra

In the event of the target date for the receipt of bids being declared as holiday for the Bank, the bids will be received till the target time on the next working day.

The Bank may at its discretion extend the bid submission date. The modified target date & time will be notified on the web site of the Bank. The bids shall be

submitted by the time and date rescheduled. All rights and obligations of the Bank and bidders will remain the same.

Any Bid received after the deadline for submission of Bids prescribed, will be rejected and returned unopened to the bidder.

7.17. Modification and withdrawal of bids

a. The Bidder may modify or withdraw its Bid after the Bid's submission, provided that written notice of the modification, including substitution or withdrawal of the Bids, is received by the Bank, prior to the deadline prescribed for submission of Bids.

b. A withdrawal notice may also be sent by Fax, but followed by a signed confirmation copy, not later than the deadline for submission of Bids.

c. No modification in the Bid shall be allowed, after the deadline for submission of Bids.

d. No Bid shall be withdrawn in the interval between the deadline for submission of Bids and the expiration of the period of Bid validity specified by the Bidder on the Bid Form. Withdrawal of a Bid during this interval may result in the forfeiture of EMD submitted by the Bidder

e. Withdrawn Bids, if any, will be returned unopened to the Bidders.

8. Opening and evaluation of bids

8.1. Opening of bids

The responses to the RFP will be opened in the presence of the Bidders' authorized representatives who choose to attend the meeting on the specified date and time at the venue as mentioned under the clause Schedule of Events. The Bidders' representatives must carry an authorization letter for Technical Bid opening.

8.2. Objective of Evaluation Process

The bids will be evaluated by SBI to determine if they are complete, in proper order and if they are adhered to all the terms and conditions mentioned in the Schedule of Events.

A bid not meeting the pre-requisite criteria, will be rejected and the decision will be solely based on SBI's discretion. SBI may waive any minor deviation in the bid submission process which does not have any material impact on the overall evaluation process.

The objective of the evaluation process is to evaluate the bids so as to select a capable and best fit Bidder at a competitive price. The evaluation will be undertaken by a Committee constituted by the Bank. The decision of the Bank shall be considered final.

For the purpose of the evaluation and selection of Bidder, a three-phase bidding process will be followed as mentioned below:

- **Phase 1 –** Eligibility Criteria Evaluation
- **Phase 2 –** Technical Bid Evaluation
- **Phase 3 –** Commercial Bid Evaluation

In the first phase, Bidders will be evaluated based on the Eligibility Criteria provided in Section 2 – **Annexure 29** of this document.

In the second phase, only the 'Technical Bids' of those bidders will be evaluated who have been shortlisted after satisfying eligibility criteria. All technical bids will be evaluated and a technical score would be arrived at. Bidder needs to get minimum 80% marks in technical evaluation to qualify for the next stage of selection to participate in the reverse commercial auction process.

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The Technical Bid shall NOT contain any pricing or commercial information at all and if the Technical Bid contains any price related information, then that Technical Bid would be disqualified and would NOT be processed further.

In the third phase, the Commercial Bids of only those bidders shall be evaluated who have qualified in the technical evaluation. The remaining commercial bids, if any, shall not be opened.

L1 bidder will be selected based on lowest quote by the bidder in the reverse auction process.

SBI may call for any clarifications/additional particulars required, if any, on the eligibility requirements/technical/ commercial bids submitted. The Bidder has to submit the clarifications/ additional particulars in writing within the specified date and time.

The Bidder's offer may be disqualified, if the clarifications/ additional particulars sought by the Bank are not submitted within the specified date and time.

8.3. Phase 1 - Eligibility Criteria Evaluation

Bidders need to comply with all the eligibility criteria mentioned in **Annexure 29** of this document. Non-compliance by the bidders to any of these criteria shall result in outright rejection of the Bidder's proposal. The Bidder is expected to provide proof for each of the points for eligibility evaluation. The proof provided has to be in line with the details mentioned in **Section 2**.

There will be no scoring involved in the Eligibility Bid evaluation.

The decision of the Bank would be final and binding on all the bidders to this document. The Bank may accept or reject an offer without assigning any reason what so ever.

The EMD DD or Bank Guarantee of the non-qualified Bidder(s) will be returned post completion of Phase 1 evaluation.

The technical and commercial bid documents of the non-qualified Bidder(s) will be retained by the Bank.

8.4. Phase 2 - Technical Evaluation

The scoring methodology for technical bid components is explained in the following sections. The evaluation parameters are defined below.

Sl.No.	Parameters
1	Functional & Technical features evaluation of solution as stated in sections 6.4, 6.5, 6.6, Annexure 3 and Annexure 4
2	Bidder's experience & capabilities:
3	Proposed solution
4	Site Visits/Reference calls for verifying use case implementation Feedback • Excellent • Good • Average
5	Technical Presentation for the proposed solution

Based on the scoring stipulated in above table, bidders complying with the following would be considered for Commercial Bid Evaluation Process:

- Bidders achieving the minimum passing mark (80%) by each individual evaluation parameter from Sr. No.1 (one) to 5 (five). ***And***
- Bidders scoring a minimum of 80% average score based on the detailed evaluation in Technical Proposal Evaluation.

In the event that none of the bidders qualify, then Bank, at its discretion, may choose to select three bidders who have achieved the top three scores to qualify for the next phase. The decision of the Bank shall be final and binding in that regard. The Technical evaluation shall comprise of areas mentioned as follows:

Sl. No.	Technical Evaluation	Evaluation Approach
1	**Functional and Technical evaluation of DATA LAKE solution as stated in section 6.4,6.5,6.6 Annexure 3 and 4**	• The Bidder is required to submit the compliance to Functional and Technical features evaluation of DATA LAKE solution as stated in section 6.4, 6.5, 6.6, Annexure 3 and 4. Note: • Deviations and non-conformance to requirements in the RFP shall be penalized • Bidder should ensure that they score minimum marks Functional & Technical evaluation of DATA LAKE solution; any critical noncompliance may lead to disqualification. • For Functional Specifications: The Bidder may get 1 mark for compliance, 0.5 for partial compliance where customisation is required and 0 for non-compliance. • For Technical Specification- The Bidder may get 1 mark for compliance, 0.5 for partial compliance where customisation is required and 0 for non-compliance. • Unreasonable scope limitations which defeat the purpose of this RFP shall lead to reduction in scores or even possibility of disqualification of the bidder. This will be at the sole discretion of the Bank. • The bidder may highlight the noteworthy/superior features of their solution. The bidder will demonstrate/substantiate all claims made in the technical bid to the satisfaction of the Bank, the capability of the solution to support all the required functionalities at their cost in their lab or those at other organizations where similar solution is in use. • The Bank reserves the right to evaluate the bids on technical & functional parameters including factory/workplace visit and witness demos of the system and verify functionalities, response times, etc • Bank will evaluate the technical and functional specifications of all the equipment's quoted by the Bidder. • During evaluation and comparison of bids, the Bank may, at its discretion ask the bidders for clarification on the bids received. The request for clarification shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. No post bid clarification at the initiative of the bidder shall be entertained. • The evaluation will also take into account: ▪ The solution to be supplied/services offered by the bidder to any noticeable Bank in India. The bidder should furnish the details.

Sl. No.	Technical Evaluation	Evaluation Approach
		▪ Does the proposed product handles the projected volumes and offers a proven solution to meet the requirements. ▪ Is the product offered by the Bidder a complete system or does it have integrations with third party solutions. ▪ Upgrade(s)(software/hardware) assurance by the bidder as per requirements of the Bank for the duration of the project. ▪ Capability of the proposed product to meet future requirements outlined in the RFP. ▪ Support on open platforms and product based on latest technology (both hardware, operating software/firmware). ▪ Bidder support facilities: Support requirement like online support/ email support/ offline support, time period ▪ Bidder will support the Bank as required in peak days of business (month-end and start of the month) and during switching over process from PR to DR and vice versa.
2	**Bidder's experience & capabilities**	• Prime Bidder should have implemented a Data Lake in any large Bank in India or abroad. The said bank should have a minimum Business turnover/ Business Mix (Advances + Deposits) of INR 1, 00, 000 crores or implemented in telecom company with turnover of 5000 crores or more. or • Prime Bidder should have implemented a Data Lake for a large Insurance company (general or life) in India or abroad with turnover of INR 100000 crores or more. *or* • Prime Bidder or the Consulting partner should have implemented Big data analytics/use cases in a Large Bank or a Payment Service Provider in India or abroad with turnover of INR 100000 crores or more. Copy of the Credential Letter or Copy of Purchase order or Email Confirmation from the client's executive or an Undertaking from the bidder on the bidder's letter head confirming the implementation along with the contact details of client's representative Further Bank may at its discretion ask for site visit or verification of details.

Sl. No.	Technical Evaluation	Evaluation Approach

3	**Proposed Solution**	• The Bank will scope the proposed solution based on the following parameters:
		  • The technical and functional capabilities of the solution
		  • The use cases proposed by the bidders and its relevance for the Bank
		  • Proposed Architecture
		  • Ease of integration, scalability and adherence to leading industry practises.
		  • Project Management & Governance Framework

4	**Site Visits/Reference call for verification of use case implementation**	The Prime Bidder is required to take the Bank's representative for a reference site visit to showcase the Data Lake implementation and showcase the use case implementation or arrange for reference calls. Bank may take a decision on site visit or video conferencing or email conversation or telephone calls or combination of these for getting feedback from the client. The feedback from the client and Bank's committee judgement of implementation success will decide the marks to be awarded to the bidders.
5	**Technical Presentation for the proposed solution**	• Understanding of Bank's business and Operating environment • Demonstration of organization capability for the proposed initiative, proposed solution architecture and sizing • Service Model demonstration and project management and governance capabilities • Demonstration of value proposition offered in the bid which shall enable the success of the project. • Use cases and Case studies

The bidder's scoring the minimum threshold stated in this section will be declared technically qualified and will be eligible for next stage of evaluation.

Note:

1. Bank's decision in respect to evaluation methodology and short-listing Bidders will be final and no claims whatsoever in this respect will be entertained.
2. The Bank reserves the right to change/relax the criteria for evaluation at its sole discretion.

8.5. Phase 3 - Commercial Evaluation

Commercial Bids of only technically qualified Bidders will be opened. The Commercial Bids of the short-listed bidders after Technical evaluation stage would be opened in the presence of the bidders or their authorized

representatives who desire to be present not exceeding one person. Bank will conduct a reverse auction for determining the final commercials.

The commercial bid evaluation will be carried out through an online reverse auction process. The bidders will be asked to submit revised quotes that are lower than the starting price. Based on the commercial bid values obtained at the end of the reverse auction process, final commercials of the bidders will be determined.

Complete details for participation in the reverse auction process shall be shared with the technically qualified bidders.

Bank will notify the name of the Successful Bidder.

Commercial bid valuation shall be considered as below in case of any kind of discrepancy:

- If there is a discrepancy between words and figures, the amount in words shall prevail
- If there is a discrepancy between percentage and amount, the amount calculated as per the stipulated percentage basis shall prevail
- If there is discrepancy between unit price and total price, the unit price shall prevail
- If there is a discrepancy in the total, the correct total shall be arrived at by Bank
- In case the bidder does not accept the correction of the errors as stated above, the bid shall be rejected.
- At the sole discretion and determination of the Bank, the Bank may add any other relevant criteria for evaluating the proposals received in response to this RFP.
- Bank may, at its sole discretion, decide to seek more information from the respondents in order to normalize the bids. However, respondents will be notified separately, if such normalization exercise as part of the technical evaluation is resorted to.
- All liability related to non-compliance of this Minimum Wages Requirement and any other law will be responsibility of the bidder.
- The Bank shall not incur any liability to the affected Bidder on account of such rejection.
- The Bidder whose technical and commercial Bid is accepted will be referred to as “Selected Bidder” and the Bank will notify the same to the Selected Bidder.
- The Selected bidder shall provide revised TCO and the revised break-up of the cost items post reverse auction
- The final decision on the vendor will be taken by the Bank. The implementation of the project will commence upon successful negotiation of

a contract between the Bank and the selected bidder based on the Techno – Commercial evaluation.

- If for some reason, negotiations with the successful bidder fails to result in an agreement within a specified timeline, the Bank reserves the right to award the contract to the next most eligible bidder (L2) ranking in the commercial reverse auction process.
- Errors, if any, in the price breakup format will be rectified as under:

(e) If there is a discrepancy between the unit price and total price which is obtained by multiplying the unit price with quantity, the unit price shall prevail and the total price shall be corrected unless it is a lower figure. If the bidder does not accept the correction of errors, the bid will be rejected.

(f) If there is a discrepancy in the unit price quoted in figures and words, the unit price in figures or in words, as the case may be, which corresponds to the total bid price for the bid shall be taken as correct.

(g) If the vendor has not worked out the total bid price or the total bid price does not correspond to the unit price quoted either in words or figures, the unit price quoted in words shall be taken as correct.

(h) The Bidder should quote for all the items/services desired in this RFP. In case, prices are not quoted by any Bidder for any specific product and / or service, for the purpose of evaluation, the highest of the prices quoted by other Bidders participating in the bidding process will be reckoned as the notional price for that service, for that Bidder. However, if selected, at the time of award of Contract, the lowest of the price(s) quoted by other Bidders (whose Price Bids are also opened) for that service will be reckoned. This shall be binding on all the Bidders. However, the Bank reserves the right to reject all such incomplete bids

8.6. Contacting the Bank

i. No Bidder shall contact the Bank on any matter relating to its Bid, from the time of opening of Price Bid to the time, the Contract is awarded.

ii. Any effort by a Bidder to influence the Bank in its decisions on Bid evaluation, Bid comparison or contract award may result in the rejection of the Bidder's Bid.

8.7. Award and signing of contract

i. Bank will notify successful Bidder ***L1*** in writing by letter or fax/email that its Bid has been accepted. The Selected Bidder has to return the duplicate copy of the same to the Bank within ***7*** **working days**, duly Accepted, Stamped and Signed by Authorized Signatory in token of acceptance.

ii. The successful Bidder will have to submit Non-disclosure Agreement (wherever applicable), Performance Bank Guarantee for the amount and validity as

desired in this document and strictly on the lines of format given at **Annexure 8 & Annexure 10** respectively of this document together with acceptance of all terms and conditions of RFP.

iii. Copy of board resolution or power of attorney showing that the signatory has been duly authorized to sign the acceptance letter, contract and NDA should be submitted.

iv. The notification of award will constitute the formation of the Contract.

v. The successful Bidder shall be required to enter into a contract/ SLA with the Bank, within 30 days of award of the tender or within such extended period as may be decided by the Bank.

vi. Until the execution of a formal contract, the Bid document, together with the Bank's notification of award and the vendor's acceptance thereof, would constitute a binding contract between the Bank and the successful Bidder.

vii. The contract/ agreement will be based on Bidder's offer document with all its enclosures, modifications arising out of negotiation /clarifications etc and will include SLA, project plan – phases & milestones and schedule, copies of all necessary documents, licenses, certifications etc

viii. The Bank reserves the right to stipulate, at the time of finalization of the contract, any other document(s) to be enclosed as a part of the final contract.

ix. Failure of the successful Bidder to comply with the requirements/terms and conditions of this RFP shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD and/or PBG.

x. Upon notification of award to the L1 Bidder, the Bank will promptly notify the award of contract to the successful Bidder on the Bank's website. The EMD of each unsuccessful Bidder will be discharged and returned.

9. Payment Terms and Implementation Schedule

9.1. Data Lake Software and Implementation

The Payment will be made on the achievement of the milestones mentioned as under:

Milestone	Implementation fee for respective phases (%)
Payment of Software	
Phase 1-After successful setup of Data Lake cluster with all the components becomes functional and migration of full data from DWH to Data Lake and after implementation of atleast one use case plus after submission of BG for 10% amount	50%
Phase 2- After implementation of two use cases	10%
Phase 3 - After successful migration of all jobs for generating extracts and reports from Data Lake	10%
Phase 4 - After successful implementation of remaining use cases	15%
Phase 5 - After migration of all data sourcing from DWH to Data Lake i.e. Go live.	15%
Implementation Charges	
Phase 1 – Optimized DATA LAKE Set up complete (Migration of full data including all schemas from DWH to Data Lake and integration of Data Lake with DWH and implementation of atleast one use case)	30%
Phase 2 – After successful implementation of two Use Cases	25%
Phase 3 - After successful migration of all jobs for generating extracts and reports from Data Lake	15%
Phase 4 - After successful implementation of remaining use cases	15%
Phase 5 - After migration of all data sourcing from DWH to Data Lake i.e. Go live.	15%

Refer **Annexure 15** for Implementation Schedule and Timelines for L1 Vendor

9.2. ATS

The payment of ATS shall be made on annual basis in advance. However, the first the ATS and support services cost shall be paid after successful completion of stabilization phase (Phase -1 i.e. Set up of Data Lake and migration of data from DWH to Data Lake), subject to satisfactory services rendered, till that date. In case of delayed delivery or incomplete delivery, the date of receipt of the complete and final component as per the Software Requirement Specifications shall be treated as delivery date.

9.3. Training Costs

100% of the payment for the training costs will be borne by vendor.

9.4. Other Payment Terms

1 At all times Bank, would be paying only for the services/ application modules utilized by the Bank or deployed in production. At no point, Bank would pay for the services/ modules that is not deployed for the Bank's use.

2 Also, the payments for each quarter (as applicable) will be made only after the acceptance of the milestones and relevant activities/ deliverables for that quarter. Any delay in achievement of the milestones or deliverables will result in further delay of the payment.

3 The Bidder recognizes that all payments to the bidder under this RFP and subsequent agreement are linked to and dependent on successful achievement and acceptance of milestones/ deliverables/ activities set out in the project plan and therefore any delay in achievement of such milestones/ deliverables/ activities shall automatically result in delay of such corresponding payment.

4 Bidders have to provide the prices for implementation across all the offices. TCO will be calculated as the summation of the grand total of the price bid and all the items mentioned as additional items.

5 The reasons like non-familiarity with the site conditions and/or existing IT infrastructure will not be considered as a reason for any delay or extra claims whatsoever.

6 The fees payable by the Bank to bidder shall be inclusive of all costs such as insurance, taxes (including service tax, as per the rates applicable), custom duties, levies, cess, transportation, installation, (collectively referred to as "Taxes") that may be levied, imposed, charged or incurred and the Bank shall pay the fees due under this RFP and subsequent agreement after deducting any tax deductible at source ("TDS"), as applicable. The bidder will need to provide the details for the tax rates as considered in the pricing. This will be used for subsequent tax changes. The Bank shall pay each undisputed invoice raised in accordance with this RFP and subsequent agreement, within 30 working days after its receipt unless otherwise mutually agreed in writing, provided that such invoice is dated after such Fees have become due and payable under this RFP and subsequent agreement.

7 The price would be inclusive of all applicable taxes under the Indian law like customs duty, excise duty, import taxes, freight, forwarding, insurance, delivery, etc. but exclusive of only applicable Service Tax, VAT/GST and Octroi / Entry Tax /equivalent local authority cess, which shall be paid / reimbursed on actual basis on production of bills. Any increase in these taxes will be paid in actuals by the Bank or any new tax introduced by the government will also be paid by the Bank the entire benefits / advantages, arising out of fall in prices, taxes, duties or any other reason, must be passed on to Bank. The price quoted by the bidder should not change due to exchange rate fluctuations, inflation, market

conditions, increase in custom duty or excise tax. The Bank will not pay any out of pocket expense. No escalation in price quoted is permitted for any reason whatsoever. Prices quoted must be firm till the completion of the contract.

8 Any objection/ dispute to the amounts invoiced in the bill shall be raised by the Bank within reasonable time from the date of receipt of the invoice. Upon settlement of disputes with respect to any disputed invoice(s), the Bank will make payment within reasonable time after the settlement of such disputes. All out of pocket expenses, travelling, boarding and lodging expenses for the entire Term of this RFP and subsequent agreement is included in the amounts and the Bidder shall not be entitled to charge any additional costs on account of any items or services or by way of any out of pocket expenses, including travel, boarding and lodging etc.

9 All the payments will be made as per the milestones agreed in this RFP document

10 Vendor evaluation POC will not have separate payment

11 Bank will pay only for the bidder and Bank will not incur any additional license or actual costs

10. Post Implementation Support Requirements

Bidder should provide qualified and experienced resources to work on-site during the contract period for:

- L-1 (24hr*7days) - L1 support team(s) comprising of minimum 7 associates per shift should be able to handle basic troubleshooting and resolving the issues.
- L-2(8hr*6days) to Support Application Management - L2 team comprising of minimum 5 associates should be able to solve ~99.9% of issues. L2 team(s) are expected to fully handle all major issues concerning the BDL
- L3 - L3 team should be available for critical issues that imply design changes
- Out of the team comprises of L1 & L2 members, bidder should provide minimum 1 Data Scientists, 1 Data Modeller, 1 Big data engineer, and 2 Developers for 8hr * 6 days support and 3 Hadoop cluster administrators for providing support 24x7.

  Above resources are required to implement the minimum 12 use cases per year, sourcing of data from new source system and for interfacing with new upstream/downstream applications. Bank reserves right to increase or decrease this requirement.

Bidder would play a critical role in on-going support. Replacement of a resource under unavoidable circumstances needs to be intimated to Bank in advance and the replaced resource should be equally or more qualified and experienced.

The Bidder will be single point of contact and responsible for **ATS (Software, Daily Operations support)** warrantees for all, components, software, customizations etc. While bidding for providing Post Implementation support services, the application proposed by the Bidder by way of this RFP should come with warranty as provided by the OEM. Thereafter, the Bidder should provide ATS for **the period of the contract (5 years). This includes support during implementation phase and post Go-Live - which also includes**

daily operational support during BDL in production. Daily operational support expenses will be paid yearly in advance post implementation. The bidder needs to mention:

a) Number of people involved for support

b) Application Maintenance Support (AMS) cost for Software

ATC should include AMS cost of Software for 5 years which will be paid yearly in advance from the date of project Go-Live.

Also, the post implementation support should be carried out from the Bank's premises. The bidder must note that the managed services as a part of post implementation should be available for all environments viz. production, development and test.

Bidders must note that any Warranty pertaining to Software Application that extends beyond the contract period due to the Software Application supply towards the terminal years of the contract must be provided and supported by the Bidder without any additional cost to the Bank.

Working Day: A working day would be any day when any branch / office of the Bank is functioning.

T&M costing: - This will be applicable for Maintenance task(s). The bidder should provide a clear AMC and ATS work definition. The prices should be quoted for L1 and L2 resources. The number of resources under each L1 and L2 should be specified. The price(s) for L1 and L2 positions are fixed and consistent for the period of execution.

a) Warranties pertaining to Software / Applications starts post final acceptance of deliverables, with the period of warranty as one year
b) During Post implementation period, Bidder will be responsible for:

   i. Overall maintenance and working of the application
   ii. Bug fixing and delivery of patches/ version changes effected
   iii. Enhancement, modifications, customization, patches, upgrades due to statutory, regulatory, industry, Bank specific changes (including installation of new upgrades)
   iv. Configuration changes, version up-gradations, performance monitoring, trouble shooting, patch installation, running of batch processes, replacement / support, application and data maintenance, taking backup of the application as required, recovery, query generation and management etc. of all software supplied under this RFP document.
   v. Immediate bug fixing should be undertaken in the event of software failure causing an interruption of operation of the Data Lake as per the response / resolution times defined by Bank. In case of any software failure, the solution should continue to function seamlessly.

vi. All the detected software errors must be notified and corrected, as per the agreed timelines
vii. Support the Bank in integrating any new applications to the Data Lake and provide support in extending the model and creating analytics / reports from the same
viii. Provide Bank with daily performance monitoring reports and alert the Bank in case of any performance issues by suggesting future capacity planning
ix. Provide BCP/DR procedures and conduct DR drills in conjunction with the Bank's policies/procedures.
x. Switching to the DR site in case of system failure
xi. Service records must be maintained and tracked for software support, which will be reviewed monthly by the Bank.

c) The bidder must note that Help Desk Requirements (services) should be available for all environments viz. production, development, test and training.
d) L1, L2, L3 and Data Scientist Support to cover the following activities:

i. Level 1 (L1) Support – 24hrs*7days onsite support required

Role	• Serve as IT Service desk front-end for all users • Provide services request sorting, information and non-functional information, ticket routing
Issues addressed by L1	• Business application related issues/queries • Queries related to business process, reports generation, presentation layer applications, etc. • Enterprise application (In-Scope), Operating System (Windows, Linux & Unix), Printing, Generic IT Queries • Other environmental software related to the proposed application
L1 staff responsibility	• Assessment in case of specific rights assignment • Provision for assigning user rights only for certain fixed period • Creation or modification of user profiles • Periodic user right monitoring (at known frequency) must be specified and implemented • Categorization of requests into functional clarification, bug or change request • Functional clarification/ work around to be provided by Level 1 support itself • Logging bug and reporting for further processing • Provide telephonic and/ or electronic mechanisms for problem reporting requests and for service and status updates • Bidder should have ability to generate MIS reports periodically on performance of the system for example: Volume of calls / per day, resolution % per day, throughput, uptime etc

Bidder's responsibility	• Provide for localized L1 helpdesk at the Bank premises • Provide for L1 support for all activities and services that are part of scope
Bank's role	• Provide 1 supervisor and/or 1 support personnel • Can increase or decrease the number of seats at L1 helpdesk depending on its requirements • Can change the locations of helpdesks at its discretion

ii. Level 2 (L2) & Level 3 (L3) Support –8hrs*6days onsite support required. However L2, L3 support should be present 24*7 On-Call to handle any critical situations.

Role	• Should cover entire management and support of all the proposed application • To act upon the tickets routed from Level 1 • To address issues/queries related to the proposed solutions • To assess cause of the issue and accordingly resolve the same within the timelines • Track problems from initial call to restore to service
L2 staff responsibility	• Troubleshoot any query processing, online processing or batch processing activity at various levels in the proposed solution • Resolve the call within stipulated timeframe as defined in SLA by coordinating with the L1, L2 and L3 teams if required. • Escalation process should be in place for unresolved issues as per escalation matrix • Automatically log in calls during escalation • Provide the timeframe for providing a solution of resolution of the escalated calls • Decide on preventive maintenance schedule with the Bank • Prepare a root cause analysis document with the resolutions provided for major issues such as: Production issues, Problems resulting in complete service disruptions or downtime, Delayed response times, Data /table corruptions, etc. • Application presentation layer support • Support and maintain all interfaces to the proposed solution and other solutions part of this scope document • Modifications to existing scripts, reports • Present to Bank management on critical issues reported, resolved, solution provided and suggest

	recommendations or leading practices as and when asked by the Bank or on a monthly basis, whichever is earlier • Perform performance tuning of the application including database tuning • Perform the application audit on a half yearly basis • Rectify any corruption in the software application • Ensure patch releases are ported to the production environment with no business disruption or business losses • Support quarterly BCP/DR drills • Provide application support from the Bank's data centre as mentioned above for the DC or DR site • Routing the transactions through the backup system in case the primary system fails • Support for integrating any applications that need to be interfaced with the proposed Data Lake Application in the future
Bidder's responsibility	• Deploy L2 service desk agents at DC/DRC (If Bank plan to setup DR in future) premise from where Level 2 support is planned to be provided • Make sure that proficient and professional personnel are put to handle L2 support • Resolutions should be provided on a proactive basis • Ensure that the minimum operational support staff forL2 has onsite support experience in relevant areas and the number of shifts that they need to work • The on-site engineers are expected to provide following services: Configuration changes, version up-gradations, performance monitoring, trouble shooting, patch installation, running of batch processes, and liaison with OEM for various support issues, taking periodic backup of the database, query generation, SCD implementation etc.

iii. Data Scientist Support –

Role	• Advocate, evangelize and build data-fuelled insights and provide insight into leading analytic practices, design • Work with cross-functional team members to identify and prioritize actionable, high-impact insights across a variety of core business areas.

	• Research, design, implement and validate cutting-edge algorithms to analyze diverse sources of data to achieve targeted outcomes. • Provide expertise on mathematical concepts for the broader applied analytics team and inspire the adoption of advanced analytics and data science across the entire breadth of the bank
Data Scientist staff responsibility	• Identifies unique opportunities to collect new data. •Designs new processes and builds large, complex data sets. •Strategizes new uses for data and its interaction with data design. •Locates new data sources, analyzes statistics and implements quality procedures. •Performs data studies of new and diverse data sources. •Finds new uses for existing data sources. •Conducts statistical modelling and experiment design. •Discovers “stories” told by the data and presents them to other scientists and business managers. •Tests and validates predictive models. •Builds web prototypes and performs data visualization. •Conducts scalable data research on and off the cloud. •Implements automated processes for efficiently producing scale models. •Designs, modifies and builds new data processes. •Generates algorithms and creates computer models. •Collaborates with database engineers and other scientists. •Implements new or enhanced software designed to access and handle data more efficiently. •Trains the data management team on new or updated procedures.
Bidder’s responsibility	• Provide onsite Data Scientists. • Proposed Data Scientists should have a Ph.D. or Master’s Degree in operations research, applied statistics, data mining, machine learning, physics or a related quantitative discipline • Have a deep understanding of statistical and predictive modelling concepts, machine-learning

	approaches, clustering and classification techniques, and recommendation and optimization algorithms.

e) Pertaining to Application Management, Bidder will be responsible for:

i. Installation, configuration and Un-installation of application
ii. Processing Change request
iii. Bug fixing
iv. Vulnerability Assessment
v. Data Migration and Uploading
vi. Application code migration to new environment
vii. Incident and problem management
viii. 24*7 Performance Monitoring & Management of application
ix. Application Patch management and version control
x. Functional DR setup creation and DR management including DR synchronization, DR drill, etc.
xi. Perform quarterly DC – DR drills. Participate in DR Drill conducted by other departments.
xii. Managing capacity
xiii. Deploying objects in Application server
xiv. Troubleshooting Application server product related issues and Patch Management
xv. Configure, start, stop and manage Application Server services
xvi. Configure and manage HTTP
xvii. Configure and use monitoring tools provided for Application Server
xviii. Backup & restoration management of application server (Backup should be encrypted)
xix. Performance management
xx. Vendor management (Logging a call with product Vendor)
xxi. Version migration, testing and implementation
xxii. File Level Backup for Application Server
xxiii. Support to known errors and problems
xxiv. Monitor web /Application server availability
xxv. Monitor alert notifications, checking for impending problems, triggering appropriate actions.

11. Terms & Conditions

11.1. Subcontracting

i. As per scope of the RFP, subcontracting is prohibited. However, if the Bidder subsequently wishes to sub-contract the scope of work, it will have to obtain specific written permission from the Bank before contracting any work to subcontractors. Bank at its own discretion may permit or deny the same.

ii. In case subcontracting is permitted by the Bank, the contracting vendor will be responsible for all the services provided to the Bank regardless of which entity is conducting the operations. The contracting vendor is also responsible for ensuring that the sub-contractor comply with all security requirements of the contract and the Bank can obtain independent audit report for the same. In such a case, the Bidder shall provide subcontracting details to the Bank and if require, Bank may evaluate the same.

11.2. Patent Rights/Intellectual Property Rights

i. For any licensed software used by the finally selected L1 Vendor for performing services or developing software for the Bank, the Vendor shall have the right as well as the right to license for the outsourced services or third party software development. Any license or IPR violation on the part of Vendor/ Subcontractor should not put the Bank at risk. The Bank reserves the right to audit the license usage of the Vendor.

ii. The Vendor shall, at its own expenses without any limitation, defend and indemnify the Bank against all third party claims or infringements of Intellectual Property Rights including patent, trademark, copyright, trade secret or industrial design rights arising from use of the products or any part thereof in India or abroad. In case of violation/ infringement of patent/ trademark/ copyright/ trade secrete or industrial design, the supplier shall after due inspection and testing get the solution redesigned for the Bank, at no extra cost.

iii. The Vendor shall expeditiously extinguish any such claims and shall have full rights to defend itself there from. If the Bank is required to pay compensation to a third party resulting from such infringement(s), the Vendor shall be fully responsible therefore, including all expenses and court and legal fees.

iv. The Bank will give notice to the Vendor of any such claim without delay, provide reasonable assistance to the Vendor in disposing of the claim, and shall at no time admit to any liability for or express any intent to settle the claim.

v. The Vendor shall grant the Bank a fully paid-up, irrevocable, non-exclusive, unlimited, perpetual license throughout the territory of India or abroad to access, replicate and use proprietary software provided by the Vendor, including all inventions, designs and marks embodied therein perpetually. The source code / object code / executable code and compilation procedures of the Software Solution should be placed under an Escrow arrangement. All necessary documentation in this behalf should be made available to the Bank.

In case of Escrow arrangement, complete details and the location and the terms and conditions applicable for escrow must be specified. Any update or upgrade to source code should be informed and brought under Escrow or made available to the Bank.

The source code /object code /executable code and compilation procedures of the supported open source software Solution made under this agreement are the proprietary property of the Bank and as such the vendor shall make them available to the Bank after successful User Acceptance Testing. Vendor agrees that the Bank owns the entire right, title and interest to any inventions, designs, discoveries, writings and works of authorship, including all Intellectual Property Rights, copyrights. Any work made under this agreement shall be deemed to be 'work made for hire' under any Indian/U.S. or any other applicable copyright laws.

11.3. Power to vary or omit work

i. No alterations, amendments, omissions, additions, suspensions or variations of the work (hereinafter referred to as variation) under the contract shall be made by the successful Bidder except as directed in writing by Bank. The Bank shall have full powers, subject to the provision herein after contained, from time to time during the execution of the contract, by notice in writing to instruct the successful Bidder to make any variation without prejudice to the contract. The finally selected Bidder shall carry out such variation and be bound by the same conditions as far as applicable as though the said variations occurred in the contract documents. If any, suggested variations would, in the opinion of the finally selected Bidder, if carried out, prevent him from fulfilling any of his obligations under the contract, he shall notify Bank thereof in writing with reasons for holding such opinion and Bank shall instruct the successful Bidder to make such other modified variation without prejudice to the contract. The finally selected Bidder shall carry out such variation and be bound by the same conditions as far as applicable as though the said variations occurred in the contract documents. If the Bank confirms its instructions, the successful Bidder's obligations shall be modified to such an extent as may be mutually agreed, if such variation is substantial and involves considerable extra cost. Any agreed difference in cost occasioned by such variation shall be added to or deducted from the contract price as the case may be.

ii. In any case in which the successful Bidder has received instructions from the Bank as to the requirements for carrying out the altered or additional substituted work which either then or later on, will in the opinion of the finally selected Bidders, involve a claim for additional payments, such additional payments shall be mutually agreed in line with the terms and conditions of the order.

iii. If any change in the work is likely to result in reduction in cost, the parties shall agree in writing so as to the extent of change in contract price, before the finally selected Bidder(s) proceeds with the change. In all the above cases, in the event of a disagreement as to the reasonableness of the said sum, the decision of the Bank shall prevail.

11.4. No waiver of Bank rights or successful bidder's liability

Neither any sign-off, nor any payment by the Bank for acceptance of the whole or any part of the work, nor any extension of time, nor any possession taken by the Bank shall affect or prejudice the rights of Bank against the finally selected Bidder(s), or relieve the finally selected Bidder(s) of his obligations for the due performance of the contract, or be interpreted as approval of the work done, or create liability in the Bank to pay for alterations/ amendments/ variations, or discharge the liability of the successful Bidder(s) for the payment of damages whether due, ascertained, or certified or not or any sum against the payment of which he is bound to indemnify the Bank nor shall any such certificate nor the acceptance by him of any such amount paid on account or otherwise affect or prejudice the rights of the successful Bidder against Bank.

11.5. Change in order

i. The Bank may, at any time, by a written order given to the Vendor, make changes within the general scope of the Contract in any one or more of the following:

a) Method of shipment or packing;
b) Place of delivery;
c) Quantities to be supplied subject to 25% above or below the originally declared quantities.

ii. If any such change causes an increase or decrease in the cost of, or the time required for the Vendor's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Vendor for adjustment under this clause must be asserted within 15 days from the date of Vendor's receipt of Bank's change order.

11.6. Contract amendment

No variation in or modification of the terms of the Contract shall be made, except by written amendment, signed by the parties.

11.7. Inspection, Quality Control Tests

i. The Bank reserves the right to carry out pre-shipment factory / godown inspection by a team of Bank officials or demand a demonstration of the product on a representative model at Bidder's place.

ii. The Inspection and Quality Control tests before evaluation, prior to shipment of goods and at the time of final acceptance would be as follows:

a) In the event of the Software Solution failing to pass the acceptance test, as per the specifications given, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Bank reserves the right to cancel the Purchase Order.

b) The inspection and quality control tests may also be conducted at the point of delivery and / or at the goods' final destination. Reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors, at no charge to the Bank. In case of failure by the Vendor to provide necessary facility / equipment at its premises, all the cost of such inspection like travel, boarding, lodging & other incidental expenses of the Bank's representatives to be borne by the Vendor.

c) Nothing stated herein above shall in any way release the Vendor from any warranty or other obligations under this contract.

iii. The Bank's right to inspect, test the product/ solution after delivery of the same to the Bank and where necessary reject the products/solution which does not meet the specification provided by the Bank. This shall in no way be limited or waived by reason of the products/ solution having previously being inspected, tested and passed by the Bank or its representative prior to the products/ solution shipment from the place of origin by the Bank or its representative prior to the installation and commissioning.

Iv. Nothing stated hereinabove shall in any way release the Vendor from any warranty or other obligations under this contract.

v. System integration testing and User Acceptance testing will be carried out as per requirement of the Bank.

11.8. Right to Audit:

i. The Selected Bidder (Service Provider) has to get itself annually audited by internal/ external empanelled Auditors appointed by the Bank/ inspecting official from the Reserve Bank of India or any regulatory authority, covering the risk parameters finalized by the Bank/ such auditors in the areas of products (software and services) etc. provided to the Bank and the Service Provider is required to submit such certification by such Auditors to the Bank. The Service Provider and or his / their outsourced agents / sub – contractors (if allowed by the Bank) shall facilitate the same The Bank can make its expert assessment on the efficiency and effectiveness of the security, control, risk management, governance system and process created by the Service Provider. The Service Provider shall, whenever required by the Auditors, furnish all relevant information, records/data to them. All costs for such audit shall be borne by the Bank.

ii. Where any deficiency has been observed during audit of the Service Provider on the risk parameters finalized by the Bank or in the certification submitted by the Auditors, the Service Provider shall correct/resolve the same at the earliest and shall provide all necessary documents related to resolution thereof and the

auditor shall further certify in respect of resolution of the deficiencies. The resolution provided by the Service Provider shall require to be certified by the Auditors covering the respective risk parameters against which such deficiencies have been observed.

iii. Service Provider shall, whenever required by the Bank, furnish all relevant information, records/data to such auditors and/or inspecting officials of the Bank/Reserve Bank of India and or any regulatory authority. The Bank reserves the right to call and/or retain for any relevant material information /reports including audit or review reports undertaken by the service provider (e.g., financial, internal control and security reviews) and findings made on Selected Bidder in conjunction with the services provided to the Bank.

11.9. Cancellation of contract

The Bank shall have the right to cancel/ terminate the contract with the selected Bidder at any time during the contract period, by giving a written notice of at least 3 (three) months, for any valid reason, including but not limited to the following reasons:

- Laxity in following security standards laid down by the Bank
- Excessive delay in execution of orders placed by the Bank
- Discrepancies / deviations in the agreed processes and/or products
- Violation of terms & conditions stipulated in this RFP
- Services Contemplated are no longer required
- Scope of work were not adequately or clearly defined due to unforeseen circumstance and/or factors and/or new developments
- Proposed prices are unacceptable to the Work
- The Project is not in the best interest of SBI
- Any other reason.
- In the event of failure of the Service Provider to render the Services or in the event of termination of agreement or expiry of term or otherwise, without prejudice to any other right, the Bank at its sole discretion may make alternate arrangement for getting the Services contracted with another vendor. In such case, the Bank shall give prior notice to the existing Service Provider. The existing Service Provider shall continue to provide services as per the terms of contract until a 'New Service Provider' completely takes over the work. During the transition phase, the existing Service Provider shall render all reasonable assistance to the new Service Provider within such period prescribed by the Bank, at no extra cost to the Bank, for ensuring smooth switch over and continuity of services. If existing vendor is breach of this obligation, they shall be liable for paying a penalty of 10% of the total cost of the project on demand to the Bank, which may be settled from the payment of invoices or Performance Bank Guarantee for the contracted period.

11.10. Bank's right to accept any bid and to reject any or all bids

The Bank reserves the right to accept or reject any Bid in part or in full or to cancel the bidding process and reject all Bids at any time prior to contract award, without incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Bank's action.

11.11. Documentary evidence of establishing bidder's eligibility and qualification

Bidders meeting the eligibility criteria specified in **Annexure 29** of this document are eligible to submit the bids along with supporting documents. Non-compliance by the bidders to any of these criteria shall result in outright rejection of the Bidder's proposal. The Bidder is expected to provide proof for each of the points for eligibility evaluation. The proof provided has to be in line with the details mentioned in **Section 2**.

On acceptance of the bid by the Bank, the bidder needs to submit the documentary evidence of their eligibility/qualifications to perform the Contract to the Bank's satisfaction:

that adequate, specialized expertise are available with the bidder to ensure that the services are responsive and the Bidder will assume total responsibility for the fault-free operation of the product proposed and maintenance thereof during the support (warranty/annual maintenance contract, if desired) period.

11.12. Country of origin and eligibility of goods and services

All equipment and components thereof to be supplied under the Contract shall have their origin in eligible source countries, as per the prevailing Import Trade Control Regulations in India.

For purposes of this clause, "origin" means the place where the goods are mined, grown, or manufactured or produced, or the place from which the related product is supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially-recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

11.13. Delivery, installation, commissioning and documentation

i. The Vendor shall provide such packing of the products as is required to prevent its damage or deterioration during transit thereof to the location given by the Bank. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperature, salt and precipitation during transit and open storage. Size and weight of packing cases shall take into consideration, where appropriate, the remoteness of the Products final destination and the absence of heavy handling facilities at all transit points.

ii. Delivery, installation and commissioning of the equipment shall be made by the Vendor in accordance with the system approved / ordered and within the time schedule given in the various sections of this document.

iii. The delivery will be deemed complete when the equipment/ components/ associated software/firmware are received in good working condition at the designated locations, mentioned in this RFP.

iv. The installation will be deemed to be completed, when the product including all the hardware, accessories/components, firmware/system software, and other associated software have been supplied, installed and operationalized as per the technical specifications and all the features as per the technical specifications are demonstrated and implemented as required, on the systems, to the satisfaction of the Bank. The Bidder has to resolve any problem faced during installation and operationalization.

v. In addition, vendor will supply all associated documentation relating to the products, system software/firmware, etc. The product(s) are considered accepted (commissioned and operationalized) after signing the Acceptance Test Plan (ATP) document jointly by the representative of the Bank and the engineer from the vendor on the lines of format/certificate on the lines of **Annexure 27** of this RFP. The component level checking for individual item may be included during the acceptance test. The 'Acceptance Test Plan' document shall be deemed to form a part of the Agreement, to be signed between the vendor and the SBI. On the evaluation of the Acceptance Test results, if required, in view of the performance of the products/services (including components/ software), as observed during the Acceptance Test, the Bidder shall take remedial measures including upgradation of any of the components there under, including replacement thereof, at no additional cost to the Bank within a fortnight from the date of notification of the same to the vendor. The vendor should ensure that the product meets the requirements of the Bank as envisaged in the RFP.

vi. The details of the documents to be furnished by the Vendor are specified hereunder: -

(a) 2 copies of Vendor's Invoice showing contract number, products description, quantity, unit price and total amount.

(b) Delivery Note or acknowledgement of receipt of products from the Consignee or in case of products from abroad, original and two copies of the negotiable clean Airway Bill.

(c) 2 copies of packing list identifying contents of each of the package.

(d) Insurance Certificate.

(e) Manufacturer's / Vendor's warranty certificate.

vii. The above documents shall be received by the Bank before arrival of products (except where it is handed over to the Consignee with all

documents). If these documents are not received, the Vendor will be responsible for any consequent expenses.

viii. Penalties as specified in **Annexure 21a** will be applicable for the any kind of default in delay in delivery, installation/commissioning/support etc. expected in scope of work which will be deducted at the time of making payment(s).

ix. In addition to the penalty on delayed supplies, Bank also reserves the right to cancel the Purchase Order and forfeit the EMD. In the event of such cancellation, the vendor is not entitled to any compensation, whatsoever.

x. For the System & other Software/firmware required with the hardware ordered for or for the solution developed, the following will apply: -

(a) The vendor shall supply standard software/firmware package published by third parties in or out of India in their original publisher-packed status only, and should have procured the same either directly from the publishers or from the publisher's sole authorized representatives only.

(b) The Vendor shall provide complete and legal documentation of all sub systems, licensed operating systems, licensed system software/firmware, licensed utility software and other licensed software. The Vendor shall also provide licensed software for all software/firmware whether developed by them or acquired from others.

(c) There should not be any end user licensing cost. Any licensed software to be used for the DATA LAKE solution should be vendor's responsibility to purchase, integrate and manage. Bank will not be involved with any third party other than the Selected Bidder. Bank will pay only for the bidder and Bank will not incur any additional license or actual costs

(d) In case the Vendor is providing software/firmware which is not its proprietary software then the Vendor must submit evidence in the form of agreement he has entered into with the software/firmware vendor which includes support from the software/firmware vendor for the proposed software for the entire period required by the Bank.

The ownership of the software license shall be that of the Bank from the date of delivery of the same. In other words, wherever the ownership of the licenses is indicated, the name "State Bank of India" must appear to indicate that the Bank is the perpetual owner of the software/license. Evidence to this effect must be submitted before the payment can be released.

11.14. Services

i. All professional services necessary to successfully implement the proposed Software Solution will be part of the RFP/contract. These services include, but are not limited to, Project Management, Training, Deployment methodologies etc

ii. The Bidder should also submit as part of technical Bid an overview of Project Management approach of the proposed product.

iii. Bidder should ensure that vendor's key personnel with relevant skill-sets are available to the Bank.

iv. Bidder should ensure that the quality of methodologies for delivering the services, adhere to quality standards/timelines stipulated there for.

v. Bidder shall be willing to transfer skills to relevant personnel from the Bank, by means of training and documentation.

vi. Bidder shall provide and implement patches/ upgrades/ updates for hardware/ software/ Operating System / Middleware etc as and when released by the Vendor/ OEM or as per requirements of the Bank. Bidder should bring to notice of the Bank all releases/ version changes.

vii. Bidder shall obtain a written permission from the Bank before applying any of the patches/ upgrades/ updates. Bidder has to support older versions of the hardware/ software/ Operating System/Middleware etc in case the Bank chooses not to upgrade to latest version.

viii. Bidder shall provide maintenance support for Software/ Operating System/ Middleware over the entire period of contract.

ix. All product updates, upgrades & patches shall be provided by the Bidder/ Vendor free of cost during warranty and AMC/ ATS/ S&S period.

x. Bidder shall provide legally valid Software Solution. The detailed information on license count and type of license shall also be provided to the Bank.

xi. The Bidder shall keep the Bank explicitly informed the end of support dates on related products/firmware and should ensure support during warranty and AMC/ATS/S&S.

Bidder to note the following:

The Bidder should propose a solution for which OEM End of Sale is not declared within 3 (three) years of signing the contract and End of Support is not declared for the contract period of 5 (five) years. Further, if at any time during the contract period, Bank has to migrate to new Data Lake solution or other solutions of the respective OEMs, the cost towards the migration including licensing cost shall be borne by the Bidder.

- Bidder should provide latest version for all the solution components.

- Bidder should propose all modules of the solution for Data Lake.

The Bidder is required to submit an undertaking to this effect from OEM for the above points.

11.15. Warranty and Annual Maintenance Contract

i. The selected Bidder shall support the Software Solution during the period of warranty and AMC (if included in purchase order) as specified in Scope of work in this RFP from the ***date of acceptance of the Software Solution*** by State Bank of India.

ii. During the warranty and AMC period (if desired), the Bidder will have to undertake comprehensive support of the Software Solution supplied by the Bidder and all new versions, releases, and updates for all standard software to be supplied to the Bank at no additional cost . During the support period, the Bidder shall maintain the Software Solution to comply with parameters defined for acceptance criteria and the Bidder shall be responsible for all costs relating to labour, spares, maintenance (preventive and corrective), compliance of security requirements and transport charges from and to the Site (s) in connection with the repair/ replacement of the Software Solution, which, under normal and proper use and maintenance thereof, proves defective in design, material or workmanship or fails to conform to the specifications, as specified.

iii. During the support period (warranty and AMC, if desired), the vendor shall ensure that services of professionally qualified personnel are available for providing comprehensive on-site maintenance of the Software Solution and its components as per the Bank's requirements. Comprehensive maintenance shall include, among other things, day to day maintenance of the Software Solution as per the Bank's policy, reloading of firmware/software, compliance to security requirements, etc. when required or in the event of system crash/malfunctioning, arranging and configuring facility as per the requirements of the Bank, fine tuning, system monitoring, log maintenance, etc. The Bidder shall provide services of an expert engineer at SBI GITC, Belapur or at other locations wherever required, whenever it is essential. In case of failure of Software Solution, the Bidder shall ensure that Software Solution is made operational to the full satisfaction of the Bank within the given timelines.

iv. Warranty/ AMC (if opted) for the system software/ off-the shelf software will be provided to the Bank as per the general conditions of sale of such software.

v. Support (Warranty/ AMC, if opted) would be on-site and comprehensive in nature and must have back to back support from the OEM/Vendor. The vendor will warrant products against defects arising out of faulty design etc. during the specified support period.

vi. In the event of system break down or failures at any stage, protection available, which would include the following, shall be specified.
   a. Diagnostics for identification of systems failures
   b. Protection of data/ Configuration
   c. Recovery/ restart facility
   d. Backup of system software/ Configuration

vii. Prompt support shall be made available as desired in this RFP during the support period at the locations as and when required by the Bank.

viii. The Bidder shall be agreeable for on-call/on-site support during peak weeks (last and first week of each month) and at the time of switching over from PR to DR and vice-versa. No extra charge shall be paid by the Bank for such needs, if any, during the support period.

ix. Bidder support staff should be well trained to effectively handle queries raised by the customers/employees of the Bank.

x. Updated escalation matrix shall be made available to the Bank once in each quarter and each time the matrix gets changed.

11.16. Penalty and SLAs

Refer **Annexure 21** for SLA &**Annexure 21a** for Penalty of this RFP.

11.17. Right to verification

The Bank reserves the right to verify any or all of the statements made by the Bidder in the tender document and to inspect the Bidder's facility, if necessary, to establish to its satisfaction about the Bidder's capacity/capabilities to perform the job.

11.18. Purchase price

i. Total cost of Software Solution with support (warranty and AMC, if desired) would be the Total Cost of Ownership (TCO) and has to be quoted in commercial Bid**.**

ii. Bidders should ensure that exchange rate fluctuations, changes in import duty/other taxes should not affect the rupee value of commercial Bid over the validity period defined in this RFP.

iii. The order will be placed for total Cost of "Software Solution/services/warranty and AMC/ATS/S&S. Bank may also issue a separate order for AMC after expiry of the warranty period.

iv. The applicable TDS will be deducted at the time of payment of invoices.

v. Terms of payment are given in this RFP document.

vi. Prices payable to the Vendor as stated in the Contract shall be firm and not subject to adjustment during performance of the Contract, irrespective of reasons whatsoever, including exchange rate fluctuations, any upward revision in duties, charges, etc.

vii. The Bidder will pass on to the Bank, all fiscal benefits arising out of reductions, if any, in Government levies viz. sales tax, excise duty, custom duty, etc. or the benefit of discounts if any announced in respect of the cost of the items for which orders have been placed during that period.

11.19. Insurance

i. The insurance shall be for an amount equal to 110 percent of the value of the Products from "Warehouse to final destination" on "All Risks" basis, valid for a period not less than one month after installation and commissioning and issue of acceptance certificate by the Bank.

ii. Should any loss or damage occur, the Vendor shall:
   a) initiate and pursue claim till settlement and
   b) Promptly make arrangements for repair and / or replacement of any damaged item to the satisfaction of the Bank, irrespective of settlement of claim by the underwriters.

11.20. Validity of agreement

The Agreement/ SLA will be valid for the period up to end of support period including AMC, if opted. The Bank reserves the right to terminate the Agreement as per the terms of RFP.

11.21. Limitation of liability

i. For breach of any obligation mentioned in this RFP, subject to obligations mentioned in this clause, in no event Service Provider shall be liable for damages to the Bank arising under or in connection with this agreement for an amount exceeding the total Cost of the Project. Service provider will ensure Bank's data confidentiality and shall be responsible for liability arising in case of breach of any kind of security and/or leakage of confidential customer/Bank's related information to the extent of loss so caused.

ii. The limitations set forth herein shall not apply with respect to:

a) claims that are the subject of indemnification pursuant to IPR infringement,
b) damage(s) occasioned by the gross negligence, fraud or wilful misconduct of Service Provider,
c) damage(s) occasioned by Service Provider for breach of Confidentiality Obligations,
d) When a dispute is settled by the Court of Law in India.
e) Regulatory or statutory fines imposed by a Government or Regulatory agency for non-compliance of statutory or regulatory guidelines applicable to the Bank, provided such guidelines were brought to the notice of Service Provider.

11.22. Confidentiality

i. Bidder acknowledges and agrees that all tangible and intangible information obtained, developed or disclosed including all documents, contract, purchase order to be issued, data papers and statements and trade secret of the Bank relating to its business practices and their competitive position in the market place provided to the selected Bidder by the Bank in connection with the performance of obligations of Bidder under the purchase order to be issued, in part or complete shall be considered to be confidential and proprietary information ("Confidential Information") and shall not be disclosed to any third party/published without the written approval of the Bank.

ii. The Confidential Information will be safeguarded and Bidder will take all the necessary action to protect it against misuse, loss, destruction, alterations or deletions thereof. In the event of a breach or threatened breach by Bidder of this section, monetary damages may not be an adequate remedy; therefore, Bank shall be entitled to injunctive relief to restrain Bidder from any such breach, threatened or actual.

iii. Any document, other than the Contract itself, shall remain the property of the Bank and shall be returned (in all copies) to the Bank on completion of the Vendor's performance under the Contract, if so required by the Bank.

11.23. Delay in Vendor's performance:

i. Delivery, installation, commissioning of the Software Solution and performance of Services shall be made by the Vendor within the timelines prescribed in part II of this document.

ii. If at any time during performance of the Contract, the Vendor should encounter conditions impeding timely delivery of the Software Solution and performance of Services, the Vendor shall promptly notify the Bank in writing of the fact of

the delay, it's likely duration and cause(s). As soon as practicable after receipt of the Vendor's notice, the Bank shall evaluate the situation and may, at its discretion, extend the Vendors' time for performance, in which case, the extension shall be ratified by the parties by amendment of the Contract.

iii. Any delay in performing the obligation/ defect in performance by the Vendor may result in imposition of penalty, liquidated damages, invocation of Performance Bank Guarantee and/or termination of contract (as laid down elsewhere in this RFP document)

11.24. Vendor's obligations

i. The Vendor is responsible for and obliged to conduct all contracted activities in accordance with the contract using state-of-the-art methods and economic principles and exercising all means available to achieve the performance specified in the Contract.

ii. The Vendor is obliged to work closely with the Bank's staff, act within its own authority and abide by directives issued by the Bank from time to time and complete implementation activities.

iii. The Vendor will abide by the job safety measures prevalent in India and will free the Bank from all demands or responsibilities arising from accidents or loss of life, the cause of which is the Vendor's negligence. The Vendor will pay all indemnities arising from such incidents and will not hold the Bank responsible or obligated.

iv. The Vendor is responsible for managing the activities of its personnel or sub-contracted personnel (where permitted) and will hold itself responsible for any misdemeanours.

v. Vendor shall provide necessary training from the OEM to the designated SBI officials on the configuration, operation/ functionalities, maintenance, support & administration for Software Solution, installation, troubleshooting processes of the proposed solution.

vi. The Vendor shall treat as confidential all data and information about SBI, obtained in the process of executing its responsibilities, in strict confidence and will not reveal such information to any other party without prior written approval of the Bank as explained under 'Non-Disclosure Agreement' in ***Annexure 8*** of this document.

11.25. Technical documentation

i. The Vendor shall deliver the following documents to the Bank for every software including third party software before software/ service become

operational, which includes, user manuals, installation manuals, operation manuals, design documents, process documents, technical manuals, functional specification, software requirement specification, on-line tutorials/ CBTs, system configuration documents, system/database administrative documents, debugging/diagnostics documents, test procedures etc.

ii. The vendor shall also provide documents related to Review Records/ Test Bug Reports/ Root Cause Analysis Report, list of all Product components, list of all dependent/external modules and list of all documents relating to traceability of the Software Solution as and when applicable.

iii. The Vendor shall also provide the MIS reports as per requirements of the Bank. Any level/ version changes and/or clarification or corrections or modifications in the above mentioned documentation should be supplied by the Vendor to the Bank, free of cost in timely manner

11.26. Training

Vendor shall train designated SBI officials on the configuration, operation/functionalities, maintenance, support & administration for software/ / Database/ OS/ Middleware, application architecture and components, installation, troubleshooting processes of a proposed solution.

No#	Department	No# of Officials	Training Type	Duration

All training cost should included in the estimation and should be available as a separate item in the estimation breakup as part of total project cost.

11.27. Source Code

The source code / object code / executable code and compilation procedures of the software solution should be provided to the Bank after successful UAT or escrow arrangement should be put in place. All necessary documentation in this behalf should be made available to the Bank. In case of Escrow arrangement, complete details and the location and the terms and conditions applicable for escrow must be specified.

Any update or upgrade to source code should be informed and brought under Escrow or made available to the Bank.

In case of source code is purchased by the Bank, the Intellectual Property Rights on the software code should be assigned to the Bank.

11.28. Liquidated damages

If the Vendor fails to deliver any or all of the products/ solution or perform the services within the stipulated time schedule as specified in this RFP/ Contract, the Bank may, without prejudice to its other remedies under the Contract, and unless otherwise extension of time is agreed upon without the application of

Liquidated Damages, deduct from the Contract Price, as liquidated damages **mentioned in (Schedule of Events, Sl No 19).** Once the maximum deduction is reached, the Bank may consider termination of the Contract.

11.29. Conflict of interest

Bidder shall not have a conflict of interest (the "Conflict of Interest") that affects the bidding Process. Any Bidder found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Bank shall be entitled to forfeit and appropriate the Bid Security and/or Performance Security (Performance Bank Guarantee), as the case may be, as mutually agreed upon genuine estimated loss and damage likely to be suffered and incurred by the Bank and not by way of penalty for, inter alia, the time, cost and effort of the Bank, including consideration of such Bidder's proposal (the "Damages"), without prejudice to any other right or remedy that may be available to the Bank under the bidding Documents and/ or the Concession Agreement or otherwise. Without limiting the generality of the above, a Bidder shall be deemed to have a Conflict of Interest affecting the bidding Process, if:

(a) the Bidder, its Member or Associate (or any constituent thereof) and any other Bidder, its Member or any Associate thereof (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding of a Bidder, its Member or an Associate thereof (or any shareholder thereof having a shareholding of more than 5% (five per cent) of the paid up and subscribed share capital of such Bidder, Member or Associate, as the case may be) in the other Bidder, its Member or Associate, has less than 5% (five per cent) of the subscribed and paid up equity share capital thereof; provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act, 1956. For the purposes of this Clause, indirect shareholding held through one or more intermediate persons shall be computed as follows:

(i) where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the "Subject Person") shall be taken into account for computing the shareholding of such controlling person in the Subject Person; and

(ii) subject always to sub-clause (i) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis; provided, however, that no such shareholding shall be reckoned under this sub-clause if the shareholding of such person in the intermediary is less than 26% of the subscribed and paid up equity shareholding of such intermediary; or

(b) a constituent of such Bidder is also a constituent of another Bidder; or

(c) such Bidder, its Member or any Associate thereof receives or has received any direct or indirect subsidy, grant, concessional loan or subordinated debt from any other Bidder, its Member or Associate, or has provided any such subsidy, grant, concessional loan or subordinated debt to any other Bidder, its Member or any Associate thereof; or

(d) such Bidder has the same legal representative for purposes of this Bid as any other Bidder; or

(e) such Bidder, or any Associate thereof, has a relationship with another Bidder, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's information about, or to influence the Bid of either or each other; or

(f) such Bidder or any of its affiliates thereof has participated as a consultant to the Bank in the preparation of any documents, design or technical specifications of the Project

11.30. Fraud and corrupt practices

i. The Bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the bidding Process. Notwithstanding anything to the contrary contained herein, the Bank shall reject an Application without being liable in any manner whatsoever to the Bidder if it determines that the Bidder has, directly or indirectly or through an agent, engaged in corrupt/fraudulent/coercive/undesirable or restrictive practices in the bidding Process.

ii. Without prejudice to the rights of the Bank under Clause 44(i) hereinabove, if a Bidder is found by the Bank to have directly or indirectly or through an agent, engaged or indulged in any corrupt/fraudulent/coercive/undesirable or restrictive practices during the bidding Process, such Bidder shall not be eligible to participate in any EOI/RFP issued by the Bank during a period of 2 (two) years from the date if such Bidder is found by the Bank to have directly or indirectly or through an agent, engaged or indulged in any corrupt/ fraudulent/ coercive/ undesirable or restrictive practices, as the case may be.

iii. For the purposes of this Clause , the following terms shall have the meaning hereinafter, respectively assigned to them:

(a) "**corrupt practice**" means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the bidding Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Bank who is or has been associated in any manner, directly or indirectly with the bidding Process or the Letter of Authority or has dealt with matters concerning the Concession Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Bank, shall be deemed to constitute influencing the actions of a person connected with the bidding Process); or (ii) engaging in any manner

whatsoever, whether during the bidding Process or after the issue of the Letter of Authority or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the Letter of Authority or the Agreement, who at any time has been or is a legal, financial or technical adviser of the Bank in relation to any matter concerning the Project;

(b) **"Fraudulent practice"** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the bidding Process

(c) **"Coercive practice"** means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any person's participation or action in the bidding Process;

(d) "**Undesirable practice**" means (i) establishing contact with any person connected with or employed or engaged by the Bank with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the bidding Process; or (ii) having a Conflict of Interest; and

(e) "**Restrictive practice**" means forming a cartel or arriving at any understanding or arrangement among Bidders with the objective of restricting or manipulating a full and fair competition in the bidding Process.

11.31. Termination for default

i. The Bank, without prejudice to any other remedy for breach of Contract, by a written notice of not less than 30 (thirty) days sent to the Vendor, may terminate the Contract in whole or in part:

   a. If the Vendor fails to deliver any or all of the Software Solution and Services within the period(s) specified in the Contract, or within any extension thereof granted by the Bank; or
   b. If the vendor fails to perform any other obligation(s) under the contract; or
   c. Laxity in adherence to standards laid down by the Bank; or
   d. Discrepancies/deviations in the agreed processes and/or Software Solution; or
   e. Violations of terms and conditions stipulated in this RFP.

ii. In the event the Bank terminates the Contract in whole or in part for the breaches attributable to the Vendor, the Bank may procure, upon such terms and in such manner as it deems appropriate, Software Solution and Services similar to those undelivered, and the Vendor shall be liable to the Bank for any increase in cost for such similar Software Solution and/or Services. However, the Vendor shall continue performance of the Contract to the extent not terminated.

iii. If the contract is terminated under any termination clause, the vendor shall handover all documents/ executable/ Bank's data or any other relevant information to the Bank in timely manner and in proper format as per scope of this RFP and shall also support the orderly transition to another vendor or to the Bank.

iv. During the transition, the Vendor shall also support the Bank on technical queries/support on process implementation or in case of software provision for future upgrades.

v. The Bank's right to terminate the Contract will be in addition to the penalties / liquidated damages and other actions as deemed fit.

vi. In the event of failure of the Service Provider to render the Services or in the event of termination of agreement or expiry of term or otherwise, without prejudice to any other right, the Bank at its sole discretion may make alternate arrangement for getting the Services contracted with another vendor. In such case, the Bank shall give prior notice to the existing Service Provider. The existing Service Provider shall continue to provide services as per the terms of contract until a 'New Service Provider' completely takes over the work. During the transition phase, the existing Service Provider shall render all reasonable assistance to the new Service Provider within such period prescribed by the Bank, at no extra cost to the Bank, for ensuring smooth switch over and continuity of services. If existing vendor is breach of this obligation, they shall be liable for paying a penalty of **as provided in (Schedule of Events, Sl No 20)** on demand to the Bank, which may be settled from the payment of invoices or Performance Bank Guarantee for the contracted period or by invocation of Performance Bank Guarantee.

11.32. Force Majeure

i. Notwithstanding the provisions of terms and conditions contained in this RFP, the Vendor shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default, if any, and to the extent that the delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

ii. . For the purposes of this clause, 'Force Majeure' means and includes wars, insurrections, revolution, civil disturbance, riots, terrorist acts, public strikes, hartal, bundh, fires, floods, epidemic, quarantine restrictions, freight embargoes, declared general strikes in relevant industries, Vis Major Act of Government, impeding reasonable performance of the Vendor and / or Sub-Contractor but does not include any foreseeable events, commercial considerations or those involving fault or negligence on the part of the party claiming Force Majeure.

iii. If a Force Majeure situation arises, the Vendor shall promptly notify the Bank in writing of such condition and the cause thereof. Unless otherwise directed by the Bank in writing, the Vendor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

11.33. Termination for insolvency

The Bank may, at any time, terminate the Contract by giving written notice to the Vendor, if the Vendor becomes Bankrupt or insolvent or any application for bankruptcy, insolvency or winding up has been filed against it by any person. In this event, termination will be without compensation to the Vendor, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Bank.

11.34. Termination for convenience

The Bank, by written notice of not less than 90 (ninety) days sent to the Vendor, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Bank's convenience, the extent to which performance of the Vendor under the Contract is terminated, and the date upon which such termination becomes effective.

11.35. Disputes and arbitration (Applicable in case of Selected Bidder)

All disputes or differences whatsoever arising between the parties out of or in connection with this contract or in discharge of any obligation arising out of the Contract (whether during the progress of work or after completion of such work and whether before or after the termination of this contract, abandonment or breach of this contract), shall be settled amicably. If however, the parties are not able to solve them amicably, either party (SBI or Vendor), give written notice to other party clearly setting out there in specific dispute(s) and/or difference(s) and shall be referred to a sole arbitrator mutually agreed upon, and the award made in pursuance thereof shall be binding on the parties. In the absence of consensus about the single arbitrator, the dispute may be referred to joint arbitrator; one to be nominated by each party and the said arbitrators shall nominate a presiding arbitrator, before commencing the arbitration proceedings. The arbitration shall be settled in accordance with the applicable Indian Laws. Any appeal will be subject to the exclusive jurisdiction of courts at Mumbai.

The Vendor shall continue work under the Contract during the arbitration proceedings unless otherwise directed by the Bank or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrator is obtained.
Arbitration proceeding shall be held at Mumbai, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

11.36. Governing laws and disputes (Applicable in case of successful bidder only)

All disputes or differences whatsoever arising between the parties out of or in connection with this contract or in discharge of any obligation arising out of the Contract (whether during the progress of work or after completion of such work and whether before or after the termination of this contract, abandonment or breach of this contract), shall be settled amicably. If however, the parties are not able to solve them amicably, either party (SBI or Bidder), give written notice to other party clearly setting out there in specific dispute(s) and/or difference(s) or shall be referred to a sole arbitrator mutually agreed upon, and the award made in pursuance thereof shall be binding on the parties. In the absence of consensus about the single arbitrator, the dispute may be referred to joint arbitrator; one to be nominated by each party and the said arbitrators shall nominate a presiding arbitrator, before commencing the arbitration proceedings. The arbitration shall be settled in accordance with the applicable Indian Laws. Any appeal will be subject to the exclusive jurisdiction of courts at Mumbai.

The Bidder shall continue work under the Contract during the arbitration proceedings unless otherwise directed by the Bank or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrator is obtained.

Arbitration proceeding shall be held at Mumbai, India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

11.37. Governing language:

The governing language shall be English.

11.38. Applicable Law:

The Contract shall be interpreted in accordance with the laws of the Union of India and shall be subjected to the exclusive jurisdiction of courts at Mumbai.

11.39. Notices

Any notice given by one party to the other pursuant to this contract shall be sent to other party in writing or by Fax and confirmed in writing to other Party's address. The notice shall be effective when delivered or on the notice's

effective date whichever is later. For the purpose of all notices, the following shall be the current address:

To,
The Deputy General Manager (IDSPM),
State Bank of India, Global IT Centre, IDSPM Department,
4th Floor, Tower No 4,
Railway Station Complex Building,
CBD Belapur, Navi Mumbai – 400614.

11.40. Taxes and Duties

a. The Vendor shall be liable to pay all corporate taxes and income tax that shall be levied according to the laws and regulations applicable from time to time in India and the price Bid by the Vendor shall include all such taxes in the contract price.
b. Prices quoted should be exclusive of all Central / State Government taxes/duties and levies but inclusive of Custom duty as also cost of incidental services such as transportation, road permits, insurance etc. The quoted prices and taxes/duties and statutory levies such as Service tax, VAT/ Sales tax, Excise duty, Custom duty, Octroi, GST etc. should be specified in the separate sheet **(Annexure 13).**

c. Custom duty as also cost of incidental services such as transportation, road permits, insurance etc. in connection with delivery of products at site including any incidental services and commissioning, if any, which may be levied, shall be borne by the Vendor and the Bank shall not be liable for the same. Only specified taxes/ levies and duties in the **Annexure 13** will be payable by the Bank on actuals upon production of original receipt wherever required. If any specified taxes/ levies and duties in **Annexure 13** are replaced by the new legislation of Government, same shall be borne by the Bank. The Bank shall not be liable for payment of those Central / State Government taxes, levies, duties or any tax/ duties imposed by local bodies/ authorities, which are not specified by the Bidder in **Annexure 13**

d. Prices payable to the Vendor as stated in the Contract shall be firm and not subject to adjustment during performance of the Contract, irrespective of reasons whatsoever, including exchange rate fluctuations, any upward revision in Custom duty. The Bidder will pass on to the Bank, all fiscal benefits arising out of reductions, if any, in Government levies viz. custom duty or the benefit of discounts if any announced in respect of the cost of the items for which orders have been placed during that period.

e. Income / Corporate Taxes in India: The Bidder shall be liable to pay all corporate taxes and income tax that shall be levied according to the laws and regulations applicable from time to time in India and the price Bid by the Bidder shall include all such taxes in the contract price.

f. All expenses, stamp duty and other charges/ expenses in connection with the execution of the Agreement as a result of this RFP process shall be borne by the Vendor.

g. The price would be inclusive of all applicable taxes under the Indian law like customs duty, excise duty, import taxes, freight, forwarding, insurance, delivery, etc. but exclusive of only applicable Service Tax, VAT and Octroi / Entry Tax /equivalent local authority cess, which shall be paid / reimbursed on actual basis on production of bills.

h. As and when GST is implemented, taxes which are included in the RFP and subsequently will fall under the purview of GST, will have to be quoted separately in the invoice. The Bank will not pay the same to avoid double taxation. Any increase in these taxes will be paid in actuals by the bank or any new tax introduced by the government will also be paid by the bank. The entire benefits / advantages, arising out of fall in prices, taxes, duties or any other reason, must be passed on to Bank. The price quoted by the bidder should not change due to exchange rate fluctuations, inflation, market conditions, increase in custom duty or excise tax. The bank will not pay any out of pocket expense. No escalation in price quoted is permitted for any reason whatsoever. Prices quoted must be firm till the completion of the contract. All expenses, stamp duty and other charges/ expenses in connection with the execution of the Agreement as a result of this RFP process shall be borne by the Vendor.

11.41. Tax deduction at sources

i. Wherever the laws and regulations require deduction of such taxes at the source of payment, the Bank shall effect such deductions from the payment due to the Vendor. The remittance of amounts so deducted and issuance of certificate for such deductions shall be made by the Bank as per the laws and regulations for the time being in force. Nothing in the Contract shall relieve the Vendor from his responsibility to pay any tax that may be levied in India on income and profits made by the Vendor in respect of this contract.

ii. The Vendor's staff, personnel and labour will be liable to pay personal income taxes in India in respect of such of their salaries and wages as are chargeable under the laws and regulations for the time being in force, and the Vendor shall

perform such duties in regard to such deductions thereof as may be imposed on him by such laws and regulations.

11.42. Right to use defective products

If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the product is found to be unsatisfactory, the Bank shall have the right to continue to operate or use such product until rectification of defects, errors or omissions by partial or complete replacement is made without interfering with the Bank's operation.

11.43. Tender fee

The same should be furnished by the Bidders in the form of Demand Draft/ Bankers' Cheque as mentioned in part II. It should be enclosed with Technical Bid. The Bids without tender fee will not be considered valid.

11.44. Terms & Conditions

i. All bids and supporting documentation shall be submitted in English.

ii. SBI reserves the right to accept or reject any or all Bids without assigning any reason thereof and Bank's decision in this regard will be treated as final. Bids may be accepted or rejected in total or any part or items thereof. No contractual obligation whatsoever shall arise from the RFP process unless and until a formal contract is signed and executed by duly authorized officials of the Bank and the Bidder. However, until a formal contract is prepared and executed, this offer together with Bank's written acceptance & notification of award shall constitute a binding contract with the Bidder.

iii. Any Bid not containing sufficient information, in view of SBI, to permit a thorough analysis may be rejected.

iv. The Bank shall have the right to reject the bids not submitted in the prescribed format or incomplete in any manner.

v. The Bank is not responsible for non-receipt of bids within the specified date and time due to any reason including postal delays or holidays.

vi. The Bank also reserves the right to alter/ modify any/ some/ all of the requirements, as it may deem necessary, and notify the same on its website www.sbi.co.in before the last date for submission of response under this RFP. The bidders should be agreeable for the same.

vii. Bids not conforming to the requirements of the RFP may not be considered by SBI. However, SBI reserves the right, at any time, to waive any of the requirements of the RFP, if in the sole discretion of SBI, the best interest of SBI be served by such waiver.

viii. Bidders who do not meet the technical criteria stipulated by the Bank will not be considered for further evaluation.

ix. SBI shall have the right to cancel the RFP process at any time prior to award of contract, without thereby incurring any liabilities to the affected Bidder(s). Reasons for cancellation, as determined by SBI in its sole discretion include but are not limited to, the following:

- Services Contemplated are no longer required
- Scope of work were not adequately or clearly defined due to unforeseen circumstance and/or factors and/or new developments
- Proposed prices are unacceptable to the Work
- The Project is not in the best interest of SBI
- Any other reason

x. Pre-bid meeting, if any, will be held to brief the intending bidders about the requirements of the Bank and to furnish clarifications on any points / queries received from them. No separate communication will be sent for this meeting.

xi. SBI reserves the right to verify the validity of bid information and to reject any bid where the contents appear to be incorrect, inaccurate or inappropriate at any time during the process of RFP or even after award of contract.

xii. SBI reserves the right to re-negotiate the prices in the event of changes in the market conditions and/or technology etc.

xiii. Bank reserves the right to appoint a consultant at any stage during bidding process.

xiv. During the term of agreement, Bidder will not hire or retain, either as an employee or consultant any employee of Bank. During the contract period, Bank will also not hire or retain, either as an employee or consultant, any employee of the Bidder. Nothing herein shall affect Bank's public recruitment process.

xv. All pages of RFP should be stamped and signed by Authorized Signatory of the Bidder.

xvi. Bidder is not authorized to sell any proprietary and Bank-specific customization of software to any other party for a predefined period of 5 (five) years. After expiry of predefined period, if Bidder wishes to sell such customization to some other party, a written concurrence/permission from the Bank should be obtained.

xvii. Bank may choose to take an undertaking from Bidder employees to maintain the confidentiality of the Bank's information/documents etc. Bank may seek details / confirmation on background verification of Bidder's

employees worked/working on Bank's project as may have been undertaken / executed by the Bidder. Bidder should be agreeable for any such undertaking/verification.

12. Annexures

12.1. Annexure 1: Bid Covering Letter (BID FORM (TECHNICAL BID))

ANNEXURE 1

BID FORM (TECHNICAL BID)

[On Company's letter head]

(to be included in Technical Bid Envelope)

Date:_____

To:

The Deputy General Manager (IDSPM),
State Bank of India, Global IT Centre, IDSPM Department,

4th Floor, Tower No 4,
Railway Station Complex Building,
CBD Belapur, Navi Mumbai – 400614.

Dear Sir,

Ref: RFP No: SBI/GITC/IDSPM/2017/2018/411 Dated: 09/08/2017

We have examined the above RFP, the receipt of which is hereby duly acknowledged and subsequent pre-bid clarifications/ modifications / revisions, if any, furnished by the Bank and we offer to supply, Install, test, commission and support the desired Software Solution detailed in this RFP. We shall abide by the terms and conditions spelt out in the RFP. We shall participate and submit the commercial Bid through online auction to be conducted by the Bank's authorized service provider, on the date advised to us.

2. While submitting this Bid, we certify that:

- The undersigned is authorized to sign on behalf of the VENDOR and the necessary support document delegating this authority is enclosed to this letter.
- We declare that we are not in contravention of conflict of interest obligation mentioned in this RFP.
- Indicative prices submitted by us have been arrived at without agreement with any other Bidder of this RFP for the purpose of restricting competition.
- The indicative prices submitted by us have not been disclosed and will not be disclosed to any other Bidder responding to this RFP.
- We have not induced or attempted to induce any other Bidder to submit or not to submit a Bid for restricting competition.
- The rate quoted in the indicative *price Bids are as per the RFP* and subsequent pre-Bid clarifications/ modifications/ revisions furnished by the Bank, without any exception.

3. If our offer is accepted, we undertake to complete the formalities for supply, installation, testing and commissioning of the Software Solution within the period specified in this document.

4. We agree to abide by all the Bid terms and conditions, contents of Service Level Agreement as per sample available at Annexure 21 of this document and the rates quoted therein for the orders awarded by the Bank up to the period prescribed in the Bid, which shall remain binding upon us.

5. Until a formal contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

6. We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely “Prevention of Corruption Act 1988”.

7. We undertake that we will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the Bank, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

8. We undertake that we will not resort to canvassing with any official of the Bank, connected directly or indirectly with the bidding process to derive any undue advantage. We also understand that any violation in this regard, will result in disqualification of bidder from further bidding process.

9. We certify that we have not made any changes in the contents of the RFP document read with its amendments/clarifications provided by the Bank submitted by us in our Bid document.

10. It is further certified that the contents of our Bid are factually correct. We also accept that in the event of any information / data / particulars proving to be incorrect, the Bank will have the right to disqualify us from the Bid.

11. We understand that you are not bound to accept the lowest or any Bid you may receive and you may reject all or any Bid without assigning any reason or giving any explanation whatsoever.

12. We hereby undertake that our name does not appear in any “Caution” list of RBI / IBA or any other regulatory body for outsourcing activity.

13. If our Bid is accepted, we undertake to enter into and execute at our cost, when called upon by the Bank to do so, a contract in the prescribed form and we shall be jointly and severally responsible for the due performance of the contract.

14. The name(s) of successful Bidder to whom the contract is finally awarded after the completion of bidding process shall be displayed on the website of the Bank and/or communicated to the successful Bidder(s).

15. The commercial bidding process will be through the reverse auction process to be conducted by the Bank or a company authorized by the Bank. We understand that our authorized representative who would participate in the reverse auction process would be possessing a valid digital certificate for the purpose.

16. We hereby undertake and agree to abide by all the terms and conditions stipulated by the Bank in the RFP document.

Dated this ..... day of 201

_____

(Signature) *(Name)*

(In the capacity of)

Duly authorised to sign Bid for and on behalf of

_____

Seal of the company.

12.2. Annexure 2: Bill of Materials

12.2.1 – Annexure 2a: Technical Bill of Materials

Annexure 2a - Technical BOM_V1-F

12.2.2 - Annexure 2b: Commercial Bill of Materials

Annexure 2b - Commercial BOM_BI

12.3. Annexure 3: Functional Requirement

Annexure 3

Functional Specifications

Sr. No	Required Functionalities/ Features	Compliance (Yes/No) and Supporting Documents	Available as part of solution (Yes / No)	Will be Provide as Customization (Yes / No)	Will be provided as Third Party Solution	Feasible(Yes/No)
1.	Functioning of Software / Network etc	Attached supporting Documents				

2.	Licensing details of Software Solution / Service/ Product	Attached supporting Document				
3.						
4						
5						

The following list specifies the functional requirements of the Data Lake Solution.
The **Response** Column is to be mandatorily responded to by the Bidder, for each requirement.
Response: The Bidder is to confirm in this column that the software solution is 'Compliant, require customization, or non-compliant..

Serial No.	Functional Requirements	Compliant, require customization, or non-compliant
1.	Unified horizontally scalable, central, parallel processing Big Data Lake for storage and processing	
2.	DATA LAKE should be implemented using commodity hardware and supported open-source software	
3.	Initially all data needs to be migrated from DWH to Data Lake	
4.	As data will be ingested from DWH to DATA LAKE, changes being done (incremental changes) in DWH through ingestion and updation should be reflected in DATA LAKE setup in real time basis.	
5.	Within 5 months from the DATA LAKE setup, all jobs generating extracts and reports will be migrated to DATA LAKE. DATA LAKE will be one true source for all data requirements of the Bank.	
6.	DATA LAKE setup is proposed to have landing and staging layer and hence will support data ingest from all Source Systems. However, data ingestion from new Source Systems for new data requirement will be added directly to DATA LAKE whereas DWH will keep ingesting data from existing Source Systems, the way it is working now, till we move all source data ingestion to DATA LAKE setup.	
7.	Any change in schema/structure on the source system / Data Warehouse should generate an alert on BDL	
8.	DWH and DATA LAKE will run in parallel. But, hadoop solution provided should have capability to subsume DWH functionality in Data Lake if the Bank decides in future.	
9.	Data virtualisation layer to be setup for fetching data from DWH and Data Lake using data federation.	
10.	There should be a provision for minimum 2000 users accessing DATA LAKE ecosystem concurrently, not including API based access, without impacting its	

	performance in the first year of operations and should have capability to increase further in the coming years.	
11.	DATA LAKE should have capacity to run minimum 30,000 jobs per day including complex jobs and having capacity to run minimum 5000 jobs concurrently without affecting the performance of the system.	
12.	Proposed DATA LAKE should have the flexibility to go on cloud(public/private)	
13.	Over 99.9% uptime requirement	
14.	The proposed solution should have a cluster monitoring and management tools	
15.	Proposed solution should have framework in place to monitor/handle hardware failures or corruption in underlying file system level. It should also have capability to enable exact point-in-time recovery of files or directories in the cluster from accidental deletions or corruption due to user or application error	
16.	Any change in business logic in DWH source systems during ETL migration to BDL – these new changes need to be implemented by bidder.	
Ingestion		
17.	The system / solution should be capable of ingesting data from any source system/databases including but not limited to: • Oracle • DB2 • SQL Server	
18.	The system / solution should be able to ingest data from csv files as well as flat files with high throughput and low latency.	
19.	The system / solution should be able to ingest data from structured, semi-structured, unstructured sources including but not limited to: • Text files • Drawings • Image Files • Audio Files • Video Files with high throughput and low latency.	
20.	The system / solution should be able to ingest data from packaged applications like CRM, Lotus &ERP Systems with high throughput and low latency.	
21.	The system / solution should be able to ingest data from click streams/social media streaming data, APIs with high throughput and low latency.	
22.	The system / solution should be able to ingest data from Data Warehouses and multi-dimensional cubes with high throughput and low latency.	

23.	The system / solution should be able to ingest data from ATMs and Mobiles with high throughput and low latency.	
24.	The system / solution should be able to ingest data from various log files with high throughput and low latency.	
25.	The system / solution should be able to ingest data in real-time	
26.	The system/solution should be able to ingest IoT data	
27.	The system / solution should be able to ingest data in batches.	
28.	The system / solution should be able to do simple field manipulations, JSON parsing, de-duplication and masking functions.	
29.	The system / solution should be able to do execute complex operations using scripts or by calling out to external data services	
30.	The solution should be able to route data from source to multiple schemas/data stores. Routing can be simple or complex, with routing rules based on attributes of the data, and with automatic conversion of data types and formats.	
31.	Data engineers should be able to create ingest pipelines, or a logical connection between a source and multiple destinations.	
32.	It should be possible to monitor ingestion pipelines to ensure that they are not dropping data or that the data is not becoming corroded over time.	
33.	It should allow to add new data sources to DATA LAKE as and when requirement comes but should have provision to interface with all important applications	
34.	It should allow data ingestion from ODBC sources, DB links, messaging queues with high throughput and low latency	
35.	It should have easy to use GUI based framework to configure sources to DATA LAKE, select table/columns and rows of data to be ingested	
36.	Pre-defined logic for every process can be setup, defining how the data will be selected from source systems/operational files. It should allow to perform full load, partial load and incremental/daily loads from any source.	
37.	It should allow data ingestion from a single or combination of source systems/files/operational input files/sources	
38.	It should allow to define the frequency of ingestion for all source systems, not limited to existing source systems	
39.	It should be able to define data pipelines to replicate changes being done in DWH through ingestion/updation is reflected in DATA LAKE in real-time	
40.	It should be able to automatically run validation scripts in periodically and on on-going basis and generate reports for	

	- Validation between source systems and DATA LAKE - Validation between DWH and DATA LAKE	
41.	It should be able to ingest data from big tables (in terms of number of columns and records) like INVM file(investor master file in Oracle database in CBS) through change data capture process	
42.	It should have failure, retry, alert, frequency and escalation logic defined	
43.	Generate detail logs for auditing and troubleshooting. Failure or reject records should be logged	
Data Storage		
44.	The system / solution should be able to store structured data	
45.	The system / solution should be able to store semi-structured and unstructured data	
46.	Data integration functionality should include change data capture and integration with business rules engines.	
47.	The Data Lake Solution should have the ability to reliably store a large amount of data irrespective of the storage format.	
48.	It should be able to store data as CSV, documents, images, videos, GIS, binary and any other arbitrary data formats that are understood by the applications by the applications that use the data.	
49.	The underlying data storage must be scalable and reliable.	
50.	The system / solution should support compression of data which should allow various compression techniques that can be applied to the data files to improve space and network bandwidth utilization.	
51.	It should be possible to modify, over-write, and read data as required.	
52.	The system/ solution should be able to do multiple concurrent read and write on any file.	
53.	Vendor should define effective number of data storage layers needed between data ingestion and data consumption	
54.	Should define the replication factor ideal for the solution being designed	
55.	Proposed solution should define the type of storage to opt for (SQL, NO-SQL, GRAPH etc)	
Data Processing framework and workflow management		
56.	The proposed system/solution should support all the data transformations used in the Bank to apply the required business logic	
57.	It should allow joining multiple sources/tables/inputs etc.	

58.	It should be able to put the processed data in a predefined area separate from the raw data.	
59.	Perform validation checks pre and post processing	
60.	The system / solution should have robust workflow capabilities out of the box that can be utilized across many domains, for master data stewardship and governance as well as enterprise wide consumption.	
61.	Have a job scheduler to schedule data transformation, data acquisition or data delivery jobs at specified times or in response to an external trigger.	
62.	It Should have failure, retry, alert and escalation logic defined	
63.	It Should have audit and error logs for auditing and troubleshooting	
64.	The system / solution should have the capability to integrate external workflows based on business rules	
65.	Workflow can be defined to specify job dependencies and a means to execute jobs in a way that the dependencies are respected.	
66.	It should be possible to define schedules and workflows via a graphical user interface and not through the command line	
67.	Framework should give significant advantage in speed by leveraging the parallel processing capability of DATA LAKE compared to comparable jobs on DWH	
68.	Should have comparable capabilities that an industry standard ETL tool provides like, ease of use, fault tolerance, troubleshooting and job restart etc	
Data Federation		
69.	Requires data federation to be setup to ensure seamless data access to the users and reports between DWH and DATA LAKE	
70.	Data Federation between Data Lake and DWH should be provided through virtualisation layer.	
71.	The bidder should also specify the bandwidth needed to enable data federation between DWH and BDL. It should be noted that DWH will remain at CDC Belapur whereas Data Lake will be setup at Rabale CDC. , BDL and DR sites will be at different locations (Belapur, Rabale and Hyderabad)	
Metadata Management		
72.	The system / solution should have robust metadata management capability for handling business metadata like business glossaries, definition of entities, business rules, data dictionary, data lineage, maintaining of golden record and field etc.	

73.	The Solution should have the capability to document the source systems along with where it is coming from.	
74.	Should be capable of capturing and indexing of information about the data as it enters the Data Lake.	
75.	Should have archiving, backup, purge and recovery policies defined	
76.	Maintain data versioning	
77.	Capturing Patterns and trends	
78.	Data modelling capability	
79.	Define data quality rules	
80.	Define ownership and relationship definitions	
Information life cycle management		
81.	A robust solution that defines policies/framework that govern/manage data from the point of ingest/creation, distribution, usage, maintenance, archiving, replication, compression, backup to disposition of information on DATA LAKE.	
82.	It should be strongly coupled with the metadata management and data governance policies	
Ability to search for data		
83.	Ability to search for object space, tagged data sets, specific fields or raw text	
Data governance, security, administration and access management		
84.	The system/solution should Provide traceability – it should be possible to track and visualize any data transformation or any rule applied to data in the lake	
85.	Provide trust – The system should be able to ensure the users that they are accessing data from the right source of information.	
86.	Provide auditability – the solution should record any access to the data to satisfy compliance audits. For example, it should be able to check on who touched the data, when did they touch it, is there a chain of custody issue, is there transparency in terms of data privacy and protection etc.	
87.	Enforce security and privacy – Data inside the Data Lake will be accessed by only authorized users. Data at rest/in-motion should be encrypted	
88.	Automate security policies and compliance reports	
89.	Capability to store (personal identifiable information) sensitive data in encrypted /masked form and should have capability to decrypt/unmask such information when required by only authorized ID's	
90.	Provide administrative and security management facilities	
91.	Should provide for DATA LAKE portal displaying all reports, Dashboard, Data dictionary, applications running in DATA LAKE, data sourcing department (upstream	

	applications), Data sharing departments (downstream applications), information about interfacing applications, login to portal details, list of missing files from source systems, status of all applications / interfaces running on DATA LAKE along with memory, disk and CPU usage, status of DATA LAKE clusters, hardware status/software status etc. with need based access.	
92.	Capability to define clear roles and access management rules to user ID's and the monitoring of activity of privileged users.	
93.	The system / solution should provide centralized role-based access control to perform different functions (add, edit or delete objects from the data model).	
94.	It should be possible to define policies and rules for implementation and access control using the tool.	
95.	The system/ solution should have the capability of integration with the Active Directory of the Bank/LDAP	
96.	A comprehensive identity and access management system should be available for centralized management of users and groups.	
97.	It should be possible to quickly create and revoke the identity of a user or a service by simply deleting or disabling the account in the directory	
98.	Multi-factor authentication should be provided as an additional layer of security for user sign-in and transactions.	
99.	Define administrative steps to recover from a full, unplanned cluster restart due to power loss or catastrophic condition. How much time is required for the cluster to become fully available for reads and write after such a scenario?	
100.	System/solution should be in place to monitor logs on daily basis for processing status, pending tasks, pending time, running, monitoring and successful completion of execution / process/ report, etc.	
Data Discovery		
101.	The system / solution should be able to extract useful data out of semi-structured/unstructured data. This new, accessible data can be used by further analytic queries or machine-learning algorithms.	
102.	The system / solution should support interfaces to heuristic-based analysis to help guide data discovery and extraction	
103.	It should be possible to deliver data to the traditional relational databases so that conventional business intelligence tools can directly query it.	

104.	It should be possible to use Web-based interfaces for investigating raw data and then devising strategies for cleansing and pulling out relevant data.	
105.	It should be possible to enhance data on the fly	
106.	It should have good visualization capabilities and should support various chart types.	
Data Access		
107.	It should be possible to query both structured and unstructured data in the Data Lake for making business decisions.	
108.	It should be possible to access the data stored by using SQL like queries	
109.	It should be possible to access the data stored in the Data Lake solution without writing any code.	
110.	It should be possible to perform text search on the data	
111.	It should be possible to deliver reports on web or mobile	
Data Quality		
112.	The system / solution should support all aspects of data cleansing including but not limited to: • Data profiling and discovery • Data matching and de-duplication • Normalization against third-party or reference standards • Data enrichment drawing from internal and external sources • Data validation and reconciliation against source systems	
113.	The system / solution should facilitate the user to define business rules through an easy-to-navigate, highly intuitive user interface.	
114.	The system / solution should enable the user to define actions based on existing business rules	
115.	The system / solution should have provision of sending email notification based on completion or failure of certain events or violation of business rules.	
116.	The system / solution should have out-of-the-box integration capabilities with various cleansing tool in order to leverage existing environment	
117.	The system / solution should have the functionality to define data profiling rules including but not limited to: • Threshold matching • Minimum/maximum length • Functional dependency rules • Superset / Subset rules	
118.	The system / solution should have the functionality to display results of data profiling including but not limited to: • Column lengths found in profiled column	

	• Number/Percentage of rows with null value • Columns with a specific pattern • Minimum/Maximum value of a column • Distinct values found in a column • Number/Percentage of rows with a specific value • Duplicate values that exist in a column	
119.	The system / solution should provide multiple matching engines including • Deterministic • Probabilistic • Heuristic • Phonetic • Linguistic • Empirical	
120.	The system / solution should have the functionality to drill down to individual data sources and view specific records of a source to analyze output of data profiling.	
121.	The system / solution should have the functionality to apply custom business rules to the data to identify records that cross certain thresholds, or that fall inside or outside of defined ranges.	
122.	The system / solution should have the functional ability to identify data that fails to conform to internal standards such as Person ID formats or external reference standards such as email address format or international postal codes.	
123.	The system / solution should have the capability to connect to third-party address verification tools. This is a nice-to-have feature.	
Downstream data consumption		
124.	The system / solution should have capability to seamlessly connect by transforming the data with downstream/upstream applications and allow data to be either pushed/pulled downstream.	
125.	Should be capable of supporting approx. 2000 reports and 10000 extracts / jobs to be shared with downstream applications.	
126.	Should support bulk data and targeted data extracts via statistical tools and API interfaces. All existing reports (600 approx) and extracts (2000) for sharing data should be developed in Data Lake within 5 months from the date of DATA LAKE setup.	
127.	DATA LAKE should have supported open source statistical and machine learning tools configured for analysis and reporting	
128.	Should have capability to easily connect with any downstream applications currently used at the bank	
129.	Should have capability to define workflows and jobs governing downstream data consumption	

Real-time and Advanced Analytics		
130.	It should be possible to move data using an integrated development environment for creating and running pipelines using a visual UI to minimize the amount of custom-coding required.	
131.	The system / solution should support algorithms for Optimization problems, projections etc.	
132.	The system / solution should support benchmarking (as per the benchmarking parameters advised in the RFP Section 6.4.7.13) and relationship analysis, Trend analysis, Data Summarization etc.	
133.	The Data Lake solution should be able to query relational and non-relational data for employing iterative machine learning algorithms and other arbitrary computations including building search index and classification.	
134.	The system / solution should support simple transformations like data preparation, data cleansing and filtering.	
135.	The system / solution should support analytics queries to provide a summary view of a data set, like cross-referencing other data sets.	
136.	Users should be able to use a search engine to search the Data Lake quickly without SQL knowledge.	
137.	DATA LAKE should have capability to ingest data in real-time	
138.	Capable to perform in-memory processing and equipped with tools to perform analytics on real-time data in real-time/near real-time.	
Software change management framework		
139.	Vendor should provide a robust change management framework to track versioning, change history with date and user information, track migration of code from development to production, security.	
140.	It should allow easy configuration of the environment to the production version for debugging and troubleshooting	
Disaster recovery site and other environments		
141.	Vendor should have capability to replicate data from PR setup cluster to the DR setup cluster of same the configuration as the production cluster if the Bank decides in future. However, immediate requirement is to have	

	functional DR where metadata, snapshots, models, scripts, configuration files and all software related to hadoop cluster maintenance should be replicated at DR.	
142.	Vendor should provide the framework/architecture for online real-time replication from production DATA LAKE setup to functional DR DATA LAKE setup and achieve 2 hrs of RTO.	
143.	Development and UAT environments to be set up in addition to Production DATA LAKE and DR DATA LAKE.	
144.	Should be capable to configure recovery point objectives (RPO) and recovery time objectives (RTO)	
145.	Should provide run book and process for failover and fallback	
146.	Vendor should provide support for planned mock failover & fallback. This will be carried out at a frequency defined by the guidelines at the bank	
147.	Reconciliation scripts needs to be available on DR site which can be used along with the last transaction on the DR database to recover lost transaction on DR database at any given time	
148.	Reconciliation mechanism needs to be available for logs which are in transit	
149.	Proposes system/solution should be able to have a seamless auto failover without any user / client intervention both for failover and DR	
150.	Applications should be up in 2Hrs and user access to data should be seamless in the event of DR, with downstream applications consuming data flawlessly from DR	
151.	Proposed solution/system should ensure there is no data corruption during fail over and fall back	
152.	There should be automated procedure for switch over / switch back	
Benchmarking of Data Lake Performance (Maximum marks 29, 1 marks is allocated for each point)		
1	Bidders are required to provide benchmark execution times they can commit for the Data Lake on the following tasks. Selected bidder will be required to achieve actual performance within 5% of the numbers they committed, on real-world data sets that the Bank will provide as per the description listed below: Data Set Description: • 4 transactional tables of 100 million records or more each, each with at least one Boolean variable • At least one table has one or more text fields as part of a composite key • At least one table with a five-part composite key	

	• Two reference tables with 5-level hierarchical data (e.g., branch-region-area-division kind of structure), with at least 1,000 distinct entries at leaf level which will serve as foreign key reference to a transactional table with 100 million+ records • Each transactional table having 64 or more columns, of which 12 or more columns are alphanumeric, 4 or more are date, 4 or more are categorical variables with 20 or more distinct values (e.g., industry classification), 4 or more are continuous variables (e.g., account balance) In your response to the RFP, please include as a table with the execution times you can commit to achieve on the proposed data lake for the following operations 1. Find records with numeric key match 2. Find records with alphanumeric key match 3. Find records with 5-part composite key (numeric + alphanumeric) match 4. Find records with referential foreign-key match 5. Find records with sub-string match 6. Sort 7. Distinct / duplicate identification 8. Distinct with composite key 9. Outer join between two transactional tables with numeric key match 10. Outer join between two transactional tables with composite key match 11. Find ten highest/lowest values from a numeric, continuous variable 12. Find average, highest, lowest and count of 8 numerical, continuous variables grouped by four categorical variables 13. Generate percentile distributions of a numeric, continuous variable 14. Generate frequency distribution of a category variable 15. Find random sample of 20,000 records from transactional table 16. Generate all-node roll-up of numerical variable by category variable hierarchy from transactional table where transactional table has data only at leaf level 17. Outlier identification (+/- six-sigma) of continuous, numeric variable 18. Time for data quality audit – missing/blank/null values, dispersion (90% or more records have the same value for a particular variable), 19. Find pair wise correlations of category variables across two different tables	

	20. Determine Multi co-linearity (VIF, Condition indices) 21. 10-fold cross-validation – for a random sample of 1 million transactional records 22. Ingestion of 10 million records into transactional table without index update 23. Ingestion of 10 million records into transactional table with index update **Scatter matrix construction** 24. Time series prediction 25. Information value computation 26. Logistic Regression model – with minimum six independent variables and R^2 or χ^2 or better and GINI coefficient of 0.6 or better – for a random sample of 1 million transactional records 27. 6-level Decision Tree – for a random sample of 1 million transactional records 28. Clustering with minimum 6 clusters and 6 or more input variables – for a random sample of 1 million transactional records 29. Neural Network – for a random sample of 1 million transactional records	

Signature and Seal of Company

12.4. Annexure 4: Technical Requirement

The following list specifies the technical requirements of the Data Lake Solution. The **Response** Column is to be mandatorily responded to by the Bidder, for each requirement.

Response: The Bidder is to confirm in this column that the software solution is 'Compliant, require customization or non-compliant, i.e. the service will be delivered or not.

Serial No.	Technical Requirements	Compliant, require customization or non-compliant
1.	Data lake is to be built on commodity hardware.	
2.	The Data Lake Solution should contain capabilities to scale horizontally without disturbing the base architecture or requiring system downtime.	

3.	Design should take into consideration the current data and processing needs, growing number of sources, unstructured data, IOT data, next gen first of a kind Use cases	
4.	Choice of software platform/tools on BDL should be supported open source.	
5.	Platform is agnostic to the choice of tools	
6.	Vendor should provision and support any open source tool Bank wants to use	
7.	The data lake solution should be able to handle large & complex data with atleast 2000 concurrent users.	
8.	Users are expected to grow, vendor should ensure that the solution gives consistent performance with increase in concurrent user access	
9.	The big data lake solution should have enough compute power to atleast process 30000 complex jobs on daily basis and having capacity to run minimum 5000 jobs concurrently without affecting the performance of the system.	
10.	The solution at SBI should be enabled for exact point-in-time recovery of files or directories in the cluster from accidental deletions or corruption due to user or application error.	
11.	The architecture of the system / solution should let it be in High Availability mode (at least 99.9%)	
12.	The performance of the solution should remain the same in spite of the growth in the number of systems or the volume of data generated.	
13.	End users should be able to access the database using simple SQL queries even without having knowledge of big data query language.	
14.	BDL should be built to comply with standard banking stress and vulnerability standards.	
15.	A utility to compute the processing overhead in case of new data source / activity type should be in-place to ensure that compute scalability is justified.	
16.	Automatic detection and partial correction of failures should be in-built. Monitoring dashboards as simple web pages should be available	
Ingestion		
17.	Solution should be capable of ingesting data from different source types in any format.	
18.	System built must be capable of ingesting incremental 5TB (but not limited to) of data daily with high level of response time. It should have capability to scrap source system archival logs having volume of 10TB (but not limited to) of data daily with high level of response time.	

19.	System should be capable of ingesting the overall DWH DB size of 1250 TB with high level of scalability and response time	
20.	System should be capable of ingesting data from db extracts/log files with high level of response times	
21.	System should be capable of ingesting data from tabular data dumps, flat files etc. with high level of response time	
22.	System should be capable of handling incremental data changes (Change data capture) in structured DB to be synchronized in BDL with DWH	
23.	System should be capable of ingesting real time data – structured, semi-structured, or unstructured (E.g.: Card transactions, Forex data loading, DB Events / extract Logs, machine data, streaming data sources etc)	
24.	Ingest unstructured data like but not limited to images, video, audio, text etc from file servers/file transfer API's	
25.	Ingest semi-structured data like but not limited to geographic information, mobile touch stream, internet Banking user logs etc.	
26.	Ingest external data from web or cloud	
27.	The data may be available in a stream or batches. Solution should support various protocols for data movement.	
28.	The system / solution should be able to maintain incremental and differential copies.	
29.	Ingestion layer should allow simple field manipulations, JSON parsing, de-duplication and masking functions	
30.	More complex operations should be supported by executing scripts or by calling out to external data services	
31.	The solution should be able to route data from source to multiple data stores	
32.	Should support routing rules based on attributes of the data and with automatic conversion of data types and formats	
33.	The ingestion function should be performed as a low-latency, high throughput, continual process, even when the characteristics of the incoming data change. Data sanity checks, validations and reconciliation of data should be available as part of the data ingest solution.	
34.	System should allow to perform sanitization of ingested data to support universally acknowledged policies such as masking/encrypting personally identifiable information/Sensitive information or using canonical data representations, as well monitoring the	

	inbound data flow for completeness, consistency and accuracy.	
35.	The ingestion tool should ensure that data in motion is encrypted	
36.	Ingestion framework should be easy to use, simple, intuitive point and click utilities that support creating / modifying and scheduling data pipeline jobs.	
37.	It should also be possible to monitor ingestion pipelines to ensure that they are not dropping data or that the data is not becoming corroded over time	
38.	Should be able to provide audit logs for data validation and tracking data lineage in case of failure.	
39.	An alerting, report and monitoring utility about the ingest pipelines should be available as part of the solution.	
40.	Should generate detail job logs, error logs for auditing and troubleshooting. Success / failure or audit logs for critical data ingest should be available.	
41.	Failure and reject records to should be logged and appropriate escalation rule should be triggered	
42.	Trigger mechanisms in identifying schema changes at source and packaging data in formats for quick retrieval from BDL are in scope	
43.	Data engineers should be able to create ingest pipelines, or a logical connection between a source and multiple destinations.	
44.	It should be possible to move data using an integrated development environment for creating and running pipelines using a visual UI to minimize the amount of custom-coding required.	
45.	The vendor should be able to design solutions to handle data volumes and complexity in source data. An example workload is provided below (Workloads of this type are in scope of this engagement) A source system table with ~ 400 columns in an Oracle database generates data of ~ 800 GB on a daily basis having 73 crores records. The ingest tools should be able to perform a change data capture on source systems of this nature.	
46.	Escalation matrix and rules can be defined and generate required alerts to the groups via email/sms/calls.	
47.	Changed data from existing structured sources should be available on BDL with an efficiency gain of 30-40% of the of system(s) on existing DWH	
48.	Flat file extracts should be loaded and parsed for usage with at-least 35% efficiency gain over DWH (Refer to section 6.4.7.13)	

49.	Real time streaming data should be available with minimum or no delay to kick start processing tasks on BDL	
50.	Network and IO usage metrics during ON and OFF data processing workflows should be available to the Bank	
51.	Clear logical separation of Staging, landing and storage should be available on BDL.	
Storage and Data formats		
52.	Data lake solution for storage should be able to store reliably, efficiently and optimally irrespective of the data type.	
53.	Storage replication is managed by the platform/solution provided by the bidder.	
54.	Data is stored in formats that are suitable and efficient for processing engines to consume	
55.	Storage should support data compression. It should be possible to perform both fast compression and efficient compression based on data processing needs.	
56.	The storage layer of lake should support large volume data ingest and transfer seamlessly over the network.	
57.	The lake should be robust for to allow for concurrent reads and allow for high throughputs. Should allow to write and modify the data store.	
58.	Storage should be compatible to perform processing operations on whole dataset as well as Individual records or Individual groups.	
59.	The underlying architecture is scalable horizontally and vertically. Redistribution of storage load across the lake should be possible and in-scope of setting up the Data Lake.	
60.	Ensuring regular health checks, monitoring and alerting about data storage / utilization of storage / failure handling of storage are in-scope of activities	
61.	The storage system should be robust to handle multiple concurrent access by processing engines / end users	
62.	Data stored in storage should be in specific serialization formats so as to ensure efficient in-memory processing.	
63.	The system / solution should get quick response, least processing time and higher availability of database required for ad-hoc query purpose or for report generation.	
64.	The Data Lake will have storage intensive, compute intensive and balanced workload scenarios. The storage mechanism should serve as a single entity	

	that can be utilized by multiple processing engines or compute nodes designated for a specific purpose in the Lake.	
65.	Storage layer should allow data to be viewed in multiple modes e.g. as transactions as a graph structure	
66.	The Lake should be flexible to handle data needs for Staging, direct data ingestion / landing, projections of data, organizing data and aligning it with specific schema type(s) etc.	
67.	Choice of compression and encryption algorithms on BDL should be Quantifiable	
68.	All data stored on BDL should be governed by a storage policy (That is, data is used either for further processing, archival, purging or transfer to DR)	
69.	Data stored on BDL should be optimal for record level as well as snapshot level aggregate queries. Performance on all queries used for report generation on BDL should have at-least a 50% performance efficiency than DWH. The performance needs to be consistent factoring growth of both concurrent jobs and users.	
70.	Metadata at every object level needs to be maintained and available on BDL	
Data processing: Transformations		
71.	Solution should have robust, highly efficient and parallel extraction framework for data transformation jobs. Job designs should be reusable.	
72.	Should be able to handle data transformation jobs for synchronization of daily incremental data between DWH and Lake	
73.	Should be capable of performing all the data transformations currently implemented in DWH	
74.	Vendor should use off-the-shelf tools not resort to building from scratch	
75.	Should be capable of running multiple data transformation jobs in parallel.	
76.	BDL should be able to run 30 k jobs in batch or near real-time mode every day	
77.	Solution developed should have capability to monitor, log and assess the progress of each transformation job	
78.	There should be provision to multiple transformations in to a job and organize multiple jobs as a single job	
79.	Easy interface should be available for organizing, scheduling and triggering jobs	

80.	Reports on job status and success / failure / retrigger should be sent to concerned stakeholders on a periodic basis.	
81.	The tool(s) used for data transformation should be aligned to data sources and types / formats of data residing on Data Lake.	
82.	In case, it is decided in future, to subsume DWH into Data Lake then the Hadoop solution should be capable of daily data loading and updates and all transformations in data lake need to be completed within 2 hrs as compared to 6 hours as of now.	
83.	The processing pipelines for ETL jobs also include daily, weekly, monthly, quarterly and annual reports, feeding data structures for downstream consumption.	
84.	Transformations for this activity can be categorized into the following types: • Existing transformations in DWH that needs to be migrated to BDL • New transformations for data sources that are not sourced by DWH • Transformations and data processing pipelines for real time data capture	
85.	The Bank will engage the vendor to create specific data transformation pipelines based on need basis.	
86.	The system / solution should support data agility and allow real-time analytics and allowing creation of schema-on-the-fly.	
87.	All batch jobs inclusive of jobs which have not been otherwise specified are expected to be completed on the same operational day	
88.	Real time data should be available and processing should kick-start as and when the data is available. Data processing and report generation for real time data should be completed on the same business day. Reconciliation of data between batch and real-time operations should be possible	
89.	In-memory computing should be enabled for all critical data processing tasks. Priority queues need to be set up for resource allocation - Transformation workflows, reports and analytics jobs. Ad-hoc queries should be prioritized dynamically based on overall load on the system.	
Workflow management and scheduling		
90.	Individual tasks of data capture, ingest, organize, processing and creating data structures for data consumptions is designed and developed as easy to manage and monitor workflows	

91.	The workflows should be designed using off the shelf tools. The workflow management tool should work with all supported tools / components used underneath for data capture, storage, organization, transformations and updates.	
92.	The workflows should work with standard schedulers.	
93.	Monitoring and management of workflows should be possible from an easy to use interface	
94.	Workflow management tool(s) should have connectors / pluggable interfaces to already existing / in-use proprietary software available with the Bank	
95.	Audit, alerting, traceability, recovery and monitoring form critical features that need to be available as part of workflow and scheduling system on the lake	
96.	It should be possible to trigger workflows / schedule jobs through User interface or using a command line utility.	
97.	It should be possible to use auditing logs for diagnostic purposes	
98.	The bank will engage the vendor to design and develop data processing workflows on BDL.	
99.	Should have the scalability and flexibility to handle the offloading of approx. 600 reports and over 2000 extract jobs	
100.	The workflow engine should take into account the total resources available on cluster	
101.	The data sourcing workflows through CDC should be completed for existing data pipelines in less than 2 hrs from the EOD time.	
102.	Logging should be available for audit and maintenance. This should be configurable for different modes like INFO, DEBUG, ERROR, SEVERE etc	
103.	New workflows should have performance benchmark(s) similar to existing data processing pipelines	
104.	Workflow managers should allow standard support for schedulers. The workflows should allow custom modules to be integrated to the system	
105.	There should be a provision to restrict the CPU/core usage of a specific workflow.	
106.	It should be possible to selectively trigger / restart jobs / workflows. Workflow components should be re-usable to ensure quick development	
107.	Must have a coordinator service and ability to trigger recurrent jobs	
Data Discovery & Preparation		

108.	To support ad-hoc analysis, the lake should have tools for data discovery. The fields / entities of interest should be available for search	
109.	The tool(s) should have the capability to extract data from structured/semi-structured/unstructured data, data in log files, filter data using selection criteria like regular expressions and other data filters.	
110.	On-demand object creation to blend data from multiple sources (relational, objects in lake, semi-structured data) should be facilitated.	
111.	An easy to use web interface and SQL like query capability should be available for authorized users/applications on the lake	
112.	The vendor as mandated by the Bank will streamline ad-hoc reports / visualizations using the data discovery capability or assist business teams build pipelines for analysis using data discovery capability	
Analytics		
113.	Should support Rapidly building and deploying scalable analytics solutions on the BDL	
114.	Existing analytic models built on proprietary tools should be able to consume data from BDL	
115.	Empower analysts with tools like notebooks to perform interactive data analysis and rapid model building	
116.	Enable Bank to develop and implement end-to-end use cases	
117.	BDL should provide tools in analytics layer for data extraction and preparation	
118.	BDL should provide tools in analytics layer for data pre-processing	
119.	BDL should provide tools in analytics layer for experimentation and model building	
120.	BDL should provide tools in analytics layer for model evaluation, deployment and visualizations	
121.	BDL should support best in class machine learning and analytics frameworks that run on scalable architectures	
122.	BDL – Analytics solution should have ability to create templates for common data processing / end to end applications, tag data sets and re-use operators across machine learning pipelines.	
123.	BDL – Analytics solution must have capability to utilize in-memory computing, blend tools in analytics notebooks that perform SQL like querying on relational data and unstructured data on BDL	
124.	The analytics notebooks should be shareable and experiments be replicable across users / teams performing similar analysis.	

125.	Analytic queries can be used to provide a summary view of a data set, like cross-referencing other data sets, and ad-hoc computation can be used to support a variety of algorithms, for example, building a search index or classification via machine learning	
126.	All standard reporting dashboards and downstream operational reports are processed, complete and ready for consumption in 3 hrs before the start of business day	
127.	All real time reports available on the same business day. Reports on real time data are generated at fixed intervals of time every day. The intervals will be decided by the Bank	
128.	All data / tables to be populated for downstream applications should be available on the same business day.	
Search		
129.	Should allow free text search across BDL	
130.	Should allow search for metadata and objects in BDL namespace	
131.	Should allow search for patterns (keywords + regular expressions)	
132.	Should allow search for datasets and analytic notebooks	
133.	Should allow search for workflows, reports and jobs	
134.	Should allow search in repository for data processing operators	
135.	Search solution should use tool(s) which work with each of the BDL ecosystem components	
136.	Advanced search options should be available for users	
137.	Search interface should be intuitive and results must be relevant	
138.	Users / applications should have the provision to index objects and assets created on BDL.	
139.	Simple Query-1: Query with 2 to 3 tables join with Primary Index; Select condition on a base of 1 crores records with 25,000 records in the query result; Size range of query result file =10MB to 10GB For eg: Branch Level aggregation Query Response: Queries to complete within 30 seconds with 2000 concurrent users	
140.	Simple Query-2: Query with 2 to 3 tables join with Primary Index; Select condition on a base of 30 crores records with 10 crores records in the query result; Size range of query result file =10MB to 100GB For eg: A/c /Customer Level aggregation	

	Query Response: Queries to complete within 90 seconds with 2000 concurrent users	
141.	Moderate Query-1: Query with 3 to 4 tables join with interim spool file of 10-50 crores records with sort & group by function; Select condition on a base of 50 crores records with 10 crore records in the query result; Size range of query result file =100GB to 500GB For eg: <CUSM: INVM:> DEPP Query Response: Queries to complete within 2 minutes with 2000 concurrent users	
142.	Complex Query-1:Query with 4 to 5 tables join with or without interim spool file of minimum of 50 crores records with sort & group by function; Select condition on a base of minimum 50 crores records with 10 crores records in the query result; Size range of query result file =100GB to 500GB For eg: <CUSM: INVM:> DEPP Query Response: Queries to complete within 5 minutes with 2000 concurrent users	
143.	Complex Query-2:Query with >5 tables join with interim spool file of minimum of 50 crores records with sort & group by function; Select condition on a base of minimum 50 crores records and at least 1 table of 3650 crores records with 30 crores records in the query result; Size range of query result file =500GB to 5TB For eg: <INVM: INCT:> DEPP- Product, Account, Branch, Segments, Transaction tables Query Response: Queries to complete within 20 minutes with 2000 concurrent users	
144.	Complex Query-3:Query with >5 tables join with interim spool file of minimum of 50 crores records; Select condition on a base of minimum 50 crores records with 50 crores records in the query result; Size range of query result file =100GB to 5TB For eg: <INVM: INCT:> DEPP- Product, Account, Branch, Segments, Transaction tables Query Response: Queries to complete within 60 minutes with 2000 concurrent users	
Metadata & Governance		
145.	It should be possible to define metadata to update and access requests as well as schema.	
146.	Metadata should be available for data, processes and pipeline(s)	
147.	The Solution should have the capability to document the source systems along with where it is coming from.	

148.	It should be possible for track data lineage, audit and log events relevant to process these events	
149.	Able to generate logs for Bank to analyse on periodic basis	
150.	The solution should let the users have an understanding of the quality of the data using data profiling	
151.	Should ensure data quality by maintaining sanctity of data at the source, data correctness and validity post transformations, truth of data at the time of access.	
152.	It should be possible to define policies and rules for implementation and access control in the BDL	
153.	BDL should support user level, group level, role level and application level authentication and authorization	
154.	The solution should compliant to Bank's security policies. It should be possible to protect the data in the data lake throughout its life cycle including data in transit and data in store.	
155.	The solution should allow users to create Enterprise glossaries to define a consistent and uniform business vocabulary to prevent misinterpretation of data elements	
156.	The Metadata to be created using the tool(s) on BDL can also be technical and provide details of data cleansing, derived data, data mappings etc.	
157.	The Solution should be able to manage data from the point of ingest to retirement – including retention, archiving, replication, compression and backup / purging	
158.	There should be a provision for entire data and application lifecycle to be managed and monitored through an easily usable interface.	
159.	Data lifecycle should be managed using crisp storage policies	
Data Encryption		
160.	Data encryption applies to the following data on BDL: • Data at rest • Data in motion • Data available over an API to external sources / applications	
161.	Standard encryption techniques / policies should be implemented for this activity. The sensitive and personal identification data on BDL should be encrypted.	

162.	The vendor team will determine tables / columns that need encryption by discussing with data owners before implementing the solution	
163.	The processing time for data should include time needed for encrypting and decrypting information needed for downstream / report generation	
164.	The overall SLA for data processing should be adhered to, keeping data encryption as an important activity.	
Cloud Integration and Migration		
165.	BDL should be able to consume data from external cloud based infrastructures. For example: Social data and web data can be processed on an external cloud. This data is publicly available data	
166.	There should be a solution in place to transfer Insights drawn from this data / results post the data analysis activity to BDL.	
167.	Cloud integration / data transfer to and from public cloud should be available using all standard protocols. (Web requests / secure transfer channels etc.)	
168.	The architecture of BDL should enable interaction between Public/Private cloud and edge servers alone. BDL cannot be directly exposed to the public cloud.	
169.	Transfer out of BDL to public cloud should not be possible by all roles in BDL. All activities with data transfer from Public/Private cloud should be logged for audit and monitoring.	
170.	In view of the intent to reduce the hardware footprint (in future), the technical architecture of BDL solution should be flexible to accommodate provisioning BDL on cloud. The Bank understands that there can be differences in services offered by cloud service providers	
171.	The BDL solution architecture should be designed considering as-is infrastructure availability in cloud.	
Other Requirements		
172.	Handle large volume of data, handle variety in data types and accommodate real time streaming data	
173.	BDL / applications on BDL should be robust to increase in user base. The Bank expects the BDL to be performance and functionality compliant to at-least 2000 concurrent users. This number is expected to grow and support to such growth in user base is in scope of the current assignment	
174.	The system should be capable of handling structured and unstructured data which can be visualized using sophisticated reporting and charting tools	

175.	Any relevant analytics, data processing and analysis tool(s) as needed by the Bank should be provisioned in BDL	
176.	There should be an API layer that allows data consumption in any of the below mentioned access modes for downstream applications: • Delimited files • File extracts • Tables populated in RDBMS • Data access through API • API providing file access path • Direct links	
177.	The BDL solution at SBI should be enabled for exact point-in-time recovery of files or directories in the cluster from accidental deletions or corruption due to user or application error	
178.	The solution should also maintain incremental and differential copies. This can be on traditional storage devices or storage intensive part of the BDL solution.	
179.	While building BDL on commodity hardware, failure handling should be a design characteristic. There should be tool(s) that can notify, alert and if possible, predict node, disk or application failure.	
180.	Necessary corrective action should be in place for each failure. Failure of node, disk or any network component should not affect the functionality of BDL	
181.	Failure tolerance is not restricted only to server and application failure. Failure of software & services are considered failure scenarios in scope.	
182.	Standard practices of configuring BDL for High Availability and storage namespace federation (at least 99.9%) should be implemented.	
183.	BDL solution should serve users even when confronted with node failures or network partitions.	
184.	Batch mode of operation on BDL is one of its features.	
185.	BDL is expected to provide data and process agility. Agility is in terms of the following: • Near real time availability of data for analysis • Quantum of time taken for analysis • Ease of incorporating ad-hoc analysis to mainstream use-cases	
186.	Solution should ensure • Horizontal & Vertical scaling of nodes in BDL • Application processing scale – More complex jobs on BDL	

	• Supporting scale of input sources both in terms of number of source systems and transaction / event volume of each source system	
187.	The vendor is expected to submit a capacity planning for initial size of BDL cluster, timely upgrades / additions to the BDL, size of the cluster in 2nd and 3rd year of operations and tentative expected growth rate of the cluster	
188.	The Bidder should provide scalability of the proposed technology also keeping in mind new technologies emerging for catering to future needs	
189.	The Data Lake Solution should contain capabilities to scale horizontally without disturbing the base architecture or requiring system downtime and the data should be rebalanced automatically.	
190.	The scalability design should ensure that the query response time(s) / time(s) for analysis / transformation does not get negatively impacted with scale.	
191.	Application users having easy to use interface to monitor and manage data pipelines	
192.	Analysts having access to analytics notebooks	
193.	Administrators and project managers having access to single window dashboards that report status of BDL – BDL specific job stats, daily jobs metrics, data pipelines, data source rates and reconciliation triggers, hardware and software performance and capacity monitors.	
194.	System having provisions for easy maintenance and upgrades	
195.	Interfaces to enable Addition of nodes / patches with minimum impact on BDL uptime.	
196.	A comprehensive identity and access management system should be available for centralized management of users and groups	
197.	Integration with standard LDAP and encryption of customer sensitive information should be available on BDL. Any Performance parameter will be considered valid only when desired security measures are applied on the BDL	
198.	Ability to apply security policies at different levels of granularity - E.g.: File system, file, table, record, row etc	
199.	It should be possible to quickly create and revoke the identity of a user or a service by simply deleting or disabling the account in the directory	
200.	Multi-factor authentication should be provided as an additional layer of security for user sign-in and transactions	

201.	Role-based access controls should be provided for authorization of account-related and data-related activities.	
202.	It should be possible to protect the data in the Data Lake throughout its lifecycle including data in transit and data in store.	
203.	Auditing or diagnostic logs should be used to log management-related activities or data-related activities	
204.	Log management and auditing of all critical activities on BDL is a critical requirement. The Bank reserves right to ask the vendor to produce / analyse logs for reporting purposes.	
205.	CMMI level 5 certified vendor	
Disaster Recovery		
206.	To start with, BDL should have a only functional DR at Ctrl S Hyderabad where metadata, snapshots, models, scripts, configuration files and all software related to hadoop cluster maintenance should be replicated at DR. However, Bank may decide at later stage to have 100% DR.	
207.	The production DATA LAKE and DATA LAKE - DR will be geographically separate.	
208.	The DR solution should be synced with production DATA LAKE. The SLA for RTO should be maximum 2Hrs as per Bank's defined policy. The proposed solution for DATA LAKE - DR should include data transfer, job synchronization, security considerations and all other features that the production environment possess.	
209.	The SLA for RTO should be maximum 2Hrs as per Bank's defined policy	
210.	The proposed solution for BDL - DR should include data transfer, job synchronization, security considerations and all other features that the production environment possess.	
211.	In general, for the end user the perception will be that both BDL and BDL – DR will be functional on a daily basis	
212.	The BDL – DR will be passive in general, however will be made active as soon as there is an unavoidable and planned/unplanned unavailability of BDL	
213.	(Fully functional BDL – DR can either run the jobs and have checkpoints for data synchronization or have a solution by replicating data from BDL to BDL – DR)	
214.	The proposed solution is expected to have a monitoring engine that can determine the health of production BDL and raise alerts / trigger remedial actions to bring BDL – DR as the default BDL for downstream / reports / data processing and end user ad-hoc analysis	
215.	Switching over to BDL – DR can have limited manual intervention. The handover should be soft and no data loss	

	/ data corruption can be tolerated. Jobs in transit can be restarted to have minimal impact of data loss	
216.	The downstream applications / end users layer to access BDL should be logically isolated from operational BDL. This separation will enable switching between environment(s) to trigger DR operation sequence	
217.	Jobs developed to be deployed in production, should be deployed both in production and DR. The same applies to any admin activity, security policy and other activities on BDL	
218.	The Bank reserves the right to enforce mock up scenarios for failure to ensure that the BDL – DR solution is working as expected. The vendor should support the Bank to demonstrate such scenarios as and when required by the Bank.	
219.	The solution for DR should cover standard policies and framework to formulate recovery point objectives, data loss prevention and minimal impact to work. A thorough plan / successfully implementing the BDL – DR is a critical component for completion of this assignment	

Signature and Seal of Company

12.5. Annexure 5: Implementation Details for proposed Solution

1. Bidders interested in providing services as specified in Section 6, 7, 8 , 9 10 of RFP need to provide the following details for proposed solution.
2. Bidder and OEM need to provide details separately.
3. For each credential, separate sheet should be provided by the bidder in the format given below.
4. For each proposed solution (Data Lake Application Implementation), separate sheet should be provided by the bidder in the format given below.
5. Credentials should be provided only for those clients where the bidder has implemented the proposed solution.
6. If the complete information is not provided, credential will not be considered for evaluation.

Sl. No.	Particulars	Response			
1	Assignment Name				
2	Location of the Assignment				
3	Name of Client				
4	Category of Client (Bank/Insurance/FI/Others please specify)				
5	Address				
6	Reference Contact Person				
7	Telephone Number (With STD Code), Mobile Number, Fax Number and E-Mail Address				
8	Project Scope				
9	Original Project Duration				
10	Start Date of the Project (Month & Year)				
11	Completion Date of the Project (Month & Year)				
12	Actual completion Date of the Project (Month & Year)				
13	Total No. of team members in the Assignment				
14	Name of Project Manager				
15	Project Effort (Man months)				
16	Name of the solution (s) implemented and the version				
17	Details of the solution (applicable only for Data Lake solution)	Module	Implemented (Yes/ No)	Product Name/ Version	Month/ Year of Implementation
18	Narrative Description of Project with present status/result				

Sl. No.	Particulars	Response
19	Whether the solution has been implemented enterprise wide or at department/office level.	
20	Number of branches/offices using the solution	
21	If the solution is being used by other group companies, then provide the name of the group companies.	
22	Provide the number of active users and concurrent users separately.	

Yours faithfully,

For:

Seal and Signature:

Name:

12.6. Annexure 6: Bidder Details

Bidders interested in providing services as specified in Section 6, 7, 8, 9 and 10 of RFP need to provide the following details:

Annexure-D

Bidder Details

Details of the Bidder

S. No.	Particulars	Details
1.	Name	

2.	Date of Incorporation and / or commencement of business	
3.	Certificate of incorporation	
4.	Brief description of the Bidder including details of its main line of business	
5.	Company website URL	
6.	Particulars of the Authorized Signatory of the Bidder a. Name b. Designation c. Address d. Phone Number (Landline) e. Mobile Number f. Fax Number g. Email Address	

Signature and Seal of Company

12.7. Annexure 7: OEM Details

OEMs interested in providing solutions as specified in Section 6, 7, 8, 9 and 10 of RFP need to provide the following details:

Sl.No.	Particulars	Response
1	Date of Incorporation	
2	Company Head Office Address	
3	Registered Office Address	
4	Contact Person Name, Designation and Address	

5	Telephone Number (With STD Code), Mobile Number, Fax Number and E-Mail Address	
6	Alternate Contact Person Name, Designation and Address	
7	Telephone Number (With STD Code), Mobile Number, Fax Number and E-Mail Address	
8	Total number of employee in the organization	
9	Details of standard performance benchmarking report for the proposed solution, if any	
10	Details of bandwidth requirement for proposed solution	
11	List of standard reports/dashboards available with the proposed solution	

Declaration:

I. We confirm that we will abide by all the terms and conditions contained in the RFP.
II. We hereby unconditionally accept that Bank can at its absolute discretion apply whatever criteria it deems appropriate, not just limiting to those criteria set out in the RFP, in short listing of bidders.
III. All the details mentioned by us are true and correct and if Bank observes any misrepresentation of facts on any matter at any stage, Bank has the absolute right to reject the proposal and disqualify us from the selection process.
IV. We confirm that this response, for the purpose of short-listing, is valid for a period of six months, from the date of expiry of the last date for submission of response to RFP.
V. We confirm that we have noted the contents of the RFP and have ensured that there is no deviation in filing our response to the RFP and that the Bank will have the right to disqualify us in case of any such deviations.

Place

Date
Seal & Signature of the Bidder

12.8. Annexure 8: Non-Disclosure Agreement

ANNEXURE 8

NON-DISCLOSURE AGREEMENT

THIS RECIPROCAL NON-DISCLOSURE AGREEMENT (the “Agreement”) is made at Mumbai between:

_____ constituted under the _____ Act, _____ having its Corporate Centre at _____ _____ (hereinafter referred to as "Bank" which expression includes its successors and assigns) of the ONE PART;

And

_____ (hereinafter referred to as "_____" which expression shall unless repugnant to the subject or context thereof, shall mean and include its successors and permitted assigns) of the OTHER PART;

And Whereas

1. _____ is carrying on business of providing _____, has agreed to _____ for the Bank and other related tasks.

2. For purposes of advancing their business relationship, the parties would need to disclose certain valuable confidential information to each other. Therefore, in consideration of covenants and agreements contained herein for the mutual disclosure of confidential information to each other, and intending to be legally bound, the parties agree to terms and conditions as set out hereunder.

NOW IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES AS UNDER

1. **Confidential Information and Confidential Materials:**

(a) "Confidential Information" means non-public information that Disclosing Party designates as being confidential or which, under the circumstances surrounding disclosure ought to be treated as confidential. "Confidential Information" includes, without limitation, information relating to installed or purchased Disclosing Party software or hardware products, the information relating to general architecture of Disclosing Party's network, information relating to nature and content of data stored within network or in any other storage media, Disclosing Party's business policies, practices, methodology, policy design delivery, and information received from others that Disclosing Party is obligated to treat as confidential. Confidential Information disclosed to Receiving Party by any Disclosing Party Subsidiary and/ or agents is covered by this agreement

(b) Confidential Information shall not include any information that: (i) is or subsequently becomes publicly available without Receiving Party's breach of any obligation owed to Disclosing party; (ii) becomes known to Receiving Party prior to Disclosing Party's disclosure of such information to Receiving Party; (iii) became known to Receiving Party from a source other than Disclosing Party other than by the breach of an obligation of confidentiality owed to Disclosing Party; or (iv) is independently developed by Receiving Party.

(c) “Confidential Materials” shall mean all tangible materials containing Confidential Information, including without limitation written or printed documents and computer disks or tapes, whether machine or user readable.

2. **Restrictions**

(a) Each party shall treat as confidential the Contract and any and all information (“confidential information”) obtained from the other pursuant to the Contract and shall not divulge such information to any person (except to such party’s own employees and other persons and then only to those employees and persons who need to know the same) without the other party’s written consent provided that this clause shall not extend to information which was rightfully in the possession of such party prior to the commencement of the negotiations leading to the Contract, which is already public knowledge or becomes so at a future date (otherwise than as a result of a breach of this clause). Receiving Party will have executed or shall execute appropriate written agreements with its employees and consultants specifically assigned and/or otherwise, sufficient to enable it to comply with all the provisions of this Agreement. If the Service Provider shall appoint any Sub-Contractor then the Service Provider may disclose confidential information to such Sub-Contractor subject to such Sub Contractor giving the Bank an undertaking in similar terms to the provisions of this clause.

(b) Receiving Party may disclose Confidential Information in accordance with judicial or other governmental order to the intended recipients (as detailed in this clause), provided Receiving Party shall give Disclosing Party reasonable notice prior to such disclosure and shall comply with any applicable protective order or equivalent. The intended recipients for this purpose are:

(1) the statutory auditors of the Bank and

(2) regulatory authorities regulating the affairs of the Bank and inspectors and supervisory bodies thereof

(c) The foregoing obligations as to confidentiality shall survive any termination of this Agreement

(d) Confidential Information and Confidential Material may be disclosed, reproduced, summarized or distributed only in pursuance of Receiving Party’s business relationship with Disclosing Party, and only as otherwise provided hereunder. Receiving Party agrees to segregate all such Confidential Material from the confidential material of others in order to prevent mixing.

(e) Receiving Party may not reverse engineer, decompile or disassemble any software disclosed to Receiving Party.

3. **Rights and Remedies**

(a) Receiving Party shall notify Disclosing Party immediately upon discovery of any unauthorized used or disclosure of Confidential Information and/ or Confidential Materials, or any other breach of this Agreement by Receiving Party, and will

cooperate with Disclosing Party in every reasonable way to help Disclosing Party regain possession of the Confidential Information and/ or Confidential Materials and prevent its further unauthorized use.

(b) Receiving Party shall return all originals, copies, reproductions and summaries of Confidential Information or Confidential Materials at Disclosing Party's request, or at Disclosing Party's option, certify destruction of the same.

(c) Receiving Party acknowledges that monetary damages may not be the only and / or a sufficient remedy for unauthorized disclosure of Confidential Information and that disclosing party shall be entitled, without waiving any other rights or remedies (as listed below), to injunctive or equitable relief as may be deemed proper by a Court of competent jurisdiction.

a. Suspension of access privileges

b. Change of personnel assigned to the job

c. Financial liability for actual, consequential or incidental damages

d. Termination of contract

(d) Disclosing Party may visit Receiving Party's premises, with reasonable prior notice and during normal business hours, to review Receiving Party's compliance with the term of this Agreement.

4. **Miscellaneous**

(a) All Confidential Information and Confidential Materials are and shall remain the property of Disclosing Party. By disclosing information to Receiving Party, Disclosing Party does not grant any expressed or implied right to Receiving Party to disclose information under the Disclosing Party patents, copyrights, trademarks, or trade secret information.

(b) Any document provided under this Agreement is provided with RESTRICTED RIGHTS.

(c) Neither party grants to the other party any license, by implication or otherwise, to use the Confidential Information, other than for the limited purpose of evaluating or advancing a business relationship between the parties, or any license rights whatsoever in any patent, copyright or other intellectual property rights pertaining to the Confidential Information.

(d) The terms of Confidentiality under this Agreement shall not be construed to limit either party's right to independently develop or acquire product without use of the other party's Confidential Information. Further, either party shall be free to use for any purpose the residuals resulting from access to or work with such Confidential Information, provided that such party shall maintain the confidentiality of the Confidential Information as provided herein. The term "residuals" means information in non-tangible form, which may be retained by person who has had access to the Confidential Information, including ideas, concepts, know-how or techniques contained therein. Neither party shall have any obligation to limit or restrict the assignment of such persons or to pay royalties for any work resulting

from the use of residuals. However, the foregoing shall not be deemed to grant to either party a license under the other party's copyrights or patents.

(e) This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof. It shall not be modified except by a written agreement dated subsequently to the date of this Agreement and signed by both parties. None of the provisions of this Agreement shall be deemed to have been waived by any act or acquiescence on the part of Disclosing Party, its agents, or employees, except by an instrument in writing signed by an authorized officer of Disclosing Party. No waiver of any provision of this Agreement shall constitute a waiver of any other provision(s) or of the same provision on another occasion.

(f) In case of any dispute, both the parties agree for neutral third party arbitration. Such arbitrator will be jointly selected by the two parties and he/she may be an auditor, lawyer, consultant or any other person of trust. The said proceedings shall be conducted in English language at Mumbai and in accordance with the provisions of Indian Arbitration and Conciliation Act 1996 or any Amendments or Re-enactments thereto.

(g) Subject to the limitations set forth in this Agreement, this Agreement will inure to the benefit of and be binding upon the parties, their successors and assigns.

(h) If any provision of this Agreement shall be held by a court of competent jurisdiction to be illegal, invalid or unenforceable, the remaining provisions shall remain in full force and effect.

(i) All obligations created by this Agreement shall survive change or termination of the parties' business relationship.

5. **Suggestions and Feedback**

(a) Either party from time to time may provide suggestions, comments or other feedback to the other party with respect to Confidential Information provided originally by the other party (hereinafter "feedback"). Both party agree that all Feedback is and shall be entirely voluntary and shall not in absence of separate agreement, create any confidentially obligation for the receiving party. However, the Receiving Party shall not disclose the source of any feedback without the providing party's consent. Feedback shall be clearly designated as such and, except as otherwise provided herein, each party shall be free to disclose and use such Feedback as it sees fit, entirely without obligation of any kind to other party. The foregoing shall not, however, affect either party's obligations hereunder with respect to Confidential Information of other party.

Dated this _____ day of _____ *2017* at _____

(month) (place)

For and on behalf of _____

Name		
Designation		

Place		
Signature		

For and on behalf of _____

Name		
Designation		
Place		
Signature		

12.9. Annexure 9: Compliance Statement

DECLARATION

To,
The Deputy General Manager (IDSPM),
State Bank of India, Global IT Centre, IDSPM Department,
4th Floor, Tower No 4,
Railway Station Complex Building,
CBD Belapur, Navi Mumbai – 400614.

Terms & Conditions

Dear Sir,

We hereby undertake and agree to abide by all the terms and conditions stipulated by the Bank in the RFP document.

We declare that we are not in contravention or conflict of interest obligation mentioned in this RFP.

We certify that we have not made any changes from the contents of the RFP document read with its amendments/clarifications provided by the Bank submitted by us in our Bid document. It is further certified that the contents of our bid are factually correct. We also accept that in the event of any information / data / particulars proving to be incorrect, the Bank will have the right to disqualify us from the bid.

We hereby undertake that our entities name does not appear in any “Caution” list of RBI / IBA or any other regulatory body for outsourcing activity.

Yours faithfully,

For:

Seal and Signature:

Name:

12.10. Annexure 10: Performance Bank Guarantee (Indicative for SBI)

ANNEXURE–10

PERFORMANCE BANK GUARANTEE FORMAT

(TO BE STAMPED AS AN AGREEMENT)

THIS PERFORMANCE BANK GUARANTEE AGREEMENT executed at ……..this…….day of …….. 201 by ……. (Name of the Bank)…….. having its Registered Office at …….and its Branch at ……(hereinafter referred to as "the Guarantor", which expression shall, unless it be repugnant to the subject, meaning or context thereof, be deemed to mean and include its successors and permitted assigns) **IN FAVOUR OF** State Bank of India, a Statutory Corporation constituted under the State Bank of India Act, 1955 having its Corporate Centre at State Bank Bhavan, Nariman Point, Mumbai and one of its offices at---------- **(procuring office address),** hereinafter referred to as "**SBI**" which expression shall, unless repugnant to the subject, context or meaning thereof, be deemed to mean and include its successors and assigns).

WHEREAS M/s_____, incorporated under _____ Act having its registered office at _____ and principal place of business at _____ (hereinafter referred to as "**Service Provider/ Vendor**" which expression shall unless repugnant to the context or meaning thereof shall include its successor, executor & assigns) has agreed to develop, implement and support …… (name of Software Solution/ Service) (hereinafter referred to as **"Services")** to SBI in accordance with the Request for Proposal (RFP) No. SBI:ESS:IDSPM:RFP:xx dated : 09/08/2017.

WHEREAS, SBI has agreed to avail the Services from the Service Provider for a period of _____ year(s).

WHEREAS, in accordance with terms and conditions of the RFP/Purchase order/Agreement dated……, Service Provider is required to furnish a Bank Guarantee for a sum of Rs._____/- (Rupees _____ only) for due performance of the obligations of the Service Provider in providing the Services, in accordance with the RFP/Purchase order/Agreement guaranteeing payment of the said amount of Rs._____/- (Rupees _____ only) to SBI, if Service Provider fails to fulfil its obligations as agreed in RFP/Agreement.

WHEREAS, the Bank Guarantee is required to be valid for a total period of _____ months and in the event of failure, on the part of Service Provider, to fulfil any of its commitments / obligations under the RFP/Agreement, SBI shall be entitled to invoke the Guarantee.

AND WHEREAS, the Guarantor, at the request of Service Provider, agreed to issue, on behalf of Service Provider, Guarantee as above, for an amount of Rs._____/- (Rupees _____ only).

NOW THIS GUARANTEE WITNESSETH THAT

1. In consideration of SBI having agreed to entrust the Service Provider for rendering Services as mentioned in the RFP, we, the Guarantors, hereby unconditionally and irrevocably guarantee that Service Provider shall fulfil its commitments and obligations in respect of providing the Services as mentioned in the RFP/Agreement and in the event of Service Provider failing to perform / fulfil its commitments / obligations in respect of providing Services as mentioned in the RFP/Agreement, we (the Guarantor) shall on demand(s), from time to time from SBI, without protest or demur or without reference to Service Provider and not withstanding any contestation or existence of any dispute whatsoever between Service Provider and SBI, pay SBI forthwith the sums so demanded by SBI in each of the demands, subject to a cumulative maximum amount of Rs._____/- (Rupees _____only).

2. Any notice / communication / demand from SBI to the effect that Service Provider has failed to fulfil its commitments / obligations in respect of rendering the Services as mentioned in the Agreement, shall be conclusive, final & binding on the Guarantor and shall not be questioned by the Guarantor in or outside the court, tribunal, authority or arbitration as the case may be and all such demands shall be honoured by the Guarantor without any delay.

3. We (the Guarantor) confirm that our obligation to the SBI, under this guarantee shall be independent of the agreement or other understandings, whatsoever, between the SBI and the Service Provider.

4. This guarantee shall not be revoked by us (the Guarantor) without prior consent in writing of the SBI.

WE (THE GUARANTOR) HEREBY FURTHER AGREE & DECLARE THAT-

(i) Any neglect or forbearance on the part of SBI to Service Provider or any indulgence of any kind shown by SBI to Service Provider or any change in the terms and conditions of the Agreement or the Services shall not, in any way, release or discharge the Bank from its liabilities under this Guarantee.

(ii) This Guarantee herein contained shall be distinct and independent and shall be enforceable against the Guarantor, notwithstanding any Guarantee or Security now or hereinafter held by SBI at its discretion.

(iii) This Guarantee shall not be affected by any infirmity or absence or irregularity in the execution of this Guarantee by and / or on behalf of the Guarantor or by merger or amalgamation or any change in the Constitution or name of the Guarantor.

(iv) The guarantee shall not be affected by any change in the constitution of SBI or Service Provider or winding up / liquidation of Service Provider, whether voluntary or otherwise

(v) This guarantee shall be a continuing guarantee during its validity period and the SBI can make its claim in one or more events within the total liability of the Guarantor mentioned herein.

(vi) This Guarantee shall remain in full force and effect for a period of __ years from the date of the issuance i.e. up to _____ Unless a claim under this Guarantee is made against us within three (3) months from that date i.e. on or before _____ , all your rights under this Guarantee shall be forfeited and we shall be relieved and discharged from all liabilities there under.

(vii) This guarantee shall be governed by Indian Laws and the Courts in Mumbai, India alone shall have the jurisdiction to try & entertain any dispute arising out of this guarantee.

Notwithstanding anything contained herein above:

(a) Our liability under this Bank Guarantee shall not exceed Rs……../- (Rupees ……only)

(b)This Bank Guarantee shall be valid up to…….

c) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if SBI serve upon us a written claim or demand on or before …… (date which is 3 months after date mentioned at (b) above.

Yours faithfully,

For and on behalf of Bank.

_____

Authorised official

12.11. Annexure 11: Bank Guarantee Format for Earnest Money Deposit

To,
The Deputy General Manager (IDSPM),
State Bank of India, Global IT Centre, IDSPM Department,
4th Floor, Tower No 4,
Railway Station Complex Building,
CBD Belapur, Navi Mumbai – 400614.

Dear Sir,

EMD BANK GUARANTEE FOR

REQUEST FOR PROPOSAL

FOR SELECTION AND ENGAGEMENT OF VENDOR FOR PROVIDING SOFTWARE SOLUTION, SERVICES, SETUP & IMPLEMENTATION OF BIG DATA LAKE AS ARE SET OUT IN THE SBI:ESS:IDSPM:RFP:xx dated : 09/08/2017

WHEREAS State Bank of India (SBI), having its Corporate Office at Nariman Point, Mumbai, and Regional offices at other State capital cities in India has invited Request for Proposal FOR SELECTION AND ENGAGEMENT OF VENDOR FOR PROVIDING SOFTWARE SOLUTION, SERVICES, SETUP & IMPLEMENTATION OF BIG DATA LAKE as are set out in the Request for Proposal SBI:ESS:IDSPM:RFP:xx dated : 09/08/2017

2. It is one of the terms of said Request for Proposal that the Bidder shall furnish a Bank Guarantee for a sum of Rs._____/-(Rupees _____Only) as Earnest Money Deposit.

3. M/s. _____, (hereinafter called as Bidder, who are our constituents intends to submit their Bid for the said work and have requested us to furnish guarantee in respect of the said sum of Rs._____/-(Rupees _____ only)

4. NOW THIS GUARANTEE WITNESSETH THAT

We _____ (Bank) do hereby agree with and undertake to the State Bank of India, their Successors, assigns that in the event of the SBI coming to the conclusion that the Bidder has not performed their obligations under the said conditions of the RFP or have committed a breach thereof, which conclusion shall be binding on us as well as the said Bidder, we shall on demand by the SBI, pay without

demur to the SBI, a sum of Rs._____/- (Rupees _____ Only) that may be demanded by SBI. Our guarantee shall be treated as equivalent to the Earnest Money Deposit for the due performance of the obligations of the Bidder under the said conditions, provided, however, that our liability against such sum shall not exceed the sum of Rs._____/- (Rupees _____ Only).

5. We also agree to undertake to and confirm that the sum not exceeding Rs._____/- (Rupees _____ Only) as aforesaid shall be paid by us without any demur or protest, merely on demand from the SBI on receipt of a notice in writing stating the amount is due to them and we shall not ask for any further proof or evidence and the notice from the SBI shall be conclusive and binding on us and shall not be questioned by us in any respect or manner whatsoever. We undertake to pay the amount claimed by the SBI within 24 hours from the date of receipt of the notice as aforesaid. We confirm that our obligation to the SBI under this guarantee shall be independent of the agreement or agreements or other understandings between the SBI and the Bidder. This guarantee shall not be revoked by us without prior consent in writing of the SBI.

6. We hereby further agree that –

a) Any forbearance or commission on the part of the SBI in enforcing the conditions of the said agreement or in compliance with any of the terms and conditions stipulated in the said Bid and/or hereunder or granting of any time or showing of any indulgence by the SBI to the Bidder or any other matter in connection therewith shall not discharge us in any way our obligation under this guarantee. This guarantee shall be discharged only by the performance of the Bidder of their obligations and in the event of their failure to do so, by payment by us of the sum not exceeding Rs._____/- (Rupees _____ Only)

b) Our liability under these presents shall not exceed the sum of Rs._____/- (Rupees _____ Only)

c) Our liability under this agreement shall not be affected by any infirmity or irregularity on the part of our said constituents in tendering for the said work or their obligations there under or by dissolution or change in the constitution of our said constituents.

d) This guarantee shall remain in force up to 180 days provided that if so desired by the SBI, this guarantee shall be renewed for a further period as may be indicated by them on the same terms and conditions as contained herein.

e) Our liability under this presents will terminate unless these presents are renewed as provided herein up to 180 days or on the day when our said constituents comply with their obligations, as to which a certificate in writing by the SBI alone is the conclusive proof, whichever date is later.

f) Unless a claim or suit or action is filed against us within six months from that date or any extended period, all the rights of the SBI against us under this guarantee shall be forfeited and we shall be released and discharged from all our obligations and liabilities hereunder.

Notwithstanding anything contained herein above:

(a) Our liability under this Bank Guarantee shall not exceed Rs……../- (Rupees …….only)

(b) This Bank Guarantee shall be valid up to …….

(c) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ……

Yours faithfully,

For and on behalf of

_____

Authorized official.

(Note: This guarantee will require stamp duty as applicable in the State where it is executed and shall be signed by the official(s) whose signature and authority shall be verified)

12.12. Annexure 12: Checklist – Technical Bid

Sl.No.	Documents
1	Annexure 1 – Bid Covering Letter
2	Annexure 2a – Technical Bill of Material
3	Annexure 3 – Functional Requirement
4	Annexure 4 – Technical Requirement
5	Annexure 5 – Implementation details for proposed solution
6	Annexure 6 – Bidder Details
7	Annexure 7 – OEM Details
8	Annexure 9 – Compliance Statement
9	Annexure 11 – EMD (DD/Bank Guarantee)
10	Annexure 17 – Proposed solution details
11	Annexure 19 – Non-blacklisting conformity letter
12	Annexure 29 – Eligibility Criteria
13	Bidder's proposed approach and methodology for providing solution and services. Also specify, • Detailed Solution Architecture Document (including Physical, Technical and Logical Architecture) • Security Architecture (of the proposed application(s)
14	All relevant Credentials/ Documents required for claiming / proofing Eligibility Criteria under all 20 items specified in **Annexure 29**.
15	Certificate from Bidder's Statutory Auditor in original providing turnover details for the last three financial years (2014-15, 2015-16 and 2016-17)
16	Certificate from Bidder's Statutory Auditors in original providing profit& Loss details for two out of the last three years, viz. 2014-15, 2015-16 and 2016-17
17	Copy of Certificate of Incorporation of the Bidder's organization
18	Self- Declaration by authorized signatory confirming that the proposed solutions is owned by Bidder/ Bidder's Parent Company (or its subsidiaries)/ or any other subsidiary of the Bidder
19	Power of Attorney
20	Letter in original from the authorized personnel of OEM confirming to this criteria/Certificate of authorization by the OEM for the Bidder to implement the product/ solution.

12.13. Annexure 13: Checklist – Commercial bid

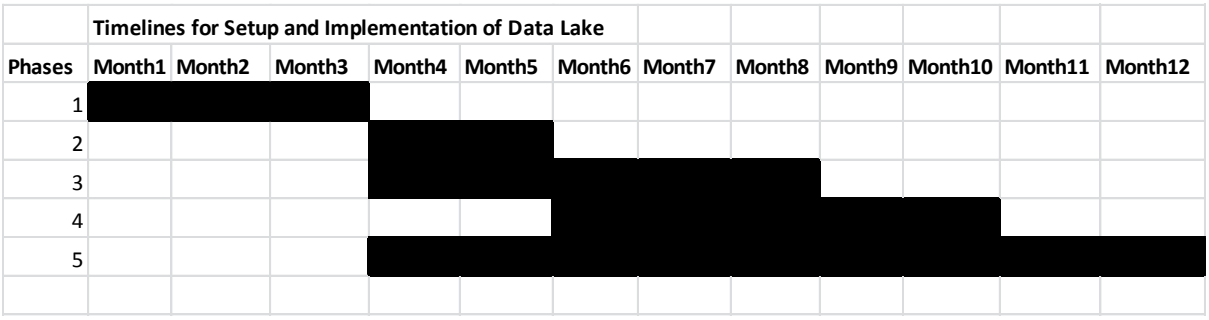
S. No.	Documents
1	Annexure 24 – Indicative Commercial Bid
2	Annexure 2b – Commercial Bill of Material

12.14. Annexure 14: Indicative Users and Growth Rate

- The BDL will be single source of data for all downstream applications, ad-hoc analysis, experimentation, analytics models deployment and concurrent user access. Multiple analytics and customer centric use cases will be deployed on BDL. The BDL solution should factor user growth specific to two types of users:
    - Concurrent users running multiple jobs / triggering ad-hoc queries / analysis requests on BDL
    - Consumers of services / applications deployed on BDL The current numbers for concurrent user(s) to be supported on BDL is ~ 2000. The solution should be robust and the growth (compute / storage) of BDL should factor an increase to this user base.
- Another set of user(s) are consumers of services / applications deployed on BDL. The Bank envisages that applications on BDL should be able to serve decision makers at every level of Bank. This will be a significant user base and the support should be at-least for 40% of Bank's employees having capacity to support 5% concurrent users. However, this number is only indicative and can grow based on applications. There should NOT be any user based license model on BDL.
- The solution should be usable by any number of users and there should not be any cost implications with user growth.
- In terms of compute and data growth rate, the Bank estimates that the fully functional BDL should be able to run ~30k jobs on a daily basis and at-least 7k ETL jobs for existing workloads. With new ingest pipelines and real time data ingest / processing the number of jobs is expected to grow at-least at a rate of 5% on average for ETL jobs and at-least 5% on average for overall daily jobs (Every quarter)
- Scaling or expansion plans for BDL should be submitted by Vendor taking into account the compute, storage and user's footprint on BDL.

12.15. Annexure 15: Implementation Schedule

Phase 1 will commence after installation and power on of hardware.



Phase 1-Setup of Data Lake cluster with all the components becomes functional and migration of full data from DWH to Data Lake and implementation of atleast one use case.
Phase 2- Implementation of two use cases
Phase 3 - Successful migration of all jobs for generating extracts and reports from Data Lake
Phase 4 - Successful implementation of remaining use cases
Phase 5 - Migration of all data sourcing from DWH to Data Lake i.e. Go live.

12.16. Annexure 16: Sourcing Application Details

A) Refer below mentioned illustrative list of applications (and not exhaustive) which shall be sourced with proposed Data Lake solution:

SBI's applications to be sourced with proposed DATA LAKE at SBI							
Sr. No	**Application Name**	**Application's Function**	**Hardware/Database**	**Operating System**	**Application Platform**	**Integration Interface Available**	**Middleware**
1	Core Banking Solution (TCS BaNCS)	Core Banking Solution supporting financial and non- financial transactions	Oracle 11G/12c				Server Integrator (SI)
2	Loan Originating Software (LOS) - SME and Agri	Software solution to handle all loan origination needs	Oracle 11G/12c	LINUX	Web Based	Web Service	Web-Logic
3	Loan Originating Software (LOS) - for P-segment loan	Software solution to handle all loan origination needs	Oracle 11G/12c	AIX	Java (Web Based)	Web Service	WebSphere
4	Active Directory Services	Used for authentication of the SBI employees.		Windows Server 2012			
5	SAP-HCM HRMS	System used to handle Payroll/Reimbursement etc.	HP Blade Server/Oracle 11g/12c	HP-UX 11.31	SAP-WebdypoABAP/JAVA		
6	Lead Management Systems	New leads and tracking of old leads relating to deposits, retail loans etc.	Oracle 11G/12c OS:REHL 5.0	Windows Server 2008	J2EE (Web based)	-	Oracle WebLogic Server
7	Complaints Management Systems	Centralized application for lodging of complaints by Contact Centre, Branches and administrative offices.	Oracle 11G/12c OS:REHL 5.0	Windows Server 2008	J2EE (Web based)	CBS, ATM	Oracle WebLogic Server
8	Performance Linked Incentive System (PLIS)	Used for incentive calculation.	Oracle 11G/12c		.NET (Web based)	Web service	

SBI's applications to be sourced with proposed DATA LAKE at SBI							
Sr. No	**Application Name**	**Application's Function**	**Hardware/Database**	**Operating System**	**Application Platform**	**Integration Interface Available**	**Middleware**
9	Debit Card Management System (inclusive of Card Tracking System)	Used for issuance and management of debit cards	Application on VMware, database on ORACLE EXADATA	LINUX or Windows	WebLogic	Web service	NA
10	SMS Alert applications	SMS Alert application generate the SMS alerts for ATM, POS, ePG transactions and sent to customer's mobile.	Oracle database 11G/12c		Java Platform 1.6	HTTP & XML web services , DB Link, HTTPS API	Axiom
11	Internet Banking Application	An internet facing web based application. This application is integrated with other systems of SBI like Core Banking System, Mobile Banking, and Reward Points System.	Oracle 11G/12c		Java (Web Based)		
12	Mobile Banking Application (e.g. STATE BANK OF INDIA FREEDOM, STATE BANK OF INDIA ANYWHERE and others)	Application to manage customer transactions initiated through mobile channel	Oracle Database	AIX 7.1 RHEL 5.6 RHEL 5.3 RHEL 6.4 OS X 10.8.4 RHEL 6.5 Windows AIX/7 100-03-02-1412	Application developed and deployed on Kony Middleware. Backend applications are hosted on IBM WebSphere application server.	JSON and SOAP web services	IBM WebSphere Application Server, IBM MQ
13	Digital Banking Application (e.g. SBI Buddy)	SB Buddy application	VM / Oracle 11 G/12c	Linux RHEL 6.5	SMP Mobiliser	Email, Bill desk,	NA

SBI's applications to be sourced with proposed DATA LAKE at SBI							
Sr. No	**Application Name**	**Application's Function**	**Hardware/Database**	**Operating System**	**Application Platform**	**Integration Interface Available**	**Middleware**
		currently in use is Mobile Wallet.				IMPS SMS	
14	Loan Lifecycle Management system	End to end loan lifecycle management suite	Oracle 11G/12c	Mainframe	Java (Web Based)	Web Service	WebSphere
15	Loyalty Rewards (Loyalty Application)	Enterprise Wide Loyalty Programme for State Bank Group	Dell PowerEdge R710	Windows Server 2008 R2	.Net	NA	NA
16	Wealth Management Module (MoneyWare Integra from MilesSoft)	Core wealth management platform with CRM as one of the core functionalities	MSSQL 2012 Enterprise SP3	Windows Server 2012 R2 64 Bit, IIS 8.0, .NET Framework 4.5, Windows Server Service Bus 1.1		Web service based (JSON etc.) and file based upload	NA
17	Phone Banking Application	Transactional Banking provided to Contact Centre through IVR and Agent: 1. Stop Payment of Cheque 2. Fund Transfer 3. Issue of TDR/STDR 4. Issue of Statement of Account 5. Issue of H/L and E/L certificates	Oracle 11G/12c	Windows Server 2008	J2EE (Web based)	CBS, MR Port	Oracle WebLogic Server
18	Samadhan Prayas Kendra Software	Outbound Telecalling to borrowers who are defaulting in repayment of H/L, E/L, Car	Oracle 11G/12c	Windows Server 2008	asp.Net	-	IIS Server

SBI's applications to be sourced with proposed DATA LAKE at SBI							
Sr. No	**Application Name**	**Application's Function**	**Hardware/Database**	**Operating System**	**Application Platform**	**Integration Interface Available**	**Middleware**
		loan and Personal Loan accounts.					
19	Pension Management System	Enquiry of last 6 pensions, status of life certificates, details of arrear payments etc.	Oracle 11G/12c	Windows Server 2008	asp.Net	-	IIS Server
20	CMP ITRO Tracking System	Used for refund Income Tax Returns	Oracle 11G/12c	LINUX	.Net	Web Services	
21	Project Vijaypath	SME Loan Tracking	SQL	Windows 2008 R2	.Net	Web service, web interface	
22	ATM	Uses BASE24 EFT processing and switching system					
23	Kiosk	Used for passbook printing and financial transactions	Oracle 11G/12c	UNIX	Java	CBS, BSNL, PMS, Bill Desk, Web services	
24	Document Management System	System is used to track, manage and store documents	8 GB RAM, Quadcore processor, 2.4 Ghz, 1 TB storage Database : Oracle 11g	Windows 2008	.Net 4.5	NA	IIS
25	Government Business Software Solution (Phase-I)	Used for reconciliation of government bills and fund settlement	Database Server: 128 GB RAM, 1.6 Ghz, dual core processor,	Database : HP UX App Server: Windows 2008 - 32	.Net 4.0	NA	IIS

SBI's applications to be sourced with proposed DATA LAKE at SBI							
Sr. No	**Application Name**	**Application's Function**	**Hardware/Database**	**Operating System**	**Application Platform**	**Integration Interface Available**	**Middleware**
			Oracle 11.2.0.4 App Server: 16 GB RAM, 3.2 Ghz, dual core processor				
26	Government Business Software Solution (Phase-II)	Used for reconciliation of government bills and fund settlement	Database Server: 128 GB RAM, 1.6 Ghz, dual core processor, Oracle 11.2.0.4 App Server: 64 GB RAM, 32 core processor	Database : HP UX App Server: Windows 2008 R2 - 64 bit	.Net 4.5	CBS	IIS
27	Payment Hub	Used for RTGS and NEFT	Oracle 11G/12c	AIX	Java		IBM MQ
28	sbiINTOUCH	Digital Banking Application used in 7 Digital Banking Outlets	SQL	MS Dynamics 2013			
29	CTI	Current CTI set up is CRM (IResolve) developed and managed by Vendor and hosted on SBI Web Server.					

Below mentioned application at SBI will also be sourced with Data Lake solution.

S.No.	Application Name
1	Data Warehouse
2	Workflow Solution
3	Finacle for foreign branches

S.No.	Application Name
4	ACE Pelican and Bridger (Name scanning software used for customer sanctions and payment sanctions)
5	Loan Collection module
6	AMLOCK
7	Finacle Treasury
8	Pivotal CRM – Aptean
9	ERS
10	TATkal Tracker
11	Service Desk
12	OFSAA
13	Early Warning System
14	OCAS
15	ITAM
16	Social Media (Planned solution)
17	External Applications (viz. NSDL, Credit Bureaus, Aadhaar, CERSAI, etc.)
18	Analytics

B) Refer below mentioned illustrative list of applications from SBIL to be sourced with proposed DATA LAKE at SBI Life.

Sr. No	Application Name	Application's Function	Hardware/ Database	Operating System	Application Platform	Integration Interface Available
1	SBIL Policy Management System	Core Insurance System of SBI Life	Oracle	Windows	Ingineium Product	Web Service, DB Link
2	Integrated Grievance Management System	System for recording customer grievances	NA	Windows	.net	Web Service, Batch
3	Channel Management System	System for getting sales channel hierarchy and commission data	Oracle	Linux	Java	Web Service
4	MIS (reporting)	To get real time policy data and reports and campaign data	Oracle	Linux	Oracle	Web Service, Query
5	LDAP	For authentication	Open LDAP	Linux		Web Service
6	Swayam	For leave management	Oracle	Linux	SAP	File, Web Service

C) Refer below mentioned illustrative list of applications from SSL to be sourced with proposed DATA LAKE at SSL.

Sr. No.	Application Name
1	Front Office
2	Back Office

D) Refer below mentioned illustrative list of applications from SBI and subsidiaries to be sourced with proposed DATA LAKE solution

Sr. No	Application Name
SBI	
1	TCS BaNCS (SBI Core Banking Solution)
2	Data Warehouse
SBI Life Insurance Company Ltd.	
1	SBIL Policy Management System
2	SBI Life CRM (Planned Solution)
3	Data Warehouse
SBI General Insurance Company Ltd. (SBIGI)	
1	Master Data Management (MDM) solution at SBIGI
2	SBIGI CRM
3	eBAO (core system of SBI General)
SBI Cards and Payment Services Private Limited.	
1	CardOne (CRM of SBI Cards)
2	Vision+ (core business application of SBI Cards)
SBICAP Securities Ltd. (SSL)	
1	Back Office
2	CRM at SSL (Planned)
SBI Funds Management Pvt. Ltd.	
1	CRM at SBI MF (Planned)

12.17. Annexure 17: Proposed Solution

Specify details of the proposed solution in below mentioned format.

Solution	Product Name	Proposed Version and End of Life	Latest Version Available	OEM for the Proposed Solution	Solution Components

12.18. Annexure 19: Non-Blacklisting Conformity Letter

To,
The Deputy General Manager (IDSPM),
State Bank of India, Global IT Centre, IDSPM Department,
4th Floor, Tower No 4,
Railway Station Complex Building,
CBD Belapur, Navi Mumbai – 400614.

Reference: RFP No: SBI/GITC/IDSPM/2017/2018/411 Dated: 09/08/2017

Subject: Conforming non-blacklisting

Dear Sir,

We hereby undertake that <Bidder's/OEM's complete legal name as mentioned on Bid covering letter> has not been blacklisted by IBA/ RBI/Govt./Public Sector Undertakings during the last three years.

Yours faithfully,

For:

Seal and Signature:

Name:

12.19. Annexure 20: Pre-bid Query Format

ANNEXURE 20

Pre-Bid Query Format

(To be provide strictly in Excel format)

Vendor Name	Sl. No	RFP Page No	RFP Clause No.	Existing Clause	Query/Suggestions

Note:

- Bidders are requested to refer this Annexure 20 before submitting pre-bid queries so as to avoid duplication.
- Bidders to note that there will be no change in standard Terms and Conditions of RFP and Model SLAs (Annexure 21)

Queries are to be submitted strictly in the above-mentioned format and in.xls/.xlsx file only.

12.20. Annexure 21: Model SLA

ANNEXURE 21

Service Level Agreement

1. DEFINITIONS & INTERPRETATION

1.1 Definition

Certain terms used in this Agreement are defined hereunder. Other terms used in this Agreement are defined where they are used and have the meanings there indicated. Unless otherwise specifically defined, those terms, acronyms and phrases in this Agreement that are utilized in the information technology services industry or other pertinent business context shall be interpreted in accordance with their generally understood meaning in such industry or business context, unless the context otherwise requires/mentions, the following definitions shall apply:

A. 'The Bank' shall mean the State Bank of India (including domestic branches and foreign offices), its subsidiaries:< *Strike of whichever is inapplicable*.>

B. "Documentation" will describe in detail and in a completely self-contained manner how the User may access and use the ……. (name of the Software/ Maintenance Services)<*Strike off whichever is Inapplicable*>,[2] such that any reader of the Documentation can access, use and maintain all of the functionalities of the ……. (Service)[3], without the need for any further instructions. 'Documentation' includes, user manuals, installation manuals, operation manuals, design documents, process documents, technical manuals, functional specification, software requirement specification, on-line tutorials/CBTs, system configuration documents, system/database administrative documents, debugging/diagnostics documents, test procedures, Review Records/ Test Bug Reports/ Root Cause Analysis Report, list of all Product components, list of all dependent/external modules and list of all documents relating to traceability of the Product as and when applicable etc.

[2] Name of Software
[3] Name of Software

C. 'Services' shall mean and include the Services offered by '……'[4],including but not limited to ……[5] more particularly described in Clause 2 of this Agreement. 'Services' shall also include the Implementation Services, Training Services and Maintenance Services etc. and other incidental services and other obligation of the service provider to be provided under this Agreement

D. "Code" shall mean computer programming code contained in the Software. If not otherwise specified, Code shall include both Object Code and Source Code which means programming languages, including all comments and procedural code, and all related development documents(e.g., flow charts, schematics, statements of principles of operations, end-user manuals, architecture standards, and any other specifications that are used to create or that comprise the Code). Code shall include Maintenance Modifications and Enhancements licensed by the Bank.

E. "Confidential Information" shall have the meaning set forth in Clause 15.

F. "Intellectual Property Rights" shall mean, on a worldwide basis, any and all: (a) rights associated with works of authorship, including copyrights &moral rights; (b) Trade Marks; (c) trade secret rights; (d) patents, designs, algorithms and other industrial property rights; (e) other intellectual and industrial property rights of every kind and nature, however designated, whether arising by operation of law, contract, license or otherwise; and (f) registrations, initial applications, renewals, extensions, continuations, divisions or reissues thereof now or hereafter in force (including any rights in any of the foregoing).

G. "Software" shall mean (a) the software product(s) described in this agreement; (b) all Maintenance Modifications and Enhancements that are provided to the Bank; (c) the Code contained in or otherwise related to each of the foregoing; and (d) the Documentation.

H. "Project Documents" shall mean all the plans, drawings and specifications used while bidding and all other documents necessary to complete all work.

I. "Deficiencies" shall mean non satisfactory outcome of the services which has resulted in deviation from the desired outcome and has thereby cause loss to a party of this agreement.

[4]Name of the service provider
[5]Description of nature of service in detail.

J. “Open Source or Copyleft license” shall mean a license of a computer program in which the source code is available to the general public for use and/or modification from its original design.

K. “Revision control procedure”shall mean the procedure for management of changes to documents, software programs, and other collections of information made during this engagement.

L. “Test Bug Reports” shall mean a report providing the details as to the efficiency of software in relation with reporting and resolution of any bug.

M. “Root Cause Analysis Report” shall mean a report addressing a problem or non-conformance, in order to get to the ‘root cause’ of the problem, which thereby assists in correcting or eliminating the cause, and prevent the problem from recurring.

1.2 Interpretations:

1.2.1 Reference to a person includes any individual, firm, body corporate, association (whether incorporated or not) and authority or agency (whether government, semi government or local).

1.2.2 The singular includes the plural and vice versa.

1.2.3 Reference to any gender includes each other gender.

1.2.4 The provisions of the contents table, headings, clause numbers, italics, bold print and underlining is for ease of reference only and shall not affect the interpretation of this Agreement.

1.2.5 The Schedules, Annexure and Appendices to this Agreement shall form part of this Agreement.

1.2.6 A reference to any documents or agreements (and, where applicable, any of their respective provisions) means those documents or agreements as amended, supplemented or replaced from time to time provided they are amended, supplemented or replaced in the manner envisaged in the relevant documents or agreements.

1.2.7 A reference to any statute, regulation, rule or other legislative provision includes any amendment to the statutory modification or re-enactment or, legislative provisions substituted for, and any statutory instrument issued under that statute, regulation, rule or other legislative provision.

1.2.8 Any agreement, notice, consent, approval, disclosure or communication under or pursuant to this Agreement is to be in writing.

1.2.9 The terms not defined in this agreement shall be given the same meaning as given to them in the RFP. If no such meaning is given technical words shall be understood in technical sense in accordance with the industrial practices.

1.3 Commencement, Term & Change in Terms

1.3.1 This Agreement shall commence from its date of execution mentioned above/ deemed to have commenced from _____ (Effective Date).

1.3.2 This Agreement shall be in force for a period of 5 year(s), unless terminated by the Bank by notice in writing in accordance with the termination clauses of this Agreement.

1.3.3 The Bank shall have the right at its discretion to renew this Agreement in writing on the mutually agreed terms & conditions.

1.3.4 Either party can propose changes to the scope, nature or time schedule of services being performed under this Service Level Agreement. Such changes can be made upon mutually accepted terms & conditions maintaining the spirit (Purpose) of this Service Level Agreement.

2. SCOPE OF WORK : Main scope of work is defined in section 6, 7, 8, 9 and 10 of the RFP. Following conditions are added in addition to above scope.

1. The Vendor warrants that the products supplied under the Contract are new, unused, of the most recent or current model and they incorporate all recent improvements in design and / or features. The Vendor further warrants that all the Products supplied under this Contract shall have no defect, arising from design or from any act of omission of the Vendor that may develop under normal use of the supplied products in the conditions prevailing in India.

2. Warranty for the System Software/off-the-shelf Software will be provided to the Bank as per the conditions of sale / licensing of such software.

3. Warranty for Software Solution: Onsite comprehensive warranty for all the software solution components, including free fixing of bugs, addition of missing features if any will be 12 months from the date of go-live

4. The Vendor shall in addition comply with the performance guarantees specified under the Contract. If, for reasons attributable to the Vendor, these guarantees are not attained in whole or in part the Vendor shall make such changes,

modifications and / or additions to the Products or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests.

5. On-site comprehensive warranty: The warranty would be on-site and comprehensive in nature and back to back support from the OEM if any. The vendor will warrant all the software against defects arising out of faulty design, materials and media workmanship etc. for a period of one years from the date of acceptance of the software. The vendor will provide support for Operating Systems and other preinstalled software components during the warranty period of the hardware on which these software & operating system will be installed. The Vendor shall repair or replace worn out or defective parts including all plastic parts of the equipment at his own cost including the cost of transport.

6. However, if Bank desires to shift the installation to a new site and install it thereof urgently, the VENDOR shall be informed of the same immediately. THE Bank shall bear the charges for such shifting and the VENDOR shall provide necessary arrangement to Bank in doing so. The terms of this agreement, after such shifting to the alternate site and reinstallation thereof would continue to apply and binding on the VENDOR.

7. Bank shall arrange to maintain appropriate environmental conditions, such as those relating to space, temperature, power supply, dust within the acceptable limits required for equipment similar to that covered by this Agreement.

8. NO term or provision hereof shall be deemed waived and no breach excused, unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. Any consent by any party to or waiver of a breach by other, whether express or implied, shall not constitute a consent to or waiver of or excuse for another different or subsequent breach.

9. On account of any negligence, commission or omission by the engineers of the VENDOR and if any loss or damage caused, the VENDOR shall indemnify/ pay/ reimburse the loss suffered by the BANK.

10. Future additions of Hardware / Software:
    a. The Bank would have the right to:
        i. Shift supplied systems to an alternative site of its choice.
        ii. Disconnect / connect / substitute peripherals such as printers, etc. or devices or any equipment / software acquired from another vendor.
        iii. Expand the capacity / enhance the features / upgrade the hardware / software supplied, either from the vendor, or another vendor, or developed in-house.

    Provided such changes or attachments do not prevent proper maintenance, from being performed or unreasonably increase the VENDOR cost of performing repair and maintenance service.

14.2 The warranty terms would not be considered as violated if any of (i), (ii) or (iii) above takes place. Should there be a fault in the operations of the

system, the vendor, would not unreasonably assume that the causes lie with that components / software not acquired from them.

2.1 Standard Services

Standard services to be delivered under this agreement are illustratively listed below but are not limited to the following:-

1 Setup of Data Lake and all related applications 2 Management, Maintenance and Administration of Data Lake cluster and related applications and tools 3 Monitoring of performance of Data Lake Cluster and other applications 4 Development and operationalization of jobs / script / reports on Data Lake 5 Development and implementation of use cases 6 Carrying out day to day operations of Data Lake 7 Development of interfaces for interacting with upstream and downstream applications 8 Migration of Data from DWH and other source systems to Data Lake 9 All work relating to addition of new source systems to Data Lake etc. 10. Periodic data validation and reconciliation.

2.2 Maintenance/ Upgrades

2.2.1 ..... (Service provider) shall maintain and upgrade the Software during the Warranty Period so that the Software shall, at all times during the Warranty Period, meet or exceed the specifications in the Project Documents and the performance requirements as set forth in this Agreement. ..... (Service provider) shall, at no cost to the Bank, promptly correct any and all errors, deficiencies and defects in the Software.

2.2.2 ……(Service Provider) shall have the operational maintenance obligations (e.g., telephone support, problem resolution, on-site services) as mentioned in **Annexure A as a part of this document. Service Provider needs to provide escalation matrix as per the format provided in the Annexure B.**

2.3 Correction of Deficiencies in Deliverables.

2.4.1 If .....(Service provider) is unable to correct all Deficiencies preventing Acceptance of a Deliverable for which .....(Service provider) is responsible after a reasonable number of repeated efforts, the Bank may at its discretion:

a) Allow .....(Service provider) to continue its efforts to make corrections; or

b) Accept the Deliverable with its Deficiencies and reach agreement with .....(Service provider) on an equitable reduction to .....(Service provider)'s charges for developing such Deliverable to reflect the uncorrected Deficiencies; or

c) Terminate this Agreement for cause in accordance with Clause 17[6] (except that the Bank is under no obligation to provide Service provider any further opportunity to cure) and recover its damages as set forth in this agreement.

2.4 Service Milestones[7]

Refer **Annexure 15** : Implementation Schedule of this RFP

2.5 Risk Management

The ……(Service Provider) shall identify and document the risk in delivering the services. …… . …….. (Service Provider) shall identify the methodology to monitor and prevent the risk, and shall also document the steps taken to manage the impact of the risks.

3. FEES /COMPENSATION

3.1 All duties and taxes (excluding/including[8] service tax, VAT or other local taxes) , if any, which may be levied, shall be borne by the Service Provider and Bank shall not be liable for the same.All expenses, stamp duty and other charges/ expenses in connection with execution of this Agreement shall be borne by …… (Service Provider).

3.2 …… (Service Provider) shall provide a clear description quantifying the service element and goods element in the invoices generated by them.

3.3 Payments

3.3.1 The Bank will pay properly submitted valid invoices after sign-off within reasonable period but not exceeding ……..30.....days after its receipt thereof. All payments shall be made in Indian Rupees.

3.3.2 The Bank may withhold payment of any charges that it disputes in good faith, and may set-off penalty amount and any other amount which .....(Service provider) owes the Bank against

[6]Please see Clause 17 'Termination Clause'

[7] The Purpose of this clause is identify any assumption made for this agreement.

[8] Please determine the applicability of the taxes.

charges payable to .....(Service provider) under this Agreement.

3.4 Performance Guarantee and Penalties

3.4.1 The ……..(Service Provider)has to furnish a performance guarantee for an amount of Rs. _____ (10% of the cost of the project) from a Scheduled Commercial Bank other than State Bank of India in a format provided/ approved by the Bank.

3.4.2 If at any time during performance of the Contract, the ……..(Service Provider)shall encounter unexpected conditions impeding timely completion of the Services under the Agreement and performance of the services, the ……..(Service Provider)shall promptly notify the Bank in writing of the fact of the delay, it's likely duration and its cause(s). As soon as practicable, after receipt of the ……..(Service Provider)'s notice, the Bank shall evaluate the situation and may at its discretion extend the ……..(Service Provider)'s time for performance, in which case the extension shall be ratified by the Parties by amendment of the Agreement.

3.4.3 Performance of the obligations under the Agreement shall be made by the Service Provider in accordance with the time schedule[9] specified in this Agreement.

3.4.4 The ……..(Service Provider)shall be liable to pay penalty at the rate mentioned in **Annexure 21a** of the RFP in respect of any delay beyond the permitted period in providing the Services.

3.4.5 Subject to Clause 17 of this Agreement, any unexcused delay by the …….. (Service Provider) in the performance of its Contract obligations shall render this Agreement to be Terminated.

3.4.6 No penalty shall be levied in case of delay(s) in deliverables or performance of the contract for the reasons not attributable to the …….. (Service Provider). On reaching the maximum of penalties specified the Bank reserves the right to terminate the contract.

4. LIABILITIES/OBLIGATION

4.1 The Bank's Duties /Responsibility(if any)

(i) Processing and Authorising invoices

[9] Please ensure that the time scheduled is suitably incorporated in the Agreement.

(ii) Approval of Information

(iii) .....

(iv) .....

(v) .....

4.2 ……..(Service Provider)Duties

(i) Service Delivery responsibilities

(a) To adhere to the service levels documented in this Agreement.

(b) ..... (Service provider), if permitted to sub-contract, shall ensure that..... (Service provider) personnel and its subcontractors will abide by all reasonable directives issued by the Bank, including those set forth in the Bank's then-current standards, policies and procedures (to the extent applicable), all on-site rules of behaviour, work schedules, security procedures and other standards, policies and procedures as established by the Bank from time to time.

(c) ……

(d) ……..*<the concerned dept. may add duties depending on the nature of agreement>*

(ii) Security Responsibility

(a) To maintain the confidentiality of the Bank's resources and other intellectual property rights.

(b).....

(c).....

5. REPRESENTATIONS &WARRANTIES

5.1 …… (Service Provider)Warrants that the technical quality and performance of the Services provided will be consistent with the mutually agreed standards. Warranty shall be for a period of 5 (years) from the date of acceptance.

5.2 Any defect found will be evaluated mutually to establish the exact cause of the defect. Bank may have direct and separate agreement with …….. (Service Provider) to provide technical support to the Bank for related deficiencies.

5.3 ……(Service Provider) warrants that the software developed is free from malware at the time of sale, free from any obvious bugs, and free from any covert channels in the code (of the versions of the applications/software being delivered as well as any subsequent versions/modifications done) and free from OWASP vulnerabilities of applications/software arising out of faulty design, workmanship, etc. during the warranty period (up to.....).

5.4 …… (Service Provider)represents and warrants that its personnel shall be present at the Bank premises or any other place as the bank may direct, only for the Services and follow all the instructions provided by the Bank; Act diligently, professionally and shall maintain the decorum and environment of the Bank; Comply with all occupational, health or safety policies of the Bank.

5.5 ..,…….. (Service Provider) shall assume responsibility under Labour Laws, and also hold the Bank harmless from any loss, expense, damage or personal injury, death and any claim for payment of compensation of its employees, salary, retirement benefits, or any other fringe benefits asserted by an employee of ……(Service Provider), and/or any claim arising out of alleged infringement of intellectual property rights or other proprietary right of any third party arising out of '……(Service Provider)'s.' performance of Services hereunder.

5.6 Each party represents and warrants that it has all requisite power and authorization to enter into and perform this Agreement and that nothing contained herein or required in the performance hereof conflict or will conflict with or give rise to a breach or default under, or permit any person or entity to terminate, any contract or instrument to which the party is bound.

5.7 …… (Service Provider) warrants the Bank against any license or IPR violations on its part or on the part of subcontractor, wherever permitted, in use of any technology /software /product for performing services or developing software for the Bank as part of this Agreement.

5.8 The ……..(Service Provider) shall perform the Services and carry out its obligations under the Agreement with due diligence, efficiency and economy, in accordance with generally accepted techniques and practices used in the industry and with professional standards recognized by international professional bodies and shall observe sound management practices. It shall employ appropriate advanced technology and safe and effective equipment, machinery, material and methods.

5.9 The ……..(Service Provider) has the requisite technical and other competence, sufficient, suitable, qualified and experienced manpower/personnel and expertise in providing the Services to the Bank.

5.10 The ……..(Service Provider) shall duly intimate to the Bank immediately, the changes, if any in the constitution of the ……..(Service Provider).

5.11 The Services and products provided by the ……..(Service Provider) to the Bank do not violate or infringe any patent, copyright, trademarks, trade secrets or other intellectual property rights of any third party.

5.12 The ……..(Service Provider) shall ensure that all persons, employees, workers and other individuals engaged by or sub-contracted by the ……..(Service Provider) in rendering the Services under this Agreement have undergone proper background check, police verification and other necessary due diligence checks to examine their antecedence and ensure their suitability for such engagement. No person shall be engaged by the ……..(Service Provider) unless such person is found to be suitable in such verification and the ……..(Service Provider) shall retain the records of such verification and shall produce the same to the Bank as when requested.

5.13 During the Warranty Period if any software or any component thereof is supplied by…….(Service Provider) is inoperable or suffers degraded performance for more than [_____] not due to causes external to the software, ...(Service provider) shall, at the Bank's request, promptly replace the software or specified component with new software of the same type and quality. Such replacement shall be accomplished without any adverse impact on the Bank's operations within agreed time frame.

5.14 ……

5.15 ……*<any other additional warranty can be incorporated>*

6. GENERAL INDEMNITY

6.1 ……. (Service provider) agrees and hereby keeps the Bank indemnified against all claims, actions, loss, damages, reputation loss, costs, expenses, charges, including legal expenses (Attorney, Advocates fees included) which the Bank may suffer or incur directly or indirectly on account of any misuse of data /information or deficiency in Services or breach on any obligations mentioned in clause 5[10] herein, including without limitation of

[10]Please See Clause 5 'Representation and Warranties'

confidentiality obligations, from any acts of Commission / omission on the part of employees, agents, representatives or Sub-Contractors of Service Provider. ……. (Service provider), to make good the loss suffered by the Bank on first demand made by the Bank in this regard which shall be final conclusive and binding on the .....(Service Provider).

6.2 ……. (Service provider) further undertakes to promptly notify the bank in writing any breach of obligation of the agreement by its employees or representatives including confidentiality obligation and in such an event, the Bank will in addition to and without prejudice to any other available remedies be entitled to immediate equitable relief in a Court of competent jurisdiction to protect its interest including injunctive relief.

6.3 The ……. (Service provider) shall indemnify and keep fully and effectively indemnified the Bank against any fine or penalty levied on the Bank for improper payment of tax for the reasons attributable to the ……. (Service provider).

6.4 The ……. (Service provider) hereby undertakes the responsibility to take all possible measures, at no cost, to avoid or rectify any issues which thereby results in non-performance of software within reasonable time. The Bank shall report as far as possible all material defects to the ……. (Service provider) without undue delay. The ……. (Service provider) also undertakes to co-operate with other service providers thereby ensuring expected performance covered under scope of work.

Nothing contained in this agreement shall impair the Bank's right to claim damages without any limitation for an amount equal to the loss suffered for non-performance of software.

7. CONTINGENCY PLANS.

The ……. (Service provider) shall arrange and ensure proper Data Recovery Mechanism, Attrition Plan and other contingency plans to meet any unexpected obstruction to the service provider or any employees or sub-contractors of the service provider in rendering the Services or any part of the same under this Agreement to the Bank. The …….. (Service Provider) at Banks discretion shall co-operate with the bank in case on any contingency.

8. Transition Requirements.

In the event of failure of the Service Provider to render the Services or in the event of termination of agreement or expiry of term or otherwise, without prejudice to any

other right, the Bank at its sole discretion may make alternate arrangement for getting the Services contracted with another vendor. In such case, the Bank shall give prior notice to the existing Service Provider. The existing Service Provider shall continue to provide services as per the terms of contract until a 'New Service Provider' completely takes over the work. During the transition phase, the existing Service Provider shall render all reasonable assistance to the new Service Provider within such period prescribed by the Bank, at no extra cost to the Bank, for ensuring smooth switch over and continuity of services. If existing vendor is breach of this obligation, they shall be liable for paying a penalty of Rs._(10% of contract value)____on demand to the Bank, which may be settled from the payment of invoices for the contracted period. The Bank may also require the Service Provider to enter into a Transition & Knowledge Transfer Agreement as mentioned in Annexure D of this document.

9. LIQUIDATED DAMAGES

9.1 The Bank reserves the right to deduct, as liquidated damages to the extent of Rs._(10% of contract value) in case of non-performance of software or for deficiency in services provided by ……. (Services provided)as per work order or service levels, if any. In such a case, the Bank also reserves the right to levy penalties as per **Annexure 21a** notwithstanding the Bank reserving its right to terminate the contract.

10. RELATIONSHIP BETWEEN THE PARTIES

10.1 It is specifically agreed that the …….. (Service Provider) shall act as independent service provider and shall not be deemed to be the Agent of the Bank except in respect of the transactions/services which give rise to Principal - Agent relationship by express agreement between the Parties.

10.2 Neither the …….. (Service Provider)nor its employees, agents, representatives, Sub-Contractors shall hold out or represent as agents of the Bank.

10.3 None of the employees, representatives or agents of …….. (Service Provider) shall be entitled to claim any absorption or any other claim or benefit against the Bank.

10.4 This Agreement shall not be construed as joint venture. Each Party shall be responsible for all its obligations towards its respective employees.

No employee of any of the two Parties shall claim to be employee of other Party.

10.5 All the obligations towards the employees of a Party including that on account of personal accidents occurred while working in the premises of the other Party shall be with the respective employer and not on the Party in whose premises the accident occurred.

11. SUB CONTRACTING

11.1 …….. (Service provider) has to obtain written permission from the Bank before contracting any work to subcontractors. Bank at its own discretion may permit or deny the same.

11.2 In case of subcontracting permitted, ……(Service Provider) is responsible for all the services provided to the Bank regardless of which entity is conducting the operations. ……..(Service Provider)is also responsible for ensuring that the sub-contractor comply with all security/confidentiality requirements and other terms and conditions as applicable to ……..(Service provider) mentioned in this Agreement. Bank reserves the right to conduct independent audit in this regard.

11.3 Before engaging Sub-Contractor, the …… (Service Provider) shall carry out due diligence process on sub-contracting/ sub-contractor to the satisfaction of the Bank and Bank shall have access to such records.

11.4 In the event of sub-contracting the …… (Service Provider) shall ensure that suitable documents including confidentiality agreement are obtained from the sub-contractor and the …… (Service Provider) shall ensure that the secrecy and faith of Bank's data / processes is maintained.

11.5 …… (Service Provider) shall provide subcontracting details to the Bank and if required, Bank may evaluate the same.Notwithstanding approval of the Bank for sub-contracting, the …… (Service Provider) shall remain liable to the Bank for all acts/omissions of sub-contractors.

11.6 The Bank reserves the right to ask ……..(Service Provider) and .....(Service provider) shall change/ amend the clause(s) entered between …….(Service Provider) and Subcontractor for Bank's suitability.

12 INTELLECTUAL PROPERTY RIGHTS

12.1 For any technology / software / product developed/used/supplied by …… (Service provider) for performing services or developing software for the Bank as part of this Agreement, ……(service provider) shall have right to use as well right to license for the outsourced services or third party software development. Any license or IPR violation on the part of …….. (Service provider) shall not put the Bank at risk.

12.2 Without the Bank's prior written approval, ...(Service provider) will not use or incorporate in performing the Services link to or call or depend in any way upon, any software or other intellectual property that is subject to an Open Source or Copyleft license or any other agreement that may give rise to any third-party claims or to limit the Bank's rights under this Agreement.

12.3 ……(service provider) shall, at their own expenses without any limitation, defend and indemnify the Bank against all third party claims or infringement of Intellectual Property Right, including Patent, trademark, copyright, trade secret or industrial design rights arising from use of the technology / software / products or any part thereof in India or abroad, for software developed as part of this engagement. In case of violation/ infringement of patent/ trademark/ copyright/ trade secret or industrial design, (Service provider) shall, after due inspection and testing, get the solution redesigned for the Bank at no extra cost.

12.4 …… (Service provider) shall expeditiously extinguish any such claims and shall have full rights to defend it there from.

12.5 The Bank will give notice to …… (Service provider) of any such claim without delay/provide reasonable assistance to..... (Service provider) in disposing of the claim, and will at no time admit to any liability for or express any intent to settle the claim.

12.6 ……(service provider) hereby grants the Bank a fully paid-up, irrevocable, non-exclusive/exclusive license<*strike off whichever is not applicable*> throughout the territory of India or abroad to access, replicate, modify and use software developed including its upgraded versions available during the term of this agreement by……(service provider) as part of this engagement, including all inventions, designs and trademarks embodied therein perpetually.

12.7 Software developed as part of this agreement can be put to use in all offices of State Bank of India/ its foreign office/its subsidiaries.

13 INSTALLATION

…… (Service provider) will install the software/support the Bank in installation of the software developed into the Bank's production, Disaster Recovery, Testing and training environment, if required.

14 INSPECTION AND AUDIT

14.1 It is agreed by and between the parties that the Service Provider shall get itself annually audited by external empanelled Auditors appointed by the Bank/ inspecting official from the Reserve Bank of India or any regulatory authority, covering the risk parameters finalized by the Bank/ such auditors in the areas of products (IT hardware/ software) and services etc. provided to the Bank and the vendor shall submit such certification by such Auditors to the Bank. The vendor and or his / their outsourced agents /sub – contractors (if allowed by the Bank) shall facilitate the same. The Bank can make its expert assessment on the efficiency and effectiveness of the security, control, risk management, governance system and process created by the Service Provider. The Service Provider shall, whenever required by such Auditors, furnish all relevant information, records/data to them. All costs for such audit shall be borne by the Bank.

14.2 Where any deficiency has been observed during audit of the Service Provider on the risk parameters finalized by the Bank or in the certification submitted by the Auditors, it is agreed upon by the Service Provider that it shall correct/ resolve the same at the earliest and shall provide all necessary documents related to resolution thereof and the auditor shall further certify in respect of resolution of the deficiencies. It is also agreed that the Service Provider shall provide certification of the auditor to the Bank regarding compliance of the observations made by the auditors covering the respective risk parameters against which such deficiencies observed.

14.3 Service Provider further agrees that whenever required by the Bank, it will furnish all relevant information, records/data to such auditors and/or inspecting officials of the Bank/ Reserve Bank of India and or any regulatory authority required for conducting the audit. The Bank reserves the right to call and/or retain for any relevant material information / reports including audit or review reports undertaken by the Service Provider (e.g., financial, internal control and security reviews) and findings made on the Service Provider in conjunction with the services provided to the Bank.

15 SECURITY AND CONFIDENTIALITY

15.1 “Confidential Information” mean all information which is material to the business operations of either party or its affiliated companies, in any form including, but not limited to, proprietary information and trade secrets, whether or not protected under any patent, copy right or other intellectual property laws, in any oral, photographic or electronic form, whether contained on computer hard disks or floppy diskettes or otherwise without any limitation whatsoever. Without prejudice to the generality of the foregoing, the Confidential Information shall include all information about the party and its customers, costing and technical data, studies, consultants reports, financial information, computer models and programs, software, contracts, drawings, blue prints, specifications, operating techniques, processes, models, diagrams, data sheets, reports and other information with respect to any of the foregoing matters. All and every information received by the parties and marked confidential hereto shall be assumed to be confidential information unless otherwise proved. It is further agreed that the information relating to the Bank and its customers is deemed confidential whether marked confidential or not.

15.2 All information relating to the accounts of the Bank’s customers shall be confidential information, whether labeled as such or otherwise.

15.3 All information relating to the infrastructure and Applications (including designs and processes) shall be deemed to be Confidential Information whether labeled as such or not. ..... (Service provider) personnel/resources responsible for the project are expected to take care that their representatives, where necessary, have executed a Non-Disclosure Agreement as per the format attached in the **Annexure 8** of the RFP provided by the Bank.

15.4 Each party agrees that it will not disclose any Confidential Information received from the other to any third parties under any circumstances without the prior written consent of the other party unless such disclosure of Confidential Information is required by law, legal process or any order of any government authority. ..... (Service provider), in this connection, agrees to abide by the laws especially applicable to confidentiality of information relating to customers of Banks and the banks per-se, even when the disclosure is required under the law. In such event, the Party must notify the other Party that such disclosure has been made in accordance with law; legal process or order of a government authority.

15.5 Each party, including its personnel, shall use the Confidential Information only for the purposes of achieving objectives set out in this Agreement. Use of the

Confidential Information for any other purpose shall constitute breach of trust of the same.

15.6 Each party may disclose the Confidential Information to its personnel solely for the purpose of undertaking work directly related to the Agreement. The extent of Confidential Information disclosed shall be strictly limited to what is necessary for those particular personnel to perform his/her duties in connection with the Agreement. Further each party shall ensure that each personnel representing the respective party agree to be bound by the terms of this Agreement.

15.7 The non-disclosure obligations herein contained shall not be applicable only under the following circumstances:

(i) Where Confidential Information comes into the public domain during or after the date of this Agreement otherwise than by Disclosure by a Party in breach of the terms hereof.

(ii) Where any Confidential Information was disclosed after receiving the written consent of the other Party.

(iii) Where if a Party is requested or required by law or by any Court or governmental agency or authority to disclose any of the confidential information, then that Party will provide the other party with prompt notice of such request or requirement prior to such disclosure.

(iv) Where any Confidential Information was received by the Party from a third party which does not have any obligations of confidentiality to the other Party.

15.8 ..... (Service provider) shall abide with the Bank's IT and IS policy in key concern areas relevant to the project. Specific requirements will be shared upfront before the start of the work.

15.9 ..... (Service provider) shall ensure to filter all phishing / spamming / overflow attacks in order to ensure availability and integrity on continuous basis. ..... (Service provider) shall also implement any enhanced solutions mandated by security requirements for any / all types of Software/ support.

15.10 The security aspect of the solution/software will be comprehensively reviewed periodically by the Bank, and..... (Service provider) shall carryout modifications / updates based on the security review recommendations on case to case basis.

15.11 The Service Provider shall not, without the Bank's prior written consent, make use of any document or information received from the Bank except for purposes of performing the services and obligations under this Agreement.

15.12 Any document received from the Bank shall remain the property of the Bank and shall be returned (in all copies) to the Bank on completion of the Service Provider's performance under the Agreement.

15.13 Upon expiration or termination of the Agreement and on all amounts as due and payable to..... (Service provider) under the Agreement having been received by..... (service provider), all proprietary documents, software documentation, programs partially or wholly completed, or materials which are directly related to any project under the Agreement shall be delivered to the Bank or at the Bank's written instruction destroyed, and no copies shall be retained by ..... (Service provider) without the Bank's written consent.

16 OWNERSHIP

16.1 ..... (Service provider) will provide source code for every version of the product/Software developed specifically for the Bank, without any cost to the Bank, and it will be treated as the Property of the Bank.

16.2 The source code /object code /executable code and compilation procedures of the software solution made under this agreement are the proprietary property of the Bank and as such..... (Service provider) shall make them available to the Bank after successful User Acceptance Testing.

16.3 ..... (Service provider) agrees that the Bank owns the entire right, title and interest to any inventions, designs, discoveries, writings and works of authorship, including all intellectual property rights, copyrights. Any work made under this agreement shall be deemed to be 'work made for hire' under any Indian/U.S. or any other applicable copyright laws.

16.4 ..... (Service provider) shall ensure proper change management process covering Impact assessment, requirement and solution documents detailing changes made to the software for any work order, in addition to enabling the programmers identify and track the changes made to the source code. The source code will be delivered in appropriate version control tool maintained at the Bank's on site location.

16.5 ..... (Service provider) shall adhere to revision control procedure of the Bank to maintain required documentation and configuration files as well as source code. Necessary backup and restoration of the revision control software related information will be handled by the Service team as per the approved backup policy of the Bank.

16.6 For each application developed by..... (Service provider) on ……. software, including third party software before the platform

become operational, (service provider) shall deliver all documents to the Bank, which include coding standards, user manuals, installation manuals, operation manuals, design documents, process documents, technical manuals, and other documents, if any, as per work order.

16.7 ..... (Service provider) shall also provide documents related to Review Records/ Test Bug Reports/ Root Cause Analysis Report, details and documentation of all Product components, details and documentation of all dependent/ external modules and all documents relating to traceability of the software made under this agreement before its production release.

16.8 All software programs supplied/developed, program documentation, system documentation and testing methodologies along with all other information and documents (other than tools being proprietary to ..... (Service provider) and used for customized software development shall be the exclusive property of the Bank.

16.9 The Intellectual Property Rights on the software code, copyright and source code for various applications/ interfaces developed under this Agreement, and any other component/ framework/ middleware used/ developed as pre-built software assets to deliver the solution, shall belong to the Bank and the Bank shall have complete and unrestricted rights on such property. However, the ……..(service provider) shall hold All Intellectual Property rights in any pre-built software *per se* , except for those which have been assigned under this agreement.

16.10 All information processed by..... (Service provider) during software development, implementation& maintenance belongs to the Bank. ……. (Service provider) shall not acquire any other right in respect of the information for the license to the rights owned by the bank. ..... (Service provider) will implement mutually agreed controls to protect the information. ..... (Service provider) also agrees that it will protect the information appropriately. Failure to protect information may attract civil, criminal, or administrative penalties.

16---- SOURCE CODE ESCROW AGREEMENT[11]

[11] This agreement is to be made wherein the …service provider… has refused to give ownership over the Software. The user department has to delete inapplicable para.

16.1 The …….(Service Provider) shall deposit the source code and everything required to independently maintain the software, to the source code escrow account and agrees to everything mentioned in '**Annexure C'**

16.2 The ……. (Service provider) shall deposit the latest version of source code in escrow account…….. At regular intervals as mentioned in '**Annexure C'**

16.3 The Bank shall have the right to get the source code released and will receive no opposition/hindrances from the escrow agent and ……. (Service provider) under the following conditions:-

(i) In the event wherein the ……. (Service provider) has been declared Insolvent/Bankrupt.

(ii) In the event wherein the ……(software) development project given to ……..(service provider) has been cancelled.

(iii) In the event wherein the ……. (Service provider) has declared its expressed/written unwillingness to fulfill his contractual obligations.

(iv)……..

(v)……..

16.4 ……..(Service provider) agree to bear the payment of fees due to the escrow agent.

16.5 The Escrow Agreement shall ipso-facto would get terminated on delivery of Source Code to either of the parties upon the terms & conditions mentioned in '**Annexure C'.**

17 TERMINATION CLAUSE

17.1 The Bank, without prejudice to any other remedy for breach of contract, shall have the right to terminate the contract in whole or part, if ……..(service provider), at any time, by giving a written notice of at least ……6 months…….(term of notice) fails to deliver any or all of the deliverables within the period(s) specified in this Agreement, or within any extension thereof granted by the Bank pursuant to conditions of Agreement or if ……..(service provider) fails to perform any other obligation(s) under the Agreement provided a cure period of not less than ……6 month…….(term) is given to ……..(service provider) to rectify the defects.

17.2 In the event the bank terminates the Agreement in whole or in part for the breaches attributable to the ……..(Service Provider), the bank may procure, upon such terms and in such manner, as it deems appropriate, software or services similar to those undelivered and …….(service provider) shall be liable to the Bank for any excess costs for such similar software or services. However,

…….(service provider),in case of part termination, shall continue the performance of the Agreement to the extent not terminated.

17.3 In the event of termination of the Agreement, ……(service provider) shall be entitled to receive payment for the Services rendered (delivered) up to the effective date of termination.

17.4 The Bank may at any time terminate the Agreement without giving written notice to …… (Service provider), if …… (Service provider) becomes bankrupt or otherwise insolvent. In this event termination will be without compensation to …… (Service provider), provided that such termination will not prejudice or affect any right of action or remedy, which has occurred or will accrue thereafter to the Bank on payment to the ……..(Service Provider) for the services rendered.

17.5 In the event of the termination of the Agreement..... (Service Provider) shall be liable and responsible to return to the Bank all records, documents, data and information including Confidential Information pertains to or relating to the Bank in its possession.

17.6 In the event of termination of the Agreement for material breach by service provider, Bank shall have the right to give suitable publicity to the same including advising the Indian Bank's Association.

17.7 Upon termination or expiration of this Agreement, all rights and obligations of the Parties hereunder shall cease, except such rights and obligations as may have accrued on the date of termination or expiration; the obligation of indemnity; obligation of payment ;confidentiality obligation; Governing Law clause; Dispute resolution clause ; and any right which a Party may have under the Applicable Law.

18 DISPUTE REDRESSAL MACHANISM & GOVERNING LAW

18.1 All disputes or differences whatsoever arising between the parties out of or in connection with this Agreement (including dispute concerning interpretation) or in discharge of any obligation arising out of the Agreement (whether during the progress of work or after completion of such work and whether before or after the termination of this Agreement, abandonment or breach of this Agreement), shall be settled amicably.

18.2 If the parties are not able to solve them amicably, either party [SBI or ..... (service provider)] shall give written notice to other party clearly setting out there in, specific dispute(s) and/or difference(s), and shall be referred to a sole arbitrator

mutually agreed upon, and the award made in pursuance thereof shall be binding on the parties.

18.3 In the absence of consensus about the single arbitrator, the dispute may be referred to an arbitration panel; one to be nominated by each party and the said arbitrators shall nominate a presiding arbitrator, before commencing the arbitration proceedings. The arbitration shall be settled in accordance with the applicable Indian Laws.

18.4 ..... (Service provider) shall continue work under the Agreement during the arbitration proceedings, unless otherwise directed by the Bank or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrator is obtained.

18.5 Arbitration proceeding shall be held at ……Mumbai.. (Place of Arbitration), India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English.

18.6 This Agreement shall be governed by laws in force in India. Subject to the arbitration clause above, all disputes arising out of or in relation to this Agreement, shall be subject to the exclusive jurisdiction of the courts at …… Mumbai ……(place) only.

18.7 In case of any change in applicable laws that has an effect on the terms of this Agreement, the Parties agree that the Agreement may be reviewed, and if deemed necessary by the Parties, make necessary amendments to the Agreement by mutual agreement in good faith, in case of disagreement obligations mentioned in this clause shall be observed.

19 POWERS TO VARY OR OMIT WORK

19.1 No alterations, amendments, omissions, additions, suspensions or variations of the work (hereinafter referred to as variation) under the Agreement shall be made by..... (Service provider) except as directed in writing by Bank. The Bank shall have full powers, subject to the provision herein after contained, from time to time during the execution of the Agreement, by notice in writing to instruct..... (Service provider) to make any variation without prejudice to the Agreement. ..... (Service provider) shall carry out such variations and be bound by the same conditions, though the said variations occurred in the Agreement documents. If any suggested variations would, in the opinion of..... (Service provider), if carried out, prevent them from fulfilling any of their obligations under the Agreement, they shall notify the Bank, thereof, in writing with reasons for holding such opinion and Bank shall instruct.....

(Service provider) to make such other modified variation without prejudice to the Agreement. ..... (Service provider) shall carry out such variations and be bound by the same conditions, though the said variations occurred in the Agreement documents. If Bank confirms their instructions..... (Service provider)'s obligations will be modified to such an extent as may be mutually agreed. If such variation is substantial and involves considerable extra cost, any agreed difference in cost occasioned by such variation shall be mutually agreed between the parties. In any case in which..... (Service provider) has received instructions from the Bank as to the requirement of carrying out the altered or additional substituted work, which either then or later on, will in the opinion of..... (Service provider), involve a claim for additional payments, such additional payments shall be mutually agreed in line with the terms and conditions of the order.

19.2 If any change in the work is likely to result in reduction in cost, the parties shall agree in writing so as to the extent of reduction in payment to be made to ……(Service Provider), before..... (Service provider) proceeding with the change.

20 NO WAIVER OF BANK RIGHTS OR..... (SERVICE PROVIDER)'S LIABILITY

Neither any payment sign-off/payment by the Bank for acceptance of the whole or any part of the work, nor any extension of time/possession taken by the Bank shall affect or prejudice the rights of the Bank against..... (Service provider), or relieve..... (Service provider) of their obligations for the due performance of the Agreement, or be interpreted as approval of the work done, or create liability on the Bank to pay for alterations/ amendments/ variations, or discharge the liability of..... (service provider) for the payment of damages whether due, ascertained, or certified or not or any sum against the payment of which they are bound to indemnify Bank nor shall any such certificate nor the acceptance by them of any such paid on account or otherwise, affect or prejudice the rights of the ..... (Service provider), against the Bank.

21 LIMITATION OF LIABILITY

21.1 For breach of any obligation mentioned in this agreement, subject to clause 21.3, in no event ……..(Service Provider) shall be liable for damages to the

Bankarising under or in connection with this agreement for an amount exceeding the total cost of the project .

21.2 .....(Service provider) will ensure Bank's data confidentiality and shall be responsible for liability arising in case of breach of any kind of security and/or leakage of confidential customer/Bank's related information to the extent of loss so caused.

21.3 The limitations set forth in Clauses 21.1 shall not apply with respect to:

(i) claims that are the subject of indemnification pursuant to Clause 12[12],

(ii) damage(s) occasioned by the gross negligence or willful misconduct of ……..(Service Provider),

(iii) damage(s) occasioned by ……..(Service Provider) for breach of Clause 15[13],

(iv) Loss/Damages suffered by the Bank due to Non-Compliance of Statutory or Regulatory Guidelines by Service Provider.

(v) when a dispute is settled by the Court of Law in India.

22 FORCE MAJEURE

22.1 Any failure or delay by either parties in performance of its obligation, to the extent due to any failure or delay caused by fire, flood, earthquake or similar elements of nature, or act of God, war, terrorism, riots, civil disorders, rebellions or revolutions, acts of government authorities or other events beyond the reasonable control of non-performing Party shall not be deemed as default.

22.2 If Force Majeure situation arises, the non-performing party shall promptly notify within…30…… (Term, in days) to the other party in writing of such conditions and the cause(s) thereof. Unless otherwise agreed in writing, the non-performing party shall continue to perform its obligations under the Agreement as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

22.3 If the Force Majeure situation continues beyond 30 days, the either parties shall have the right to terminate the Agreement by giving a notice to the other party.Neither party shall have any penal liability to the other in respect of the termination of this Contract as a result of an event of Force Majeure. However,

[12] Please see Clause 12 'IPR Indemnification'
[13]Please see Clause 15 'Security and Confidentiality'

.....(Service Provider) shall be entitled to receive payments for all services actually rendered up to the date of the termination of this Agreement.

23 NOTICES

23.1 Any notice or other communication under this Agreement given by either party to the other party shall be deemed properly given if in writing and;

i. When hand delivered during normal business hours of the recipient, acknowledgment taken.

ii. If transmitted by facsimile during normal business hours of the recipient; proof of delivery taken. A copy sent by registered mail/ first class courier, return receipt requested shall follow all fax notices, to any Fax number of..... (Service provider)'s office at Mumbai, or any other place advised by..... (Service provider) to the Bank from time to time.

iii. If mailed by registered mail/ first class courier, return receipt requested, within five working days of posting, properly addressed and stamped with the required postage, to the intended recipient at its address specified below its signature at the end of this Agreement.

23.2 The Addresses for Communications to the parties are as under.

(a) In the case of the Bank

……..

……..

……..

……..

……

(b) In case of service provider

……

……..

……..

……..

23.3 In case there is any change in the address of one party, it shall be communicated in writing to the other party with in ……15… (days).

24 GENERAL TERMS & CONDITIONS

24.1 TRAINING: ..... (Service provider) shall train designated Bank officials on the configuration, operation/ functionalities, maintenance, support & administration for software, application architecture and components, installation,

troubleshooting processes of the proposed ……(services)as mentioned in this agreement.

24.2 PUBLICITY:..... (Service provider) may make a reference of the services rendered to the Bank covered under this Agreement on..... (Service provider)'s Web Site or in their sales presentations, promotional materials, business plans or news releases etc., only after prior written approval from the Bank.

24.3 SUCCESSORS AND ASSIGNS: This Agreement shall bind and inure to the benefit of the parties, and their respective successors and permitted assigns.

24.4 NON-HIRE AND NON-SOLICITATION: During the term of this Agreement and for a period of one year thereafter, neither party shall (either directly or indirectly through a third party) employ, solicit to employ, cause to be solicited for the purpose of employment or offer employment to any employee/s or sub-contractor/s of the other party, or aid any third person to do so, without the specific written consent of the other party. However nothing in this clause shall affect the Bank's regular recruitments as per its recruitment policy and not targeted to the employees of..... (Service provider).

24.5 SEVERABILITY: The invalidity or unenforceability of any provision of this Agreement shall not in any way effect, impair or render unenforceable this Agreement or any other provision contained herein, which shall remain in full force and effect.

24.6 MODIFICATION: This Agreement may not be modified or amended except in writing signed by duly authorized representatives of each party with express mention thereto of this Agreement.

24.7 ENTIRE AGREEMENT: This Agreement, including all Work orders, Exhibits, Annexure, RFP and other documents or communications incorporated herein, represents the entire agreement for the services of ……(description of software) covering……(short description of the service to be provided), between the parties and supplements all prior negotiations, understandings and agreements, written or oral, relating to the subject matter herein.

24.8 PRIVITY: Neither this Agreement nor any provision hereof is intended to confer upon any person/s other than the Parties to this Agreement any rights or remedies hereunder.

24.9 EFFECTIVE DATE: This Agreement shall be effective from the date mentioned at the beginning of this Agreement.

24.10 DUE AUTHORISATION: Each of the undersigned hereby represents to the other that she/ he is authorized to enter into this Agreement and bind the respective parties to this Agreement.

24.11 COUNTERPART: This Agreement is executed in duplicate and each copy is treated as original for all legal purposes.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by their duly authorized representatives as of the date and day first mentioned above.

State Bank of India	**…….Service Provider**
By:	**By:**
Name:	**Name:**
Designation:	**Designation:**
Date:	**Date:**
WITNESS:	
1.	1.
2.	2.

ANNEXURE, SCHEDULE, ETC

ANNEXURE A

DELIVERABLES/SCOPE OF WORK

As defined in the section 6, 7, 8, 9 and 10 of the RFP.

'……(Service Provider).' Undertakes and warrants to provide technical support with resolution time frame as per the matrix given below:

Issue Classification	**For All Periods (Post30daysofGo-Live)**	
	Response Time	**Resolution Time**
Severity1	*30minutes*	*150minutes*
Severity2	*60minutes*	*360minutes*
Severity3	*120minutes*	*720minutes*

LEVEL	**Type of Infrastructure**	**Function / Technology**
Severity 1(High)	Criteria	a. Any problem due to which users cannot access the proposed solution or infrastructure; or b. Proposed solution is unavailable for use; or c. Any problem due to which the proposed solution does not perform according to the defined performance and query processing parameters required as per the RFP; or d. Showstoppers involving major functional failure in the application, where there are no usable workarounds.
Severity 2(Medium)	Criteria	a. Any incident which could have been classified as "Severity1" but for which an acceptable workaround has been provided by the Bidder; or b. Any problem due to which the proposed solution produces a clearly incorrect or unexpected answer; or c. Users face severe functional restrictions in the application due to partial failure, irrespective of the cause.

LEVEL	**Type of Infrastructure**	**Function / Technology**
Severity3(Low)	Criteria	a. Any other incident causing a partial disruption of service or incorrectness of results; or b. Moderate functional restrictions in the application irrespective of the cause, which have a convenient and readily available workaround

Documentation:

All documents relating to Data dictionary, metadata management, data lineage, golden record, all jobs, scripts, reports, extracts etc. should be created and maintained with the currnet status.

ANNEXURE B

ESCALATION MATRICS[14]

Service level Category	Response/Resolution Time	Escalation thresholds			
		Escalation Level 1		Escalation.....	
		Escalation to	Escalation Mode	Escalation to	Escalation Mode
Production Support	30 minutes	*<Name, designation contact no.>*			
Service Milestones	Within one week	*<Name, designation contact no.>*			
Infrastructure Management	1 hour	*<Name, designation contact no.>*			
Application Development & Maintenance	1 day	*<Name, designation contact no.>*			

ANNEXURE C

[14] To ensure that the service beneficiary receives senior management attention on unresolved issues, the service provider operates a problem escalation procedure in order that any unresolved problems are notified to the service provider management personnel on a priority basis dependent upon the impact and urgency of the problem.

DATED……..DAY OF……..20…

ESCROW AGREEMENT

BETWEEN

[insert name of escrow agent]

("Escrow Agent")

-AND-

STATE BANK OF INDIA

("Principal")

-AND-

[Insert name of supplier]

("Supplier")

[This Agreement is a DRAFT provided only for the purposes of furthering negotiations between the parties. The Department at their end may make changes/ customisation and updates depending upon individual contract/service.]

RECITALS:

This AGREEMENT dated……day of…….. is between *insert name of agent* ("Escrow Agent")

AND

State Bank of India ("Principal")

AND

insert name of software owner (“Supplier”)

A. WHEREAS Supplier has agreed vide agreement dated ……. to license to the Principal the use of certain software.
B. Supplier and principal have already entered into Annual Support and Maintenance services Agreement dated …… pursuant to the Software License Agreement for providing maintenance and support services in respect of the Software Applications on the terms and conditions set out therein.
C. Supplier has agreed to deposit the “Source Code ” (as defined hereinafter) with the Escrow Agent for being made available to the principle on the occurrence/happening of any event of default as specified in this Software Escrow Agreement.
D. The Supplier and the Principal have agreed to appoint an escrow agent and the Escrow Agent has agreed to act as escrow agent and to hold the Source Code to the Software on the following terms and conditions.

AGREED TERMS:

1. INTERPRETATION AND DEFINITIONS

1.1 In this Agreement unless the contrary is clearly intended:

1.1.1 “License Agreement” means the agreement between the Supplier and the Principal as mentioned in clause A;

1.1.2 “Commencement Date” means the date mentioned in the Recital of this agreement ;

1.1.3 “Escrow Fee” means the fee set out in clause 6 of this Agreement.;

1.1.4 “Software” means the software, including software tools, described in License Agreement;

1.1.5 “Source Code” means the Software, including software tools, expressed in human-readable language which is necessary for the understanding, maintaining, modifying, correcting and enhancing of the Software specified in License Agreement;

1.1.6 “Supporting Material” means all of the material and data developed and used in and for the purpose of creating the software including but not limited to compiled object code, tapes, operating manuals and other items listed in License Agreement or Master Service Agreement.

1.1.7 Other terms defined in the Agreement have the same meaning in this Agreement.

1.2 In this Agreement unless the contrary intention appears:

1.2.1 The Clause headings are for convenient reference only and have no effect in limiting or extending the language of the provisions to which they refer;

1.2.2 A cross reference to a Clause number is a reference to all its Sub-clauses;

1.2.3 Words in the singular number include the plural and vice versa;

1.2.4 Words importing a gender include any other gender;

1.2.5 A reference to a person includes a partnership and a body, whether corporate or otherwise;

1.2.6 A reference to a Part, Clause, Sub-clause or Paragraph in this Agreement is a reference to a Part, Clause, Sub-clause or Paragraph of this Agreement as the case may be, and a reference to a Part, Clause, Sub-clause or Paragraph in a Schedule or Annexure is a reference to a Part, Clause Sub-clause or Paragraph in the Schedule or Annexure unless expressed explicitly therein as referring to the Agreement;

1.2.7 Where a word or phrase is given a particular meaning, other parts of speech and grammatical forms of that word or phrase have corresponding meanings;

1.2.8 Monetary references are references to Indian currency;

1.2.9 References to natural persons include corporations and vice versa; and

1.2.10 The plural includes the singular and vice versa.

1.3 Where an obligation is imposed on a party under this Agreement, that obligation shall be deemed to include an obligation to ensure that no act, error or omission on the part of the party's employees, agents or sub-contractors or their employees or agents occurs which prevent the discharge of that party's obligation.

2. DURATION

This Agreement commences on the Commencement Date and continues until either the Source Code is released in accordance with this Agreement, or this Agreement is terminated under Clause 9.

3. APPOINTMENT OF ESCROW AGENT

The Escrow Agent is appointed jointly by the Principal and the Supplier to hold, retain and deal with the Source Code in accordance with the terms of this Escrow Agreement.

4. SUPPLIER'S OBLIGATIONS

4.1 The Supplier must deliver to the Escrow Agent ……[15] copy of the Source Code, within ……[16] days of the date of this Escrow Agreement.

4.2 Within ……[17] of the Supplier making any Upgrade or New Release in relation to the Software available to the Principal, the Supplier must deliver to and deposit with the Escrow Agent, one copy of the Source Code for that Upgrade or New Release (or where appropriate, the Source Code for the whole of the Software including that Upgrade or New Release.

4.3 If the Source Code is lost, stolen, damaged or destroyed after delivery to the Escrow Agent the Supplier must deliver another copy of the Source Code as soon as practicable after notification of the loss, theft, damage or destruction.

4.4 All copies of Source Code delivered to and deposited with the Escrow Agent must be clearly labeled with the name of the Supplier, the name of the Principal, a description of the Source Code (for example where Source Code for an Upgrade only is delivered) and the date.

4.5 The Supplier warrants that all Source Code delivered to and deposited with the Escrow Agent will be free from any virus or device which would prevent it being used for the understanding, maintaining, modifying, correcting or enhancing of the Software, or which would prevent or impede a thorough and effective verification of the Source Code.

4.6 The Supplier further warrants that all Source Code delivered to and deposited with the Escrow Agent will be an accurate and complete expression of the Software (in its then current version) in human readable language.

5. ESCROW AGENT'S OBLIGATIONS

5.1 The Escrow Agent must accept delivery of the Source Code on the date of delivery and hold the Source Code on trust, on the terms and conditions of this Agreement.

5.2 The Escrow Agent must take all necessary steps to ensure the preservation, care, maintenance, safe custody and security of the Source Code while it is in the possession, custody or control of the Escrow Agent, including storage and in a secure receptacle and in an atmosphere which does not harm the Source Code.

5.3 The Escrow Agent must provide written confirmation to both the Supplier and the Principal of all items deposited and released pursuant to this Agreement.

5.4 If the Source Code is lost, stolen, destroyed or damaged while it is in the possession, custody or control of the Escrow Agent, the Escrow Agent must:

---

[15]Please Specify number of copies required, Generally it is One(1) copy of source code.
[16] Please specify the number of days.
[17] Please specify the number of days.

5.4.1 Immediately notify the Supplier and the Principal;

5.4.2 At its own expense fully co-operate in the replacement of the lost, damaged or destroyed Source Code; and

5.4.3 Fully indemnify the Supplier and the Principal in respect of costs and expenses incurred as a result of such loss, damage or destruction.

5.5 The Escrow Agent is not obliged to determine the nature, completeness, or accuracy of any Source Code lodged with it.

6. ESCROW FEE AND EXPENSES

The Supplier must pay the Escrow Fee annually in advance, the first payment being due ……..[18] days after the date of this Agreement and fees for subsequent years being due on each anniversary of the date of this Agreement. The annual Escrow Fee shall be Rs……..(*In words*)

7. TESTING AND VERIFICATION

7.1 The Principal may analyze and conduct such tests in relation to the Source Code as the Principal considers reasonably necessary, to verify that the Source Code deposited pursuant to this Agreement accords with the description of the Source Code in this Agreement or as represented by the Supplier.

7.2 The Principal may engage an independent assessor to undertake analysis and tests of the Source Code on the Principal's behalf.

7.3 The costs of the independent verification must be borne by the Principal, unless the verification demonstrates that the Source Code does not accord with its description in this Agreement or with the Supplier's representations, in which case the costs of the independent verification must be borne by the Supplier.

7.4 The Supplier consents to the release of the Source Code to the Principal or the Principal's agent for the purposes of testing and verification under this clause.

8. RELEASE OF THE SOURCE CODE

8.1 The Escrow Agent must not release, or allow access to, the Source Code except in accordance with the provisions of this Agreement.

[18] Please specify number of days.

8.2 The Escrow Agent must release the Source Code to the Principal in not less than ……[19] business days after receipt of a written request signed by or on behalf of the Principal and accompanied by a Statutory Declaration by an officer of the Principal declaring that:

8.2.1 the Principal has the right to terminate the Agreement for breach by the Supplier; or

8.2.2 Supplier is wound up, or ordered wound up, or has a winding up petition ordered against it, or assigns all or a substantial part of its business or assets for the benefit of creditors, or permits the appointment of a receiver for the whole or substantial part of its business or assets, or otherwise ceases to conduct its business in the normal course, or files a voluntary petition in bankruptcy or an involuntary petition in bankruptcy is filed against the Supplier which is not dismissed within 60 days thereafter; or

8.2.3 Supplier files a voluntary petition in bankruptcy or insolvency; or

8.2.4 Supplier discontinues business because of insolvency or bankruptcy, and no successor assumes Supplier's Software maintenance obligations or obligations mentioned in the License Agreement; or

8.2.5 Supplier has admitted in writing its inability to honour, due to reasons attributable to itself, its obligations under the Software Maintenance and Support Agreement or obligations mentioned in the License Agreement in respect of the Deposit Material; or

8.2.6 Supplier has expressed in writing its unwillingness to render due to the reasons attributable to itself any services to be required to rendered under the Software Maintenance and Support Agreement or obligations mentioned in the License Agreement in respect of the Deposit Material; or

8.2.7 Supplier dissolves or ceases to function as a going concern or to conduct its operation in the normal course of business or intends and conveys its intention to do so.

8.2.8 Supplier/Owner (or its successor) defaults in its obligation to provide maintenance services (except when the Principal fails to pay maintenance fees under any agreement by virtue of which maintenance services to be provided is not in place, expires and is not renewed with in time) as required by the License Agreement, or any agreement by virtue of which maintenance services are to be provided, and fails to cure such default within two weeks after receiving written notice of the default from Principal.

[19] Please specify number of days.

The notice must describe the default and the action which Principal believes is necessary to cure the default. If more than two weeks is reasonably required to complete the cure, Supplier/Owner (or its successor) shall have such additional time (not to exceed two months) as is reasonably needed, provided that Owner (or its successor) is diligent in completing the cure.

8.3 The Principal must provide a copy of the written request and accompanying a notice to the Supplier at the same time, and by the same method of delivery, as it is provided to the Escrow Agent.

8.4 The Escrow Agent must release the Source Code to the Supplier not later than ……(…) business days after receipt of a written request signed by or on behalf of the Supplier and accompanied by a Statutory Declaration by an officer of the Supplier declaring that the Supplier has terminated the Agreement for breach by the Principal.

8.5 The Supplier must provide a copy of the written request and accompanying approval letter from the Principal at the same time, and by the same method of delivery, as it is provided to the Escrow Agent.

8.6 ……..

8.7 …….<*any other condition may be added by the dept. at there end.*>

9. TERMINATION

9.1 This Software Escrow Agreement shall remain in force until the termination/expiry of the Software License Agreement and / or the Software Maintenance & Support Agreement or unless terminated under the terms of this Software Escrow Agreement. Upon the termination or expiry of the Software License Agreement or the Software Maintenance & Support Agreement, this Software Escrow Agreement shall automatically stand terminated.

9.2 The Principal and the Supplier may jointly terminate this Agreement on ……. (…..) days notice in writing to the Escrow Agent.

9.3 If this Agreement is terminated pursuant to this clause , the Escrow Agent must deal with the Source Code in accordance with written directions endorsed by both the Supplier and the Principal.

9.4 If this Agreement is terminated under this clause and the effective date of termination is other than an anniversary of the date of this Agreement, the Escrow

Agent must within …….(…) days of the date of termination make a pro rata refund to the Principal of any Escrow Fees paid in advance.

10. CONFIDENTIALITY

10.1 No party shall, except as permitted by this Escrow Agreement, make public or disclose to any person any information about this Escrow Agreement or the Source Code.

10.2 The Escrow Agent must not reproduce the Source Code or cause it to be reproduced unless the Escrow Agent reasonably believes that reproduction of the Source Code is necessary to carry out the Escrow Agent's obligations under this Escrow Agreement.

10.3 The obligations under this clause shall survive the termination or expiry of this Escrow Agreement.

10.4 Escrow agent shall regard, preserve and keep as secret and confidential all the Source Code including Supporting Materials deposited under this Agreement. In maintaining confidentiality hereunder the Escrow agent agrees and warrants that it shall, either on its own account or jointly with or for any other person, firm, company or any other entity, without obtaining the written consent of the supplier:

I. Not disclose, transmit, reproduce or make available the Source Code including Supporting Materials or any part thereof to the Principal prior to the occurrence/happening of any of the events listed in this Agreement

II. Not disclose, transmit, reproduce or make available the Source Code including Supporting Materials or any part thereof to any person firm, company or any other entity other than its directors, partners, advisers, agents or employees, who need to know the same for the purpose of holding, preserving, safe custody and security of the Source Code including Supporting Materials;

III. Use at least the same degree of care in safeguarding the Source Code including Supporting Materials as it uses for its own confidential documents and information of like importance and such degree of care shall be atleast that which is reasonably calculated to prevent such inadvertent disclosure;

IV. Keep the Source Code including Supporting Materials and any copies thereof secure and in such a way so as to prevent unauthorised access by any third party;

V. Bind each of its directors, partners, advisers, agents or employees so involved to hold, preserve and protect the Source Code including Supporting Materials in the manner prescribed in this Agreement;

VI. Upon discovery of any disclosure or suspected disclosure of the Source Code including Supporting Materials, to promptly inform the supplier and the principal of such disclosure in writing and immediately return to the principal all the Source Code including Supporting Materials, including any and all copies thereof.

11. INSURANCE

11.1 The Escrow Agent must, be insured in respect of potential liability, loss or damage arising at common law or under any statute in respect of claims for property damage, personal injury, public liability and professional indemnity relevant to the performance of the Escrow Agent's obligations pursuant to this Agreement.

11.2 The Escrow Agent must produce evidence on demand, to the satisfaction of the Licensee or Licensor as the case may be, of the insurance effected and maintained in accordance with this clause.

12. INDEMNITY

12.1 Escrow Agent agrees and undertakes to indemnify and hold the Supplier and Principal harmless from any loss, damage, claims, liabilities, charges, costs, or expense (including reasonable attorneys' fees), that may arise or be caused or result by reason of any breach, failure, delay, impropriety or irregularity on its part to observe, adhere to, abide by or comply with any of the terms and conditions of this Agreement, and to defend, at its own expense any suits, action, claim, litigation or other proceedings brought against any party and/or its directors, officers, agents, servants, affiliates, and employees, or any of them, on account thereof, and to pay all expenses and satisfy all judgments which may be incurred by or rendered against them in connection therewith.

12.2 The Escrow Agent indemnifies the other parties against any action, claim or demand by the Escrow Agent's servants, employees or agents or their personal representatives or dependents arising out of the performance of this Agreement.

13. COMPLIANCE WITH LAWS

The Escrow Agent must comply with the provisions of any relevant Statutes, Regulations, By-Laws and the requirements of any Central, State or local authority in carrying out its obligations under this Agreement.

14. DISPUTE RESOLUTION & APPLICABLE LAW

14.1 In the event of any dispute between the Parties relating to this Agreement or the Escrow, they shall first seek to settle the dispute by mutual agreement. If they have not reached a settlement within one month, then any disputing Party may thereafter submit the dispute to arbitration, and if so submitted, such dispute shall be finally settled by arbitration conducted in accordance with the Indian Arbitration and Conciliation Act, 1996. Any arbitration, whether involving Escrow agent or not shall be conducted in …….. [20]India. The language of arbitration shall be English. The institution of any arbitration proceeding hereunder shall not relieve any Party of its obligation to make payments under this Agreement. The decision by the arbitrator shall be binding and conclusive upon the Parties, their successors, assigns and trustees and they shall comply with such decision in good faith.

14.2 This Agreement is governed by and must be construed in accordance with the laws from time to time in force in the Union of India and the parties agree that the courts of laws at Mumbai have jurisdiction to entertain any action in respect of, or arising out of this Agreement.

15. FORCE MAJEURE.

Except for obligations to make payment, no Party shall be liable for any failure to perform arising from causes beyond its control, including, but not limited to, fire, storm, flood, earthquake, explosion, accident, theft, terrorism, acts of public enemies, war, insurrection, sabotage, illness, labor disputes or shortages, product shortages, failure or delays in transportation, inability to secure materials, parts or equipment, acts of God, or acts of any governmental authority or agency thereof.

16. AUDIT RIGHTS:

At the Principal's written request, but not more frequently than annually, Escrow agent shall furnish the Principal and Supplier with a written certificate signed by its authorized representative certifying that Escrow agent is in full compliance with the terms of this Agreement. The Supplier and Principal reserves the right to audit Escrow agent's activities with regard to the Source Code including Supporting Materials no more than twice annually at their own expense. The Principal and Supplier shall schedule any audit at least thirty (30) days in advance. Any such audit shall be conducted during

[20] Please specify the place of arbitration.

regular business hours at Escrow agent's facilities and shall not unreasonably interfere with the Escrow agent's business activities.

17. VARIATION AND WAIVER

17.1 No variation of this Agreement is binding unless it is in writing and signed by all parties.

17.2 No right under this Agreement is waived or deemed to be waived except by notice in writing signed by the party having the benefit of that right.

17.3 A waiver by one party of a breach of a provision of this Agreement does not constitute a waiver in respect of any other breach of the same or any other provision of this Agreement.

17.4 No forbearance, delay or indulgence granted by one party to another will be construed as a waiver of the first party's rights under this Agreement.

18. ASSIGNMENT AND SUB-CONTRACT

18.1 Neither the Principal nor the Supplier may assign their rights under this Agreement without the prior written consent of the other.

18.2 The Escrow Agent may not assign its rights nor subcontract its obligations under this Agreement without the prior written consent of the Supplier and the Principal.

19. SEVERABILITY

If any provision of this Agreement is held invalid, unenforceable or illegal, the offending provision shall be severed from this Agreement and the remaining parts of this Agreement remain in full force and effect.

20. NOTICES

20.1 Notices must be in writing, signed by or on behalf of the party giving notice, sent to the addresses mentioned below

…….

…….

…….

……. (Escrow Agent)

……

……

……

……(Principal)

……

……

……

……(Supplier)

and:

20.1.1 Delivered by hand (in which case the notice is deemed to have been received upon delivery);

20.1.2 Sent by pre-paid ordinary post (in which case the notice is deemed to have been received three (3) business days after posting); or

20.1.3 Sent by facsimile (in which case the notice is deemed to have been received upon receipt by the sender of confirmation of successful transmission).

20.1.4 A party may change its address for service of notices by written notice to the other parties.

Agreed to and accepted by:

…….. (“supplier”) ……(“Escrow Agent”)

By (signature):_____ By (signature):_____

Name: _____ Name :_____

Title:_____ Title: _____

Email: _____ Email: _____

State Bank of India (“Principal”)

By (signature):_____

Name of Department: _____

Title: _____

Email: _____

Transition Plan

(Annexure D)

1. Introduction

1.1 This Annexure describes the duties and responsibilities of the SERVICE PROVIDER and the STATE BANK OF INDIA to ensure proper transition of services and to ensure complete knowledge transfer.

2. Objectives

2.1 The objectives of this annexure are to:

(1) Ensure a smooth transition of Services from the SERVICE PROVIDER to a New/Replacement SERVICE PROVIDER or back to the STATE BANK OF INDIA at the termination or expiry of this Agreement;

(2) ensure that the responsibilities of both parties to this Agreement are clearly defined in the event of exit and transfer; and

(3) ensure that all relevant Assets are transferred.

3. General

3.1 Where the STATE BANK OF INDIA intends to continue equivalent or substantially similar services to the Services provided by the SERVICE PROVIDER after termination or expiry the Agreement, either by performing them itself or by means of a New/Replacement SERVICE PROVIDER, the SERVICE PROVIDER shall ensure the smooth transition to the Replacement SERVICE PROVIDER and shall co-operate with the STATE BANK OF INDIA or the Replacement SERVICE PROVIDER as required in order to fulfill the obligations under this annexure…….

3.2 The SERVICE PROVIDER shall co-operate fully with the STATE BANK OF INDIA and any potential Replacement SERVICE PROVIDERs tendering for any Services, including the transfer of responsibility for the provision of the Services previously performed by the SERVICE PROVIDER to be achieved with the minimum of disruption. In particular:

3.2.1 during any procurement process initiated by the STATE BANK OF INDIA and in anticipation of the expiry or termination of the Agreement and irrespective of the identity of any potential or actual Replacement SERVICE PROVIDER, the SERVICE PROVIDER shall comply with all reasonable requests by the STATE BANK OF INDIA to provide information relating to the operation of the Services, including but not limited to, hardware and software used, inter-working, coordinating with other application owners, access to and provision of all performance reports, agreed procedures, and any other relevant information (including the configurations set up for the

STATE BANK OF INDIA and procedures used by the SERVICE PROVIDER for handling Data) reasonably necessary to achieve an effective transition, provided that:

3.2.1.1 the SERVICE PROVIDER shall not be obliged to provide any information concerning the costs of delivery of the Services or any part thereof or disclose the financial records of the SERVICE PROVIDER to any such party;

3.2.1.2 the SERVICE PROVIDER shall not be obliged to disclose any such information for use by an actual or potential Replacement SERVICE PROVIDER unless such a party shall have entered into a confidentiality agreement; and

3.2.1.3 whilst supplying information as contemplated in this paragraph 3.2.1 the SERVICE PROVIDER shall provide sufficient information to comply with the reasonable requests of the STATE BANK OF INDIA to enable an effective tendering process to take place but shall not be required to provide information or material which the SERVICE PROVIDER may not disclose as a matter of law.

3.3 In assisting the STATE BANK OF INDIA and/or the Replacement SERVICE PROVIDER to transfer the Services the following commercial approach shall apply:

(1) Where the SERVICE PROVIDER does not have to utilize resources in addition to those normally used to deliver the Services prior to termination or expiry, the SERVICE PROVIDER shall make no additional Charges. The STATE BANK OF INDIA may reasonably request that support and materials already in place to provide the Services may be redeployed onto work required to effect the transition provided always that where the STATE BANK OF INDIA agrees in advance that such redeployment will prevent the SERVICE PROVIDER from meeting any Service Levels, achieving any other key dates or from providing any specific deliverables to the STATE BANK OF INDIA, the STATE BANK OF INDIA shall not be entitled to claim any penalty or liquidated damages for the same.

(2) where any support and materials necessary to undertake the transfer work or any costs incurred by the SERVICE PROVIDER are additional to those in place as part of the proper provision of the Services the STATE BANK OF INDIA shall pay the SERVICE PROVIDER for staff time agreed in advance at the rates agreed between the parties and for materials and other costs at a reasonable price which shall be agreed with the STATE BANK OF INDIA in as described in SLA.

3.4 If so required by the STATE BANK OF INDIA, on the provision of no less than 3 months' notice in writing, the SERVICE PROVIDER shall continue to provide the Services or an agreed part of the Services for a period not less than 3 month and not exceeding 6 Months beyond the date of termination or expiry of the Agreement. In such event the STATE BANK OF INDIA shall reimburse the SERVICE PROVIDER for such elements of the Services as are provided beyond the date of termination or expiry date of the Agreement on the basis that:

(1) materials and other costs will be charged at a reasonable price which shall be agreed between the Parties; and/or

(2) Any other fees agreed between the Parties at the time of termination or expiry.

3.5 The SERVICE PROVIDER shall provide to the STATE BANK OF INDIA an analysis of the Services to the extent reasonably necessary to enable the STATE BANK OF INDIA to plan migration of such workload to a Replacement SERVICE PROVIDER provided always that this analysis involves providing performance data already delivered to the STATE BANK OF INDIA as part of the performance monitoring regime.

3.6 The SERVICE PROVIDER shall provide such information as the STATE BANK OF INDIA reasonably considers to be necessary for the actual Replacement SERVICE PROVIDER, or any potential Replacement SERVICE PROVIDER during any procurement process, to define the tasks which would need to be undertaken in order to ensure the smooth transition of all or any part of the Services.

3.7 the SERVICE PROVIDER shall make available such Key Personnel who have been involved in the provision of the Services as the Parties may agree to assist the STATE BANK OF INDIA or a Replacement SERVICE PROVIDER (as appropriate) in the continued support of the Services beyond the expiry or termination of the Agreement, in which event the STATE BANK OF INDIA shall pay for the services of such Key Personnel on a time and materials basis at the rates agreed between the parties.

3.8 The SERVICE PROVIDER shall co-operate with the STATE BANK OF INDIA during the handover to a Replacement SERVICE PROVIDER and such co-operation shall extend to, but shall not be limited to, inter-working, coordinating and access to and provision of all operational and performance documents, reports, summaries produced by the SERVICE PROVIDER for the STATE BANK OF INDIA, including the configurations set up for the STATE BANK OF INDIA and any

and all information to be provided by the SERVICE PROVIDER to the STATE BANK OF INDIA under any other term of this Agreement necessary to achieve an effective transition without disruption to routine operational requirements.

4. Replacement SERVICE PROVIDER

4.1 In the event that the Services are to be transferred to a Replacement SERVICE PROVIDER, the STATE BANK OF INDIA will use reasonable endeavours to ensure that the Replacement SERVICE PROVIDER co-operates with the SERVICE PROVIDER during the handover of the Services.

5. Subcontractors

5.1 The SERVICE PROVIDER agrees to provide the STATE BANK OF INDIA with details of the Subcontracts used in the provision of the Services. The SERVICE PROVIDER will not restrain or hinder its Subcontractors from entering into agreements with other prospective service providers for the delivery of supplies or services to the Replacement SERVICE PROVIDER.

6. Transfer of Configuration Management Database

6.1 ……6…… months prior to expiry or within ……1…… week's notice of termination of this Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA a full, accurate and up to date cut of content from the Configuration Management Database (or equivalent) used to store details of Configurable Items and Configuration Management data for all products used to support delivery of the Services.

7. Transfer of Assets

7.1 ……6……..months prior to expiry or within……1….. week of notice of termination of the Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA the Asset Register comprising:

(1) a list of all Assets eligible for transfer to the STATE BANK OF INDIA; and

(2) a list identifying all other Assets, (including human resources, skill set requirement and know-how), that are ineligible for transfer but which are essential to the delivery of the Services. The purpose of each component and the reason for ineligibility for transfer shall be included in the list.

7.2 Within ……1……month of receiving the Asset Register as described above, the STATE BANK OF INDIA shall notify the SERVICE PROVIDER of the Assets it requires to be transferred, (the "Required Assets"), and the STATE BANK OF

INDIA and the SERVICE PROVIDER shall provide for the approval of the STATE BANK OF INDIA a draft plan for the Asset transfer.

7.3 In the event that the Required Assets are not located on STATE BANK OF INDIA premises:

(1) the SERVICE PROVIDER shall be responsible for the dismantling and packing of the Required Assets and to ensure their availability for collection by the STATE BANK OF INDIA or its authorized representative by the date agreed for this;

(2) any charges levied by the SERVICE PROVIDER for the Required Assets not owned by the STATE BANK OF INDIA shall be fair and reasonable in relation to the condition of the Assets and the then fair market value; and

(3) for the avoidance of doubt, the STATE BANK OF INDIA will not be responsible for the Assets.

7.4 The SERVICE PROVIDER warrants that the Required Assets and any components thereof transferred to the STATE BANK OF INDIA or Replacement SERVICE PROVIDER benefit from any remaining manufacturer's warranty relating to the Required Assets at that time, always provided such warranties are transferable to a third party.

8. Transfer of Software Licenses

8.1 ……6…. months prior to expiry or within ……1……. week's notice of termination of this Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA all licenses for Software used in the provision of Services which were purchased by the STATE BANK OF INDIA.

8.2 On notice of termination of this Agreement the SERVICE PROVIDER shall, within ……1…… week of such notice, deliver to the STATE BANK OF INDIA details of all licenses for SERVICE PROVIDER Software and SERVICE PROVIDER Third Party Software used in the provision of the Services, including the terms of the software license agreements. For the avoidance of doubt, the STATE BANK OF INDIA shall be responsible for any costs incurred in the transfer of licenses from the SERVICE PROVIDER to the STATE BANK OF INDIA or to a Replacement SERVICE PROVIDER provided such costs shall be agreed in advance. Where transfer is not possible or not economically viable the Parties will discuss alternative licensing arrangements.

8.3 Within …1…… month of receiving the software license information as described above, the STATE BANK OF INDIA shall notify the SERVICE PROVIDER of the licenses it wishes to be transferred, and the SERVICE PROVIDER shall provide

for the approval of the STATE BANK OF INDIA a draft plan for license transfer, covering novation of agreements with relevant software providers, as required. Where novation is not possible or not economically viable the Parties will discuss alternative licensing arrangements.

9. Transfer of Software

9.1 Wherein State Bank of India is the owner of the software, …6……. months prior to expiry or within ……1…… weeks' notice of termination of this Agreement the SERVICE PROVIDER shall deliver, or otherwise certify in writing that it has delivered, to the STATE BANK OF INDIA a full, accurate and up to date version of the Software including up to date versions and latest releases of, but not limited to:

(a) Source Code (with source tree) and associated documentation;
(b) application architecture documentation and diagrams;
(c) release documentation for functional, technical and interface specifications;
(d) a plan with allocated resources to handover code and design to new development and test teams (this should include architectural design and code 'walk-through');
(e) Source Code and supporting documentation for testing framework tool and performance tool;
(f) test director database;
(g) test results for the latest full runs of the testing framework tool and performance tool on each environment; and

10. Transfer of Documentation

10.1 ……6…. months prior to expiry or within ……1….. weeks' notice of termination of this Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA a full, accurate and up-to date set of Documentation that relates to any element of the Services as defined in ……Annexure…….

11. Transfer of Service Management Process

11.1 ……6….. months prior to expiry or within ……1…….. weeks' notice of termination of this Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA:

(a) a plan for the handover and continuous delivery of the Service Desk function and allocate the required resources;

(b) full and up to date, both historical and outstanding Service Desk ticket data including, but not limited to:

(1) Incidents;

(2) Problems;

(3) Service Requests;

(4) Changes;

(5) Service Level reporting data;

(c) a list and topology of all tools and products associated with the provision of the Software and the Services;

(d) full content of software builds and server configuration details for software deployment and management; and

(e) monitoring software tools and configuration.

12. Transfer of Knowledge Base

12.1 ……6.. months prior to expiry or within …1……. week notice of termination of this Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA a full, accurate and up to date cut of content from the knowledge base (or equivalent) used to troubleshoot issues arising with the Services but shall not be required to provide information or material which the SERVICE PROVIDER may not disclose as a matter of law.

13. Transfer of Service Structure

13.1 ……6… months prior to expiry or within …1…… week's notice of termination of this Agreement the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA a full, accurate and up to date version of the following, as a minimum:

(a) archive of records including:

(1) Questionnaire Packs;

(2) project plans and sign off;

(3) Acceptance Criteria; and

(4) Post Implementation Reviews.

(b) programme plan of all work in progress currently accepted and those in progress;

(c) latest version of documentation set;

(d) Source Code (if appropriate) and all documentation to support the services build tool with any documentation for 'workarounds' that have taken place;

(e) Source Code, application architecture documentation/diagram and other documentation;

(f) Source Code, application architecture documentation/diagram and other documentation for Helpdesk; and

(g) project plan and resource required to hand Service Structure capability over to the new team.

14. Transfer of Data

14.1 In the event of expiry or termination of this Agreement the SERVICE PROVIDER shall cease to use the STATE BANK OF INDIA Data and, at the request of the STATE BANK OF INDIA, shall destroy all such copies of the STATE BANK OF INDIA Data then in its possession to the extent specified by the STATE BANK OF INDIA.

14.2 Except where, pursuant to paragraph 14.1 above, the STATE BANK OF INDIA has instructed the SERVICE PROVIDER to destroy such STATE BANK OF INDIA Data as is held and controlled by the SERVICE PROVIDER, …1….. months prior to expiry or within ……1….. month of termination of this Agreement, the SERVICE PROVIDER shall deliver to the STATE BANK OF INDIA:

(1) An inventory of the STATE BANK OF INDIA Data held and controlled by the SERVICE PROVIDER, plus any other data required to support the Services; and/or

(2) a draft plan for the transfer of the STATE BANK OF INDIA Data held and controlled by the SERVICE PROVIDER and any other available data to be transferred.

15. Training Services on Transfer

15.1 The SERVICE PROVIDER shall comply with the STATE BANK OF INDIA's reasonable request to assist in the identification and specification of any training requirements following expiry or termination. The purpose of such training shall be to enable the STATE BANK OF INDIA or a Replacement SERVICE PROVIDER to adopt, integrate and utilize the Data and Assets transferred and to deliver an equivalent service to that previously provided by the SERVICE PROVIDER.

15.2 The provision of any training services and/or deliverables and the charges for such services and/or deliverables shall be agreed between the parties.

15.3 Subject to paragraph 15.2 above, the SERVICE PROVIDER shall produce for the STATE BANK OF INDIA's consideration and approval …6…….. months prior to expiry or within ……7…… Working Days of issue of notice of termination:

(1) A training strategy, which details the required courses and their objectives;

(2) Training materials (including assessment criteria); and

(3) a training plan of the required training events.

15.4 Subject to paragraph 15.2 above, the SERVICE PROVIDER shall schedule all necessary resources to fulfill the training plan, and deliver the training as agreed with the STATE BANK OF INDIA.

15.5 SERVICE PROVIDER shall provide training courses on operation of licensed /open source software product at STATE BANK OF INDIA's …….Premises, at such times, during business hours as STATE BANK OF INDIA may reasonably request. Each training course will last for ……96……hours. STATE BANK OF INDIA may enroll up to ……50…….. of its staff or ……50…….. employees of the new/replacement service provider in any training course, and the SERVICE PROVIDER shall provide a hard copy of the Product (licensed or open sourced) standard training manual for each enrollee. Each training course will be taught by a technical expert with no fewer than ……5……. Years of experience in related operating software system. SERVICE PROVIDER shall provide the Big Data Technology training without any additional charges.

16. Transfer Support Activities

16.1 ……6…….. months prior to expiry or within …7……..Working Days of issue of notice of termination, the SERVICE PROVIDER shall assist the STATE BANK OF INDIA or Replacement SERVICE PROVIDER to develop a viable exit transition plan which shall contain details of the tasks and responsibilities required to enable the transition from the Services provided under this Agreement to the Replacement SERVICE PROVIDER or the STATE BANK OF INDIA, as the case may be.

16.2 The exit transition plan shall be in a format to be agreed with the STATE BANK OF INDIA and shall include, but not be limited to:

(1) a timetable of events;

(2) resources;

(3) assumptions;

(4) activities;

(5) responsibilities; and

(6) risks.

16.3 The SERVICE PROVIDER shall supply to the STATE BANK OF INDIA or a Replacement SERVICE PROVIDER specific materials including but not limited to:

(a) Change Request log;

(b) entire back-up history; and

(c) dump of database contents including the Asset Register, problem management system and operating procedures. For the avoidance of doubt this shall not include proprietary software tools of the SERVICE PROVIDER which are used for project management purposes generally within the SERVICE PROVIDER's business.

16.4 The SERVICE PROVIDER shall supply to the STATE BANK OF INDIA or a Replacement SERVICE PROVIDER proposals for the retention of Key Personnel for the duration of the transition period.

16.5 On the date of expiry the SERVICE PROVIDER shall provide to the STATE BANK OF INDIA refreshed versions of the materials required under paragraph 16.3 above which shall reflect the position as at the date of expiry.

16.6 The SERVICE PROVIDER shall provide to the STATE BANK OF INDIA or to any Replacement SERVICE PROVIDER within ……7……..Working Days of expiry or termination a full and complete copy of the Incident log book and all associated documentation recorded by the SERVICE PROVIDER during the ……6…… months prior to the date of expiry or termination.

16.7 The SERVICE PROVIDER shall provide for the approval of the STATE BANK OF INDIA a draft plan to transfer or complete work-in-progress at the date of expiry or termination.

17. Use of STATE BANK OF INDIA Premises

17.1 Prior to expiry or on notice of termination of this Agreement, the SERVICE PROVIDER shall provide for the approval of the STATE BANK OF INDIA a draft plan specifying the necessary steps to be taken by both the SERVICE PROVIDER and the STATE BANK OF INDIA to ensure that the STATE BANK OF INDIA's Premises are vacated by the SERVICE PROVIDER.

17.2 Unless otherwise agreed, the SERVICE PROVIDER shall be responsible for all costs associated with the SERVICE PROVIDER's vacation of the STATE BANK OF INDIA's Premises, removal of equipment and furnishings, redeployment of SERVICE PROVIDER Personnel, termination of arrangements with

Subcontractors and service contractors and restoration of the STATE BANK OF INDIA Premises to their original condition (subject to a reasonable allowance for wear and tear).

IN WITNESS WHEREOF, the parties hereto have caused this annexure to be executed by their duly authorized representatives as of ……..day of ……...

State Bank of India	**Service Provider**
By:	**By:**
Name:	**Name:**
Designation:	**Designation:**
Date:	**Date:**
WITNESS:	
1.	1.
2.	2.

12.21. ANNEXURE 21a: Penalties

Penalties

The Bidder understands that the testing agency will deliver their testing services in accordance with the Project timeline detailed in “PROJECT TIMELINE”. In order to achieve the satisfactory and timely results and execution, the Bidder will have to ensure the adequacy and experience of the testing resources to the full satisfaction of the Bank. In case of breach of the above by the Bidder, the Bank shall impose penalty equivalent to a sum of one half of one percent (0.5%) of the cost of the testing agency per calendar week or part thereof, of delay till all the obligations of the Bidder are met.

Important Note: The response and resolution by the Bidder pertaining to UAT related defects/gaps of Critical, High, and Medium & Low would strictly be to meet the Project Timeline and go live requirements of the Bank.

Post Implementation

During post implementation, penalty will be levied for non-compliance to the uptime requirements. The intent of prescribing penalty for uptime is with the view to ensure high availability of services at all times to the Bank.

a) The VENDOR shall ensure that the full configuration of hardware, software and solution are available to the BANK in proper working condition with an uptime of 99.9% of the time on a 24x7 Monthly basis. Uptime is defined as the uptime of the solution and node, not of overall hardware or system software. If any significant part of the solution or cluster is unavailable or inaccessible or unresponsive to end-users, it will be considered down-time. The Bank's decision will be final in determining downtime.

b) For purpose of calculating penalty, uptime is calculated as under:
   - Node-wise Uptime (%) = (total hours during month - Sum of downtime hours for node during month) X 100 / Total hours during the month
   - Total hours during the month = No. of calendar days x 24 hours
   - Cluster Uptime (%) = Average of node-wise uptime for all nodes in the cluster

Uptime rules

Wherever the Bidder monitors onsite, the downtime calculation starts from the time hardware/ software/ tool/ solution etc. fails leading to denial of service. As long as there is no denial service to a Bank user, downtime does not arise.

The Bidder should guarantee a minimum of uptime of 99.9% per month for the proposed solution and execute Service Level Agreement accordingly. The uptime will be calculated on monthly basis. SLA will be monitored, and penalty will be levied as below:

5% of ATS charges for the month (for every 1% shortfall from the stipulated service level)

If up-time is below 98% - No ATS charges will be paid for that month.

The right to levy the penalty is in addition to and without prejudice to other rights/remedies available to the bank such as termination of contract, invoking performance guarantee and recovery of amount paid etc.

Penalty for Losses/Breaches/reputation loss/business loss/frauds:

Penalty of 1% of total contract value

This shall be in addition to penalty for not meeting the availability SLA which is defined above:

Penalty of Rs.10,000/-shall be charged for every non-conformance with the service response and resolution time table as specified below:

Issue Classification	For All Periods (Post 30 days of Go-Live)	
	Response Time	**Resolution Time**
Severity1	*30 minutes*	*150 minutes*
Severity2	*60 minutes*	*360 minutes*
Severity3	*120 minutes*	*720 minutes*

The bank reserves the right to recover the penalty from any payment to be made under this contract.

Penalty for Reputational loss and business loss: Penalty of 1% of contract value will be levied for reputational loss / business loss.

Reputational loss is the potential loss that negative publicity regarding an institution's business practices, whether true or not, may cause a decline in the customer dissatisfaction, costly litigations or business/revenue reductions.

Business loss: in case of outage in critical applications, Bank loses the opportunity of doing the business during that period and thereby losing profits thereon.

12.22. Annexure 23: Proposed Resource Profile

Experience of the Proposed Program Manager

1.	Experience of the Proposed Program Manager						
Sl.no	Name of the resource	Number of years of experience	Name of Banks where the resource has worked in the past	Count of branches of the mentioned Banks	Scope of Work involved of the project	Client Contact Details, including name, designation, contact number & email id.	Profile attached (Yes/No)

**Add separate rows for each client*

2.	Experience of the Team Leads

Sl.no	Name of the resource	Number of years of experience	Name of Banks where the resource has worked in the past	Count of branches of the mentioned Banks	Scope of Work involved of the project	Client Contact Details, including name, designation, contact no & email id.	Profile attached (Yes/No)

**Add separate rows for each client*

3.	Experience of the Other Team Members, Functional Consultant, Architects etc.						
Sl.no	Name of the resource	Number of years of experience	Name of Banks where the resource has worked in the past	Count of branches of the mentioned Banks	Scope of Work involved of the project	Client Contact Details, including name, designation, contact no & email id.	Profile attached (Yes/No)

**Add separate rows for each client*

12.23. Annexure 24: Indicative Commercial Bid

Annexure 24

Indicative Commercial Bid

The indicative commercial Bid needs to contain the information listed hereunder in a sealed envelope bearing the identification – **"Indicative Commercial Bid for Procurement of _____".**

Name of the Bidder:

Sr. No.	Item	Cost per person/per day/ per unit etc. (as applicable)	Amount in Rupees	Proportion to Total Cost (in percentage) #
1.	----------	---------	----------	
2.	Training Cost			
3.	Comprehensive Warranty for period of ----- year(s) for Software Solution.			
4..	ATS/AMC/S&S for…..year(s) after expiry of warranty.		----------	

	(This cost should be in the range 15% to 25% p.a. of license cost of software).			
	Total Cost *			

The 'Proportion to Total Cost' percentage mentioned here will have to be maintained in the final price quote also by all the Bidders. The percentage should be mentioned in two decimal places. Variation in the final price should not exceed +/- 5%. See illustration at the end.

* This will be the Total Cost of Ownership (TCO) and should be quoted in the reverse auction.

Breakup of Taxes and Duties

Sr. No.	Name of activity/Services	Tax 1	Tax 2	Tax 3
		Mention Name of Tax		
1.				
2.				
3.				
4.				
5.				
6.				
Grand Total				

Signature

Seal of Company

Illustration

Particulars	Indicative Price Bid Quote (INR)	Proportion to Total Cost (in %age)	L1 Price (INR)	Minimum final price should not be below (INR)*	Maximum final price should not exceed (INR)**

A	*B*	*C*	*D*	*E*	*F*
(a) Item 1	25	13.16		9.38	10.36
(b) Item 2	50	26.32		18.75	20.72
(c) Item 3	75	39.47		28.13	31.09
(d) Item 4	40	21.05		15.00	16.58
(e) Grand Total (1 + 2 + 3 + 4)	**190**	**100**	**75**		

*Computed as 'C' percentage of 'D' less 5%.
**Computed as 'C' percentage of 'D' plus 5%.

12.24. Annexure 27: PROFORMA OF CERTIFICATE TO BE ISSUED BY THE BANK AFTER SUCCESSFUL COMMISSIONING AND ACCEPTANCE OF THE HARDWARE / SOFTWARE / SERVICES

ANNEXURE 27

PROFORMA OF CERTIFICATE TO BE ISSUED BY THE BANK AFTER SUCCESSFUL COMMISSIONING AND ACCEPTANCE OF THE SOFTWARE SOLUTION/ SERVICES

Date:

M/s.----------

Sub: Certificate of commissioning of Solution

1. This is to certify that the Software Solution as detailed below has/have been successfully installed and commissioned (subject to remarks in Para No. 2) in accordance with the Contract/specifications.

a) Bid No. ._____ dated _____ ___

b) Description of the Solution _____

c) Quantity _____

d) Date of commissioning _____

e) Date of acceptance test _____

2. Details of specifications of Software Solution not yet commissioned and recoveries to be made on that account:

S.No.	Description	Amount to be recovered

3. The acceptance test has been done to our entire satisfaction and Staff have been trained to operate the Software Solution.

4. The Vendor has fulfilled his contractual obligations satisfactorily*

or

The Vendor has failed to fulfil his contractual obligations with regard to the following:

(a)

(b)

(c)

5. The amount of recovery on account of non-supply of Software Solution/Services is given under Para No. 2.

6. The amount of recovery on account of failure of the Vendor to meet his contractual obligations is as indicated in endorsement of the letter.

Signature _____

Name _____

Designation with stamp _____

_____

* Explanatory notes for filling up the certificates:

(a) The Vendor has adhered to the time schedule specified in the contract in providing the required Software Solution / Manuals pursuant to Technical Specifications.

(b) The Vendor has supervised the commissioning of the Software Solution in time i.e., within the period specified in the contract from the date of intimation by the Bank in respect of the installation of the Software Solution.

(c) Training of personnel has been done by the Vendor as specified in the Contract.

(d) In the event of Manuals having not been supplied or installation and commissioning of the Software Solution having been delayed on account of the Vendor, the extent of delay should always be mentioned.

12.25. Annexure 28: PRE-CONTRACT INTEGRITY PACT

ANNEXURE 28

PRE CONTRACT INTEGRITY PACT

(TO BE STAMPED AS AN AGREEMENT)

General

This pre-Bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of 201 , between, on the one hand, the State Bank of India a body corporate incorporated under the State Bank of India Act, 1955 having its Corporate Centre at State Bank Bhavan, Nariman Point, Mumbai through its ----------Department / Office at ----------,----------,

(hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, its successors) of the First Part and M/s represented by

Shri , Chief Executive Officer

(hereinafter called the "BIDDER/Seller which expression shall mean and include, unless the context otherwise requires, its / his successors and permitted assigns of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with

the relevant law in the matter and the BUYER is an Office / Department of State Bank of India performing its functions on behalf of State Bank of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :

- Enabling the BUYER to obtain the desired service / product at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement; and
- Enabling BIDDERs to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any farm, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

1. Commitments of the BUYER

1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, Bid evaluation, contracting or implementation process related to the contract.

1.2 The BUYER will, during the pre-contract stage, treat all BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other B1DDERs.

1.3 All the officials of the BUYER will report to the appropriate authority any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

1.4 In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

2. Commitments of BIDDERs

2.1 The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its Bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:

2.2 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

2.3 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with State Bank of India for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with State Bank of India.

2.4 Wherever applicable, the BIDDER shall disclose the name and address of agents and representatives permitted by the Bid documents and Indian BIDDERs shall disclose their foreign principals or associates, if any.

2.5 The BIDDER confirms and declares that they have not made any payments to any agents/brokers or any other intermediary, in connection with this Bid/contract.

2.6 The BIDDER further confirms and declares to the BUYER that the BIDDER is the original vendors or service providers in respect of product / service covered in the Bid documents and the BIDDER has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

2.7 The BIDDER, at the earliest available opportunity, i.e. either while presenting the Bid or during pre-contract negotiations and in any case before opening the financial Bid and before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

2.8 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, Bid evaluation, contracting and implementation of the contract.

2.9 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

2.10 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass. on 'to° others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

2.11 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

2.12 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

2.13 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial Interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender. The term 'relative' for this purpose would be

as defined in Section 6 of the Companies Act 1956.

2.14 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

3. Previous Transgression

3.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise / Public Sector Banks in India or any Government Department in India or RBI that could justify BIDDER's exclusion from the tender process.

3.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

4. Earnest Money (Security Deposit)

4.1 While submitting commercial Bid, the BIDDER shall deposit an amount (specified in RFP) as Earnest Money/Security Deposit, with the BUYER through any of the mode mentioned in the RFP / Bid document and no such mode is specified, by a Bank Draft or a Pay Order in favour of State Bank of India from a nationalized Bank including SBI or its Subsidiary Banks. However payment of any such amount by way of Bank Guarantee, if so permitted as per Bid documents / RFP should be from any nationalized Bank other than SBI or its Subsidiary Banks and promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof for making such payment to the BUYER.

4.2 Unless otherwise stipulated in the Bid document / RFP, the Earnest Money/Security Deposit shall be valid up to a period of five years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.

4.3 In case of the successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

4.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

5. Sanctions for Violations

5.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:

(i) To immediately call off the pre contract negotiations without assigning any reason and without giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue, unless the BUYER

desires to drop the entire process.

(ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Base Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

(vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the BUYER or any of its Subsidiaries for a minimum period of five years, which may be further extended at the discretion of the BUYER.

(viii) To recover all sums paid, in violation of this Pact, by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

(ix) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

(x) Intimate to the CVC, IBA, RBI, as the BUYER deemed fit the details of such events for appropriate action by such authorities.

5.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1(i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

5.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

6. Fall Clause

The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present Bid in respect of any other Ministry/Department of the Government of India or PSU or any other Bank and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU or a Bank at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

7. Independent Monitors

7.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).

Shri Johny Joseph, IAS (Retd.), Maharashtra Cadre, 1972 Batch

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....

7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

7.3 The Monitors shall not be subjected to instructions by the representatives of the parties and perform their functions neutrally and independently.

7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings. Parties signing this Pact shall not approach the Courts while representing the matters to Independent External Monitors and he/she will await their decision in the matter.

7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

7.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

7.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

8. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all

the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

9. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

10. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

11. Validity

11.1 The validity of this Integrity Pact shall be from date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract, with the successful Bidder by the BUYER.

11.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12. The parties hereby sign this Integrity Pact at __ on _____

For BUYER
Name of the Officer: S. Ilangovan
Designation: DGM (IDSPM)
IDSPM Department
State Bank of India
4th Floor, Tower No:4,
CBD Belapur Railway
Station Complex,
Sector-11, CBD Belapur,
Navi Mumbai – 400614

For BIDDER
Chief Executive Officer

Witness
1.
2.

Witness
1.
2.

* Provisions of these clauses would need to be amended/ deleted in line with the policy of the BUYER in regard to involvement of Indian agents of foreign suppliers.

Note: This agreement will require stamp duty as applicable in the State where it is executed.

12.26. Annexure 29: Bidder's Eligibility Criteria

Annexure 29

Bidder's Eligibility Criteria

Bidders meeting the following criteria are eligible to submit their Bids along with supporting documents. If the Bid is not accompanied by all the required documents supporting eligibility criteria, the same would be rejected:

Commercial:

S. No.	Eligibility Criteria	Compliance (Yes/No)	Documents to be submitted
1.	The Prime Bidder must be a company / partnership firm incorporated in India and operating for at least 5 years as on the date of RFP		Copy of the Partnership deed/Bye Law/ Certificate of Incorporation issued by Registrar of Companies along with Memorandum & Articles of Association and full address of the registered office.
2.	The Prime Bidder should have a minimum turnover of INR 500 Crore in each of the last 3 Financial year (i.e.FY2014-15,2015-16, 2016-2017)		Copy of the audited Balance Sheet and / or Certificate of the Charted Accountant for preceding three years.
3.-	The Bidder should be profitable organization (on the basis of Operating Profit for at least _2__ out of last _3__ financial years.		Copy of the audited balance sheets along with profit and loss statement for corresponding years and / or Certificate of the Charted Accountant
4.	Bidder should have experience of minimum __3_ years in providing the Software Solution/services.		Copy of the order and / or Certificate of completion of the work. The Bidder should also furnish user acceptance report.
5	Client references and contact details (email/ landline/ mobile) of customers for whom the Bidder has executed similar projects. (Start and End Date of the Project to be mentioned) in the past (At least _3_ client references are required)		1. 2. 3.

6.	Deployment Methodologies (Improper or insufficient methodologies could result in disqualification at the sole discretion of the Bank)		Documents on deployment framework, tools, templates & utilities to be provided.
7.	Certification Requirements (as per scope of the project)		Copy of the Valid Certificate(s) to be provided
8.	Project Management Methodologies		Profile of project Team / previous Assignments of similar nature / Details project plan to be submitted
9.	Past/present 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.
10.	Bidders should not have been blacklisted for deficiency in service by any Public Sector Bank during the last _3_ years.		Bidder should specifically confirm on their letter head in this regard as per the format given in **Annexure 19**.
11.	Bidder should have been in BDL / Data Lake operation for minimum _3_ years		Length of existence of Bidder should be mentioned. Bidder should specifically confirm on their letter head in this regard.
12.	The Bidder/ OEM should have support setup with _1_ hours of response time in ___Mumbai___(PR)/ and ____ (DR) locations.		Bidder should specifically confirm on their letter head in this regard.
13	The OEM should be a company and have a local presence of support centre and level 3 (highest escalation) locally in India.		Bidder should specifically confirm on their letter head in this regard.
14	At least 3 reference of the implementation in India/abroad should be provided for a similar deployment.		Bidder should specifically mention this on their letter head.
15.	The Bidder should agree to the terms and conditions of Service Level Agreement (format placed at **Annexure 21**), should they become L1 in the reverse auction to execute a contract with the Bank.		Bidder should specifically confirm on their letter head in this regard.
16.	The Bidder should not have any Service Level Agreement pending to be signed with the		Bidder should specifically confirm on their letter head in this regard.

	Bank for more than 6 months from the date of issue of purchase order issued by any of the Department at SBI GITC as on the date of Bid submission. **[No change/ addition or deletion to be made by the Bidder to any of the clauses.]**		
17.	The Prime Bidder should have at least 200 SME resources on its rolls across areas like Analytics, Data Sciences and Data warehouse / Data Lake Implementation.		Undertaking from the bidder on bidder's letter head signed by the authorized signatory of the bidder.
18	The Prime Bidder should have implemented a Data Lake meeting the below-mentioned criteria in any BFSI or Telecom company in India or abroad, which has a minimum Business turnover / Business Mix (Advances + Deposits) of INR 1, 00, 000 crore for BFSI or turnover of 5000 crores or more for Telecom Company. Minimum Criteria: - 100 TB data stored - Daily data ingest of minimum 30 GB - Real-time / structured / unstructured data ingestion implemented - Size of the cluster having minimum 25 Nodes		Copy of the Credential Letter or Copy of Purchase order or Email Confirmation from the client's executive or an Undertaking from the bidder on the bidder's letter head confirming the implementation along with the contact details of client's representative.
19.	Must have implemented at least 7 out of below 13 Big Data Analytics use cases with a Bank/ Payment Service Provider/ Insurance/ Telecom sector in India or abroad - Customer behaviour analytics - Default / Delinquency analysis - Unstructured data analytics - Real time data analytics		Copy of the Credential Letter or Copy of Purchase order or Email Confirmation from the client's executive or an Undertaking from the bidder on the bidder's letter head confirming the implementation along with the contact details of client's representative

	- Fraud detection and analytics - Risk based Pricing - Pricing Analytics - Customer-Customer Relationships and House holding - Social media sentiment analysis - Credit performance monitoring - Generation of Preventive Maintenance Schedule for ATMs by analysing ATM logs for failures - Updating real time data changes from data warehouse to data lake - Use of Data Virtualization Layer to provide data using more than 1 source system like Data Warehouse and Data Lake		
20.	Should have at least 25 data scientist, 25 data modeler and 50 Big Data ETL/ELT developers across the organization		Undertaking from the bidder on bidder's letter head signed by the authorized signatory of the bidder, along with the profiles of the data scientists, data modeller and ETL/ELT developer.
21.	Primary bidder should have at least 25% of the implementation team on his roles. For the remaining team, there can be an arrangement between the primary bidder and Consulting Partner, and optionally one Big Data hardware/ software vendor.		Bidder should specifically confirm on their letter head in this regard.

Documentary evidence must be furnished against each of the above criteria along with an index. All documents must be signed by the authorized signatory of the Bidder.

Relevant portions, in the documents submitted in pursuance of eligibility criteria, should be highlighted.

Signature

Seal of Company