



Scope of work
For
Program DRISHTI
(Data Re-engineering for
Insights and Strategic
Transformation Initiative)



SBI Life Insurance Co. Ltd

SBI Life Insurance Company Limited invites bids for Consulting on Program DRISHTI.
The detailed scope is mentioned in the RFP document.

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1. Scope Of Work

1.1 Project Overview - Program DRISHTI

SBI Life has embarked on a journey to modernize its data architecture and continue to remain the Nation's most valued & trusted life insurer. To meet this vision, SBI life is commencing **Program DRISHTI – Data Re-engineering for Insights and Strategic Transformation Initiative**. DRISHTI is a technology enabled business transformation program that will not only enable SBI Life to become a technology driven life insurer with infrastructure and architecture to drive and support quicker & meaningful analytics and insights, but also strengthen its commitment to enhance digital experiences for its customers, distributors, and employees alike. DRISHTI will ensure a clean & single source of data for analytics to serve model development, training & maintenance of advanced AI/ML models. DRISHTI will ensure SBI life to strategically differentiate and enable smart and data driven journeys across multiple products such as Insurance Plans, Unit Linked Plans, Pension Plans, Group Policies etc.

DRISHTI is envisaged to empower below business outcomes:

A. Digitally Enabled & Strengthened Distribution Ecosystem

- a. Expanding Strategic tie-ups with prominent institutions
- b. Agent empowerment with customer personalized data for effective need analysis & up-selling/cross-selling
- c. Seamless onboarding of distribution partners and simplifying customer journey
- d. Intermediary enablement and data-driven intermediary recruitment
- e. Agent empowerment with customer personalized data for effective need analysis & up-selling/cross-selling

B. Products designed for Customer Needs

- f. Cross-sell, up-sell, and persistency management
- g. Innovative & personalized microinsurance products with highly segmented demographics specifically for Rural & Tier-II cities

C. Expanding Digital Capabilities & Footprints

- h. Gain insights from user journey analytics to further improve customer experience
- i. Measure success & allocate funds of digital channel partners via detailed information on lead generation & conversion

D. Customer Centricity

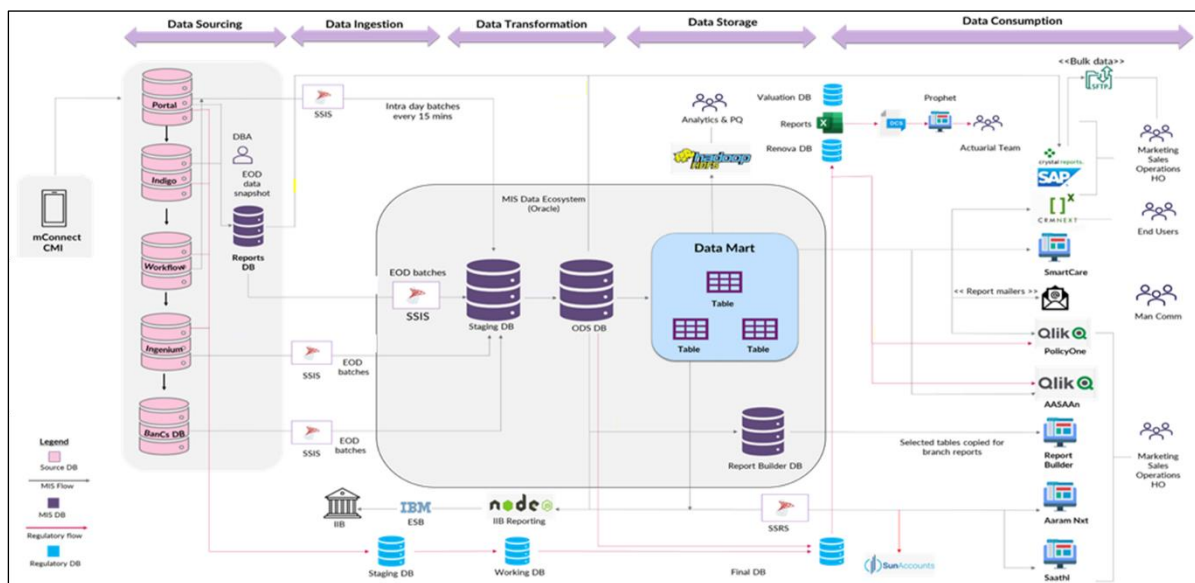
- j. Evolution from customer service to experience and engagement hub
- k. AI driven call center operations with real-time data
- l. Drive lower ratios by creating transparency in data and transaction between distributors and customers

1.2 Program DRISHTI: Context and Background

1.2.1 Current Data Landscape and Challenges

Currently SBI Life has, an MIS based ecosystem consisting of staging databases, operation datastore databases, reporting data marts etc. that have been implemented based on the requirements and needs of various departments and functions over a period. All these systems work on different data models and have evolved organically catering to specific demands from SBI Life's business functions. Variety of data, such as intermediary data, reports, public offer documents, policy data, financial data, customer data, premium payments data is collected from various sources on a daily, weekly & monthly basis. Reporting is served by different tools like AaramNxt (Static MIS reporting), Aasan (Dynamic reporting built on QlikSense) etc.

A brief description of major data systems is as follows:



Data Sourcing

Sr. No	Name	Data Store	Description	Specifications
1.	Customer Onboarding	Oracle	In house mobile app to onboard customers. Used by sales team to generate BI, Need Analysis, input customer details and generate payment quote	1 GB
2.	Cashiering	Oracle	Portal to process the money in (premium) received by customers for their new policies or renewal of existing policies.	1 GB
3.	Underwriting	Oracle	Portal to verify, validate the data entry, documents of customers and accordingly process further for underwriting decision.	4 GB
4.	PMS/PAS	Oracle	Policy Management or Admin System.	40 GB

			Policy issuance and all policy servicing activities carried out from this system. These are 3 in numbers- Individual, Group and Fund business.	
5.	CMS	Oracle	Channel management system that maintains the distributor details and the branch details	0.15 GB
6.	Pay Systems	Oracle	Claims process flow portal. Claim intimation to approval.	0.29 GB
7.	CRM	Oracle	Used by branches and call centre to service the customer queries	1.5 GB
8.	EOD Snapshots		Daily EOD data snapshot from Portal, Indigo DB is taken between 6-7 pm after business hours	
Data Ingestion & Transformation				
#	Name	Data Store	Description	Specifications
1.	SSIS	SQL	Integrates data via real-time batches that run every 15 minutes and stored in Staging DB.	
2.	Staging DB	Oracle	The data is transformed and segregated in the ODS database for the respective MIS Data Marts of Retail, BanCa and PNBC.	
3.	ESB	IBM	Using Enterprise Source Bus data of any new policies issued by EOD is collated and uploaded on the IIB portal using API, As per regulatory requirement	
Data Storage				
#	Name	Data Store	Description	Specifications
1.	MIS	Oracle	This is an Operational Data Store consisting of various data marts catering to all the data and reporting needs of the organization	50
2.	Valuation	Oracle	This data store is for regulatory and valuation data extracts that are provided to regulatory/statutory and business users on periodic basis	30 GB (Monthly Refresh Volumes)
3.	Analytics HDFS clusters	Hadoop	Data flows from Data Mart (MIS DB) to Hadoop clusters used by the Analytics & PQ team for the predictive analysis	

			use cases	
4.	Renova DB (Re-insurance)	Oracle	Month-end regulatory reports generated using the month-end snapshots are collated and leveraged for reinsurance requirements	
Data Consumption				
#	Name	Data Store	Description	Indicative daily Data transfer (GB)
1.	Reports	MS Excel	Month-end excel reports for Actuarial analysis generated as a part of Regulatory reporting are pushed to DCS for Prophet to be consumed by the Actuarial team for further analysis	
2.	SSRS	SQL	ODS Data is fetched via SSRS to serve the various end User reporting platforms & applications like AaramNxt, SmartCare, Automated Management Reports and Qlik enabled Aasan & Policy One	
3.	Crystal	SAP BO	Transactional & Operational reporting solution for scheduled reports	400 + reports
4.	AARAM	SSRS	Anywhere Anytime Reporting And More for Static reporting layouts, accessible pan India. Developed on SSRS & MEAN stack	Avg. 600 + users & 250+ reports daily
5.	Data Feeds & Mailers	SSRS, SSIS, QlikSense, NPrinting	Regulatory & Statutory data extracts / reports for Corporate Agents – SBI, Yes Bank etc	50+ types of mailer reports & score cards, trackers
6.	AASAAAn	QlikSense	QlikSense based Advance Automated System for Advance Analytics (AASAAAn) for Geo Analytics	600+ dashboards

Below are some of the critical pain points related to its current data landscape and architecture

A. Architecture Challenges

- Current technical is not contemporary / modern with various tooling that will need an upgrade / replacement
- No single source of truth leading to data inconsistency making it difficult to get a unified view of data across the organization/departments
- Lack of flexibility hindering quick adaptation to changing business requirements or integration with new data sources and analytics tools

B. Limitations to support Analytics

- Ability to Manage Large Volumes of Data
- Data Quality challenges in Business Applications requiring a strong data quality engine
- Ability to process Unstructured data for analytics
- Single 360-degree view of Customer, Agents/Distributors is unavailable
- Business Definitions & Glossary of Data Sets is not maintained
- Real-time data processing to support digital channels

C. Data Value Realization

- Lack of Data Democratization & usage of self-service analysis by end-users
- Longer turnarounds to deliver new data sets, use cases hence unable to get holistic views
- Storage, archiving, lifecycle management not governed by business requirements

D. Data Requirements

- Lack of transparency and accountability due to a missing centralized decision repository
- Inability to Segregate Data & Reports basis business domain
- Lack of ML-driven models can result in missed opportunities by delayed time-to-market for new features and services impacting growth and customer engagement

1.3 Target State of DRISHTI's Data Platform

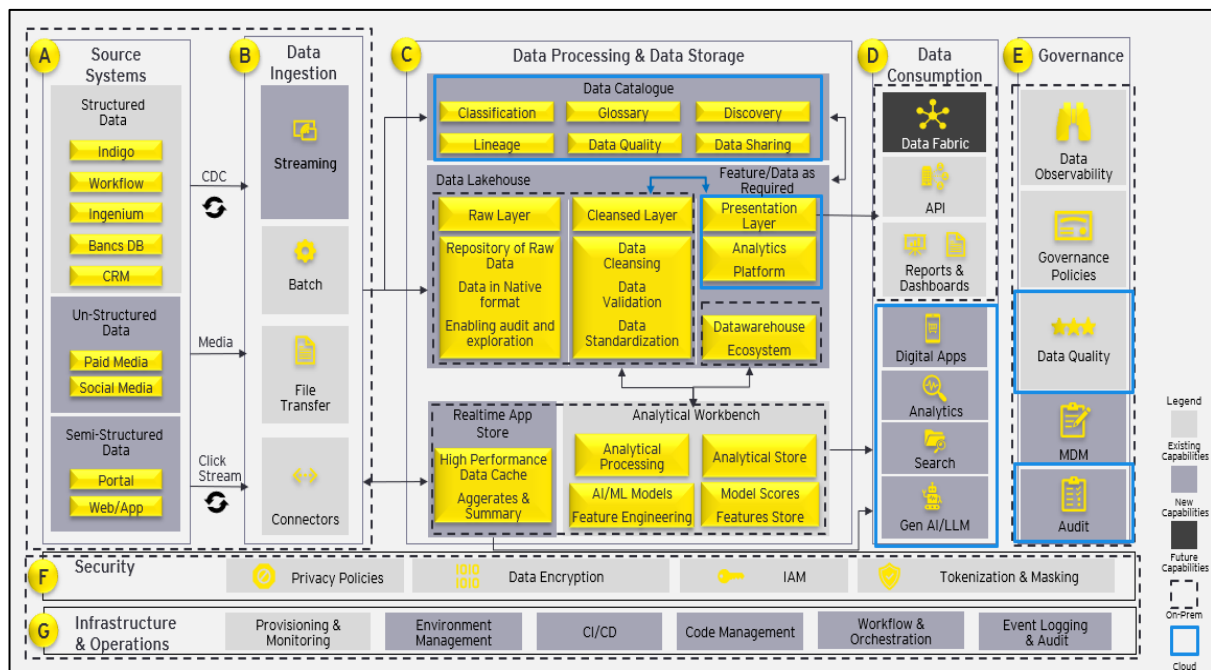
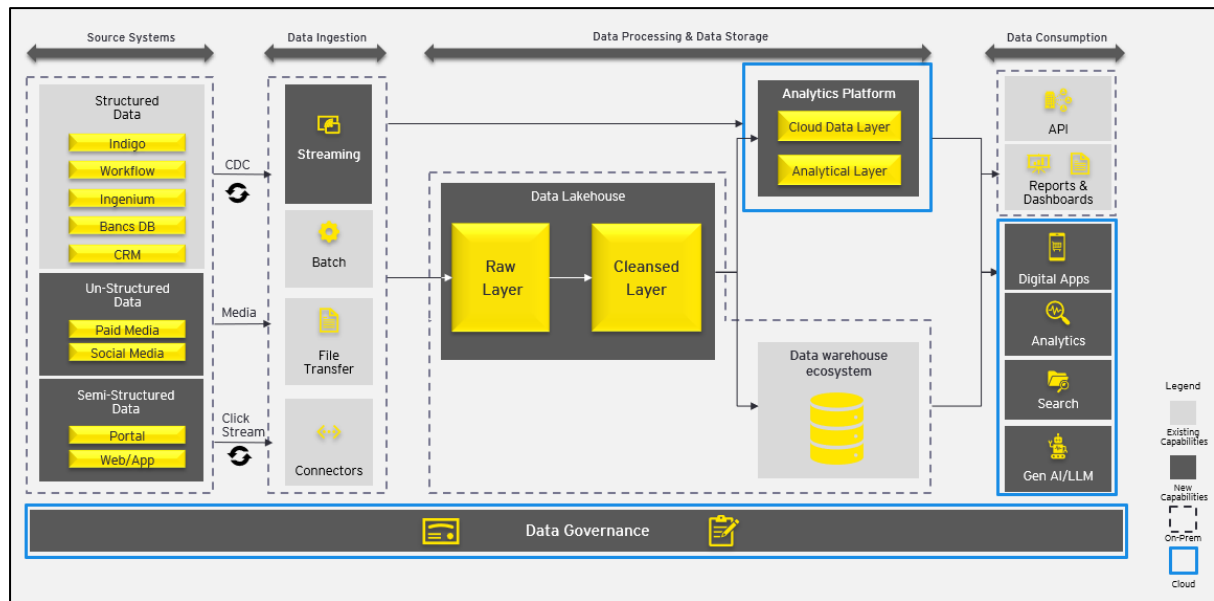
Future state for SBI Life is being designed based on creating a single source of truth for the platform while following these guiding principles:

1. *Single source of truth leading to ensure data is accessed uniformly from a single place to get a unified view of data across the organization/departments*
2. *Maximize use of open data formats data that eases sharing and enables interoperability between applications*
3. *Accommodate increasing demands without compromising performance, efficiency with a design to scale on demand*
4. *Ability to ingest and process large volumes of different data types – Structured, Semi-structured and unstructured*
5. *Separation of Storage & Compute will support innovation with new analytics capabilities without having to make large investments in on-prem technology*
6. *Compatibility with existing infrastructure to leverage existing on-premises storage investments while also taking advantage of the cloud's flexibility*
7. *Ease of Portability to Cloud to improve agility, avoid vendor lock-in and future proof against technology changes & business needs*
8. *Design components based on cloud-native principles while deploying solutions to be Hybrid*
9. *Enhance user experience & build on user centricity with easy to use and intuitive data products*
10. *Drive domain-based models and build domain-based data products using standard & consistent metadata-based architecture*
11. *Facilitate analysis & usage of data to drive business insights and decisions, and enabling real-time Analytics for Faster Data Driven Decisions*
12. *Unified MLOPS integration and design for future readiness – Performance, AI/ML, Gen AI...etc*
13. *Secure by Design. Implement security in components at every stage – From Inception to deployment*
14. *Use data governance to ensure Compliance, Privacy & Data Consistency, Archival and Purging across layers*
15. *Talent Density in the Market to maintain competitive advantage and enable more sophisticated analytics and data processing capabilities*

1.3.1 Target State of the DRISHTI'S Data Platform

DRISHTI'S Data Platform is expected to handle large amounts of structured/ unstructured/semi-structured data daily & have the capability to store and analyze the data types as well. The platform will be used as an intermediate layer to process and transform the data received from various sources and subsequently load the relevant data into the DWH/data mart.

Below diagram represents a conceptual view of the proposed Hybrid architecture (ON-prem / Cloud)



The target Data Platform architecture should enable/ support:

#	Layer	Capability
A.	Source Systems	The target data Platform should be able to leverage unstructured data & semi-structured data like images, telephonic conversations, videos etc. to be processed further, with real time synchronization
B.	Data Ingestion	Ingests data from various data sources. The data can be structured/ unstructured/semi-structured using CDC tools to effectively capture the changed data, to establish data consistency, integrity and quality
C.	Data Processing & Storage	Automation for validation and aggregation of data for a single source of truth with the standardized store A centralized data store in form of data Lakehouse to handle future data requirements Data marts data warehouse based on SBI Life's requirements Analytical platform with integrated environment for creation, management, and deployment of AI/ML models
D.	Data Consumption	Self-service tools for managing the data dump requirement & new models around agents and customers e.g.: Product 360, Agent 360, Family 360, Lead 360, Nudges etc. Integrated layer of data across diverse applications with discovery services by classifying and tagging data to make it easier to search Use consistent taxonomies and tagging strategies to ensure that users can search relevant datasets quickly
E.	Governance	MDM for consistency, operation efficiency and enhanced decision making & effective data governance, data democratization & transparency Data lineage to understand data flows & perform impact assessment
F.	Security	Access control policies to enforce the permissions associated with each role on the respective resources Reports on job status and success / failure / retrigger should be sent to concerned stakeholders on a continuous basis.
G.	Infrastructure & operations	Reusable interfaces and services to allow flexible and pluggable integration with internal and external systems Orchestration of processes, job scheduling, managing dependencies, etc. as required to meet the RFP requirements. Orchestration of pipelines and triggering jobs should be possible from an easy-to-use interface

1.3.2. Technical & Functional Requirements of the Data Platform

The proposed Data Platform should be able to connect/communicate and receive data from the various data sources currently present. The new platform should be able to receive data through various methods such as batch load, storage transfer, API ingestion/ data view, Change Data Capture (CDC) log replicate and event.

The data from the various data sources should be extracted, cleansed, transformed, and loaded in the proposed Data Platform in real-time events through a data/event stream allowing to capture and process data as it happens.

Sources:

1. Customer Onboarding
2. Cashiering
3. Underwriting
4. PMS/PAS
5. CMS
6. Payout Systems
7. CRM

In addition, the proposed data platform should have the capability to extract, clean, transform and load additional ad-hoc structured/ unstructured/semi-structured data such as health reports, telephone records, KYC documents, etc. and generate reports through various parameters.

The Data Platform's design should permit ongoing background data processing while supporting several users working online with different data segments, while being capable of extracting data from various documents such as policy documents and periodic reports available in formats like PDF (scanned/machine-readable), CSV, Excel, Word, XML etc. The platform should receive data through other means like APIs/data view and be scalable to handle large data volumes without compromising performance.

1.3.2.1 Data Ingestion

Key requirements for Data Ingestion include, but are not limited to:

Sr. No	Function	Description
1.	Historical Data	<ul style="list-style-type: none"> Load existing structured data from core sources to the Data platform for DRISHTI Current SBI Life ecosystem has approximately ~45 TB of data that should be migrated from existing sources to the new Data Platform for DRISHTI Analytical data load of 150 GB Monthly refresh (Truncate & Reload)
2.	Unstructured Data	<ul style="list-style-type: none"> Ingest Unstructured Data like images, call records, emails, social data, videos, etc.
3.	Semi-Structured Data	<ul style="list-style-type: none"> Ingestion of semi-structured data like user activity log, geographic information, XML, JSON, etc.
4.	Real Time Data	<ul style="list-style-type: none"> Real-time ingestion of structured, semi-structured and unstructured data (E.g., claims, renewals, new business,

	(Streaming)	<p>customer events, clickstream data sources, etc.)</p> <ul style="list-style-type: none"> This includes streaming data (e.g.: CDC feeds from core and other sources) or specific event-based data (e.g.: customer dropping off while filling up an online form)
5.	Multiple Sources	<ul style="list-style-type: none"> Ability to ingest from single / multiple source systems, single / multiple files and develop a system capable of scheduling jobs and process data in batches, real time etc. Metadata-driven data ingestion framework, which is flexible and highly scalable to automate data ingestion activities typically in case of manual file upload
6.	Change Data Capture	<ul style="list-style-type: none"> The ingestion mechanism will need to ingest incremental changes in source transactional system tables to be synchronized with data lakehouse in near real-time (e.g., new business, claim status, policy payment status, loan related data, etc.). It should be possible to combine Change Data Capture with other complexity such as decompression of data, decryption and encryption.
7.	Data Processing	<ul style="list-style-type: none"> Ability to scale-up the data ingestion process to handle increasing data volumes and processing demands. Optimize performance for efficient data ingestion and processing, minimizing latency and maximizing throughput Ability to Monitor and triggers alerts to track and monitor data ingestion processes like data ingestion rates, system health, and performance metrics.
8.	Data Formats	<ul style="list-style-type: none"> Identification of various data quality issues and cleaning/reformatting the data by manual intervention This needs to be done to find problems with the data acquisition process, understand assumptions to make and models to be applied to produce the results. Data can be converted to JSON or any other format. Exploratory data analysis is a key step as summarization of the clean data can help identify outliers, anomalies, and patterns. New data ingestion routines need to be designed for any new source identified for ingestion, as per the business logic needed.
9	Checks & Validations	<ul style="list-style-type: none"> Receive timely notifications of any data ingestion failures or delays Availability of sanity checks, validations, and reconciliation
10.	Audit Trail	<ul style="list-style-type: none"> Audit & Reconciliation should be done at every data transmission stage Ingestion subsystem should generate detailed audit & troubleshooting logs, and the subsystem should keep failure or reject records logs
11.	Data Ingestion through APIs	<ul style="list-style-type: none"> Ability to securely ingest data through APIs from suitable internal and external sources (e.g.: HDFS, REST APIs, etc.)

1.3.2.2 Data Processing

Key requirements for Data Processing include, but may not be limited to:

Sr. No	Function	Description
1.	Data Transformation	<ul style="list-style-type: none"> Data transformation and ability to map data from source format to a standardized format suitable for ingestion and analysis in the cloud environment. Reduced time for data transformations and query with in-memory processing
2.	Processed/Cleansed Layer	<ul style="list-style-type: none"> Processed layer should be used to minimize response time for consumption requests Design should reduce duplication in data storage, with mechanisms in place to validate data pre and post processing using data lineage features.
3.	Scheduling	<ul style="list-style-type: none"> Interaction of systems & Databases should be well-managed with timely data synchronization. A workflow management and scheduling solution to schedule data transformation, data acquisition or data delivery pipelines Efficient and scalable processing to accommodate varying data ingestion rates via real-time streaming/batch processing.
4.	Data Models	<ul style="list-style-type: none"> Robust data processing and analytics capabilities to support distributed computing frameworks to enable large-scale data processing and complex analytics task for data exploration, transformation, aggregation, and machine learning at scale
5.	Monitoring & Failure Management	<ul style="list-style-type: none"> Provision to monitor, log and assess the progress of each transformation job. Failure, retry, alert and escalation logic defined for Data processing & transfer Automatic recovery of data after failure/rejection of record without any manual intervention. The platform should prevent data leakage. There should be mechanisms for easy diagnosis of failures.
6.	Data Protection	<ul style="list-style-type: none"> Framework to encrypt and mask data at rest, data at motion and data in use. This could be at specific column levels. Solution should be able to implement SBI Life's data privacy and security policies while transforming and storing the data
7.	Parallel Pipelines**	<ul style="list-style-type: none"> Solution should be able to process data processing in parallel mode. The data platform should be able to run 400+ pipelines in batch or near real time mode every day. The platform should be capable to run multiple transformation pipelines in parallel - at-least 400 pipelines in parallel (concurrently), scalable up to 1151 in next 5 years, of varying complexity - simple, medium, complex, in batch or near real time mode every day.

****Pipelines:** A set of ETL or ELT processes that will extract a dataset (structured collection of data organised to meet one or more use cases for e.g.: Customer policy holding) from one or multiple sources, transform it, and will load it into the target database like a data warehouse

1.3.2.3 Data Storage

Key requirements for Data Storage include, but may not be limited to:

Sr. No	Function	Description
1.	Raw Layer	<ul style="list-style-type: none"> This data store is used for hosting the raw data files sourced from core transactional systems on regular and need basis Ability to store all data types (structured /unstructured /semi-structured data) reliably, efficiently, and optimally
2.	Cleansed Layer	<ul style="list-style-type: none"> Sources & transforms the data from the raw layer and stores it with purpose of providing foundation for reporting, advanced analytics and other data services
3.	Scalability	<p>The proposed Data Lakehouse should:</p> <ul style="list-style-type: none"> Be horizontally scalable with seamless redistribution of data Support parallel data access for processing & storage Support distributed and parallel processing Support all data types & formats
4.	Storage	<ul style="list-style-type: none"> The data platform solution should be able to store large amount of structured, semi-structured and unstructured data (based on SBI Life's projected data volumes) irrespective of the storage format Capability of performing both fast and efficient compression based on data processing needs Ability to support new open table format with features like schema evolution partitioning, time travel & roll back, acid compliance etc.
5.	Data Management	<ul style="list-style-type: none"> Ability to organize, store and make data available that makes is accessible and consumable as a product/service Ability to support standardized data access protocols (e.g., RESTful, APIs, GraphQL) Build a multi-temperature data management solution where data that is frequently accessed on fast storage—hot data—compared to less-frequently accessed data stored on slightly slower storage—warm data—and rarely accessed data stored on the slowest storage —cold data. (high density) Ability to facilitate automated storage tiering and seamless data transfer between hot, warm and cold storage. Ability to seamlessly merge data residing in any of these storage areas to requirements without impacting performance and while supporting data encryption at rest
6.	Monitoring & Audit Trail	<ul style="list-style-type: none"> Regular health checks, monitoring, and alerts for data storage/utilization of storage/failure in storage handling with audit and error logs for auditing and troubleshooting

1.3.2.4 Data Quality

Key requirements for Data Quality include, but may not be limited to:

Sr. No	Function	Description
1.	Data Quality	<ul style="list-style-type: none"> There needs to be an end-to-end solution catering to data quality needs starting from data origin till the data consumption Ability to perform data cleansing and transformation processes to ensure that data is standardized, consistent, and free from errors or duplications Capability to generate data quality reports and dashboards that provide insights into the overall data quality
2.	Data Validation	<ul style="list-style-type: none"> Defining the data validation rules that should be adhered to when data is ingested, including checks for data types, ranges, and formats, as well as any domain-specific rules Enabling a flexible and configurable data validation framework to define and enforce data quality rules, including format, range, and referential integrity checks Implementation of custom validation rules to accommodate domain-specific requirements, developing and scheduling automated data quality checks and validations.
3.	Data Definition	<ul style="list-style-type: none"> Enabling data classification basis sensitivity levels (e.g., public, internal, confidential, highly confidential) enforcing appropriate access controls and data handling procedures
4.	Data Retention	<ul style="list-style-type: none"> Enabling data retention and archiving facility, ensuring that outdated or irrelevant data is regularly purged or moved to long-term storage
5.	Data Lineage	<ul style="list-style-type: none"> Providing a clear visualization of data lineage from source to destination, allowing users to trace how data transformations impact downstream processes and to enable and historical analysis Enabling data versioning to manage changes and updates to data over time. Data reconciliation mechanisms to verify the consistency and accuracy of data between the new Data Platform & Various sources
6.	Auditability	<ul style="list-style-type: none"> Enabling audit trail functionality to trace data changes for every data transmission stage back to the original source. Enabling data quality issue tracking system that logs and manages data quality issues, along with processes to address and resolve
7.	Policy Adherence	<ul style="list-style-type: none"> Integration of data quality processes, roles, and responsibilities into the broader data governance framework Facilitate data quality monitoring and profiling capabilities for data platform. It should automatically assess data quality, identify data anomalies, and highlight potential data issues for remediation

1.3.2.5 Data Governance and Data Catalog

Key requirements for Data Governance and Data Catalog include, but may not be limited to:

Sr. No	Function	Description
1.	Governance Ownership &	<ul style="list-style-type: none"> Capability of assigning data stewards and data owners' responsibilities for managing and overseeing the quality, integrity, and security of specific datasets Enabling the creation and enforcement of data governance policies and workflows, including but not limited to, workflows for data access requests, data change management, and data quality issue resolution Supporting for role-based access control (RBAC) to manage user access permissions based on their roles and responsibilities Integrating with the organization's existing identity and access management (IAM) system for seamless authentication and authorization
2.	Metadata Management	<ul style="list-style-type: none"> Capturing metadata about data sources, transformations, and data flows and storing data lineage information showing how data moves through the system Enabling users to easily discover and search for relevant datasets and data assets, supporting keyword-based searches, filtering, and advanced data exploration using metadata attributes, facilitating metadata updates and versioning
3.	Monitoring Reporting &	<ul style="list-style-type: none"> The Data Governance should offer reporting and analytics capabilities to generate insights into data usage, data quality, and compliance metrics Customizable dashboards for monitoring and tracking key data governance metrics, maintaining a comprehensive data glossary with business terminologies and definitions. This ensures a common understanding of data elements across the organization

1.3.2.6 Master Data Management

As part of project DRISHTI's scope, the on-prem Master data management will be built and limited to the data warehouse only and not the enterprise. As a result, The successful bidder will have to build the Master Data Management with the indicative list of requirements as highlighted below only for Data platform.

Key requirements for Master Data Management include, but may not be limited to:

Sr. No	Function	Description
1.	Governance & Data Management	<ul style="list-style-type: none"> Robust data governance to control access, define data ownership, and maintain data integrity across master data entities A centralized repository to manage and store master data entities (e.g., customers, products) for the entire organization Allow manual metadata entry and enrichment by data stewards and users Supporting the creation, maintenance, and management of data

		<p>hierarchies for entities (e.g., product categories, organizational structures etc.)</p> <ul style="list-style-type: none"> Workflow capabilities for data stewardship, approval, and validation of master data changes
2.	Attribute Management	<ul style="list-style-type: none"> Defining data attributes, relationships, and unique identifiers Indexing and search mechanisms for efficient data retrieval Data enrichment allowing addition of additional attributes or enrichment from external data sources Mechanisms to standardize and validate master data attributes, ensuring data conforms to defined rules and formats
3.	Modelling	<ul style="list-style-type: none"> Design of a comprehensive data model that accommodates the specific data entities relevant to life insurance Data deduplication mechanisms to identify and resolve duplicate records within master data entities Creation and maintenance of golden records representing the best, most accurate versions of master data entities Support data profiling, validation rules, and data enrichment capabilities

1.3.2.7 Data Security

Key requirements for Data Security include, but may not be limited to:

Sr. No	Function	Description
1.	Encryption	<ul style="list-style-type: none"> Standard encryption/decryption techniques/policies should be enabled Enabling strong encryption mechanisms, both in transit and at rest, to protect sensitive data leveraging industry- standard encryption algorithms and key management practices to ensure data confidentiality Enabling robust security measures to protect data stored in the cloud. This includes encryption of data at rest and in transit, access controls, and multi-factor authentication to prevent unauthorized access Enable functionality for key management, including the ability to generate, rotate, and revoke encryption keys
2.	Access Management	<ul style="list-style-type: none"> Enabling granular access controls to restrict data access based on user roles and responsibilities. Enabling Role-Based Access Control (RBAC), including transactional level data for the approved user/system roles as defined by Infosec guidelines of SBI Life Use strong authentication mechanisms, such as multi-factor authentication (MFA), to verify user identities Data exports and dumps only for authorized users and in compliance with data access levels Providing the capability for administrators to provision and de-provision user access to administrative functions and generate reports Detect and prevent data breaches, exfiltration, or unwanted

		destruction of sensitive data
3.	Data Masking & Tokenization	<ul style="list-style-type: none"> Applying data masking and anonymization techniques to protect sensitive customer information during non-production use. Ensure that sensitive data is de-identified or obfuscated in development, testing, and analytics environments Provide the capability to tokenize PII data for on-cloud analytics usage and derive required insights Tie back those insights to on-prem data to provide a holistic view on the insights and to drive data backed decisioning
4.	Assessments	<ul style="list-style-type: none"> Conducting regular security assessments and penetration testing to identify vulnerabilities and ensure the effectiveness of security controls. Address any identified vulnerabilities promptly through remediation activities
5.	Monitoring & Reporting	<ul style="list-style-type: none"> Configuring robust security monitoring and logging mechanisms to detect and respond to security incidents. Collecting and analyzing security logs to identify potential threats or breaches in real-time. Configuring data loss prevention (DLP) measures to prevent unauthorized data disclosure or leakage. Monitoring and controlling data access and movement to ensure data integrity and prevent data exfiltration Logging and monitoring API calls, providing comprehensive visibility and auditability of all API interactions Any guideline breach with respect to data architecture should be segregated/updated/made accessible to respective in text and as alerts/validation which can be pulled out as a report
6.	Networks	<ul style="list-style-type: none"> Establishing secure network connections using virtual private networks (VPNs) or secure network protocols. Enabling firewalls and intrusion detection/prevention systems to monitor and protect network traffic
7.	Data Retention	<ul style="list-style-type: none"> The system should establish/ demarcate data retention & deletion/destruction periods commensurate to the business need or legal obligation and should comply with SBI Life data retention or disposal policy The system should provide the ability to purge data (data purging certificate) upon SBI Life request or when the purpose of data collection has been fulfilled
8.	Data Security Compliance	<ul style="list-style-type: none"> Ensuring compliance with relevant regulations, such as the Insurance Regulatory and Development Authority of India (IRDAI) guidelines. Enabling controls and processes to meet data security requirements specific to the life insurance industry The system should ensure that the personal information of the users is secure and should comply with regulations, such as The Digital Personal Data Protection Act 2023 (DPDPA 2023), the General Data Protection Regulation (GDPR). The system should ensure that controls are align with requirements of The Health Insurance Portability and Accountability Act (HIPAA) The system should comply with data protection regulations which includes implementing measures to protect customer privacy rights (including obtaining consent, data minimization,

		<p>anonymizing data, and ensuring data retention and deletion policies) and data principal rights (right to correction, deletion, forgotten, nominate, consent withdrawal)</p> <ul style="list-style-type: none"> • Bidder shall certify that all types of data (especially the PII data) shall remain and reside within geographical boundaries that comply with Digital Personal Data Protection Act 2023 or as may be allowed by regulation
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1.3.2.8 Data Analytics and Reporting

Key requirements for Data Analytics and Reporting include, but are not limited to:

Sr. No	Function	Description
1.	Master Data	<ul style="list-style-type: none"> • The data consumption layer should abstract underlying complexity of the Data Platform for DRISHTI separating it from curated data layer/ base data to maintain sanctity of base data. It should suffice the purpose of applications of consuming data in easy and secure manner. • The data view should include comprehensive metadata to provide context and lineage information, to help users understand the origin and quality of the data. • Ability to download, share and upload reports in excel, pdf and in another common formats and consumable by API for partners • Data warehouse should consist of data cohorts at data marts level to bring in efficiencies of collating data specific to functions for reporting ease. • Ability to create templates for common data processing / end to end applications, tag data sets and re-use operators across machine learning pipelines.
2.	Analytics	<ul style="list-style-type: none"> • Should enable ad-hoc analysis along with processing huge quantities of data. • Ability to build multi-dimensional views and visual display of data in forms of tables, graphs, charts etc. • Ability to support open source (such as R, Python) statistical and machine learning tools/ reporting/ dashboarding tools configured/proposed for analysis that runs on a scalable architecture • Ability to utilize in-memory computing, blend tools in analytics notebooks that perform SQL like querying on relational data and unstructured data • Ability to support analytical data processing, including data cleansing, missing value imputation, normalization, and transformations. • Ability to use Analytic queries to provide a summary view of a data set, like cross-referencing other data sets, and ad-hoc computation can be used to support a variety of algorithms, for e.g., building a search index or classification via machine learning • Ability to perform data extraction and preparation, data pre-processing, exploratory data analytics, experimentation and

		<p>model building, model evaluation, deployment, and visualizations on the Analytics layer</p> <ul style="list-style-type: none"> • Ability to drag & drop capabilities on the reporting and BI tool, when the data model design is complete to ensure that all the entities have a primary key, to help identify it across all systems if it originates with multiple system (e.g., Same customer created in multiple system required primary key to identify) • Ability to set up Data models on cloud and tie back insights to the on-premises setup • Visualization layer should have default templates available at functional/organizational level basis experience leverage from Indian life insurance industry which can be customized further
3.	Customer Centricity	<ul style="list-style-type: none"> • Complete customer profile captured from • Customer master data • Customer transaction data • Core platforms, Portal and other digital platforms such as Martech systems • Customer interaction data from digital platforms, contact center, emails, • Customer service and grievance management systems • Data elements: <ul style="list-style-type: none"> ○ Demographic (e.g.: unique customer ID, age, gender, address, life stage, education, profession, family details, number of policies, customer since, etc.) ○ Medical and health details (e.g.: pre-existing medical conditions, output of medical tests, etc.) ○ Holdings details (e.g.: channel of purchase, policies owned, policy type, date of commencement, policy term, premium ○ amount, premium due date, last premium ○ paid, total premium paid so far, riders, maturity dates, mode of payment, etc.) ○ Financial data (e.g.: income details, PAN, Aadhaar, CIBIL, etc.) ○ Contact ability details (e.g.: outbound & inbound contact details, complaints, emails sent, opened, SMS sent, opened, SRs raised, queries raised, language preferences, interaction history on web, mobile, social, branches, etc.) ○ Digital data (e.g.: behavioral data on digital assets, cookie data, social data, etc.) • Make the output available to other systems and platforms using suitable APIs • The system shall generate daily, weekly, and monthly reports summarizing user behavior, bot detection, and customer journey insights. These reports shall be presented through interactive dashboards and visualizations. The analysis process shall adhere to data privacy regulations, ensuring that consumer data is anonymized and stored securely
4.	Data Architecture	<ul style="list-style-type: none"> • Ability to logically organize the data based on business domains, subject areas, or use cases, making it easy for users to discover and access relevant data. • The data view should have well-defined schemas that describe

		<p>the structure of the data, including data types, field names, and relationships.</p> <ul style="list-style-type: none"> • Ability to handle evolving schemas and support schema versioning. • The data view should allow developers to filter data based on specific criteria and support aggregation functions for summarizing data • The data view should enforce role-based and use-case access control, ensuring that only authorized users can access specific data views • Ability to aggregate data by drill-down queries and reports based on data categories. • Ability to transform data into multiple data formats like structured/unstructured and semi structured. • Ability to tag and segregate data need for sharing with the regulators for ease of reporting and better accessibility to the regulators
5.	Data Access & Security	<ul style="list-style-type: none"> • Defined roles for admin & users, with admin access to all the data sets, tables, and ability to edit and modify the reports whereas a user can only consume those reports. • Ability to enforce the platform & data security while integrating with third-party/open-source data science solutions & platforms. • The data view should support data masking or anonymization within data views to protect sensitive information • Robust security monitoring and logging mechanisms to detect and respond to security incidents. Collect and analyze security logs to identify potential threats or breaches in real-time
6.	Audit Trail	<p>Audit Trail should capture enough information to allow identification and tracking of events in the proposed Data Platform for DRISHTI at both system level and application level, including but not limited to:</p> <ul style="list-style-type: none"> • Users associated with each access and operation. • Each Access to data and the user accessing the data should be logged • Time of all significant process steps. • Time and details of all user access • User ID or IP address, Type of digital footprint (e.g., website visit, mobile app usage, link click) • Referring URL or source, Interaction details (e.g., clicked links, form submissions) • Appropriate system and administration logs • Explain the event logging/safe-storing process and the event log retention and archiving facilities. • Describe the end-to-end system auditing capabilities as messages /information are processed through the various components of the system and interfaces. • Describe the information retained in audit logs • Provides role-based access with approval • Setting & changing of Audit parameters should be role and authorization based, with logs maintained for by whom and when parameters are set/updated

		<ul style="list-style-type: none"> • Reports that assist in the early detection and management oversight of potential fraud or error, including but not limited to reports showing: • Very high value/ critical alerts (high value threshold / criticality to be parameterized) • Unsuccessful login attempts • Unprocessed alerts • Repeated alerts • Application privilege change and access • The system shall identify and distinguish between legitimate bots and malicious bots based on their activity patterns. • The system shall maintain logs of all analysis activities, including errors, for auditing and troubleshooting purposes.
7.	Integration with AI/ML Platform and build Use Cases	<ul style="list-style-type: none"> • Ability to easily integrate with data sources, discover all data assets, view associated metadata and structures • The chosen AI/ML platform of SBI Life should be able to easily access & query the data, metadata, business glossary either in an interactive mode or using API calls • Using the data build 5 analytical use cases around customer, agents, fraud, etc. as defined by SBI life

1.3.2.9 Change Management/ DevOps

Key requirements for Change Management/ DevOps include, but may not be limited to:

Sr. No	Function	Description
1.	Regression Testing:	<ul style="list-style-type: none"> • Enable CI/CD pipelines to automate the build, test, and deployment processes along with frequent and reliable releases of application updates and infrastructure changes • Enable automated infrastructure testing to validate the correctness and performance of infrastructure configurations and perform tests such as security scans, performance testing, and scalability testing • Integration with the CI/CD pipeline to run tests on every commit or scheduled intervals. • Capability to run tests as required in different environments (development, staging, production). • Detailed test reports for tracking test coverage and failure points • Mechanism for easy identification and troubleshooting of failed tests
2.	Code Quality:	<ul style="list-style-type: none"> • Static code analysis to identify code smells, bugs, and anti-patterns. • Integration with version control systems to provide feedback on pull requests. • Configurable rulesets to enforce coding standards specific to the project or organization. • Ability to track code quality over time and provide insights for improvement.

		<ul style="list-style-type: none"> Support for the languages and frameworks
3.	Security & Vulnerability Scan:	<ul style="list-style-type: none"> Static application security testing (SAST) and dynamic application security testing (DAST) tools. Scanning of third-party libraries and dependencies for known vulnerabilities (using tools like OWASP Dependency-Check). Integration with the CI/CD pipeline to halt deployments if critical security issues are found. Facilitate collaboration and communication among DevOps teams with tools, such as chat platforms and issue tracking systems, to further enable seamless communication, feedback, and documentation of infrastructure changes Regular updates to the vulnerability database to catch the latest threats. Remediation guidance and prioritization of security issues based on severity
4.	Integration Testing & Deployment:	<ul style="list-style-type: none"> Automated integration testing framework that can simulate real-world usage scenarios. Environment provisioning and configuration to manage multiple environments, such as development, testing, staging and production and ensure consistency across deployments Continuous deployment capabilities with support for canary releases, blue-green deployments, or feature toggles. Rollback strategies and disaster recovery plans in case of deployment failures. Monitoring and logging tools to observe the behavior of the application post-deployment
5.	Governance:	<ul style="list-style-type: none"> Enable a version control system to manage and track changes to infrastructure code, scripts, and configurations with collaboration, code review, and rollback capabilities. Ability to ensure consistency and standardization across environments Ability to foster a DevOps culture by encouraging collaboration, communication, and shared responsibility among development, operations, and other teams, promoting knowledge sharing, automation, and continuous learning to drive a culture of efficiency and innovation

1.3.2.10 Disaster Recovery and High Availability

The Successful Bidder must develop a disaster recovery plan for restoration of the system in the event of a disaster or major incident in line with the SBI Life's DR Policy, BCP and regulatory requirements to manage RPO and RTO, including but not limited to, the following activities and features:

- Backup and recovery mechanisms to ensure data integrity and availability.
- Replication and data redundancy across multiple locations or cloud regions
- Failover and disaster recovery plans to minimize downtime.
- Define the process and procedures to recover data and applications in the event of a disaster.
- Specify Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO) for different systems while also considering the performance KPIs for service uptime
- The Bidder should identify the DR components and the DR Architecture to ensure continuous

availability of critical systems, minimizing downtime

7. Enable failover mechanisms to redirect traffic to standby resources when primary resources fail.
8. Set up data replication mechanisms, such as active-active for on-prem architecture or active-passive for on-cloud architecture.
9. Implement automated failover processes to ensure minimal manual intervention.
10. Set up real-time monitoring to detect system failures and anomalies.
11. Implement firewall rules, Virtual Private Clouds (VPCs), and Virtual Networks (VNETs) to ensure secure communication.
12. The Disaster Recovery (DR) Plan should be tested prior to the go-live as well as periodically verifying DR readiness in line with SBI Life's policies & regulatory requirements
13. Plan and approach for DR exercise to be conducted. Scheduled & planned DR activity to be conducted 3 times in a year and one ad-hoc DR exercise

1.3.2.11 Infrastructure Guidelines

The Successful Bidder must adhere to the following Infrastructure Guidelines while designing the Hybrid analytics platform with the Raw and cleansed layer on-prem but the Analytical workbench on Cloud

1. The bidder shall analyze the existing infrastructure and design the suitable infra-architecture to provide desired infrastructure capacity, sizing and specs (including hardware and software) for prod, non-prod and DR environments.
2. The bidder needs to propose dedicated HW with racks for on-premises components (data store, compute, network and security components) which can be audited by SBI Life and regulators.
3. Bidder will ensure that SBI Life's cybersecurity guidelines are adhered to.
4. Configuration Audit and VAPT will be conducted by the bidder for all Internet facing components through a certified vendor and suitable remediation should be done to ensure clean report with no pending severity observations.
5. Bidder must recommend the final optimized deployment structure basis own experience balancing performance, costs, scalability with information security requirements.
6. Before bid submission, bidder must present and submit comprehensive approach to develop and host the overall solution.
7. Bidder will also need to detail the licenses needed for all the products to be installed across the layers e.g. Operating systems, data repositories, ingestion tools, etc.
8. Bidder will need to build and configure the infrastructure in the hybrid environment ensuring seamless extension of elements to the cloud as and when SBI Life desires. The bidder at that time should extend suitable support.
9. Bidder will be expected to deliver the entire solution in a Managed Services model. The hosting infrastructure will be part of the bid.
10. SBI life can intervene in Hardware procurement and License negotiations if required
11. Bidder needs to setup required authentication and security services
 - Proposed data, reporting and analytics solution should support multiple authentication mechanisms such as OTP, AD integration
 - Configurable entitlements and authorization mechanism to ensure data is restricted based on persona and access rights.
 - Other security elements as per SBI Life security guidelines

Sr. No	Function	Description
1.	Data Lake & On-Cloud Analytical workbench	<ul style="list-style-type: none"> Design the Hybrid solution in accordance with SBI Life 's requirements. Understand SBI Life 's requirements and design a detailed data across the various repositories. Usage of a robust logical data model customized for SBI Life would be expected Define the exact data repositories, virtualization areas and the database required for each repository Supply of the necessary software components for the data lake house Develop, configure, customize and implement and maintain the Data Lakehouse solution with all the required data repositories in accordance with SBI Life's requirements Integrations with all relevant upstream and downstream applications
2.	Data Ingestion	<ul style="list-style-type: none"> Supply of the necessary software components for data ingestion Design & Develop real time, batch, data streaming solutions as required to ingest data from all the data sources in the data lake house.
3.	Data Processing	<ul style="list-style-type: none"> Supply of the necessary software components for data quality and governance Implement Data Quality & Data Governance (including metadata management, data dictionary, data catalog management, data lineage, data quality, identity resolution)
4.	Analytics	<ul style="list-style-type: none"> Supply of the necessary software components for Analytics and Setup and implement analytical tools Setup and implement suitable ML Ops and orchestration tools Development and implementation of analytical use cases & data models
5.	Visualization	<ul style="list-style-type: none"> Supply of the necessary tools for BI / visualization, along with their setup and implementation Development of Statutory and Business Reports & Dashboards as required by SBI Life
6.	Performance Management	<ul style="list-style-type: none"> Design and implement elements such as suitable data storage, database selection, processing, virtualization, infrastructure and caching to manage performance as required by SBI Life at the consumption layer.
7.	Testing	<ul style="list-style-type: none"> Performing SIT for the Data, Reporting and Analytics solution and obtaining SIT sign-off Supporting UAT for the Data, Reporting and Analytics solution and obtaining UAT sign-off Performance Testing

		<ul style="list-style-type: none"> VAPT and configuration audit of all internet facing components through a CERT-in empaneled / STQC certified vendor, supporting & resolving outstanding issues in the Data, Reporting and Analytics Solution
8.	Data Security & Privacy	<ul style="list-style-type: none"> Implementation of Encryption of Data at rest & data in-transit as per SBI Life 's InfoSec policy Implementation of Role Based Access Control and providing only need based access to data for the entire solution Data Masking as per SBI Life 's InfoSec policy and requirements Implementing suitable security components as per SBI Life 's requirement Integrating with SBI Life 's security architecture to manage elements such as data loss prevention, threat intelligence and management, security monitoring, etc. Maintaining audit logs Integrating with existing ITSM, Data security tools mentioned in the RFP (as required)
9.	Infrastructure Set-up	<ul style="list-style-type: none"> The Vendor shall be responsible for the following duly verified by SBI Life 's team: On-premises IT infrastructure sizing, procurement and provisioning Rack Layout along with cable layout IP Schema details and VLAN layout Ensuring proper connectivity and access to data lake house Network and Security Hardening Server Setup and configuration Storage and backup configuration Hardware Failover Functional DR IT continuity approach
10.	Infrastructure Installations	<ul style="list-style-type: none"> The Vendor shall ensure all Installations & Implementation to be done by OEM badged resources which will include. Preparation of racks for hosting including all required cabling & all other activities required for installation of hardware Installation and implementation of all the servers (Production, Development, UAT, DR) including network cabling BIOS-configuration configure management port and assigning IP 's for managing systems remotely, RAID Configuration. OS Installation, OS Configuration, OS Management Capabilities, Formatting the disks, OS and Network configuration and OS packages Repository Configuration. Installation and Configuration of Network equipment and Configuration of Storage and Backup equipment with Hot, warm and Cold data segregation Installation and Configuration of Security equipment Setting up the testing of the platform and UAT All work related to cabling to utilize network infrastructure will be done by Vendor. All work related to patch panels will be done by Vendor. The Vendor shall also carry out OS Hardening, Antivirus

		installation, <ul style="list-style-type: none"> Create Super user for the Production, DR and UAT/Dev environment according to SBI Life 's policy and secured configuration document
11.	Data & Operations Support	<ul style="list-style-type: none"> Bidder to provide dedicated maintenance and support to manage end-to-end data operations including, but not limited to executing, monitoring, troubleshooting, diagnostics and reconciliation of data pipelines and data access issues

1.3.2.12 Volumetrics to be considered for the Data Platform for DRISHTI

1.3.2.12.1 Volumetrics for On-Prem Workloads

Data Projections	Y0	Y1	Y2	Y3	Y4	Y5
Struct (TB) (YoY 25% growth)	85	106	133	166	208	259
Unstructured (TB) (YoY 100% growth)	0	25	50	100	200	400
Total (TB)	85	131	183	266	408	659
Pipelines** Count (growth related to Pipelines/TB)	250	451	668	1044	1096	1151
Parallel pipelines** Count (20% of No. of pipelines)	50	90	134	209	219	230
Total Users	Total no. of users					9000
	Total number of concurrent users for reports					1000
	Total No. analytical Users					50
Total Analytical use cases	Total number of analytical use cases to be Modeled and built on cloud					5
Data Volumes	Daily Transfer					45 GB
Total number of processing pipelines	ETL Pipelines**					400
	Frequency of near-real time batches					15 minutes
Total Reports	Total number of existing reports					3000

**Pipelines: A set of ETL or ELT processes that will extract a dataset (structured collection of data organised to meet one or more use cases for e.g.: Customer policy holding) from one or multiple sources, transform it, and will load it into the target database like a data warehouse

1.3.2.12.2 Volumetrics for On-Cloud workloads

Sr. No.	Requirement	Details
1	Complex Use Case	8 vCPU, 32 GB Memory
2	Medium Complex Use Case	6 v CPU, 16 GB Memory
3	Simple Use Case:	4 VCPU, 4/8GB Memory
4	SQL Analytics	10-15 times/Day for 45TB Data i.e. 450 TB -675TB worth data will be queried

1.3.2.13 Performance KPIs to be considered for the Data Platform for DRISHTI (On-Prem & On-Cloud)

Sr. No.	Performance KPI	Performance Requirement
1	Data Load batch run time	Max time for any batch load for given systems as given in the indicative volumes in 1.3.2.12.1 should be 60 minutes
2	Batch data load concurrency	Ability to run at least 200 batch pipelines in parallel
3	Report load Time	Time taken to open and refresh a pre-computed report
3.1	Report size <= 5MB (Volume of data within the report with no filters & report level calculations)	3 seconds
3.2	Report size > 5MB & Report size <= 20 MB (Volume of data within the report with no filters & report level calculations)	10 seconds
3.3	Report size > 20 MB (Volume of data within the report with no filters & report level calculations)	20 seconds
4	Elongated time for completion of daily batch loads	By 7:00am
5	Analytics & Ad-hoc query runtime (avg data volume in a query as 100MB)	20 seconds (for a concurrency of 200 users)
6	RPO – Recovery Point Objective	Up to 45 minutes
7	RTO – Recovery Time Objective for Critical Systems	Time taken to restore databases & ETL Pipelines

Sr. No.	Performance KPI	Performance Requirement
7.1	MIS DB	Up to 4 hours
7.2	ETL Pipelines	Up to 6 hours
8	Real time data load latency	500ms for 5MB of data transfer
9	API latency Time for receiving & Closing a response call till Gateway (API servicing internal SBI Life applications)	< 100ms for 99% of API Transfers
10	Service Uptime	
10.1	Data Lake / Lakehouse Uptime (including data ingestion, data repositories, data processing, data governance)	99 % (Monthly) – 3.5 hours Downtime per month
10.2	Master Data Services	99% (Monthly) 5 minutes Downtime per month
10.3	Reporting & Analytics Solution	99% (Monthly) 6 hours downtime per month

1.3.2.14 Insurance Functional Domains & Sub-domains

The Successful Bidder is expected to bring their domain expertise and should share that with SBI Life team while collecting requirement from SBI Life users. Below table illustrates the functional domains, indicative but not limited to, that will need to be setup as part of master data / reference data as well as data products design

Domain type	Domain	Sub-domains
Master	Customer	<ul style="list-style-type: none"> Demographics Contact details Policy portfolio (policy numbers across retail, group and in force, surrendered, lapsed, abandoned purchases) Channel / Distributor mapping KYC Health disclosures Financial disclosures Digital footprint (social media, SBI Life, etc.) Wearables / Fitness Family IDs Third party data enrichment (Ex. Bank partners, CIBIL, etc.) Special flags (Fraud risk, HNI, personas)
Master	Distributor	<ul style="list-style-type: none"> Demographics Contact details

Domain type	Domain	Sub-domains
		<ul style="list-style-type: none"> Policy sold / pipeline Organization hierarchy Channel mapping (type, mapping to internal employees) Commission / Incentives Corporate / Partner details (For retail, CP, GTI, Annuity)
Master	Employee	<ul style="list-style-type: none"> Demographics Contact details Policy sold Organization hierarchy Distributor mapping Profile details (work history, qualifications, etc.) Performance Compensation
Master	Retail, Health and Annuity Policy	<ul style="list-style-type: none"> Proposer, insured, Nomination, Appointees, claimants, assignee, etc. Proposal form Policy status (in force, surrendered, lapsed, etc.) Benefit illustrator Channel mapping Riders Payment Terms Facultative Reinsurer Coverages (Sum insured, fund details) Policy specific documentation Reflex questions Annuity
Master	Products (Retail, Health, Group, Annuity)	<ul style="list-style-type: none"> Product catalogue Features Riders Channel and partner mapping Premium pricing Policy charges Policy value calculations (FV, surrender, maturity, etc.) Boundary conditions
Master	Group Policy	<ul style="list-style-type: none"> MPH details MPH products and plans COI issuance history Agreements

Domain type	Domain	Sub-domains
Core	Pre-sales	<ul style="list-style-type: none"> Lead information Quote information Channel mapping Contest management Sales tools Lead drop offs contact center management Abandoned policies Sales interaction with customers
Core	NB Operations	<ul style="list-style-type: none"> Processing history Processing pipeline Processing TAT Communications RAG assessment
Core	Underwriting	<ul style="list-style-type: none"> Historical decisions and comments Processing TAT Processing pipeline Medical records Appointments, contact center and pipeline
Core	Policy servicing	<ul style="list-style-type: none"> Service request history Customer Ratings Processing TAT Branch walk-in info Service level documentation and consents Loan processing
Core	Collections	<ul style="list-style-type: none"> FYP transactions Renewal transactions Collection mode
Core	Servicing Contact Centre	<ul style="list-style-type: none"> Inbound call details and transaction history Customer Ratings Handling time Calling history and resolution details Outbound calling data (all partners) IVRS, Chatbots data
Core	Claims	<ul style="list-style-type: none"> Transaction history Investigation history Investigator comments Flags (Fraud risk probability)
Core	Payouts	<ul style="list-style-type: none"> Payouts processing history (refunds, surrenders, maturity, etc.) Maturity due base RAG assessment

Domain type	Domain	Sub-domains
Core	Actuarial	<ul style="list-style-type: none"> valuations
Core	Reinsurance	<ul style="list-style-type: none"> Types Treaties Facultative Agreements Portfolio mapping

1.4 Project Objectives and Scope

SBI Life's Data Platform for Program DRISHTI to provide a centralized storage system where the organization can store structured/ unstructured/semi-structured data in its raw form.

This allows for the consolidation of data from multiple sources, such as databases, applications (known applications, applications storing data beyond the data lake and data warehouse, and other sources of data to be discovered during the discovery phase) making it easier to access and analyze.

Your response should clearly call out any differential pricing for each of the OEMs. Also mention differential skillsets / varied capabilities for each of the OEMs in case applicable.

The new Data Platform is planned to be implemented in a Build-Operate-Transfer mode. The Successful Bidder is expected to perform the following activities:

1.4.1 Data Platform for DRISHTI: Build

Study of existing data marts, data warehouse and application landscape in SBI Life ecosystem. Co-create scope to perform prioritization of data domains and related applications/ Qlik reports into phases

- Build the proposed Data Platform for Program DRISHTI to enable capabilities of
 - Data ingestion (real-time & batch) across the systems,
 - Data processing and transformation,
 - Data storage
 - Data quality
 - Data security
 - Data governance and catalog,
 - Master Data Management
 - Data analytics and reporting,
 - Change management/DevOps,
 - Disaster recovery with high availability
- Build centralized data repository for SBI Life enabling deduplicated, cleansed, transformed, enriched, and curated layers of data
- Migrate data from ODS & Data Marts into the new Data Platform post removal of redundant and duplicate data, following the prioritization scope co-created for application and reports
- Migrate data from applications which may store data beyond ODS & Data marts (as per the requirements of SBI Life as well as applications identified during the Discovery Phase)

5. Migrate existing on-prem ETL data pipelines of the data warehouse as per the target architecture of the data platform repointing them to the source i.e. the new data lake house
6. Enable analytical platform providing integrated environment for creation, management, and deployment of AI/ML models; text mining; and tracking and monitoring model performance
7. Enable self-service analytical capability for data consumers
8. Evaluate, rationalize and repoint current reports, and ensure that required data sets are captured by the new Data Platform.
9. Design data domains and data models. Design of data domains should be able to support future business prioritized applications
10. Build AI/ML models in the on-cloud analytics platform which enables easy consumption of the data to facilitate existing requirements as well as future requirements for modeling and scoring exercises
11. Integrate:
 - a. Existing AI/ML Models with the Data Platform for DRISHTI
 - b. Existing Qlik reports & visualization, business intelligence (BI)/Analytics with new Data Platform
12. Build Data marts/Data Warehouse/ Data Lake as appropriate, subsequently creating Data Products using these repositories
13. Enable shorter turnaround times (TAT) to deliver new data sets, use cases and holistic views
14. Enable integration for NLP/ML models for forward-looking services like chatbots, video KYC, automated risk assessment scoring models and sales-based applications

1.4.2 Data Platform for DRISHTI: Operate & Transfer

Additionally, the Successful Bidder will provide Hypercare for 90 Days, and run the Operate & Maintain starts after 1st go-live till the end of contract period of 3 years before transfer to SBI Life

Below is the support coverage that is expected from the Bidder















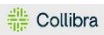
















- Monday - Sunday | 24 X 7 IST for L1 Support
- Monday – Friday | 16 X 5 for L2 & L3 Support
- Bidder should ensure mutually agreed TAT/SLA for tickets as prescribed below:

Severity	Severity Description	Acknowledgement Time	Escalation App/DBA/COE to	Resolution time
P1	Critical	30 mins	2 hours	4 hours
P2	Non-Critical-Major	1 hour	4 hours	8 hours
P3	Non –Critical-Minor	24 hours	N/A	N/A

SLA Status	Target	Green	Yellow	Red
Availability %	99%	>=99%	98-99%	<98%

1.5 OEM Guardrails to be considered

For the new data platform for Program DRISHTI, SBI life is proposing below set of OEMs that can bring the required capabilities for each layer as seen in the Fig 1 & 2 – Conceptual data architecture. The Bidder is expected to propose their solution stack within these choices for each layer

Ref. Layer	Layer Description	Capability	OEMs
B	Data Ingestion	CDC	   
B	Data Ingestion	Streaming	 
B	Data Ingestion	ELT processing tool	   
B	Data Ingestion	Managed File Transfer	  
C	Data Processing & Storage	Data Catalogue & Data Lineage	     Note: Bidder to propose the most suited tools for Data Lineage based on ingestion and data processing technology stack
C	Data Processing & Storage	On-prem Raw layer Object Storage	  
C	Data Processing & Storage	Data Marts & Data warehouse ecosystem	Existing solution is built on Oracle, which can be reused (Re-Engineering/Refactoring may be needed for a scalable Data warehouse solution)
C	Data Processing & Storage	DevOps, CI/CD	The solution architecture should be compatible with SBI Life's existing tech stack – GitLab & Fortify
C	Data Processing & Storage	Cloud Analytics Platform	   + Hyper scaler with Required Services + Hyper scaler with Required Services 
C	Data Processing & Storage	Caching	   
D	Data Consumption	Reporting & Visualization	 
G	Monitoring	Observability	Bidder to provide the most suited tools based on ingestion and data processing technology stack that they propose

Legend:

On-Cloud

On-Prem

Existing SBI Life tools to

1.6 OEM/Tools Consumption for Procure & Implement or Reuse & Implement

The Bidder should use below table to understand what components will be procured and implemented & what will be reused from existing stack of SBI life during implementation

Sr. No	Description	Procure & implement / Reuse & implement
1	Data ingestion tools	
1.1	Batch	Procure & Implement
1.2	Real time	Procure & Implement
1.3	Event based	Procure & Implement
1.4	CDC	Procure & Implement
1.5	MFT	Procure & Implement
1.6	API based (API Gateway)	Reuse & Implement
2	Data stores	
2.1	Cache	Procure & Implement
2.2	Data processing tools	Procure & Implement
2.3	Processed Data Stores	Procure & Implement
2.4	Datawarehouse and marts	Reuse & Implement
2.5	On-prem Object Storage	Procure & Implement
2.6	Cloud Data Lake	Procure & Implement
3	Business Intelligence and Analytics Workbench	Reuse & Implement
4	Visualization	Procure & Implement
5	Data governance and management	
5.1	Business glossary	Procure & Implement
5.2	Data quality	Procure & Implement
5.3	Data catalogue	Procure & Implement
5.4	Metadata management	Procure & Implement
5.5	Data lineage	Procure & Implement
5.6	Data stewardship workbench	Procure & Implement
6	Data Operations	
6.1	ML and data orchestration	Procure & Implement
6.2	ETL / ELT management	Procure & Implement
6.3	Logging and monitoring	Procure & Implement
7	Data Security	
7.1	IAM	Procure & Implement
7.2	Tokenization	Procure & Implement
7.3	Data Loss Prevention	Procure & Implement
8	Monitoring	
8.1	Logging and audit trails	Procure & Implement
8.2	Monitoring and metadata capture	Procure & Implement
8.3	Event based alerting	Procure & Implement
8.4	DevsecOps tools including container management tools	Procure & Implement

Note: The successful bidder can choose to Procure a component if they consider the components to Reuse insufficient or would like to Procure the component for efficient implementation of the solution.

2. System Integration Testing & User Acceptance Testing:

The proposed target state architecture will be implemented through “build-operate-transfer” process. Below are some key steps to achieve the same:

2.1 Approach

1. Successful Bidder shall be responsible for the implementation of the new Data Platform in accordance with the timelines
2. Successful Bidder will prepare functional specifications and solution design that will be reviewed and signed off by SBI Life. Based on these documents, Successful Bidder will prepare detailed design document for the solution.
3. Successful Bidder must propose implementation and migration strategy for the Data Platform and carry out various phases during this engagement:
 - Discovery
 - Data Platform Design
 - Implementation
 - Data Migration
 - Testing
 - User Acceptance Test
4. Successful Bidder must submit detailed technical document for each phase like integration documentation, architecture diagrams, high level design documents, low level design documents, list of data domains etc.

2.2 Release Approach

Below list of releases timelines are a guiding approach for the Bidder to consider while formulating the implementation plan

Release	Capabilities Enabled
Build the Data Lake Architecture on-Prem & Analytics CoE on Cloud	<ul style="list-style-type: none">• Raw & Cleansed Layer• Unstructured & Semi structured• Data Processing• Data Quality Rules Engine• Analytics Platform
Power analytical use cases and Enable easy-to-use Self-service BI	<ul style="list-style-type: none">• Self-Service BI• Develop Analytical Stores Analytical• Use Cases For Emerging Business• Marketing & Sales• Customer 360

Establish Data Catalogue & Discovery & Ability to Scale	<ul style="list-style-type: none"> • Data Catalogue & Data Discovery • Advanced Analytical Stores & • Feature Marts • Analytical Use Cases For Persistency, Ops etc. • Agent 360, Leads 360, Golden Record & Family ID
Activate real-time data streaming capabilities & MDM	<ul style="list-style-type: none"> • Master Data Management • Real time Event & Data Processing • Data Protection & Governance • Data Warehousing & re-engineering

2.3 Deliverables & Milestones

The project deliverables will include, but not limited to the below:

1. Solution Architecture
2. Project approach & implementation methodology
3. Detailed Project Plan
4. Functional Requirement Specification
5. Integration Framework Design, CDC, Data Quality, Data Governance, etc.
6. Detail Design Document
7. Test Plan, Test Scenarios and Test Cases, Test Data, etc. for Unit Testing, Integration Testing, UAT support
8. Review Data Mapping between source and target
9. Application coding (Database, BI Reports, etc.)
10. Report Rationalization
11. Deployment of the solution
12. Knowledge transition to Support team
13. Training to users as per Training Plan
14. Manuals (with relevant screenshots): Testing, Application, User-guides, SOPs etc.
15. Fix defects identified during hyper care, etc.
16. Solution maintenance

Project Milestones: Following Milestones will be considered for each release:

Sr. No	Milestone
1.	Submission of design document (Approval of design document)
2.	Completion of build (Submission of unit testing document)
3.	Completion of UAT (Closure of all minor and major UAT defects)
4.	Go-Live (Move deployment into Production environment)

Dates for milestones will be agreed upon at the start of the project

2.4 Testing

Successful Bidder should validate various components and functionalities of the new Data Platform to ensure that it meets the intended requirements and performs as expected. Successful Bidder should perform testing of individual components, such as data ingestion processes, data transformation scripts, and data storage mechanisms, to ensure they function correctly

Successful Bidder has to handover the mechanism or scripts to SBI Life for test the scenarios listed below.

1. Integration testing: Designing Test Strategy, Test Scenarios, Test Cases, Preparing Test Data, Executing Test Cases, Defect logging & resolution, Providing Root cause analysis, SIT sign-off
 - Service Provider should integrate the software with the existing systems as per requirement of SBI Life and carry out thorough system integration testing
2. Regression testing (Existing Consumption systems like Qlik Reports, Applications & AI/ML Models): Re-run functional and non-functional tests to ensure any modification or update done in the product without affecting the overall working functionality.
3. Functional testing: Test to ensure each application feature works as per the requirements
4. Data quality testing: Perform activities like validating the accuracy, completeness, consistency, and data stored in the new Data Platform. Data quality tests should include checks for missing values, outliers, data format validation, and adherence to defined data quality rules
5. System integration testing will be followed by user acceptance testing, plan for which has to be submitted by Service Provider to SBI Life. The UAT includes functional tests, resilience tests, benchmark comparisons, operational tests, load tests etc. SBI Life staff / third Party vendor designated by SBI Life will carry out the functional testing. This staff / third party vendor will need necessary on-site training for the purpose and should be provided by Service Provider. Service Provider should carry out other testing like resiliency/benchmarking/load etc. Service Provider should submit result log for all testing to SBI Life.

2.5 User Acceptance

2.5.1 Quality Assurance (QA) Testing and User Acceptance Tests (UAT) Activities

1. QA test of the new Data Platform shall be completed by the Successful Bidder and results of the same shall be shared with SBI Life as specified in the accepted Data Platform design by SBI Life for Program DRISHTI
2. Production use (Go Live) shall commence only after the formal User Acceptance Testing
3. The User Acceptance Tests (and repeats of such tests) shall be conducted by SBI Life in coordination with the Successful Bidder during commissioning of the new Data Platform and in accordance with the test scripts/programs approved by SBI Life
4. SBI Life shall issue a User Acceptance Certificate after successful completion of UAT SBI Life shall also notify the Successful Bidder in writing of any defect for deficiencies or other reason for the failure of the UAT, if any
5. The Successful Bidder is expected to prepare acceptance test plan and test cases for user acceptance test and obtain sign-off from SBI Life before starting UAT
6. On satisfactory completion of the aforementioned tests, the User Acceptance Test (UAT) letter will be issued to Service Provider by the competent authority on the line of Appendix-I.

2.5.2 Reliability of the Data Platform for Program DRISHTI

The Bidder shall provide a detailed definition of the turnaround time (TAT) required to set up the data pipeline for a new data source and should account for potential future functional requirements that could arise, like additional data processing steps, integration with other systems. The Bidder shall provide comprehensive documentation outlining the methodology, calculations, and reasoning used to arrive at the defined turnaround time.

Sr. No	Function	Description
1.	Data availability and accessibility	SBI Life users verify and test the data ingestion processes, data discovery mechanisms, and data retrieval methods to ensure they can locate and access the relevant data sets, and the data required is available in the new Data Platform and can be accessed easily
2.	Data quality and consistency	Users evaluate the quality, consistency of the data and standards in terms of accuracy, completeness, relevance, and integrity. Users may perform specific data quality checks or use predefined business rules to validate the data's suitability for their use cases
3.	Data exploration and analysis	Users explore the data within the data platform using various analytics tools, reporting interfaces, or query languages, and validate whether the data platform provides the necessary capabilities to perform the desired analysis, generate insights, and derive value from the data
4.	Data transformation and processing	Users may test the data transformation and processing workflows or pipelines within the data Platform to verify that the data is transformed according to predefined rules or transformations. This includes evaluating the integration of data processing frameworks, data transformation scripts, and data enrichment processes
5.	Collaboration and sharing	Users assess the collaboration and sharing features such as sharing data sets, collaborating with other users, and providing feedback or annotations on the data to ensure the new Data Platform supports effective teamwork and collaboration among users
6.	Performance and scalability	Users evaluate the performance and scalability of the new Data Platform in handling their expected workloads. They test platform's responsiveness, query execution times, and overall performance under realistic scenarios, along with the ability to scale and accommodate increasing data volumes or user loads.
7.	User experience	Users provide feedback on the user interface (UI) and overall user experience (UX) of the new Data Platform and assess the ease of use, intuitiveness of navigation, and overall satisfaction with the interface

2.5.3 Migration of Data

Sr. No	Function	Description
1.	Data accuracy and completeness	Users verify that the data migrated from the source systems to the new Data Platform is accurate and complete. They compare the migrated data with the original data to ensure there are no inconsistencies or data loss during the migration process
2.	Data transformation and mapping	Users validate that the data transformations and mappings performed during the migration process are accurate and align with the intended business rules and logic. They review the transformed data in the data lake and data warehouse to ensure it meets their expectations
3.	Query and reporting validation	Users perform queries and generate reports using the migrated data to confirm that the query results are correct and consistent with the expected output. They may also validate the performance of queries and reporting to ensure they meet performance requirements
4.	Integration with existing systems	Users test the integration points to verify that the data flow is seamless and correct between the systems and if the data lake and data warehouse are integrated with other applications, reports, AI ML Models, and any other systems. They check if the migrated data can be accessed and utilized by other applications as intended
5.	Data security and access control	Users evaluate the security measures implemented in the migrated new Data Platform. They verify that data access controls are in place, ensuring that only authorized users can access specific data sets or perform certain actions. Users may also test security features like encryption and authentication
6.	Data quality assurance	Users assess the quality of the migrated data by performing data quality checks and validations. They ensure that the data meets predefined quality standards, such as accuracy, completeness, consistency, and validity. Users may employ predefined data quality rules or perform custom data quality tests
7.	Performance and scalability	Users evaluate the performance and scalability of the migrated data lake and data warehouse. They test the platform's responsiveness, query execution times, and overall performance under different load conditions. Users assess whether the data platform can handle increasing data volumes and user loads without significant performance degradation
8.	User interface and experience	Users provide feedback on the user interface (UI) and overall user experience (UX) of the migrated solution. They assess the ease of use, intuitiveness of navigation, and overall satisfaction with the interface. Users' feedback helps identify any usability issues that may need to be addressed

2.5.4 Change Requests

1. Change Requests is not applicable for defined scope of work.
2. However, during implementation, it may be found that certain functionalities have been missed out in the requirement gathering /discovery phase. Successful Bidder would be required to incorporate these functionalities as part of this project.
3. Change Requests would be applicable post approval by In-Charge SBI Life Project Manager
4. SBI Life caps the change requests at 8% of the total effort estimated for the implementation of the project.

2.5.5 Technical Documentation

The Successful Bidder's response should identify the documentation that it proposes to provide. Full documentation shall be provided to include, but may not be limited to, the following areas

- a. Technical/system manuals for packaged software to be supplied by the Successful Bidder
- b. Any technical manuals required for the operation of the interfaces
- c. User operations manuals for the developed applications
- d. Data models and data mapping documents
- e. Data flow documents
- f. Operational manual for systems administration
- g. Check lists, data reports and process manuals for daily operations support
- h. Documentation related to migration

All manuals shall be supplied in English, in hard copy and soft copy.

The Successful Bidder's method for updating documentation to reflect changes should be explained.

3. Technical Documentation

1. Service Provider shall deliver the following documents to SBI Life for every software including third party software before software/ service become operational, which includes, user manuals, installation manuals, operation manuals, design documents, process documents, technical manuals, functional specification, software requirement specification, on-line tutorials/ CBTs, system configuration documents, system/database administrative documents, debugging/diagnostics documents, test procedures etc.
2. Service Provider shall also provide documents related to Review Records/ Test Bug Reports/ Root Cause Analysis Report, list of all Product components, list of all dependent/external modules and list of all documents relating to traceability of the Software Solution as and when applicable.
3. Service Provider shall also provide the MIS reports, data flow documents, data register and data dictionary as per requirements of SBI Life. Any level/ version changes and/or clarification or corrections or modifications in the above-mentioned documentation should be supplied by Service Provider to SBI Life, free of cost in timely manner.

4. BCP Planning & Guidelines

1. The selected bidder must develop a disaster recovery plan for restoration of the system in the event of a disaster or major incident in line with the SBI Life's Disaster Recovery & planning requirements as mentioned 1.3.2.10

2. The Disaster Recovery (DR) Plan should be tested prior to the go-live as well as periodically verifying DR readiness in line with SBI Life 's policies and regulatory requirements.
3. Defined below is the non-exhaustive list of the performance KPIs to be adhered to

Sr. No.	Performance KPI	Performance Requirement
1	RPO – Recovery Point Objective	Upto 45 minutes
2	RTO – Recovery Time Objective for Critical Systems	Time taken to restore databases & ETL Pipelines
2.1	MIS DB	Upto 4 hours
2.2	ETL Pipelines	Upto 6 hours

5. Penalties

5.1 Penalty for drop in uptime % :

Uptime (%) = $\frac{\text{Total hours during month} - \text{Sum of downtime hours during month}}{\text{Total hours during the month}} \times 100$

Total hours during the month

Total hours during the month = No. of days in the month x 24 hours

Sr. No	Uptime Metric	Penalty
1.	For every 0.1% below target of 99% Uptime as defined in 'Point #10 in section 1.3.2.13 – Performance KPIs' in Scope of work	1% of invoice amount of support work for every defaulting month

5.2 Penalty for delay in milestone delivery:

Based on pre-approved plan delivery dates of milestones will be calculated

Sr. No	Metric	Threshold	Penalty
1.	Percentage of milestones delivered on time	100% of milestones should be delivered by stated bidder based on mutually agreed delivery dates	Delay of > 1 week 0.5% of the milestone cost for each week till 4 weeks, Beyond 4 weeks of delay – 1% of the milestone cost subject to overall penalty ceiling of 10% of the respective milestone.

5.3 Penalty for non-compliance to support SLA:

Sr. No	Metric	Threshold	Penalty
1.	Generated tickets – action, Resolution	Action: Severity P1: 0.5h Severity P2: 1h Severity P3: 8h Resolution: Severity P1: 4h Severity P2: 8h Severity P3: 24h	Non-resolution of tickets within threshold > 10% of total tickets in a month: Rs 0.5 % of the monthly invoice amount.

5.4 Penalty on Availability:

Sr. No	Metric	Threshold	Penalty
1.	RPO (Recovery Point Objective)	Upto 45 minutes	Delay beyond 15 mins up to 2 hours: Rs 1 lakhs per 15 Mins Delay beyond 2 hours: Rs 1 Lakh per 30 mins
2.	RTO (Recovery Time Objective)	MIS DB - Upto 4 hours	Delay beyond 4 hours up to 10 hours: 0.5 % of the monthly invoice amount Delay beyond 10 hours: Additional 0.5 % of the monthly invoice amount
		ETL Pipelines - Upto 6 hours	Delay beyond 6 hours up to 12 hours: 0.5 % of the monthly invoice amount Delay beyond 12 hours: Additional 0.5 % of the monthly invoice amount

5.5 Penalty on Security & Compliance:

Sr. No	Metric	Threshold	Penalty
1.	Time to resolve vulnerabilities detected on code analysis	High severity: 4h Medium severity: 8h	0.5 % of the monthly invoice amount

		Low severity: 24h	
2.	Level of compliance with regulatory/legal requirements	100 % compliance with requirements	0.5 % of the monthly invoice amount

