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Software Requirements Specification

**(Emirates Interbank Offered Rate- EIBOR )**

**(NEWGEN CONFIDENTIAL)**

**Newgen Software Technologies Ltd.**

**New Delhi, INDIA**

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| --- | --- |
| **Review Summary** | |
| **ITEM SUBMITTED BY: Shashank Taneja** | |
| **REVIEW TEAM** | |
| **NAME** | **SIGNATURE** |
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| *2.* |  |
| *3.* |  |
| **REVIEW COMMENTS:** | |
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# Introduction

## Purpose

Creating a process for EIBOR rate submission which involves gathering data from various sources and applying a transparent and consistent methodology to calculate error free and accurate EIBOR rate for submission to the central bank with minimum manual intervention. Also ensuring that the EIBOR rates submission follows regulatory reporting requirements and follows the guidelines provided by the central bank.

## Solution Scope

The scope of the process is to automate the workflow and process for preparing the EIBOR rate Summary which is to be submitted to Central Bank

## Document Conventions

* The document has used bold words to highlight the user requirements.
* The document has used short forms for some commonly abbreviated terms. Such abbreviated terms are expanded at the first occurrence of usage.
* Word(s) used as a phrase, are surrounded with single quotes (‘’) for distinction.
* Sections / Text highlighted Yellow represents ‘Required Information’.

|  |  |  |
| --- | --- | --- |
| **Items** | **Font Type** | **Font Size** |
| Headings 1 | Calibri | 18 |
| Headings 2 | Calibri | 16 |
| Headings 3 | Calibri | 14 |
| Body | Calibri | 11 |

## Intended Audience

* The document is intended to be a guide for Business Users, Developers, Project Leader, Project Manager, Architecture Teams, and Testers.
* The goal of this document is to finalize the requirements of 'EIBOR Calculation' Process at RAK Bank.
* The document will be the base document for ‘System Integration Testing’ and ‘User Acceptance Testing’.

## References



# Overall Description

## Solution Perspective

The key requirement of RAK Bank is to automate the computation of EIBOR which currently is been done manually using excel macros and the approvals are taken manually over mail.

Following were some of the challenges faced by the users in the current As-Is process:

* Manually collating the data from various sources (FIS, Finacle , flexcube reports, Broker emails etc. in the excel which requires a lot of time
* There is a higher likelihood of mistakes in activities performed manually.
* There are no audit trails on the approval.

The solution should offer capability to monitor and reduce the overall TAT (Turn Around Time), provide a unified interface to users, parameterized Computation logics to enable any central bank specific reporting requirements and complete monitoring and measurement of process performance coupled with capability to send alerts and raise alarms based on events.

## Solution Features

The new process aims to achieve operational efficiencies by saving user’s time and cost effectiveness for the bank by provision of following features in the system:

* Creating an automated application based on data received via Business Objects (BO) reports by developing a system that can extract, process, and utilize the information from BO reports/ Broker emails and ensure that eligible deals or transactions are not missed and considered for EIBOR computation.
* Data Extraction Process: Utilize BO report APIs or scheduled exports to automate the extraction of data from BO reports. Implement error logging and notification mechanisms to capture any issues during the extraction process.
* Data Mapping: Data mapping of the source BO report/ email fields with the required data elements for EIBOR rate computation.
* Implementing parametrized calculation logics to allow for flexibility and adaptability in computing the daily EIBOR rate based on changing conditions or requirements.
* Maker Checker workflow for approval of the final EIBOR summary which is to be submitted to Central bank.
* Reduction in TAT as almost major computation will be automated by the system
* Automatic email triggers to central bank post approvals are in place.

## User Classes and Characteristics

User groups detailed in the table below are derived as part of process discovery exercise. IBPS allows creation of new user groups, in case new groups are required in future

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Group Name** | **Description** |
|  | Ops\_Maker | Users of this group will have access rights on following queues:   * **Eibor\_Initiation** * **Eibor\_Ops\_Maker**   This group will be created without filters. |
|  | Ops\_Checker | Users of this group will have access rights on following queues:   * **Eibor\_Ops\_Checker**   This group will be created without filters. |
|  | Frontdesk | Users of this group will have access rights on following queues:   * **Eibor\_Frontdesk**   This group will be created without filters. |

## Operating Environment

Existing environment will be used for UAT and Production

## Deliverables

The following will be deliverable:

* Release based on the requirement specified in the document.

## Assumptions and Dependencies and Constraints

* The requirement specifications mentioned in Scope Document are based on discussions with various teams/ departments /business users of RAKBank.
* This implementation will be done on top of Newgen IBPS product suite; thus the implementation has dependency on IBPS product suite
* The workflow will be implemented in English language only. There would not be any data entry or screens in any other languages.
* Any new requirement, addition or modification in the current requirements as mentioned in current document will be treated as changes.

# Work-Flow Requirement

A diagram of a flowchart

Description automatically generated

* **Initiation**:
  + Ops\_Maker users will Click on “New” button to create a new WI.
  + User will see the source data from FIS, Finacle, Flexcube reports and Broker emails populated on the form.
  + Users will do all the maker activities on the Wi and input the required manual details.
  + User will validate the correctness of computed EIBOR Summary sheet.
  + Below Decisions will be available for the User:
    - Submit: Wi Will move to Ops Checker queue
* **Ops\_Checker**:
  + User will review the EIBOR Summary sheet which had been computed post the initiator submits the WI.
  + In case of any modification required user can send back the case to Maker
  + Below Decisions will be available for the User:
    - **Submit:** Wi will move to Front Desk user queue (Mail notification will also be triggered)
    - **Send back To Maker**: WI will move to Ops\_Maker Queue
* **Ops\_Maker**:
  + In case any modifications are required, Ops\_checker can send the Wi back to Ops\_Maker for corrections.
  + Ops\_maker can resubmit the case to Ops\_checker most making the required changes.
  + Below Decisions will be available for the user:
    - Submit: Wi will move to Ops Checker queue for review
* **Front desk checker**:
  + Wi will move to front desk checker post submission from the ops checker queue for the final approval.
  + Below Decision will be available for the user:
    - Submit: Wi will move to exit queue
    - Send back To Ops Checker: Wi Will move to Ops checker Queue

## EIBOR Calculation

EIBOR submission will be computed basis below sources of data from which data would be extracted and processed to calculate the below components of the EIBOR summary sheet such as

* Determining Factor 1 (DF1)
* Determining Factor 2 (DF2)
* Determining Factor 3 (DF3)
  + History IB Data
  + History Cust Data
  + Repo
  + Observable 3rd Party Transactions
  + Broker Rates

**Source Data:**

Below existing reports will be scheduled by Control M at the defined time every day. An email will be triggered to BPM Support team if any of the Batch fails and the required BO reports or the Broker Mails are not received at the ibps by 11:05 AM

|  |  |  |  |
| --- | --- | --- | --- |
| Report Name | Source System | Target System | Time |
| EIBOR Finacle Parallel check Report | **Finacle – BO** | **iBPS** | 11:00 AM |
| EIBOR Flexcube Parallel check Report | **Flexcube- BO** | **iBPS** | 11:00 AM |
| EIBOR DF2 Back dated Deposit Check Report | **MIS- BO** | **iBPS** | 10:30 AM |
| FIS MM Deals 11.12.2023(Date) EIBOR | **FIS (Front Arena)** | **iBPS** | 11:00 AM |

Below Mails for the broker quotes will be configured to the target mail id [**eiborbrokerrates@rakbank.ae**](mailto:eiborbrokerrates@rakbank.ae)

* **ICAP:**
  + From Mail Id: To be confirmed.
  + Mail Subject: To be confirmed.
  + Mail Attachment: .xls
  + Sample Attachment:
* **BCG:**
  + From Mail Id: To be confirmed.
  + Mail Subject: To be confirmed.
  + Sample Mail:

### Determination Factor 1 (DF1)

* The source for DF1 calculation will be the data that will be extracted from the FIS MM Deals reports.
* For DF1 rate only those records will be picked which are marked as ‘Yes’ in ‘To be Reported’ column of MM grid
* Trades booked under Conv-Instl-Deposit-CBD & Conv-Instl-Deposit-FI coming in MM deals report (FIS report) are to be reported in DF2 deals grid (Option key will be the unique identifier).

|  |  |
| --- | --- |
| Grid Columns | Values |
| Tenor | 6 Rows for all the tenors |
| EIBOR rate for Today | In the MM Sheet where 'To Be Reported' value ='Yes' Volume Weighted Avg(int rate & Principal) of corresponding type of tenor |

**MM**

|  |  |  |
| --- | --- | --- |
| Grid Column | FIS Sheet Mapping | Values /Calculation Logic |
| Depo\_no | EIBOR\_Deposits | Auto Populated from Report |
| Depo\_date | Date & Time | Auto Populated from Report |
| Depo\_type | Portfolio | Auto Populated from Report |
| Principal | Start Cash | Auto Populated from Report |
| Int\_rate | Rate | Auto Populated from Report |
| Value\_date | Start Date | Auto Populated from Report |
| Due\_date | End Date | Auto Populated from Report |
| Cpty\_code | Cpty | Auto Populated from Report |
| Tenor Calendar Days |  | Due Date - Value Date |
| Tenor Business Days |  | Business Day count (excluding Weekend Sunday and public holidays) |
| Final Tenor Bucket |  | Basis Tenor Bucketing Master |
| To Be Reported? |  | Yes if Value Date is Current Date-1 else Not Applicable |
| Future Deal |  | Populate value as 'OK' if Due\_Date is less than equal to Current Date else 'Future Deal' |
| Business Days Check |  |  |

* Final Tenor bucket value will be computed based on the Tenor Bucketing masters.
  + For ON and 1 W tenor business days to be considered
  + For 1M, 3M, 6M, 1Y, Calendar days tenor is to be considered.

### Determination Factor 2 (DF2)

|  |  |
| --- | --- |
| Grid Columns | Values |
| Tenor | 6 Rows for all the tenors |
| EIBOR rate for Today | In the DF2 Sheet where 'To Be Reported' value ='Yes' Volume Weighted Avg(int rate & Principal) of corresponding type of tenor |

* Only the records for which the ‘To be Reported’ value is ‘Yes’ in the DF2 grid are to be considered in the DF2 Rates

**DF2 Deals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Grid Column | Finacle Parallel check Report | Flexcube Parallel check Report | Back dated Deposit Check Report | Values/ Calculation Logics |
| Counterparty | Acct\_Name | Ac\_Desc | Account Name | Auto Populated from Report |
| Contract Rate | Actual\_PCNT | Actual\_Pcnt | Interest Rate | Auto Populated from Report |
| Start Date | Acct\_Opn\_Date | Acct\_Opn\_Date | Start Date | Auto Populated from Report |
| Due Date | Maturity\_Date | Maturity\_Date | Maturity Date | Auto Populated from Report |
| Amount (AED MLN) | Currency\_Balance | Tran\_Date\_Bal\_Dh\_Eq | Deposit Amt | Auto Populated from Report |
| Account | Foracid | Cust\_Ac\_No | Foracid | Auto Populated from Report |
| Currency |  | Acct\_Crncy\_Code | CCY | Auto Populated from Report |
| Source File Name | Eibor Finacle Report Parallel Check YYYYMMDD | Eibor Flexcube Report Parallel Check YYYYMMDD |  | File name to be populated from where row data is fetched (Finacle/ Flexcube/ Back dated) |
| Tenor Calendar Days |  |  |  | Due Date - Value Date |
| Final Tenor Bucket |  |  |  | Basis Tenor Bucketing Master |
| To Be Reported? |  |  |  | ‘Yes’, if Value Date is Current Date-1 else Not Applicable |
| Future Deal |  |  |  | Populate value as 'OK' if Due\_Date is less than equal to Current Date else 'Future Deal' |
| Business Days Check |  |  |  |  |

* Final Tenor bucket value will be computed based on the Tenor Bucketing masters.
  + For ON and 1 W tenor business days to be considered
  + For 1M, 3M, 6M, 1Y, Calendar days tenor is to be considered.

### Determination Factor 3 (DF3)

#### 3rd Party Quotes

|  |  |  |  |
| --- | --- | --- | --- |
| Tenor | Bid | Offer | MID |
| O/N | 4.9 | 5.5 | 5.2 |
| 1 Week | 4.9 | 5.55 | 5.225 |

* Data will be extracted from the ICAP .xls file and the BCG mail that will be received in the mailbox everyday [**eiborbrokerrates@rakbank.ae**](mailto:eiborbrokerrates@rakbank.ae)
* System will read the Bid and Offer rate and compute the Mid rate
* 3rd party quotes will be calculated basis the average of ICAP and BCG MID rates for all the tenors.

#### CBUAE Published Rates

* Data for the last 4 days would be auto populated for the user. However the rates will be editable for the user to modify in case any wrong entry made for the previous day
* Users will have to manually input the Tenor Wise rate for the current date.

e.g;

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Date** | **O/N** | **1 Week** | **1 Month** | **3 Months** | **6 Months** | **1 Year** |
| 11/28/2023 | 5.040630 | 5.277800 | 5.355430 | 5.602640 | 5.500610 | 5.609330 |
| 11/29/2023 | 5.033630 | 5.279460 | 5.375240 | 5.471620 | 5.483900 | 5.611590 |
| 11/30/2023 | 5.015630 | 5.310810 | 5.369110 | 5.332420 | 5.478060 | 5.609850 |
| 12/1/2023 | 5.108870 | 5.312880 | 5.453040 | 5.440740 | 5.578020 | 5.617660 |
| 12/5/2023 | 5.236090 | 5.297340 | 5.445460 | 5.437460 | 5.567350 | 5.560810 |

#### Bloomberg-Libor + Forward Rates

|  |  |
| --- | --- |
| Grid Columns | Values |
| Tenor | ON, 1W, 1M, 3M, 6M, 1Y |
| SOFR | User Input |
| BB Ask USD/ AED Fwd Points | User Input |
| Fwd point Calculation USD | BB Ask USD/ 1000 |
| No. of Days | To be populated Basis tenor, of O/N than 1 |
| Fwd point Calculation AED | “Fwd point Calculation USD”/3.673\*360/'No. of days'\*100 |
| Eibor Rate | SOFR' + Fwd point Calculation AED |
| 5 Day Average | Average of tenor rate from CBUAE published rate grid |
| Weighted Avg | 50% of 'EIBOR rate' + 50% of '5-day avg rate' |

* Weighted average will be calculated on the click of “ Calculate Avg” Button
* ‘No. of Days’ will be set as per the Working days logic and will be editable for the user to update for ‘ON’ Tenor in case of any modification required.

#### History Interbank Data

* The source for History IB data calculation will be the data that will be extracted from the FIS MM Deals grid.
* The maximum validity of historical rates tenor should be as per the following Max validity Historical Data masters:

|  |  |
| --- | --- |
| Tenor | No. of Business Days |
| O/N | 3 |
| 1W | 3 |
| 1M | 5 |
| 3M | 5 |
| 6M | 10 |
| 1Y | 10 |

* For History Customer data rate calculation, those records from the DF2 grid will be considered for which the number of Business days is less than equal to the corresponding business days of that tenor in the max validity historical masters.

|  |  |
| --- | --- |
| Grid Columns | Values |
| Tenor | 6 Rows for all the tenors |
| EIBOR rate for Today | Volume weighted average of those records in the MM grid whose (Current date - Value date)no. of Business days is less than equal to max. validity of historical data (BD) for that tenor as per the Historical data master’s |

#### History Customer Data

* The source for History IB data calculation will be the data that will be extracted from the DF2 Deals grid.
* The maximum validity of historical rates tenor should be as per the following Max validity Historical Data masters:

|  |  |
| --- | --- |
| Tenor | No. of Business Days |
| O/N | 3 |
| 1W | 3 |
| 1M | 5 |
| 3M | 5 |
| 6M | 10 |
| 1Y | 10 |

* For History IB rate calculation, those records will be considered for which the number of Business days is less than equal to the corresponding business days of that tenor in the max validity historical masters

|  |  |
| --- | --- |
| Grid Columns | Values |
| Tenor | 6 Rows for all the tenors |
| EIBOR rate for Today | Volume weighted average of those records in the DF2 deal grid whose (Current date - Start date)Business days is less than equal to max. validity of historical data (BD) for that tenor as per the Historical data master’s |

#### EIBOR Summary

|  |  |
| --- | --- |
| Grid Columns | Values/ Calculation Logics |
| Tenor | ON, 1W, 1M, 3M, 6M, 1Y |
| DF1 | Eibor Rate for today from DF1 grid |
| DF2 | Eibor Rate for today from DF2 grid |
| Hist IB Data | Eibor Rate for today from History IB grid |
| Hist Cust Data | Eibor Rate for today from History Cust data grid |
| Repo | Repo from DF3 Grid |
| Observable third party transactions | Weighted Average' from BB grid |
| Broker rates | Average from 3rd Party Quoted grid |
| Final EIBOR fixing | Populated basis on priority DF1, DF2, Hist IB , Hist Cust, Obs 3rd part, Broker rate |
| Rationale | Populated as DF1, DF2, DF3 basis from where value is poulated in final EIBOR fixing field |
| Source | Populate Column Value from where Final EIBOR fixing is populated |

# Other Functional Requirements

* All the Source documents corresponding to the Work item should be archived in Omnidocs for future use. User should also have access to upload additional Documents in OD if required.
* Email will be triggered to ops User for the success of reports/ Mail received from BO or over mail. Email id’s and mail body to be confirmed.
* Email will be triggered to the users if there is any failure of incoming report/ Emails
* An email will be triggered to the frontdesk user once the WI is submitted from Ops checker

# External Interface Requirements

## User Interfaces

The users in the bank will be using the Newgen’s workflow interface iBPS for viewing the data and processing the Eibor calculation applications.

## Hardware Interfaces

NA

## 4.3 Software Interfaces

# Other Nonfunctional Requirements

## Performance Requirements

* The response time of the application should not be more than 30 sec. This does not apply to report generation response time.
* The Operators at multiple locations can seamlessly access the application.
* 24/7 system availability, except for planned downtimes for maintenance activities.

## Safety Requirements

N/A

## Security Requirements

* Only authorized users should be able to access the system.
* Only authorized queues to be available in users’ screen.

# Appendix A: List of Masters

# Appendix B: Route Details



# Appendix C: Field List



# Appendix D: Prototype Screens

Will be appended later.

# Templates

NA

# Appendix E: Open Items

* ICAP and BCG broker quote mail details (As mentioned ‘To be confirmed’ in Section 3.1)
* Cancelled/ amended FD reports
* Archival path to be confirmed
* Update in Refinitive sheet for the Eibor submission . API availability to be checked