



UCO BANK
Department of Information Technology

Request for Proposal (RFP) for Supply, Installation, Implementation, Post Implementation Onsite Operations and Support of End to End Data Analytics and Business Insights Solution
RFP Ref. No: DIT/BPR&BTD/OA/1289/2020-21 Date: 23/11/2020

Amendments, Addendums and Corrigendum's

PART-I

3. ELIGIBILITY CRITERIA

SL No	Existing Clause	Clarification
6	The proposed product for Data Analytics Solution should have been implemented/ under implementation and running in any scheduled commercial Bank in India.	It is clarified that, experience of OEM/OSD/Bidder has been sought for proposed data analytics application.

It is clarified that bidder can quote application module like Data Analytics, Model Building, and Reporting etc. as per RFP by forming consortium for participating in the bid process.

PART-II

4. EARNEST MONEY DEPOSIT (Renamed to “BID SECURITY DECLARATION”)

A Bidder is required to submit along with its Bid a Bid Securing Declaration. The Bidder has to sign a Bid Securing Declaration accepting that the Bidder will be suspended for participation in the tendering process of the Bank in future, if:

- a)** the Bidder withdraws its Bid during the period of validity i.e. 180 days from the Bid due date; or
- b)** the Bidder is awarded the Contract and fails to sign the Contract; or
- c)** the Bidder fails to submit an unconditional and irrevocable performance security before the deadline defined in the request for bid documents; or

- d) the Bidder makes any statement or encloses any form which turns out to be false, incorrect and/or misleading at any time prior to signing of contract and/or conceals or suppresses material information; or
- e) the Bidder fails to submit the requisite documents as per the tender specification; or
- f) The Bidder violates any of the provisions of the terms and conditions of this tender specification.

The Bid Securing Declaration shall be submitted as per the format at **Annexure-IV**.

Part –III: BID OPENING AND EVALUATION CRITERIA

2. TECHNICAL EVALUATION (Revised):

The Bank will evaluate the technical bids received in response to the RFP as below:

Bidders will be evaluated against the eligibility criteria mentioned in Annexure V. The bidder has to comply with all the eligibility criteria without fail. The bid will be evaluated as per the Evaluation Matrix given below. Further, the bidder needs to provide necessary details/documents for scoring against the maximum marks mentioned below.

Sl. No	EVALUATION CRITERIA	MARKS
1.	<p>Data Analytics Implementation Experience :</p> <p>Maximum of 5/ Minimum of 1 reference can be provided of which at least one should be of a scheduled commercial bank within India.</p> <p>a) Each Reference for successful implementation is given a score of 25 marks. [i.e. Max of 125 marks :i.e. 5 (reference)*25 (marks per reference)] for successful implementation in any scheduled commercial Bank. Format for submitting reference :</p> <p>b) For under implementation , score of 15 Marks per reference (Max Marks 75 (i.e. 5 (reference)*15 (marks per reference)</p> <p>c) Reference Letter for implementation/under implementation to be submitted for each Reference along with detailed scope of work from each reference on bidders letter head with authorized signature and seal.</p>	125

2.	Technical Requirements For Solution Provided as per Annexure VII	200
3.	Response to Functional Specification as per Annexure VI	200
4.	<p><u>Project Team:</u></p> <p>The key parameters for evaluating the team members would be:</p> <p>Experience of the Program Manager (25 marks) Should have >10 years of relevant experience as Program Manager and should have experience of Program Managing Implementation and Operations of any two of the following solutions in one or more scheduled commercial bank in India having more than 1000 branches. (25 marks) Data warehouse Analytics & BI ACRM</p> <p>Experience of the Data architect (Max 10 marks) Should have >8 years of relevant experience as Data Architect and should have experience of Design & Architecture in any two of the following solutions in one or more scheduled commercial bank in India having more than 1000 branches. (10 marks) Data warehouse Analytics & BI ACRM</p> <p>Should have >5 years of relevant experience as Data Architect and should have experience of Design & Architecture in any one of the following solutions in one or more scheduled commercial bank in India having more than 1000 branches. (8 marks) Data warehouse Analytics & BI ACRM</p> <p>Experience of the Functional Lead (max 10 marks) Should have >8 years of relevant experience in the respective Module and should have worked as a Functional lead for any one solution in at least two scheduled Bank in India having more than 1000 branches (10 marks) Data warehouse Analytics & BI ACRM Should have >8 years of relevant experience in the respective Module and should have worked as a Functional lead for any one</p>	75

	<p>solution in at least one scheduled Bank in India having more than 1000 branches (8 marks)</p> <p>Data warehouse Analytics & BI ACRM</p> <p>Experience of the Implementation Team Leads (max 10 marks)</p> <p>Should have >8 years of relevant experience with experience as team lead Implementation of any one solution in at least two scheduled Bank in India having more than 1000 branches (10 marks)</p> <p>Data warehouse Analytics & BI ACRM</p> <p>Should have >8 years of relevant experience with experience as team lead Implementation of any one solution in at least one scheduled Bank in India having more than 1000 branches (8 marks)</p> <p>Data warehouse Analytics & BI ACRM</p> <p>Experience of the Business Analyst (Max 10 marks)</p> <p>Should have >7 years of relevant experience with experience as Business Analyst of any one solution in at least two scheduled Bank in India having more than 1000 branches (10 marks)</p> <p>Data warehouse Analytics & BI ACRM</p> <p>Should have >7 years of relevant experience with experience as Business Analyst of any one solution in at least one scheduled Bank in India having more than 1000 branches (8 marks)</p> <p>Data warehouse Analytics & BI ACRM</p> <p>Experience of Data Scientist (Max10 marks)</p> <p>M. Tech / B. Tech / MSc in Artificial Intelligence / Computer Science / Analytics / Statistics / Applied Economics</p> <p>Minimum 3 years of experience in data science related areas</p>	
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	<p>Professional certification in data science and big data, or participation in minimum 4 client projects in data science, each of duration not less than 6 months Hands-on software development and experimentation skills in environments like R / Scala / Python / H2O / Matlab Research exposure, as shown by conference publications / patent applications</p> <p>Software development experience</p> <p>1 Data Scientist - 8 Marks</p> <p>More Than 1 Data Scientist - 10 Marks</p>	
5.	<p>Demo and Presentation* by the bidders covering product features, support, infrastructure, implementation and Maintenance strategy, company's financial and project management capabilities etc. Bidder needs to Show the Demo of the Below mentioned Use cases during the Technical Presentation. Bidder needs to show these Use cases on the Masked dummy data that will be shared by bank before technical presentation with all Eligible bidders</p> <ol style="list-style-type: none"> 1) Cross Sell Analytics: Improving product cross-holding ratio 2) Behavioral Analytics: Customer Segmentation & Profiling 3) Product Penetration: Market Basket Analysis, Sales Volume Forecasting 4) Loans underwriting 5) Sales Target Setting & Budgeting models 6) Spend Analytics <p>• Implementation approach and methodology submitted along with Technical Bid to be explained in presentation.</p>	200
Total		800

***Based on Bidders technical presentation maximum of 200 marks will be allotted to them. During the evaluation, bank would be scoring the presentation made by the bidders at the Bank's premises across the areas laid out in the table below.**

Technical Presentation on Proposed Solution	Score
<p>Demonstration of Functional specifications of proposed solution for below use cases.</p> <ol style="list-style-type: none"> 1) Cross Sell Analytics: Improving product cross-holding ratio 2) Behavioral Analytics: Customer Segmentation & Profiling 3) Product Penetration: Market Basket Analysis, Sales Volume Forecasting 4) Loans underwriting 5) Sales Target Setting & Budgeting models 6) Spend Analytics 	100
IT architecture, approach and methodology	60

Execution Competency (Solution Accelerators, Functional & Technical Competency)	40
Total	200

Notes:

- The bidder has to score minimum of **80% overall marks** to qualify for Commercial Evaluation.
- Bidder should score at least **80% marks** in the technical evaluation - Technical Requirements as per Annexure VII to qualify for commercial bid. Bank reserves the right to disqualify the bidder if any mandatory requirements are not available in the solution.
- Bank reserves the right to normalize the evaluation criteria by reducing the minimum qualifying marks
- Bidder should score at least 80% marks in the technical evaluation – Functional specification as per Annexure VI to qualify for commercial bid.
- Bidder to provide required Hardware specification for proposed solution along with implementation approach and methodology.
- Presentation to be made by the Project Manager to be deployed for the Project, along with the proposed team; time allotted for presentation – 120 minutes including question answer session
- Documentary evidence must be furnished against each of the above criteria along with an index as required by Bank.
- All documents must be signed by the authorized signatory of the bidder. Relevant portions, in the documents submitted in pursuance of above criteria, should be highlighted.

PART – IV

SCOPE OF WORK (Revised)

1. SCOPE OF WORK

The objective of the exercise is to engage a vendor for supply, installation, implementation, post-implementation onsite operations and support of end to end data analytics and business insights solution (On bank Premise Implementation) in UCO Bank.

The selected bidder will implement the analytics models at UCO Bank by going through a detailed step by step process of analytics implementation. These includes detailed requirement gathering, technical design, data extraction, data preparation, data quality, model development, model validation, model testing, model deployment, model recalibration, go-live and information delivery. The vendor is also required to build the analytical models and provide requisite training, documentation and support to bank. The selected bidder has to provide the Perpetual Enterprise Software License of the proposed advanced data analytics solution to the Bank. Training is to be provided by vendor to the UCO Bank Team.

1.1 Requirements Collection

- Interact with business teams, gather, and finalize functional requirements for each of the business functions and models identified for each phase of the implementation roadmap.
- Formulate analytical problems and hypothesis based on business and process insights
- Incorporate global best practices while defining requirements
- Document business processes to identify key steps where analytics could be embedded.
- Perform detailed systems analysis and undertake data discovery and prepare data requirements document.
- Administration and maintenance for end to end data analytics solution.

1.2 Data Discovery, Extraction, Preparation and Loading

Bidder should carry out below process during ETL but not limited to the following

- ❖ Consolidation of data from various source systems.
- ❖ Ensure data consistency
- ❖ Format standardization

- Development of reporting and analytical Data Mart for various banking segments as identified by Bank, by integrating and cross-relating identified sources for supporting analytical and statistical model implementation.
- Extraction of data from various source systems but not limited to the following ((Transform data on batch or real- time basis)
 - ✓ Domestic and Overseas CBS (Finacle 7x upgraded to Finacle 10X),
 - ✓ Treasury,
 - ✓ Internet Banking ,
 - ✓ Mobile Banking/ M-Wallet/UPI
 - ✓ ATM Switch ,
 - ✓ GBM ,
 - ✓ LOS ,
 - ✓ Financial Inclusion ,
 - ✓ HRMS
 - ✓ Biometric
 - ✓ Finance Central Office
 - ✓ LMS etc.
- Connect to leading databases identify, profile and validate reference data from source system as follows but not limited to the following
 - ✓ Oracle,
 - ✓ MS Sql,
 - ✓ My Sql,
 - ✓ Postgress
- Capability to work with big data, unstructured data sources viz. social media, call center data etc. However the big data solution should not be proposed by the bidder as part of the recent scope.
- Provide interface for managing and monitoring ETL activities. Auto Discover ETL failures, redundant data analysis, identify data integrity and quality issues.
- Discover patterns within data, structure discoveries, frequency distribution.
- Data profiling, prepare data flow design, data mapping routines, metadata etc.
- Audit trails / Data change management – Maintain and manage history.

1.2.1 Data Quality and Master Data Management

The Bidder should focus on below aspects of data –

- ❖ Completeness
- ❖ Consistency
- ❖ Timeliness
- ❖ Accuracy

The Bidder should propose a solution which is capable of –

Data Profiling - Provide profiling capabilities for various different data sources with inbuilt pattern frequency analysis, primary key/foreign key relationship analysis, gender analysis etc. to just name a few features.

Data Enrichment - Updation of data by completing data available from various source systems. It helps in standardization of data across the bank. The solution to have India specific libraries and knowledge base. Bidder needs to provide the utility / input screen for doing the data enrichment.

Control and Monitor – It includes rules which are applied to both raw and corrected data to monitor quality issues which may arise from time to time. It also aids in publishing a metrics on data quality.

1.2.2 Data Engines

Data warehouse/ Repository (ODS) must deliver strategic and operational analytics throughout the organization so that users can access a single source of consistent, centralized, integrated data. Support of multidimensional analytic engine, Data cubes feature which deliver sophisticated calculations using simple query.

Data warehouse should act as a central repository which will be a single version of truth. It should store granular level of data and the summarized data.

Bidder should propose the data engines as below:

a. Data Repository :

Data Repository design constitutes the fundamental solution for integrating and cleansing heterogeneous data sources across multiple subject areas so that data is consistent, easily reused, and guaranteed to meet requirements across the enterprise. Data Repository must deliver strategic and operational analytics throughout the organization so that users can access a single source of consistent, centralized, integrated data. Data warehouse should act as a central repository

which will be a single version of truth. It should store granular level of data and the summarized data. Data warehouse should be capable of processing large amounts of data. Data model should be adaptable taking into account future modifications.

b. Big Data:

Big Data would be used for capturing, storing, archiving, and refining semi-structured and unstructured data. This is a data engine to store semi structure and unstructured data and apply analytical capability on that data. As of now bank is not looking for the Big data solution as part of this scope but the proposed solution should be capable to integrate with Big data solution which would be procured in future by bank.

c. ODS (Operational Data Store):

Operational data store accumulates the data that are needed for operational reporting. The solution proposed should have the ability to store most recent, granular and integrated data from various data sources. The data from various data sources can be sourced, integrated on T-1 frequency. ODS should be the single source of Data for all the downstream tools / applications.

d. Virtual Query Layer:

Bidder should propose a virtual query layer with the ability to execute a query that can dip in and push down processing into multiple engines. This virtual query layer should be able to give a single access layer to access data from multiple data engines in a single request. This virtual layer should use push down approach to minimize the data movement between multiple data engines.

e. In-Memory analytics layer:

Bidder should propose in-memory analytics for business intelligence workloads for faster advanced analytics and exploration capabilities on EDW/Data Repository and big data datasets. In Memory should work on principle of loading and distributing all data involved in a particular analytic dataset into the available (combined) RAM of multiple servers in a cluster, and providing complete end to end processing of that data directly from RAM minimizing IO latencies & enabling analytic jobs in parallel directly against data in memory.

f. Augmented Artificial Intelligence (AI) and Machine Learning (ML)

Augmented artificial intelligence (AI) analytics capabilities quickly surfaces key insights in the datasets, data enrichment features that automatically recommend new elements for analysis, machine learning (ML) capabilities.

1.3 Metadata

The bidder should provide metadata of the solution across below divisions:

- a. Process Metadata - EDW system status should be published on the bank portal which may include BI performance data, processing and response time and data regarding other process tasks. It should also publish details about individual access to reports, dashboards and scorecards.
- b. Technical Metadata - It includes definition of all entities and attributes & information about all the data warehouse tables. Source of data and data type should also be published along with information about data flow from data sources to reports and dashboards.
- c. Business metadata - It should capture all the information about business domains which includes definition of KPIs, dashboards. Information about how each KPI was derived from input sources should

1.4 Model Building

- 1.4.1** Selection of probable models, verify model assumptions and selection of estimation methods.
- 1.4.2** Build analytical models on training data.
- 1.4.3** Develop information delivery framework leveraging analytical reports, dashboards, and alerts.
- 1.4.4** Variable selection, derivation and validation.

1.5 Development & Implementation

- 1.5.1** Implementation should adhere to timelines as specified Point No. 6 Implementation Roadmap
- 1.5.2** Document on implementation approach and methodology to be submitted with technical bid and to be explained during Demo and presentation as specified in Eligibility Evaluation.

1.6 Business Requirements:

- 1.6.1** The bidder must do in-depth study of all business requirements and design and implement a solution taking them into account. The solution should be adaptive and responsive to requirements which may arise in future. The bidder's proposed solution must comply with the functional and technical requirements mentioned in Annexure -VI and VII. The business requirements have been covered in the below section but not limited to the below list :

1.7 Analytical Customer Relationship Management:

Based on the Customer analytics and segmentation analysis, the Solution should provide the next best offer which the customers are most likely to take up. The Solution should also provide detailed information on the channel usage – which, when and where of the customers use of the channels, frequency of use by channel, by product, by value, whether a customer prefers certain channels over others, which channels provides the most value to the customer, what are the channel costs and profitability, etc. Users can leverage this information while planning changes in the existing channel structure, introducing new channels and migration of customers to low cost channels.

Analytical Customer Relationship Management layer should be capable of:

- Performing Customer Segmentation & Profiling.
- Integration with Analytics Platform, Marketing Performance Tracking, Feedback Analysis, turnaround time (TAT) driven request processing, Marketing return of investment (ROI) Analysis, Roles for user access etc.
- Should be able to analyze all types of data including customer's historical information.

Customer Profitability:

Customer profitability is a key metric which would take into account products bought by the customer, channel used by the customer and the volume of business in each product. The Bidder needs to build dashboards to analyze profitability from different viewpoints.

The bank should be able to gain insights and information for each customer for accordingly cross selling, up selling and offering services as per the existing data available with bank. The bank can also influence channel usage as suited to a customer and which would be more profitable for the bank. Relationship marketing strategy should be designed for customers to maximize customer profitability.

Banks should also be able to identify unprofitable customers using this model. The findings would also include cost and income drivers which would be used to calculate profitability.

Single View of Customer (SVOC):

The bank intends to become customer focused by having a 360 degree view of a customer. It will capture and present all the information related to customer at a single place. It would include profile of the customer and all the transactions done by the

customer in addition to the products bought by the customer and other information. Steps to consider to arrive at SVOC:

- Removing customer duplicates which may exist in the system. These duplicates may arise due to a single customer holding multiple accounts. Duplicates need to be identified by matching the customer information across the database and finding the customer. All the duplicates need to be removed so that all the customers can be viewed through their single and unique customer ID.
- Duplicates which currently exist across multiple systems need to be removed.

These duplicates may be due to non-banking products owned by the customer in addition to the core banking product. Non-banking products may be life insurance or some other product. These duplicates need to be removed and grouped so that all customer information can be viewed at a single place. It would help in further cross selling and up selling of products to the customer.

An extension to customer de-duplication activity would be customer house holding, using the same solution, which shall assist in cross-sell/up-sell.

Campaign Management:

Implemented solution should be used for improving marketing campaigns launched by the bank. Campaign analytics should indicate the best product to be sold to an existing customer based on his profile, behaviour and transactions. Also, analytics should point out the channel which should be used to reach the customer along with the preferred timing as per the data available with bank. Banks can leverage such information to execute marketing campaigns effectively to increase efficiency of marketing campaigns. The bank can also migrate customers to a low cost channel based on the information provided to increase customer profitability. Bank can also introduce low cost channels based on the information generated by the solution in the form of report.

Customer Churn or Retention Analysis:

Scoring models need to be developed to identify customers who may leave the bank and the reasons leading to customer churn. So, that bank can initiate a dialogue and stop the customers from leaving the bank. This analysis would also help bank in gaining insights into processes or products which are not going well with the customer. It would help to retain customers and increase lifetime value of customers.

Cross Sell & Up Sell

Creation of single view of customer and customer analysis should be used by the Bidder to create application for assisting bank for cross selling and up selling to a customer.

Based on customer information, the bank should be able to identify valued product which could be purchased by an existing customer. The application should also be capable of pointing the best suited timing to approach a customer. It may be based on past behaviour and transactions of the customer. The application should also point to the best channel to reach the customer for cross and up sell.

Risk Analytics

Banks often face high risk of credit repayment defaults by customers. Decision makers try to reduce this risk by creating and analyzing a 360 degree view of customers. The proposed tool should enable Bank to facilitate the following-

- ✓ Get detailed insight into all kind of credit products like loan, casa and so on in the same dashboard.
- ✓ View current balance of all products by segments to know which product entails high risk based on volumes and make necessary arrangements.
- ✓ Take prophylactic measures by analyzing and comparing counter party exposure limit by agreed upon limit. Analyze every counter party in details by knowing their exposure limit, whether the limit has crossed or not.
- ✓ Check risk level based on colored indicators that represent customer portfolio risk as per pre-defined market standards.
- ✓ Compare trend across product segments and define top and bottom customers to gauge default possibility.
- ✓ Compare counter party credit risk variance as per week, month and year to see the changes in the capital involved and avoid unnecessary defaults.

This kind of analytic platform helps Bank to mitigate the underlying risk and adhere to regulatory compliance and maintain transparency.

1.8 Credit Monitoring Analytics

- ✓ Management can view current status of loans by selecting categories like sectors (e.g. Retail, Agriculture, MSME, Corporate etc.) , various limit buckets (e.g. below 10 lakhs, upto 25 lakhs, above 1 cr. Etc.).
- ✓ Daily sanctioned/disbursement, outstanding, top borrowers.
- ✓ Monitoring the quality of loans in terms of pending review/renewal, stock statements, SMA, NPA etc.

- ✓ Monitoring the performance of recovery of the bad loans.

It enables Bank to make accurate disbursement decisions, monitoring credit portfolio.

1.9 Executive Dashboard

Comprehensive dashboard should be provided to the Top executives.

- ✓ Get a 360 degree view, quick and accurate insights of their key performance indicators (KPI) to take informed decisions and avoid surprises.
- ✓ Compare current year achievements against previous years. Track the negative and positive growth, understand the improvement in performance and identify factors affecting these variances.
- ✓ Analyze sales performance of various product line such as Loans, Savings Accounts, Current accounts, ADC products and ancillary business etc. Track factors affecting products and compare sales against budget.
- ✓ Trend analysis based transaction details.

1.10 Predictive Modelling/Data Mining

Predictive modelling will be based on availability of granular level of data on which predictive models can be build. It will help to predict future NPAs, cross sell, up sell, prospect customers and other business parameters which may assist the bank. The Bidder is responsible for providing predictive modelling and accurate output for a variety of parameters based on the existing data of bank. The list and process will be explained to the bank to get an approval on the process flow. Predictive modelling will assist in scoring each customer and then predicting future behaviour of the customer. Bidder should propose the analytical modelling technology such that it should be capable of leveraging the computation power of the database/appliance platform and run scoring models within, when required.

Data mining will be used to access data which would help management to gain business insights. The extracted data needs to be visualized with visual and graphical tools. These insights would be related to product, customers and all other banking data.

1.11 Validate & Deploy

1.11.1 Testing & QA

- Validate model and check goodness of fit (Receiver operating characteristic Curves, Lift Curves) based on defined framework
- Test other aspects (Unit Testing, System Integration Testing, UAT, Post-Deployment testing, QA testing).
- Document validation and testing criteria and steps which include providing statistical insights of analysis results

1.11.2 Modification/ Recalibration

- Fix bugs found during testing
- Modify solution based on user feedback
- Subsequent testing of revised solutions

1.11.3 Operationalize

- Training is to be done for Banks Analytics Team and End-Users (both classroom and hands-on mode)
- Preparation & submission of soft copies of training material and end-user manuals.
- Sessions must cover Analytical modeling, Statistical modeling, Reporting etc.

1.11.4 Reporting Requirements

- Vendor has to develop reports (ad-hoc, analytical, tabular, dashboards, and alerts) as an information delivery mechanism to the business users. Results generated to be made available to the users based on their roles and needs.
- The layout and format of the reports should be in a form consumable by the information consumers and as approved by UCO Bank. The users should also be able to do basic activities such as sorting, filtering, slicing, dicing and drill down.
- Data visualizations for the dashboards should be interactive with the support ranges of graphical representation e.g. Bar, Pie, line charts etc. capability of geospatial mapping, trend analysis for pixel perfect reporting.
- Interface should be provided and proper training has to be given to Bank team so that enable Bank to prepare customize report as on when required.
- Facility should be provided to build quick data capture form for capturing data from various Bank levels. Moreover maker-checker concept is to be implemented in entry screen.

- Banking hierarchy (Head Office level, ZO Level, Branch Level etc.) should be maintained in all type of Reporting and Dashboard.

Vendor is expected to build types of reports including but not limited to the following:

a. Ad-hoc Reports:-

Users will be able to perform ad-hoc analysis represented through customised ad-hoc reports for decision making by Top management. These are users who have business knowledge and technical knowhow. Vendor is also expected to perform ad-hoc analysis.

b. Analytical Dashboards:-

Dashboards will be built based on the business requirement. These will be essentially targeted towards Top management. There should also be functionality to drill down on a metric (to a separate dashboard or to a separate report) to analyse the cause of a particular event/trend. This movement between dashboard layers should be smooth. The data for the dashboards may be refreshed automatically/ on-demand.

Solution should provide heat maps based on multiple parameters as required by bank customized to zone (geo polling), state, district wise etc.

c. Alerts:-

Alerts must be generated at specific events based on business requirements including but not limited to turn-around time breach alert, ideal/non allocated lead alerts, Sales target alerts, risk benchmark breaches, exposure breaches, fraud alerts. Such alerts would be consumed across multiple levels and teams basis business needs.

The reports/dashboards should have standard options including but not limited to export to Word/Excel, HTML, XML, XBRL, CSV, PDF etc., printing options, email, SMS options etc.

- Bidder needs to create 300 Reports including dashboard which are further divided as below
 - **Simple Report :- 50%**
 - **Complex Report 20%**
 - **Medium report:- 30%**

Simple Report	Report with up to 5 tables join with Primary Index select condition on a base of 30 million records with 20,000 records in the query result.
Complex Report	Report from joining 6 to 10 tables on primary or foreign key fetching around 300,000 records including grouping or sorting on given condition from 25 million plus records
Medium Report	Report from joining more than 10 tables on composite key fetching any number of 2,000,000 records, including grouping or sorting, formula calculation, aggregation etc. for report displaying on given condition from 20 million plus records

1.12 Data Archival Solution

The bidder should go through the technical specifications for data archival in Annexure VII

- a) Data archival should ensure no loss of bank data
- b) The EDW should store at least 39 month of data. Data older than 39 months should be archived. There should be capabilities and connectors to off-load data to Hadoop Stores and/or other storage proposed by the bidder
- c) The solution should be able to archive huge level of data
- d) Archival solution should be easily able to integrate with data warehousing solution
- e) A solution to query historic data should be implemented
- f) Should support tracking and analytics for reporting purpose
- g) Ability to process historic data or information
- h) Ability to publish archived dashboards, reports and scorecards
- i) Ability to restore archive data using queries
- j) Data should be stored in online and offline or archived location for analytics use

Data Retention & Archival	Remarks	Online		Archival Storage	
		Retention Period	Mechanism	Retention Period	Mechanism
Source Files	Files that are sourced from data sources. Should account for some intermediate processed files as appropriate	Last 3 months	ETL server file folder	Last 24 Months	Data Archival solution
Data Warehouse	Master tables, Aggregate tables, Physical tables, Transaction tables, Reference tables etc.	39 Months	DW Database		
ODS	Master tables,	6 Months	DW	5 years	

	Aggregate tables, Physical tables, Transaction tables, Reference tables etc.		Database		
Data Mart	Master tables, Aggregate tables, Physical tables, Transaction tables, Reference tables etc.	6 Months	DW Database	5 years	
Reports	Critical Reports Needs for Reference	3 Months	Report Server	5 years	

1.13 **Security & Accessibility**

- Work on data security and data access issues. Different reports and dashboards will have different level of access based on users.
- Grant access based on role and responsibility matrix
- Formulation of approval matrix for granting request to users
- Prohibit direct access to data warehouse
- Establish data governance practice for security of data which is an asset to the bank
- Access to internal and external users should be only through BI tool
- Role based across processes in EDW solution
- The access matrix should be reviewed periodically for monitoring purpose
- Provision of approval of ad-hoc data request from only respective necessary authority
- Sharing of sensitive data internally and externally after proper encryption of data
- Complete testing of security and accessibility to suit bank requirements..

1.14 **Hardware and Sizing Parameters**

- 1) Bidder needs to do adequate sizing as per the Parameters provided in the RFP to maintain the SLA of the RFP for the duration of 5 years
- 2) All the ATS and AMC of the software and infrastructure supplied through this RFP needs to be factored by the bidder. All bug resolution / issue fix / patch management and all coordination with OEM needs to be done by the bidder.
- 3) The Bidder is required to maintain all in scope items for all the environments. Bidder is required to perform vendor management during contract duration.
- 4) Bidder should specify various infrastructure requirements well in advance before delivery of hardware & software which need to be provided for commissioning and smooth functioning of the equipment. This will include site requirements, power requirements, network requirements, UPS, environmental conditions, illumination etc., so that Bank can arrange accordingly at the desired premises.
- 5) All the hardware and software to be supplied/proposed must be IPv4 and IPv6 compliant wherever applicable.

- 6) Bidder will be responsible for sizing for the proposed Solution. The sizing needs to be done based on Bank's requirements, optimized power usage and scalability

1.15 Environments

Logical separation / Virtualization for Test, Dev and Training can be done in a dedicated non-production environment. The bidder should note that the production and non-production environment should be physically separate. The licenses should be provided to meet the requirements of the contract, during the period of contract.

- DC data should be automatically propagated online through asynchronous replication to DR site.
- RTO of 2 hours and RPO of 30 minutes should be provided
- Fail over should be allowed only as per the DR policy of the Bank
- Bidder shall design and implement data synchronization procedures for the DR Site. Periodic testing and drills shall be conducted to ensure that all replication and data synchronization procedures are in place all the time. In case of disaster at primary site / production site, ETL and other tools shall continue to operate and DR site is to be made operational. Bidder should carry out DR drill every 6 month basis or as per bank's policy.

Bidder needs to note that physically separate adequately sizing should be quoted for each of the following environments.

- Production at DC and DR (100% compute and storage capacity of DC), however DC should be in HA and DR should be standalone
- Test & SIT,
- Development.
- Training
- The Test & SIT, Training and development servers should be minimum of 20% respectively of the size of the production as per the fifth-year sizing however the database size will be similar to production database size
- All the Non-Production environment needs to be factored at DR Location
- All the Non-Production Environment should be physical separate from the Production Environment.
- Bidder need to ensure that UAT and Training environment need to be in sync with Production environment in terms of master data and sources. All the customization / enhancement / products / parameter change needs to be applied in these environments on periodic basis which should not be greater than 1 month. Bidder needs to ensure that all the master data such as customer information and balances needs to be masked before releasing the Non-Production environment to the end

user. Non-Production environment here refers to pre-Prod, Test & SIT, Training and development.

- Bidder should arrive at the sizing independently. In case, the sizing quoted by the Bidder fails to meet the necessary services, bank will not bear any cost for upgrades or replacements. Also, during the contract period, growth of the bank should be considered and thus, the appliances proposed should have enough CPUs, memory and storage available to accommodate the predicted sizing required.
- The Bidder will be completely responsible for supply, installation, configuration, customization and maintenance of complete solution for the contract duration. The bank at a later date will not make any additional payments for the solution provided by the Bidder.
- Bank is already having ULA with Oracle for the below components, bidder who are proposing below components needs not to factor any amount for the same in bill of material however the sizing needs to be provided. In case during contract period is bidder require more number of Licenses for these components Bidder needs to provide the same at no additional cost to bank

Sl.no	Product Description	License Type / term
1	Oracle Database Enterprise Edition	Processor / Perpetual
2	Oracle Partitioning	Processor / Perpetual
3	Oracle Diagnostics Pack	Processor / Perpetual
4	Oracle Tuning Pack	Processor / Perpetual
5	Oracle real Application Cluster	Processor / Perpetual
6	Oracle Advance Security	Processor / Perpetual
7	Oracle Data Masking and Sub setting Pack	Processor / Perpetual
8	Oracle Advance Compression	Processor / Perpetual

No of Users Details

The End users of the bank would be segregated as below:

Business Users: Users with only read access (canned reports)

Power Users: Users with Viewing and Adhoc Query Access

Super Users: Users with Viewing and exploration access, working on large data sets.

User Concurrency

User Type	Year 1 User Count	Year 5 User Count (15% YoY Growth)	User Concurrency
BI User :- Business User	3000	6034	40%
BI User :- Power User	52	105	40%
BI User :- Super User	20	40	40%

Query response Time

User Type	Response Time
Simple	3 sec
Medium	60 Sec
Complex	960 Sec

The definition of the query will remain same as define the Report section for Simple, Medium and complex report.

EMS Tool for Server Monitoring and Ticket logging

Bank is already having an EMS tool which will be augmented to bidder for tacking and monitoring the SLA and response time of the call logged by the users. Integration of the proposed solution with existing EMS tool will be the responsibility of the bidder

Backup Solution

Bidder needs to propose a new backup solution which needs to be in compliance with the Technical specification mentioned in the functional & technical specifications. Bidder needs to Supply, install, implement and provide AMC/ATS support for new back-up solution for the period of contract. The new backup software will be used for the doing backup of the DB, Operating system & Application. Bidder need to proposed capacity-based license for the new backup solution as per the below details:

The new solution should fulfil Bank's daily back-up requirement for next 5 years for the proposed solution.

1. Supply requisite hardware with accessories, software & licenses
2. Study existing environment and prepare detailed design documents for:
 - a. The deployment / installation of each of proposed Backup Solution
 - b. Implementation of Backup solution and Tape solution with a detailed backup plan. Install, configure and integrate Backup solution with hosts
3. Install, configure and operationalize of backup software, tape library, server and appliances at DC
4. Integrate, configure and operationalize backup solution with the Tape Library

5. Prepare detailed implementation plan with installation/implementation documents (with all screenshots).
6. Provide monitoring and management application for the proposed solution
7. Backup solution configuration and backup
8. Complete configuration and architecture diagram for the solution.
9. File system and Database Backup Daily policy which is incremental.
10. File system and Database Backup weekly policy which is full.
11. File system and Database Backup monthly policy which is full.

SI NO	Backup Client	Application	Backup Frequency	Backup Type
1	DB and File system	All	Daily	Incremental
2		All	Weekly	Full
3		All	Monthly	Full

1.16 **Support Model**

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

- Data administration
- System Administration
- Extraction and development of reports
- Support technical and functional queries
- A technical team, to solve logged issues within SLA period

This facilities management on-site team would have to play a critical role in on-going support. All resources will be screened by bank authorities. 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 AMC, ATS, guarantees & warranties for all, components, hardware, software, etc. While bidding for providing facilities management services, the products and solutions proposed by the Bidder by way of this RFP should come with warranty as provided by the respective OEMs. Thereafter, the Bidder should provide AMC/ATS for these products and solutions (a warranty of 3 Years for Hardware from the Hardware implementation date and 1 Year for Software from software go-live sign off date). Also, the facilities management function should be carried

out from the Bank's premises. The bidder must note that the managed services as a part of facilities management should be available for all environments viz., production, development and test. AMC/ATS will be paid by the bank yearly in advance to the Bidder.

Bidder needs to note that the resources Proposed for FM needs to fulfill the qualification criteria as per the Annexure XXIV

2. Onsite Support - Resources:

- All the resources provided for monitoring of the products & administration of the solutions shall as per the qualification criteria mentioned in Annexure XXIV.
- It is mandatory for the bidder to provide dedicated onsite resources required for 6.00 am to 10.00 pm schedule ,
- Working Day: A working day would be any day when any branch / office of the Bank is functioning
- For Reporting and timings the following shall be ensured :-
 - The onsite team shall report to Bank personnel / Bank authorized representative.
 - Shall operate from the Bank's Corporate/Head office.
 - In case of exigencies even during off business hours / Bank holidays/ Drill, the resources will be required to be present onsite.
 - An equivalent replacement with knowledge of our site to be given in case the designated resource is unavailable.

2.1 Scope of Support

Technology related support

- Installation of third party software if any.
- Daily ETL and Data Repository preparation.
- Creation and customization and maintenance of adhoc reports, modules And analytics Dash Board.
- End to end Application and DB support.

Functional support

- Step by step guide to generate output.

- Detailed explanation of effectiveness measures.
 - Other Support
- 1 Overall maintenance and working of the SOLUTION
 - 2 Bug fixing and delivery of patches/ version changes effected
 - 3 Providing tools for creating knowledge repository for the bugs identified, resolution mechanism, version upgrade, future upgrade etc. of Application software, OS, RDBMS etc.
 - 4 Provision should be available for version control and restoring the old versions if required by the Bank
 - 5 Enhancement, modifications, customization, patches, upgrades due to statutory, regulatory, industry, changes will be provided at no additional cost to the bank. However, only major version upgrades, if required by the Bank will be undertaken as per mutually agreed terms and conditions and cost.
 - 6 Providing the sizing for anti-virus software, the Bank will provide the required anti-virus.
 - 7 Configuration changes, version up-gradations, performance monitoring, trouble shooting, patch installation, running of batch processes, database tuning, replacement / support, technical support for ETL process, application and data maintenance, taking backup of the database as required, recovery, query generation and management etc. of all software supplied under this RFP document.
 - 8 Immediate bug fixing should be undertaken in the event of software failure causing an interruption of operation of the Data Warehouse systems as per the response / resolution times defined by Bank. In case of any software /hardware /network failure, the solution should continue to function seamlessly.
 - 9 All the detected software errors must be notified and corrected, as per the agreed timelines
 - 10 Support the Bank in integrating any new applications to the EDW and provide support in extending the model and creating analytics / reports from the same
 - 11 Provide Bank with daily hardware utilization/performance monitoring reports and alert the Bank in case of any performance issues by suggesting future capacity planning
 - 12 The operational support staff should have onsite support experience for the EDW, BI, Data Quality, Data Mining and other Application solutions
 - 13 Provide BCP/DR procedures and conduct DR drills in conjunction with the Bank's policies/procedures
 - 14 Routing the transactions through backup system in case the primary system fails Switching to the DR site in case of system failure Service records and calls to helpdesk must be maintained and tracked for software support, which will be reviewed monthly by the bank

3. Security Requirements

The vendor has to comply with the IT (Information Technology) / IS (Information Security) policy of the bank and work within the purview of the IT / IS policy in key concern areas relevant to the RFP. Some of the key areas are as under:

3.1 Responsibilities for data and application privacy and confidentiality

3.2 Responsibilities on system and software access control and administration

Custodial responsibilities for data, software, hardware and other assets of the Bank being managed by or assigned to the Vendor.

3.3 Physical Security of the facilities

3.4 Physical and logical separation from other customers of the Vendor

3.5 Incident response and reporting procedures

3.6 Password Policy of the Bank

3.7 Data Encryption/Protection requirement of the Bank

Detailed security requirement of the Bank will be shared with the successful bidder.

The model developed or customized should follow a standard development process to ensure that it meets all (functional, security, performance & regulatory etc.) requirements of the Bank.

4. Analytics Solution logging capabilities

Implemented solutions should have features pertaining to security and logging which will cover functionalities around:

- User activity logging (reports runs, data deleted etc.).
- System activity logs around the following system query runs, batch report extractions and master data/operational data deletions/modifications.
- Application error and crash logs (e.g. data ingestion errors, failed sanity checks, API errors etc.).

PART-V

4. Warranty/AMC &ATS

For Hardware:

The Selected Bidder must provide Three years comprehensive on-site Warranty after completion of Implementation. The Bidder has to provide AMC for all the hardware equipments supplied under this RFP for two years after the expiry of warranty period.

For Software:

The Selected Bidder must provide 4 (Four) years comprehensive on-site support after completion of Implementation (Go-Live Sign off), which should be completed within 1 Year from the date of issuance of Purchase Order for End to End Data Analytics and Business Insights Solution.

The Onsite FM Service for the solution to be provided post implementation (Module Wise) for the remaining contract period i.e. Upto 5 years including implementation & warranty period. Bidder will mention the ATS charges for 2nd Year, 3rd Year, 4th Year and 5th Year as per the commercial format.

The draft format of SLAs will be provided after the Letter of Intent (LOI) with the successful bidder.

5. PAYMENT TERMS

The payment will be released to the vendor as per the payment schedule defined as below:

a. There will be no advance payments. There will be no interest on late payment.

The Vendor shall submit draft deliverables as per the time line indicated above.

Deliverables	% OF PAYMENT	STAGES (On completion of the activities)
Hardware	70%	Delivery of the Hardware and submission of invoice with Proof of Delivery and other documents
	30%	On Successful installation and acceptance of the infrastructure / hardware by the bank
Database systems, OS & Other peripheral	70%	On delivery of licenses on submission of invoice with proof of delivery.

Deliverables	% OF PAYMENT	STAGES (On completion of the activities)
software	30%	On successful implementation and Acceptance of Database systems, OS & Other peripheral software by the bank
ETL, Data Model, and other application licenses	60%	Delivery of Base version of respective application software and on submission of Invoice and proof of Delivery.
	10%	On successful completion of current state assessment, gap analysis and system specification definition Phase for respective applications
	10%	On UAT sign off for respective applications
	15%	On successful release of customized software to production, for respective applications
	5%	One month after successful release of application to production, for respective applications
Solution Implementation cost	30%	SRS Sign-off of respective module from the Bank of Quick Start Phase
	45%	Go-live of respective module across hubs / branches / Offices / cluster offices for Quick Start Phase
	25%	One month after successful completion of respective modules of Quick Start Phase and on submission of Invoice and proof of completion
	30%	SRS Sign-off of respective module from the Bank of Evolving Phase
	45%	Go-live of respective modules across hubs / branches / offices / cluster offices for Evolving Phase
	25%	One month after successful completion of respective modules of Evolving Phase and on submission of Invoice and proof of completion.
	30%	SRS Sign-off of respective module from the Bank of Transform & Maturity Phase
	45%	Go-live of respective modules across hubs / branches / offices / cluster offices for Transform & Maturity Phase
	25%	One month after successful completion of respective modules of Transform & Maturity Phase and on submission of Invoice and proof of completion.
Training	100%	Will be paid as and when each batch of training is completed

Deliverables	% OF PAYMENT	STAGES (On completion of the activities)
AMC/ATS	ATS Yearly in advance AMC Quarterly in Arrears	The AMC/ATS shall commence on completion of the warranty period (3 years for hardware and One year for software/services). * AMC / ATS warranty of all component will start after Go live of that Component only. Bidder has to provide (a warranty of 3 Years for Hardware and 1 Year for Software).
Managed Services	Quarterly in arrears	The Bidder shall provide managed services towards database administration, system administration, development and application support. The managed services during the implementation of the project i.e., up to successful completion of Phase III shall be included by the bidder under implementation costs. The facilities management costs towards managed services will therefore commence after successful completion of Phase III of the project and sign off by the Bank. The bidder must note that the managed services should be available for all environments viz., production,
Hardware & peripheral software installation & commissioning	40%	On successful implementation of hardware & peripheral software
	50%	On successful completion of acceptance testing of hardware & peripheral software by the bank
	10%	After three months of acceptance sign off by the bank

6. SCHEDULE OF IMPLEMENTATION:

Implementation Roadmap and Schedule of Delivery

The analytics implementation at UCO Bank is envisaged to occur in various phases.

There are 3 Phases in the implementation:

- Quick Start Phase
- Evolving Phase
- Transform & Maturity Phase

The description of each phase along with duties of vendor in terms of models to be implemented in a particular phase is given below. However during the implementation phase, Bank may change the schedule of implementation of modules based on its business requirement mutually agreed with the selected bidder. Indicative modules to be implemented in different phases is given as below:

a. Quick Start phase (0 to 4 months):

In this phase, the selected implementation vendor is expected to start implementing the hardware and finalize the HLD and LLD. Also Bank aspect the bidder to at-least develop one use case.

Phase Implementation Roadmap & identified use cases:

- Submit BRD & SRS documents and sign off from Bank
- ETL (Extract, Transform and Load) Data Mapping and sign off from Bank
- Customer Segmentation.
- Supply of the Hardware at DC and DR
- Power on all hardware
- Do all the OS , DB and other peripheral software installation and sign off from bank
- Submit the HLD and LLD for Bank's review and sign off

b. Evolving phase (5 months to 9 months):

In this phase, the selected implementation vendor is expected to complete implementation of the Analytics framework through at least 14 (Fourteen) additional analytical / statistical areas identified by the Bank. The areas identified are:

- Complete the ETL development and data extraction, Data Quality
- Branch performance and Profitability analytics
- Executive Dashboards (for Top Executives and Department Heads)
- Customer Retention Analytics: Churn Prediction
- Event Detection / Event Based Marketing
- Spend Analytics (for cards business)
- Provide 360 degree view of customers across all touch points and channel management based on demography, profile, product portfolio, LTV etc.
- Cross Sell Analytics: Improving product cross-holding ratio
- Design and track Campaigns for customer's based on various customer analytical parameters.
- Asset Quality Optimization
- Customer Acquisition Scorecard - Prioritization
- Product Pricing Analytics:

- Dynamic pricing models
- Product Profitability

c. Transform & Maturity Phase (10 Months to 14 Months):

Module to be implemented for 10 to 12 Months:

In this phase, the intent is to build and deploy capabilities for wide-scale dissemination of analytical insights into the business results of departments.

- Customer Profitability
- Service Differentiation - Enhancing Relationship Value
- Product Penetration: Market Basket Analysis, Sales Volume Forecasting
- Customer Life Time Value and Customer Loyalty.
- Process Optimization: TAT Reduction in customer service
- Sales Target Setting & Budgeting models
- Channel Performance & Profitability, Channel Planning & Optimization.

Module to be implemented for 12 & 14 Month:

- Deliver appropriate offers to customers on their past and current behavior patterns.
- Cross-sell/up-sell based on customer purchasing behavior.
- Credit Scoring – Tagging customer credit worthiness etc.
- Customer Propensity modelling
- Customer Behavioral Analytics
- Budget Forecasting & Target setting
- Loans underwriting Fund Flow and Cash Flow Optimization: Forecasting source and application of funds/cash
- Decision making based on business rules and analytics insights.

Note: UCO Bank may at its sole discretion decide to review and alter the list of models during the course of the project. Further, UCO Bank may at its sole discretion decide to either include additional data categories/data fields for each model or exclude data categories/data fields already identified for each model in this RFP.

7. UPTIME & PENALTY

The Bidder shall perform its obligations under the agreement entered into with the Bank, in a professional manner.

If any act or failure by the bidder under the agreement results in failure or inoperability of systems and if the Bank has to take corrective actions to ensure functionality of its property, the Bank reserves the right to impose penalty, which may be equal to the cost it incurs or the loss it suffers for such failures.

If the Bidder fails to complete the due performance of the contract in accordance with the specification and conditions of the offer document, the Bank reserves the right either to cancel the order or to recover a suitable amount as deemed reasonable as Penalty / Liquidated Damage for non-performance.

Any financial loss to the Bank on account of fraud taking place due to Successful Bidder, its employee or their services providers' negligence shall be recoverable from the Successful Bidder along with damages if any with regard to the Bank's reputation and goodwill.

Bank may impose penalty to the extent of damage to its any equipment, if the damage was due to the actions directly attributable to the staff of the Bidder

Penalties & Service Level Agreement

Bank expects that the Bidder shall be bounded by the Service Levels described in this document. Bidder shall have to enter into "Service Levels Agreement" with Bank covering all terms and conditions of this tender while providing the service support and onsite support. Once go live of application, the services should be available on 365X24x7 basis and hence any technical problem should be resolved as per the response Time Matrix given below.

Bidder is expected to response and resolve issue within prescribed time frame based on the severity description decided by bank mentioned above and needs to strictly adhere to Server Level Agreement (SLA).

Bank would expect the bidder to commit to the service level assurances. The Bidder shall commit to maintain uptime of 99.50% and above per month.

The SLA will be reviewed on a monthly basis. Penalties will be applicable due to downtime of software application.

The bidder shall guarantee 99.50% uptime. The Bidder shall be liable for penalties for uptime maintained below 99.50% in a month. Penalties for downtime of the application will be as per below mentioned table:

Level of Uptime Per Month	Penalty Charges
99.50% and above	No Penalty
99.00% and above but below 99.50 %	1 % of total cost of Quarterly payout
98.00% and above but below 99.00 %	2 % of total cost of Quarterly pay-out
97% and above but below 98.00 %	5 % of total cost of Quarterly pay-out
below 97%	10% of total cost of Quarterly payout

Bank will impose penalty for every instance of service un-availability Further if the number of downtime instances during a month exceeds 3 times, an additional 0.50% downtime will be reduced from uptime and the penalty will be calculated accordingly.

Bidder needs to adhere to the below service level for all the call which will be logged by the bank for any issues faced by the users. EMS tool will be provided by the bank however bidder needs to provide the number of agents Lic required by the bidder during contract period. Penalty of 10,000 INR shall be charged for every non-conformance with the service response and resolution time table as specified below

Issue Classification	For all Period (Post 30 days of Go-Live)	
	Response Time	Resolution Time
Severity 1	30 min	150 min
Severity 2	60 min	360 min
Severity 3	120 min	720 min

Penalties, if any shall be calculated for every quarter and recovered from the Annual Technical Support/AMC/. For calculation of penalty during warranty period, ATS/AMC Cost will be considered which will be deducted from the payment being paid towards on-site support facility being availed during warranty period. Wherever applicable as stated above while effecting any payment, deduction towards LD payment will be made. Hence the bidder should raise the invoice deducting the penalty amount.

10. PERFORMANCE BANK GUARANTEE

The vendor, within 15 days from the date of LOI (letter of Intent) will have to furnish a Performance Bank Guarantee, format as per Annexure-X of the RFP, issued by any scheduled commercial bank equivalent to **3%** of the total cost of the Project (TCO)/Order value valid for **(63 months) 5 years with 3 months additional claim period** from the date of purchase order. However, the selected bidder may have to extend the validity of the Performance Bank Guarantee for a period of AMC/ATS as required by the Bank.

The Performance Bank Guarantee shall act as a security deposit and either in case the selected bidder is unable to start the project within the stipulated time or start of the

project is delayed inordinately beyond the acceptable levels, the Bank reserves the right to forfeit the same.

Further, the Bank reserves the right to invoke the Performance Bank Guarantee in case the selected bidder is not able to fulfil any and all conditions specified in the document or is unable to complete the project within the stipulated time. This is independent of the LD (Liquidity Damage) on Delivery and installation.

In case the contract is getting extended, the selected bidder shall submit the Bank Guarantee of 3% of the project cost of that period of time with a validity of the extension period with 3 months claim period.

The selected bidder shall be responsible for extending the validity date and claim period of Performance Bank Guarantee as and when it is due on the account of non-completion of the project and warranty period.

Post submission of Bank guarantee, Successful bidder need to sign the contract (SLA) and submit the same to Bank along with Deed of Indemnity, Nondisclosure agreement duly stamped, after which Bank shall issue Purchase order

47. PREFERENCE TO MAKE IN INDIA (Revised):

The policy of the Govt. of India to encourage "Make in India" and promote manufacturing and production of goods and services in India, "Public Procurement (Preference to Make in India), Order 2017 and the revised order issued vide GOI, Ministry of Commerce and Industry, Department for Promotion of Industry and Internal trade, vide Order No. P-45021/2/2017-PP (BEII) dated 04.06.2020 will be applicable for this tender.

1. Purchase Preference: In procurement of all goods, services or works in respect of which Nodal Ministry/Department has communicated that there is sufficient local capacity and local competition, only "Class-I Local Supplier", as defined under the order, shall be eligible to bid irrespective of purchase value.

In procurements of goods or works which are divisible in nature, the "Class-I Local Supplier" shall get purchase preference over "Class-II Local Supplier" as well as "Non-Local Supplier", as per following procedure:

- Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.
- If L1 bid is not a 'Class-I local supplier', 50% of the order quantity in toto shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price for remaining

quantity and so on , and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers then such balance quantity may also be ordered on the L1 bidder.

In procurement of goods or works which are not divisible in nature and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get Purchase Preference over 'Class-II Local Supplier' as well as 'Non Local Supplier' as per following procedure:

- Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class – I Local Supplier ', the contract will be awarded to L1.
- If L1 is not 'Class –I Local Supplier, the lowest bidder among the 'Class-I Local Supplier ', will be invited to match the L1 price subject to Class –I local suppliers quoted price falling within the margin of purchase preference and the contract shall be awarded to such 'Class -I Local Supplier' subject to matching the L1 price.
- In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier ' with the next higher bid within the margin of Purchase Preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case of none of the 'Class-I Local Supplier' within the margin of Purchase Preference matches the L1 price, the contract may be awarded to the L1 bidder.
- "Class-II local supplier" will not get purchase preference in any procurement, undertaken by procuring entities.

2. For the purpose of Preference to Make in India, Order 2017 (PPP-MII Order):

- "Local content" means the amount of value added in India which shall be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.
- **"Class-I Local supplier"** means a supplier or service provider whose product or service offered for procurement has local content equal to or more than 50%.
- **"Class-II local supplier"** means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%.
- **"Non-Local Supplier"** means a supplier or service provider , whose goods , services or works offered for procurement , has local content less than or equal to 20%.

- **"Margin of purchase preference"** means the maximum extent to which the price quoted by a local supplier may be above the L1 for the purpose of purchase preference. The margin of purchase preference shall be 20%.

3. VERIFICATION OF LOCAL CONTENT:

- a. The 'Class-I local supplier'/'Class-II Local Supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self – certification that the item offered meets the local content requirement for 'Class –I Local Supplier'/'Class –II Local Supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made.
- b. In case of procurement for a value in excess of Rs 10 Crores, the 'Class-I Local Supplier/'Class-II Local Supplier 'shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

The local supplier at the time of submission of bid shall be required to provide a certificate as per **Annexure-XXVIII** from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content

The Bank shall follow all the guidelines/notifications for public procurement.

50. BLACKLISTING (New clause added)

Grounds for Disqualification & Blacklisting

- (A)** Notwithstanding anything contained in this document, any Bidder/selected Vendor shall be disqualified when –
- i)** any Bidder who have been black-listed or otherwise debarred by any Bank/Financial Institution/Central Government/State Government/any Central or State Undertaking or Corporation/Reserve Bank of India or any other Regulatory/Statutory Authority as on date of the publication of this Tender/Procurement;
 - ii)** any bidder whose Contract/Agreement with any Bank/Financial Institution/Central Government/State Government/any Central or State Undertaking or Corporation/Reserve Bank of India or any other Regulatory/Statutory Authority has been terminated before the expiry of the Contract/Agreement for breach of any terms and conditions at any point of time during the last five years;

- iii) any Bidder whose Earnest Money Deposit and/or Security Deposit have been forfeited by any Bank / Financial Institution/Central Government/ State Government/any Central or State Undertaking or Corporation/ Reserve Bank of India or any other Regulatory/Statutory Authority, during the last five years, for breach of any terms and conditions.
- (B) Further disqualification can be imposed by the Bank in accordance with the procedures established, which may include but not limited to the following grounds, either at the stage of Competitive Bidding or at the stage of implementation of the Contract:

Commission of any act of:

- i) submission of a bid, proposal or any other document that is known or should be known by the Bidder to be false, misleading or non- meritorious or to contain false information or concealment of information which will influence the outcome of the eligibility screening/selection process;
- ii) any documented unsolicited attempt by the Bidder to unduly influence the decision making process of the Bank while determining the eligibility screening/selection process in favor of the Bidder;
- iii) unauthorized use of one's name or using the name of another for purpose of bidding;
- iv) breach of the terms of a public contract by a wilful or material failure to perform in accordance with the terms thereof;
- v) withdrawal of a bid, or refusal to accept an award, or enter into contract with any Bank/Financial Institution/Central Government/State Government/ any Central or State Undertaking or Corporation/Reserve Bank of India or any other Regulatory Authority without any justifiable cause, after the Bidder had been adjudged as having submitted the lowest calculated Responsive Bid or highest rated Responsive Bid;
- vi) refusal or failure to furnish the required performance security within the prescribed time frame;
- vii) refusal to clarify or validate the Bid submitted, in writing, within a period of seven (7) calendar days from receipt of the request for clarification if sought by the Bank;
- viii) that may tend to defeat the purpose of the competitive bidding, such as but not limited to; an eligible Bidder not purchasing the bid documents or not complying with the requirements during the evaluation of bid or habitually withdrawing from

bidding or submitting letter of non-participation for at least three (3) times within a year, except for valid reasons;

- ix)** lack of integrity or honesty or fraud, bribery, collusion or conspiracy;
- x)** failure by the Bidder/Vendor, due to solely his fault or negligence, to mobilize and commence the work or perform within the specified time period, as specified in the Tender Document, including but not limited to the Request for Proposal/ Request for Quotation/ Agreement/Letter of Intention/Purchase Order etc.,;
- xi)** failure by the Bidder/Vendor to fully and faithfully comply with its contractual obligations without valid cause, or failure to comply with any written lawful instruction of the Bank or its representative(s) pursuant to the implementation of the Contract, which may include but not limited to the following:
 - a.** Employment of competent technical personal, competent engineers and/or work supervisors;
 - b.** Provision of warning signs and barricades in accordance with approved plans and specifications and contract provisions;
 - c.** Stockpiling in proper places of all materials and removal from the project site of waste and excess materials, including broken pavement and excavated debris in accordance with approved plans and specifications and contract provisions;
 - d.** Deployment of committed equipment, facilities, support staff and manpower; and
 - e.** Renewal of effectively date of the performance security after its expiry during the tenure of the Contract.
- xii)** assignment and subcontracting the Contract or any part thereof or substitution of key personnel named in the proposal without prior written approval by the Bank;
- xiii)** for the procurement of goods, unsatisfactory progress in the delivery of the goods by the manufacturer, supplier or distributor arising from his fault or negligence and/or unsatisfactory or inferior quality of goods, as may be provided in the contract;
- xiv)** for the procurement of consulting services, poor performance by the consultant of his services arising from his fault or negligence. The poor performance of the Consultant can include and may not be limited to defective design resulting in substantial corrective works in design and/or construction, failure to deliver critical outputs due to consultant's fault or negligence, specifying materials which are inappropriate,

substandard, or way above acceptable standards, allowing defective workmanship or works by the contractor being supervised by the consultant etc.,

- xv)** for the procurement of infrastructure projects, poor performance by the contractor or unsatisfactory quality and/or progress of work arising from his fault or negligence as per the existing performance monitoring system of the Bank shall be applied, quality of materials and workmanship not complying with the approved specifications arising from the contractor's fault or negligence, willful or deliberate abandonment or non-performance of the project or contract by the contractor resulting to substantial breach thereof without lawful and/or just cause.
- (C)** Any parameters described, *supra*, attributable to any Partner/Director shall be construed as disqualification for the Firm/Company, as the case may be.
- (D)** The Bank will have the discretion to disqualify the Bidder/Vendor and/or initiate the process for blacklisting the Bidder/Vendor and may also entail forfeiture of performance security furnished by the Bidder/Vendor. “

FORMAT OF BID SECURING DECLARATION

(The Bidder shall fill in this Format in accordance with the instructions as indicated)

RFP Ref. No: DIT/BPR&BTD/OA/1289/2020-21 Date: 23/11/2020

To
The Deputy General Manager
DIT, BPR & BTD
UCO Bank, Head Office
5th Floor, 3 & 4, DD Block,
Sector -1, Salt Lake,
Kolkata – 700 064.

Sir,

I/We..... (Authorised Signatory of the Bidder) submitted by the undersigned on behalf of the Bidder (M/s _____) either Sole or in Joint Venture, do hereby declare and accept the following:

- (A) I/We understand according to your conditions, the bid must be supported by a Bid-Securing Declaration.
- (B) I/We accept that M/s _____ will automatically be suspended from being eligible for bidding or submitting proposals in any contract with the Bank for the period of time starting on **Bid Submission Date** if I/We are in breach of our obligation(s) under the Bid conditions, enumerated as under:
- 1) if I/We withdraw the Bid during the period of validity i.e. **180 Days** from the Bid due date; or
 - 2) if I/We is/are awarded the Contract and fail to sign the Contract; or
 - 3) if I/We fail to submit an unconditional and irrevocable performance security before the deadline defined in the request for bid documents; or
 - 4) if I/We make any statement or enclose any form which turns out to be false, incorrect and/or misleading at any time prior to signing of contract and/or conceals or suppresses material information; or
 - 5) if I/We fail to submit the requisite documents as per the tender specification; or
 - 6) if I/We violate any of the provisions of the terms and conditions of this tender specification.

(C) We understand this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder or (ii)days after the expiration of our Bid.

Name of the Bidder*	
Name of the person duly authorized to sign the Bid on behalf of the Bidder**	
Designation of the person signing the Bid	
Signature of the person named above	
Official Seal	

Dated onthis day of(mention the month),..... (mention the year)
P.S.

(1) * In the case the Bid is submitted by an Entity (viz., Partnership Firm, LLP, Company, Joint Venture), specify the name of the Entity as the Bidder.

(2) ** The Person signing the Bid shall have the Power of Attorney given by the Bidder to execute the documents on behalf of the Bidder.

(3) In case of a Joint Venture, the Bid-Securing Declaration must be in the name of all Members/Partners to the Joint Venture that submits the Bid.

FUNCTIONAL SPECIFICATION

The weightage for this section is **200 marks**. The total scores will be scaled according to the total marks. The response to each line item under each functional head should be as per the table below.

Compliance	Description	Score	Marks
S	Standard feature- Readily available/ Supported by the Solution / customized in solution	S	8
C	Not supported / Not customizable within the same solution proposed without adding 3 rd party components and completion within stipulated timelines.	C	0

Sl. No	Analytics area	Complied (S/C)	Remarks
1.	Customer Retention Analytics: Churn Prediction		
2.	The Bank reserves the right to do Vulnerability Assessment and Penetration Testing (VAPT) audit of the solution provided by third party security auditors appointed by Bank periodically or as per regulatory guidelines. The vendor shall fix/ rectify the vulnerabilities and observations found by the IS Auditor free of cost and submit the final compliance/closer report/certificate from the Auditor. First IS Audit and VA/PT should be conducted prior to deployment of Data Analytics solution.		
3.	Customer Life Time Value and Customer Loyalty		
4.	Cross Sell Analytics: Improving product cross-holding ratio		
5.	Behavioral Analytics: Customer Segmentation & Profiling		
6.	Product Penetration: Market Basket Analysis, Sales Volume Forecasting		
7.	Delinquency management: Pre- delinquency & Loss Forecasting		
8.	Design and track Campaigns for Customer's based on various customer analytical parameters.		
9.	Channel Performance & Profitability, Channel Planning & Optimization.		
10.	Customer Acquisition Scorecard - Prioritization		

11.	Customer Propensity modelling		
12.	Branch Performance & Profitability		
13.	Customer Profitability		
14.	Sales Funnel Management: Casualty analysis and Process optimization		
15.	Sales Target Setting & Budgeting models		
16.	Product Pricing Analytics: Dynamic pricing models		
17.	Budget Forecasting & Target setting		
18.	Loans underwriting		
19.	Product Profitability		
20.	Service Differentiation - Enhancing Relationship Value		
21.	Customer Feedback - Text, Semantic and Voice Analytics		
22.	Asset Quality Optimization		
23.	Concentration / Exposure Management (Simulation)		
24.	Spend Analytics		
25.	Event Detection / Event Based Marketing		
Total Marks			200

TECHNICAL REQUIREMENTS FOR SOLUTION PROVIDED

The weightage for this section is **200 marks**. The total scores will be scaled according to the total marks.

*The response to each line item under each functional head should be as per the table below.

Compliance	Description	Score
S	Standard feature- Readily available in solution	Full Marks as mentioned in Line Items
C	Customization required. Customization possible within the same solution proposed without adding 3 rd party components and completion within stipulated timelines.	½ of Max Marks as mentioned in each line item
X	Not available in the proposed solution/ require 3 rd party integration.	0

SL NO	Specification	Mandatory	Compliance (S/C/X)	Proposed Tool /Product and Version	No. of license required (Qty.)	Licensing Model	Remarks	Marks (Total 1000)
1.	The solution needs to provide end-to-end data warehousing process, from enterprise applications and ETL tools to databases ensuring the timely delivery of trusted BI reports to our business users.	Y						20
2.	Solution to be backed with Artificial Intelligence and Natural Language Processing (based on text structure). Solution implemented (including NLP, AI engines) should be on bank premise.	Y						20
3.	Creation of users, groups and roles: The solution must enable administrators to assign role based permissions to be configured in order to	Y						10

	control what solution features and data users can access.							
4.	The solution must allow users to define hypotheses, analyze data, and visualize results without using the advanced query language	Y						10
5.	The solution must allow users to build data queries with code-free "drag and drop", "multidimensional maps" visual tools to enable non-technical personnel to easily find desired data across a combination of different sources.	Y						10
6.	In memory processing & ETL integration support: The solution shall allow processing of data by storing it in RAM instead of writing it to disk. This allows users to blend big data sets (Future Compatibility) on a solution, instead of doing the blends in the database. Solution should integrate with supplied ETL tool.	Y						10
7.	The solution must provides tools to compile and prepare data for analytics, testing hypotheses, performing visualization, creating/sharing reports, or setting up custom alerts.	Y						10
8.	The solution must allow users to create a visual (or graphic) outline of the content	Y						10

9.	The solution must provide guidance to the users by suggesting the best possible representation of the data.							10
10.	The solution needs to support plug-ins or advanced tools to expand data visualization capabilities.	Y						10
11.	The solution must support specialized analytics and visualizations that provide a geographic, spatial and time context allowing users to easily depict physical features and geographically referenced data and relationships.	Y						10
12.	The solution should offer predictive, prescriptive analytic capabilities that support the identification of meaningful patterns and correlations among variables in complex, structured, unstructured, historical, and potential future data sets for the purposes of predicting events and assessing the attractiveness of various courses of action.	Y						10
13.	The solution needs to help identifying the best outcome to events, given the parameters, and suggesting decision options to take advantage of a future opportunity or to mitigate a future risk.							10
14.	The solution should let users analyze the root cause of certain events and behaviours.							10

15.	The solution must provide performance analytics to address goals, objectives, and accountability. Performance analytics typically use a variety of KPIs including strategic scorecards; relevant comparisons against plans, budgets, forecasts, prior performance, and industry benchmark data; and the ability to drill down to root-cause details.							10
16.	The solution must enable users to understand data by creating a summary of historical data and preparing the data for further analysis.							10
17.	The solution must have the ability to let users create reusable data models to enhance future searches and analysis.	Y						10
18.	The solution should allow users to examine large pre-existing databases in order to discover patterns and create predictive models that can validate new business insights.							10
19.	The solution must permit import of third- party analytic models using Predictive Modeling Markup Language (PMML).	Y						10
20.	The solution must have capabilities to search through data using natural language text and linguistic rules thereby making search function intuitive.							10
21.	The solution needs to provide data-model- free analysis, in which any data attribute can be							10

	used as a 'fact' or a 'dimension' to enable users to find information without the need to rely on pre-defined data linkages.							
22.	The solution should have a capability to convert unstructured text data into meaningful data for analysis.							10
23.	The solution must provide statistical tools to analyze and draw inferences from data.							10
24.	The proposed solution should support query hybrid, columnar, and array-based data sources, such as Hadoop, MapReduce, or other NoSQL databases, to take advantage of the full range of business data.	Y						10
25.	The Proposed solution should support the ability to gather and analyze data from social media sources such as Facebook or Twitter and combine the data with other information, to provide a complete view of relevant activity.	Y						10
26.	The solution should enable users to run on-demand, ad-hoc reports to visualize data based on various criteria.	Y						10
27.	The solution must provide Dashboards so that users can get a snapshot view of important conditions, trends, and exceptions.	Y						10
28.	The solution needs to support custom dashboard views that can be configured and shared between users to provide relevant views into analytical data and trends.	Y						10

29.	The solution must allow users to share information and interact via discussion threads, chat capabilities, and annotations to facilitate decision making and content analysis.							10
30.	The solution should provide a drill-down capability to access details directly from the dashboard.	Y						10
31.	The solution must support OLAP, also known as 'slicing and dicing' analysis, to enable users to analyze data with fast query and calculation performance.	Y						10
32.	The solution's OLAP capabilities should be able to span a variety of data architectures (such as relational, multidimensional, or hybrid) and storage architectures (such as disk-based or in-memory) in order to integrate with all available data.	Y						10
33.	The system's OLAP capabilities should possess the ability to drill up, down, across, and through the data, in order to make the analysis as clean and comprehensive as possible.	Y						10
34.	The solution should provide an API (Application Programming Interface), Web Services for custom integration with other solutions.	Y						10
35.	The solution should be able to integrate with big data software if required.							10

36.	The solution should have the capability to integrate with external predictive tools or solutions to enhance analytical capabilities.							10
37.	The solution must integrate with mapping solutions such as ESRI ArcIMS and Google Maps thereby allowing users to visualize the spatial component of business data.	Y						10
38.	The solution needs to integrate with LDAP and/or Active Directory to tie into corporate user management.	Y						10
39.	The solution should be able to deliver content to mobile devices (both admin and view), either in a published mode for view-only access or in an interactive mode to enable data manipulation.	Y						10
40.	The solution should have the capability to utilize mobile devices' native capabilities to enhance mobile access, such as a touch-screen, camera, location awareness, and natural-language query.							10
41.	The solution should allow users to manage business finances by providing an overview of balance sheets, P&L, debtors, creditors, etc.							10
42.	The solution should allow users to define business rules to automate routine regulatory tasks.							10
43.	The solution must have the capability to point out issues within the data.							10
44.	The solution must allow users to have tools for score analytics, transform							10

	data, create business recommendations, and comment on the information to help drive decisions.							
45.	The solution must have the capability to point out patterns within the data.							10
46.	The solution's dashboard should enable exploration of data by changing charts using color, brightness, size, shape and motion.	Y						10
47.	The solution should provide tools to aid in creating routine data backups and point-in-time snapshots to protect against data loss.							10
48.	The solution should provide a set of programmatic and visual tools and a development workbench for building reports, dashboards, queries and analysis.							10
49.	The solution must be simple and intuitive providing users a good user experience.							10
50.	The solution should have an option to customize to meet users' specific needs with a user-friendly UI.							10
51.	The solution should handle increasing volumes of data and growing numbers of users for performing analytics without drop in performance at-least upto a business growth rate of 15% YOY during contract period.	Y						10
52.	The system should contain tools to provide a robust and centralized way for administrators to search, capture, store, re-use, and publish							10

	metadata objects so as to enable users to leverage the same systems-of-record semantic model and metadata.							
53.	The solution should enable users to do code-free, 'drag and drop', user-driven data combinations of different sources and the creation of analytical models, such as user-defined measures, sets, groups, and hierarchies.	Y						10
54.	The solution must support reading and interacting with data from sources outside of OLAP and databases, such as MS Excel files and .txt files, in order to analyze all data a customer may provide.	Y						10
55.	The solution should support design and deployment processes and technologies to enable profiling, analysis, remedial actions and automated cleansing.							10
56.	The solution should allow and support user reports and output to be saved in common formats, such as HTML, Excel, XML, XBRL, CSV, or PDF to provide flexibility.	Y						10
57.	The solution must have a log for administrative and user actions, and report on the logged items.	Y						10
58.	The system should have encryption capabilities for secure data storage and transmission.	Y						10
59.	The solution should provide tools to aid in restoring solution data from a backup or snapshot to facilitate recovery.	Y						10

60.	It must be easily scalable to support changing throughput.							10
61.	The solution should be platform independent , should have capability to be installed on various operating systems like Microsoft Windows, Linux, AIX,etc.	Y						10
62.	The solution should support integration with common development environments such as Microsoft Visual Studio or Eclipse to facilitate							10
63.	The proposed Data Archival solution should be able to archive and restore terabytes of data with minimum operational downtime.	Y						10
64.	The proposed Data Archival solution should provide tools to do consistency check on collected legacy Backup data backed up in different formats and on different medias.	Y						10
65.	The proposed Data Archival solution should be able to maintain one set of consistent backup copy received from data warehouse solution.	Y						10
66.	The archival solution should be able to maintain the time related details and should be able integrate seamlessly with previous versions of archival of data	Y						10
67.	The proposed conversion tools should be either on J2EE or ASP.NET platform or similar technologies and should connect to any ODBC database on Windows, Unix, AIX, Linux etc...	Y						10

68.	The proposed solution should be able to convert data from the backup data provided by the data warehouse solution over secure FTP transfer.	Y						5
69.	The proposed solution should be able to integrate the new converted uniform data into the previous uniform data seamlessly without any duplications, deletions of the old data.	Y						5
70.	The proposed solution should be able to create desired uniform archival data on tape libraries.	Y						5
71.	The data retrieval software should be the same for all backed up data.	Y						5
72.	The proposed data retrieval software should execute on all versions of operating systems.	Y						5
73.	The proposed data retrieval tools / software should generate reports as desired by the Bank (customizable)	Y						5
74.	The proposed solution must have password/ access rights mechanism to restrict access to the solution by authorized users only.	Y						5
75.	The proposed solution should view and have an option of printing Customized reports in all the modules.	Y						5
76.	The proposed solution should provide search /sort and display information on specifying parameters.	Y						5

77.	The bank users on the corporate network should be able to access the proposed Data Retrieval software at the Centralized location and view, print and download the financial / non- financial data in popular file formats like XML,ASCII text, Adobe pdf, MS-word, MS-Excel).	Y						5
78.	The proposed Data Retrieval Software shall run from the Centralized location.	Y						5
79.	The proposed Data Retrieval Software at the Centralized location should provide uniform access to the data (converted and uploaded on centralized server in uniform read only format) of all the branches.	Y						5
80.	The proposed Data Retrieval Software at the Centralized location should be a web based solution.	Y						5
81.	The proposed archival solution should be able to archive and restore seamlessly across all components of the data warehouse solution.	Y						5
82.	The archival solution should support including the following data Structured and unstructured data Source data files Data warehouse ODS DQ Store All data marts & downstream files Reports, dashboards, query data etc.	Y						5
83.	The proposed Data Archival Solution should have been implemented in at least TWO banks out	Y						5

	of which one should be scheduled commercials Banks in India having more than 1000 branches.							
84.	The ETL loading window for every day increment data should not be more than 3 hr Push/Pull way of data acquisition from Source System (without any impact or should have minimal impact i.e not more than 5% on production databases).	Y						5
85.	The Offered Automated tape Library should be supplied with minimum 4 x latest generation of LTO FC Tape drives and further scalable to 16 x latest generation LTO FC Tape Drives.	Y						5
86.	The proposed backup software should be modular in architecture, allowing for components to be added and removed without requiring the backup system to be shutdown.	Y						5
87.	The software should have web based Graphical User Interface (GUI) / Java so that all backup servers can be managed centrally, regardless of location.	Y						5
88.	All backup/restore administration must be controlled by a centralized master system	Y						5
89.	The master system must support Operating systems: Windows/ Linux/ Unix etc.	Y						5
90.	Master system must maintain a database for all backup/restore meta-data	Y						5
91.	Easy to reconstruct against in the unlikely event of corruption.	Y						5

92.	Easily protected with an integrated backup and recovery plugin for the database	Y						5
93.	The software must provide flexibility to backup to different media. These include disk-to-tape, disk-to-disk and interoperability.	Y						5
94.	The proposed backup solution must be able to support raw device backup – on Windows, various Linux versions and Unix (IBM AIX, Sun Solaris, HP UX etc.)	Y						5
95.	The proposed backup solution must be able to support consolidated (synthetic) backup – for file system data on all platforms.	Y						5
96.	The proposed backup solution must have user level access control list security function. Each user has different permissions and privileges on the system.	Y						5
97.	The proposed backup solution must be able to encrypt backup data at source and store with 128-bit or higher encryption.	Y						5
98.	Supported client systems include: Windows, Linux, CentOS, Solaris etc.	Y						5
99.	Ability to configure automated backups for specific days and weeks within a month, while maintaining a simplified methodology for complex date scenarios.	Y						5
100.	Software should have following reporting capabilities:	Y						5
101.	a. Full job completion report. Overview of the full backup jobs that were successful, partially successful and failed for each day	Y						5
102.	b. Full backup data volume report. Overview of the total data volumes that were backed up for each day	Y						5

103.	c. Average tape utilization report. Listing of the average amount of data stored on each media	Y						5
104.	Software should meet the following Media Management capabilities:	Y						5
105.	a. Allow tape library sharing among master/media servers	Y						5
106.	b. Allow individual tape drive sharing among media servers and allow for reconfiguration without rebooting media servers	Y						5
107.	The software inbuilt reporting tool must have the ability to create customize reports without any additional purchase of another reporting module or 3rd party reporting module	Y						5
108.	Tape media scanning should be quick and easy to perform to rebuild a lost index or re-import a tape with older backup data.	Y						5
109.	The software must have the ability to provide disaster recovery of Window and Linux operating systems by use of a bare metal recovery technology.	Y						5
110.	Must support storage protocols such as NDMP (version 3 & above). Capable of providing Check –Point Restart able Backup and Restore feature.	Y						5
111.	Must support online backup of virtual machines on both VMware & Hyper-V platform forms.	Y						5
112.	The software should support 32 bits and 64 bits operating systems, data bases and applications	Y						5
113.	The backup software should support Image level backup of the Virtual machine(s)	Y						5

114.	The backup software should allow single / granular file recovery of data from the image level backup	Y						5
115.	The Backup software should include / add on licenses for Enterprise wide reporting from a single dashboard.	Y						5
116.	The backup licenses should be capacity based for the proposed solution for DC for the contract duration	Y						5
117.	The Offered Tape Library must be with Minimum 3 Slots all activated and ready to use & further Scalable to 5 slots as and when required.	Y						5
118.	The Tape Library must be Offered latest generation of LTO drive in the Library shall conform to the Continuous and Data rate matching technique for higher reliability.	Y						5
119.	Offered latest generation of LTO drive shall support 300 MB/sec in Native mode and 750 MB/sec in 2.5:1 Compressed mode.	Y						5
120.	The offered Tape Library must be offered with Redundant Power supply	Y						5
121.	The Offered Tape Library shall provide 8Gbps native FC connectivity to SAN switches.	Y						5
122.	Offered Tape Library must have partitioning support so that each drive can be configured in a separate partition. The Partitioning Licence should be provided along with the Library.	Y						5
123.	Bidder must Supply 24 Blank- New Data cartridges & 2 Cleaning Cartridges with barcode labels.	Y						5
124.	Tape Library shall provide web based remote management.	Y						5
125.	The offered tape library must have a high reliability i.e. MSBF (Mean	Y						5

	Swap Between Failures) greater than 2,000,000 cycles							
126.	The offered tape Library must support encryption. The overall solution offered with the Tape Library should provide either AME or LME encryption key management. The necessary License required must be provided by the System integrator, to keep the Encrypted keys safe and secured.	Y						5
127.	Tape library shall support Barcode reader and min 3 mail slots- to deliver easy, secure access to individual tape cartridges without interrupting library operations.	Y						5
128.	Tape Library shall have GUI Panel. Shall be rack mountable. The Tape library must Set alerts with respect to Tape library software and hardware	Y						5
129.	Tape drive sharing must support both iSCSI and FC based connections.	Y						5

Annexure- VIII (Masked Commercial Bid Format)

- >Please refer file named as "Commercial Bill of Material" (attached along with the corrigendum)
-

Annexure- IX (Commercial Bid Format)

- >Please refer file named as "Commercial Bill of Material" (attached along with the corrigendum)
-

Annexure- XXII (Recommended Hardware SpecifiCATION REQUIRED FOR THE PROPOSED SOLUTION AT dc/dr/uat/Test & Development)—Stands Deleted

Undertaking for Non-Blacklisting / Non-Debarment of the bidder

TO BE STAMPED AS A DECLARATION & DULY ATTESTED BY A NOTARY

Sub: Request for Proposal forRFP No.....dated.....)

- 1)** I/We, Proprietor/Partner(s)/Director(s) of M/s..... hereby confirm that I/We have read and understood the eligibility criteria and fulfil the same.
- 2)** I/We further confirm that all the information furnished by me/us, as per the requirement of the Bank, have been included in our bid.
- 3)** I/We further hereby undertake and agree to abide by all terms and conditions and guidelines stipulated by the Bank. We understand that any deviation may result in disqualification of our bid.
- 4)** *I/We further hereby declare that I/We have not been black-listed or otherwise debarred by any Bank/Financial Institution/Central Government/ State Government/any Central or State Undertaking or Corporation/ Reserve Bank of India or any other Regulatory Authority or any other Statutory Authority as on date of the publication of this Tender/Procurement.

(OR)

I/We further hereby declare that the Proprietorship Concern/Partnership Firm/Company/..... (if any other entity) namely M/s was blacklisted/debarred by.....(Name of the Authority who blacklisted/debarred) from taking part in their Tender/Procurement for a period ofyears w.e.f.to..... The period is subsisting/over on.....and now I/We is/are entitled to take part in Tender/Procurement.

- 5)** I/We declare that no proceedings/inquiries/investigations have commenced/pending against me/us by any Statutory Authority/Regulatory Agency/Investigating Agency which may result in liquidation of company/ firm/proprietorship concern and/or may act as deterrent on the continuity of business and/or may hamper in providing the said services, as envisaged in this document.
- 6)** I/We further hereby declare that no legal action is pending against me/us for any cause in any legal jurisdiction.
- 7)** I/We undertake that adequate number of resources, if required by the Bank, will be deployed for the project to complete the assignment within the stipulated time.

***STRIKE OUT WHICH IS INAPPLICABLE**

(Deviation to the above if any, the Bidder must provide details of such action(s))

Signature (1) (2)

(duly authorized to sign)

Name:.....

Capacity in which as executed:.....

Name & registered address of the Bidder:.....

Seal of the Bidder to be affixed

RESOURCE EXPERIENCE

The resources deployed for the Project (Implementation / Maintenance) should minimum adhere to resource qualification guidelines stated below

S.No.	Resource	Qualification	Compliance
1.	Program Manager	<p>Should have >15 years of relevant experience as Program Manager and should have experience of Program Managing Implementation and Operations of any one or more of the following solutions in one or more scheduled commercial bank in India having more than 1000 branches.</p> <ul style="list-style-type: none"> • Data warehouse • Analytics & BI • ACRM • MBA / Engineering with PMI certification / Prince2 Certification 	
2.	Data Architect	<p>Should have >10 years of relevant experience as Data Architect and should have experience of Design & Architecture in any one or more of the following solutions in one or more scheduled commercial bank in India having more than 1000 branches.</p> <ul style="list-style-type: none"> • Data warehouse • Analytics & BI • ACRM • MBA / Engineering with Requisite relevant industry experience / PMI certification / Prince2 Certification 	
3.	Functional Leads	<p>Should have >8 years of relevant experience in the respective Module and should have worked as a Functional lead for any one solution in at least one or more scheduled Bank in India having more than 1000 branches</p> <ul style="list-style-type: none"> • Data warehouse • Analytics & BI • ACRM • MBA / Engineering with requisite relevant certification 	
4.	Implementation Team Leads	<p>Should have >8 years of relevant experience with experience as team lead Implementation of any one solution in one or more scheduled Bank in India having more than 1000 branches</p> <ul style="list-style-type: none"> • Data warehouse • Analytics & BI • ACRM • MBA / Engineering with requisite relevant OEM certification 	
5.	Business Analysts	<p>Should have >7 years of relevant experience with experience as Business Analyst of any one solution in one or more scheduled Bank in India having more than 1000 branches</p> <ul style="list-style-type: none"> • Data warehouse • Analytics & BI 	

S.No.	Resource	Qualification	Compliance
		<ul style="list-style-type: none"> ACRM MBA / Engineering with requisite relevant certification 	
6.	Implementation team	<p>Should have >5 years of relevant experience with experience as Implementation resource of any one solution in one or more scheduled Bank in India having more than 1000 branches</p> <ul style="list-style-type: none"> Data warehouse Analytics & BI ACRM Or on relevant technology for which the resource is positioned as implementation team Diploma / Science Graduate / MBA / Engineering with requisite relevant OEM certification. If a science graduate is proposed, he/she should have passed with a first division. 	
7.	Managed Services- L2 (server , DB , middleware etc)	<ul style="list-style-type: none"> Diploma / Engineering Graduate / Science Graduate. If a science graduate is proposed, he/she should have passed with a first division. Good Communication (written/Oral) Willing to work in 24X7 environment Should have at least 5 years of relevant experience Should have worked in 2 similar project of Data Warehouse / CBS / ACRM as L2 on the similar technology Should have relevant certification i.e. server / appliance resource should be certified on proposed server / appliance, similarly DB resource should be certified on proposed DB technologies etc. 	
8.	Managed Services -L1 (server , DB , middleware etc)	<ul style="list-style-type: none"> Diploma / Engineering Graduate / Science Graduate. If a science graduate is proposed, he/she should have passed with a first division. Good Communication (written/Oral) Willing to work in 24X7 environment Should have at least 3 years of relevant experience Should have worked in 1 similar project of Data Warehouse / CBS /ACRM as L2 on the similar technology Should have relevant certification i.e. server / appliance resource should be certified on proposed server / appliance, similarly DB resource should be certified on proposed DB technologies etc. 	
9.	Data Scientist	<ul style="list-style-type: none"> M.Tech / B.Tech / MSc in Artificial Intelligence / Computer Science / Analytics / Statistics / Applied Economics Minimum 3 years of experience in data science related areas Professional certification in data science and big data, or participation in minimum 4 client projects in data science, each of duration not less than 6 months Hands-on software development and experimentation skills in environments like R / Scala / Python / H2O / MatLab Research exposure, as shown by conference publications / patent applications Software development experience Good verbal and written communication skills 	
10.	Senior data Scientist	<ul style="list-style-type: none"> PhD / MTech / MS in Artificial Intelligence / Computer Science / Analytics Minimum 5 years of experience in data science related areas 	

S.No.	Resource	Qualification	Compliance
		<ul style="list-style-type: none"> Professional certification in data science and big data Participation in at least 3 enterprise data science projects Experience of team management Experience / certification in Agile / Scrum project management Hands-on software development and experimentation skills in environments like R / Scala / Python / H2O / MatLab Proven research expertise, as demonstrated by international publications / patent applications / primary developer of novel open source software components Software project management experience Expertise with scalable machine learning tools like H2O / Mahout / Spark ML Experience with training and mentoring new data scientists Proven client interfacing skills, excellent verbal and written communication skills 	

Bidder Needs to factor minimum below resources during Implementation Phase

Resource	Location	Minimum No of resources
Program Manager	Bank head office	1
Banking Domain Expert	Bank head office	1
Techno Functional – Business Analyst	Bank head office	2
Data Modeller / Model Developer	Bank head office	2
Report Developer	Bank head office	2
Data Scientist	Bank head office	1
server and DB expert	Bank head office	2

Minimum Team Requirement during Sustenance Phase

Resource	Location	Minimum No of resources across shift	No of Shifts	Service Windows	Total Minimum Resources
Program Manager	Bank head office	1	1	General Shift	1
L1 Server Management	DC	1	2	6:00 AM to 10 PM	2
L1 Server Management	DR	1	2	6:00 AM to 10 PM	2
L2 Server Management	DC	1	1	General Shift	1
L1 Database Management	DC	1	2	6:00 AM to 10 PM	2
L1 Database Management	DR	1	2	6:00 AM to 10 PM	2
L2 Database	DC	1	1	General Shift	1

Management					
L1 ETL	Bank head office	1	2	6:00 AM to 10 PM	2
L2 ETL	Bank head office	1	1	General Shift	1
L1 BI	Bank head office	2	2	6:00 AM to 10 PM	4
L2 BI	Bank head office	1	1	General Shift	1
L1 Storage, Tape Library & Backup Management	DC	1	2	6:00 AM to 10 PM	2
L2 Storage, Tape Library & Backup Management	DC	1	1	General Shift	1
L1 Storage, Tape Library & Backup Management	DR	1	2	6:00 AM to 10 PM	2

Bio-data Format for Resources to be deployed on-site

SI.NO	ITEM	DETAILS			
1	Resource Name				
2	Specify role to be played in the project				
3					
	Organization name	From Date	To Date	Designation	Roles/ Responsibilities
4	Number of years with the Current Organization				
5	Sum of project durations of similar projects executed				
6	Educational Background, Training / Certification * including institutions, % of marks, specialization areas etc.				
	Degree	Year of Award of Degree	University	% of marks	

(TO BE PROVIDED ON Rs.100/- STAMP PAPER)**Self-Certificate for Local Content**

Date: __/__/__

I.....S/o, D/o, W/o.....resident of.....do hereby solemnly affirm and declare as under:

- 1) That I will agree to abide by the terms and conditions mentioned in the tender specification issued vide ref. no.....dated.....
- 2) That the information furnished hereinafter is correct to the best of my knowledge and belief and that I undertake to produce the relevant records before to any authority nominated by UCO Bank for the purpose of assessing the Local Content.
- 3) That the Local Content for all inputs which constitute the Goods (mention the procurement) has been verified by me and that I am responsible for the correctness and accuracy of the claims made therein.
- 4) That in the event of the Local Content mentioned herein is found to be incorrect and not meeting the prescribed norms of Local Content, based on the assessment of an authority so nominated by UCO Bank and that I will be liable as under Clause 9(f) of Public Procurement (Preference to Make in India) Order 2017, as amended.
- 5) That I agree to maintain all the information regarding my claim for Local Content in our records and that I shall make the requisite information available to UCO Bank as and when required.
- 6) That *I (name of Manufacturer) do hereby confirm in respect of quoted item(s) that the Local Content is equal to or more than 50% and come under 'Class-I Local Supplier' Category. As being 'Class-I Local Supplier', I am eligible for Purchase Preference under 'Make in India' Policy vide Government of India Order no. P-45021/2/2017-PP (B.E.-II) dated 15.06.2017 (subsequently revised vide Orders dated 28.05.2018, 29.05.2019 and 04.06.2020)

OR

That *I (name of Manufacturer) do hereby confirm in respect of quoted item(s) that Local Content is more than 20% but less than 50% and come under 'Class-II Local Supplier' Category.

- 7) That I submit as under:

Name & Details of the Local Supplier (Regd. Office, Manufacturing Unit, Location, Nature of legal entity)	
Date on which this Certificate was issued	
Product for which the Certificate is issued	
Procuring Agency to whom the Certificate is furnished	

Percentage of Local Content claimed	
Name & details of the unit of the Manufacturer	
Sale Price of the Product	
Ex-Factory Price of the Product	
Freight, Insurance and handling	
Total bill of Material	
List & Total cost value of inputs used manufacture of the proposed Goods	
List & Total cost value of inputs which are locally sourced (Attach Certificates of Local Content from Local Suppliers, if the input is not in-house)	
List and cost of inputs which are imported (directly or indirectly)	
Any other information	

8) That the details of the location(s) at which the local value addition made is/are as under:

Sl. No.	Product Details	Name of Place

* Strike out whichever is not applicable

Date:

For & on behalf of

Signature of the Authorised Signatory of the Bidder (insert name, designation & contact number)

Official Seal of the Bidder

Place- Kolkata

Date- 19.03.2021

*****End of Document*****