



RTGS BUSINESS PROCESS USE CASES FULL SET

Buna – The Regional Payment Platform

المؤسسة الإقليمية لمقاصة وتسوية
المدفوعات العربية

Arab Regional Payments
Clearing and Settlement
Organization

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| | | | <p>Use Case Request and receive business day timetable or template was added</p> <p>Use Case Change participant status upon CEB's request was added</p> <p>Use Case Request and receive actual calendar was added</p> <p>Use Case Lock account upon CEB's request was added</p> <p>Use Case Unlock account upon CEB's request was added</p> <p>Used message types chapter was added</p> <p>Chapter «Use cases using SWIFT messaging» was added</p> <p>Chapter «Use cases using Portal» was added</p> <p>Participants Directory report was added</p> <p>Transaction type codes were added</p> <p>Reason codes for returns were added</p> <p>Billing report was added</p> |
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| 27.04.2020 | CMA Small Systems AB | 5.0 | Use cases UC003 «AML Check» and UC015 «Manage Queued and Suspended instructions at EOD» were changed according to CR2 and CR3 |
| 01.06.2020 | CMA Small Systems AB | 7.0 | <p>Use cases UC003 «AML Check» and UC015 «Manage Queued and Suspended instructions at EOD» were changed according to CR2 and CR3</p> <p>UC003 «AML Check» comments were resolved</p> <p>UC020 «Intraday participant withdrawal requests for BPA» and UC021 «Intraday participant withdrawal requests for BPUCRSB» - moment of sending status message from Buna to Participant was changed</p> <p>UC043- Register InBuna Participant by Buna Participant via Buna Portal was added</p> <p>UC044- Modify the link of Buna Participant with InBuna Participant via Buna Portal</p> <p>UC045- Delete the link of Buna Participant with InBuna Participant via Buna Portal</p> <p>UC009: Payments on behalf of InBuna Participants – check the link between BP and IP was added to business validation rules</p> |
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| 05.03.2022 | CMA Small Systems AB | 9.12 | <ul style="list-style-type: none"> • Authorization by Buna Financial Administrator checker was added to QUE-03, QUE-04, NPM-06, NPM-07, NPM-09, NPM-10, NPM-11, NPM-12 Use Cases • Use case PM-02 “Payment message validation” – Holidays check was added to the Business validation check (enhancement was developed) |
| 12.10.2022 | CMA Small Systems AB | 10.2 | Use Case LIQ-12: «Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation» was moved from IPS Use Cases |

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| 03.11.2022 | CMA Small Systems AB | 11 | 2 use cases were added: <ul style="list-style-type: none">• Use Case LIQ-13: «Set FX rate by FX Provider»• Use Case LIQ-14: «Delete FX rate by FX Provider» |
|------------|-------------------------|----|--|

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1 GLOSSARY

| ABBREVIATION OR TERM | DESCRIPTION |
|--|--|
| Buna | Arab regional payment system |
| AMF | Arab Monetary Fund |
| FHI | Fund holding institution. It will be the Central Bank of issuance of a currency supported by Buna, if the currency passes Buna eligibility criteria. Where this is not possible (i.e. currencies outside the Arab region), commercial banks will be utilized as the fund holding institution |
| PSFHI | Payment System of the FHI |
| Buna Participant (BP) | Participant, registered at Buna with type “Buna Participant”, having an account at Buna. Central Banks, should they choose to do so, may also be Buna Participants in Buna, submitting cross-border payments on their behalf or on behalf of their local market participants |
| Correspondent Bank (CRSB) | A Bank, having an account at the FHI Payment system, used by Buna Participants for top-up and withdrawal in a case where they do not have an account at the PSFHI |
| BPA | Buna Participant of Buna having an account at the PSFHI |
| BPUCRCB | Buna Participant of Buna using a correspondent bank for top-up and withdrawal, because it does NOT have an account at the PSFHI |
| SA | Settlement account |
| CEB | Central Banks, who are within the same country as a participant of Buna. Regulatory authority institutions for Buna Participants. They can also act as a Buna Participant sending their payments to the system |
| Non-registered participant 8*** | Participant, which is not registered inside the Buna core database, but it has a BIC with the same first 8 digits as a Registered participant |

2 SYSTEM TOPOLOGY

2.1 SYSTEM TOPOLOGY FOR FHI

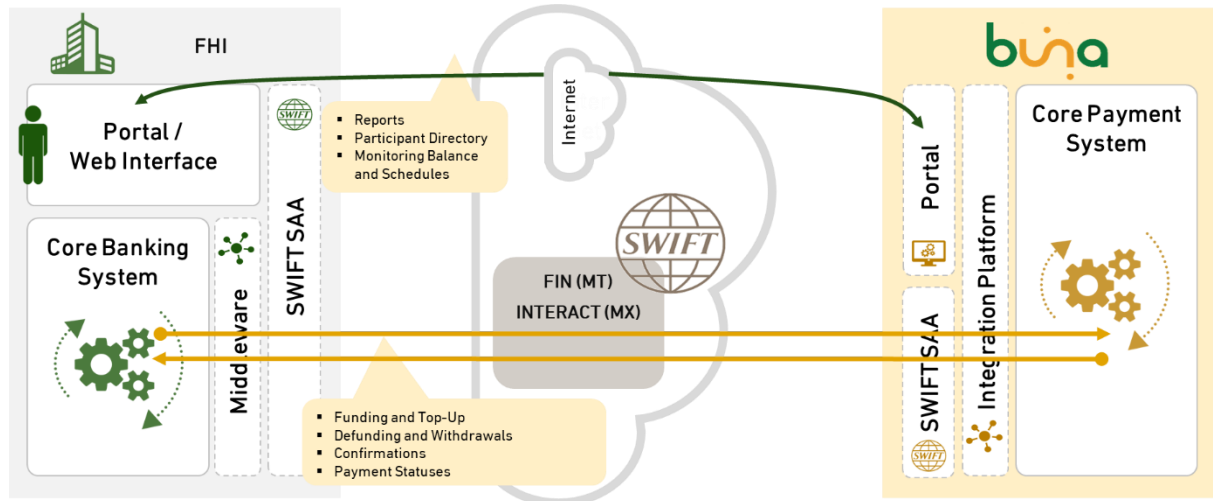


Figure 1: FHI Interaction with Buna

The FHIs will interact with Buna in 2 ways:

1. Via SWIFT messages
 - a. For MT messages via SWIFT FIN
 - b. For MX messages via SWIFT INTERACT
2. Via Web the Portal (Graphical User Interface)

The FHIs will send and receive the following messages via **SWIFT**:

1. Funding and top-up messages
2. Defunding and withdrawals
3. Confirmations
4. Payment statuses
5. Statement report

The FHIs will have access to **Portal (GUI)** provided by Buna in order to check the following:

1. Reports
2. Participant Directory (will be generated in Excel or xml format for upload to the FHI Payment system)
3. Monitoring facilities:
 - a. Balances
 - b. Funding and de-funding operations
 - c. Business day schedule
 - d. Calendar
 - e. Text messages
 - f. Limits

2.2 SYSTEM TOPOLOGY FOR BUNA PARTICIPANTS

The below picture illustrates how the Buna Participants will interact with Buna:

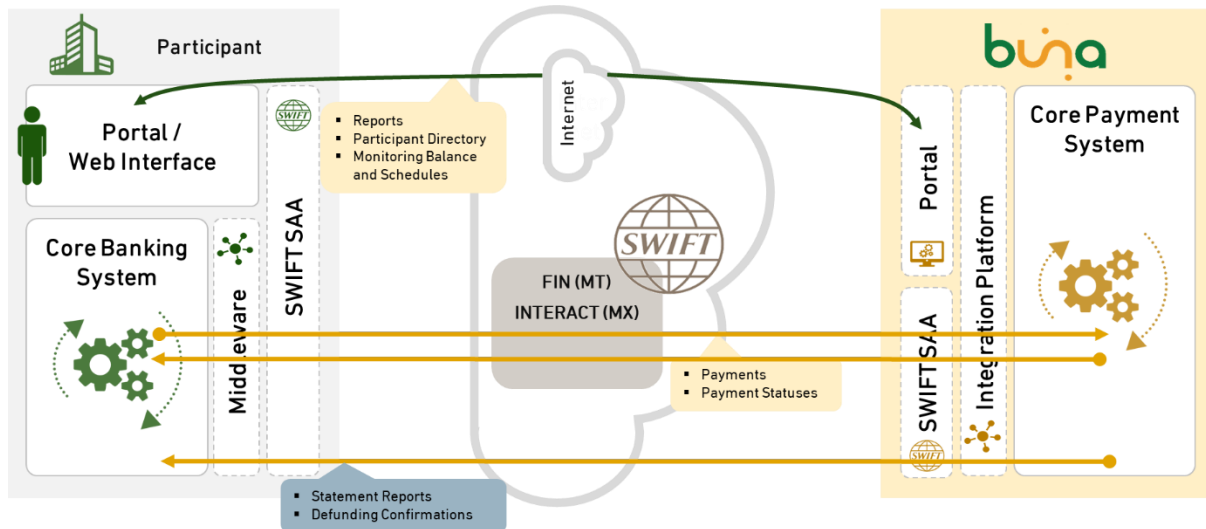


Figure 2: Participant interaction with Buna

The Buna Participants will interact with Buna in 3 ways:

1. Via SWIFT messages
 - a. For MT messages via SWIFT FIN
 - b. For MX messages via SWIFT INTERACT
2. Via the Portal
3. Via APIs

The Buna Participant will send and receive the following messages via **SWIFT**:

1. Funding and top-up messages
2. Defunding and withdrawals
3. Payments
4. Payment control messages
5. Confirmations
6. Payment statuses
7. Statement report

The Buna Participant will have access to a **Portal** provided by Buna in order to check the following:

1. Reports
2. Participant Directory (will be generated in Excel or xml format for upload to the payment system of the FHI)
3. Dispute Management
4. Payment control functions
5. Monitoring facilities:
 - a. Balances
 - b. Funding and de-funding operations
 - c. Business day schedule
 - d. Calendar
 - e. Text messages
 - f. Limits

The Buna Participant will have access to Buna APIs for:

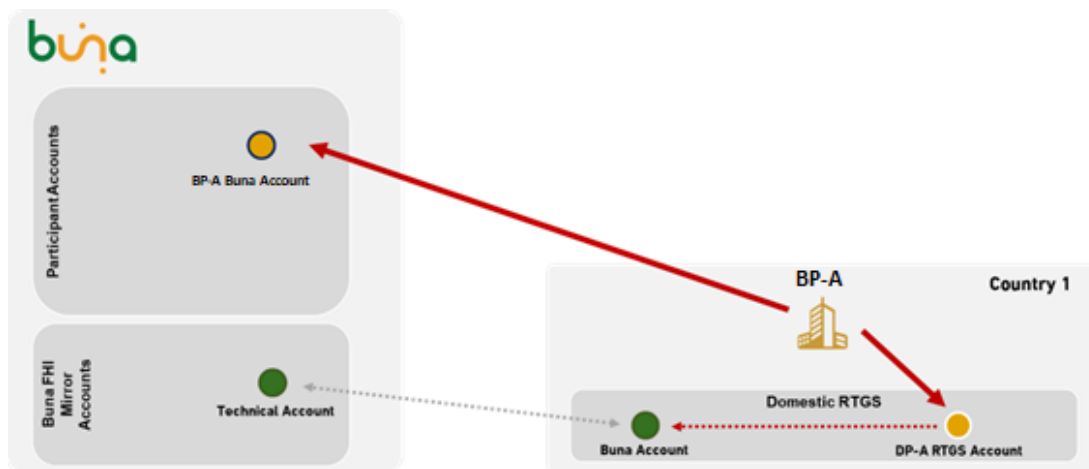
1. Reporting

3 ACCOUNT TOPOLOGY

There will be several accounting schemes at Buna:

1. Buna Participant has an account at the Payment System of the FHI (BPA)
2. Buna Participant uses their correspondent bank for top-up and withdrawal, because it has no account in the Payment System of the FHI (BPUCRSB)

3.1 ACCOUNTING SCHEME FOR BPA



3.2 ACCOUNTING SCHEME FOR BPUCRSB

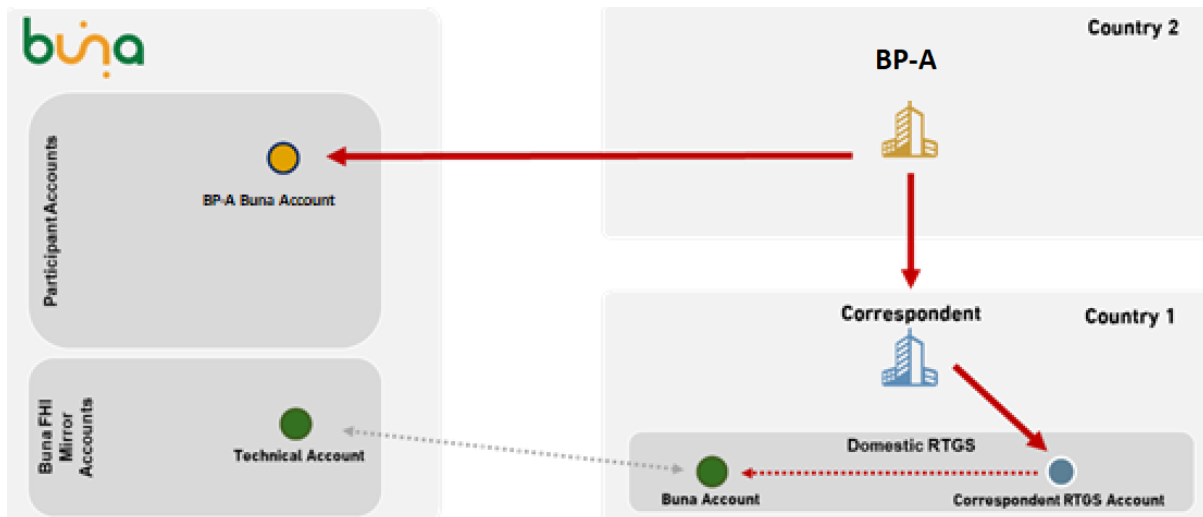


Figure 3: Accounting scheme for BPUCRSB

4 BUSINESS PROCESS USE CASES LIST

4.1 PAYMENT PROCESSING USE CASES

Buna Participants have access to a list of payment processing use cases that extend from the “General Payment processing” use case:

- Interbank Transfer
- Customer Credit Transfer
- Batch Transfer
- Return Payment

The “General Payment Processing” use case includes the following sub-process use cases:

- Message Validation
- Gridlock Resolution
- Queueing
- Resolve Queue

| ID | NAME | DESCRIPTION |
|-------|----------------------------|--|
| PM-01 | General Payment processing | Abstract use case to describe general behavior for all payment processing related operations |
| PM-02 | Message validation | Perform security, syntax, business validation, limits check and AML check |
| PM-03 | AML Check | AML Check will be done according to its mode setting |
| PM-04 | Queueing | Describes the usage of the queuing mechanism for a lack of liquidity case |
| PM-05 | Resolve queue | Describes the process of changes in queue processing |
| PM-06 | Interbank Transfer | Execute payment processing on a Buna Participant's accounts for interbank transfers. |
| PM-07 | Customer credit Transfer | Execute payment processing on a Buna Participant's accounts for customer transfers |
| PM-08 | Batch Transfers | Settle batches of transactions to support remittance payments |
| PM-09 | Return Payment | Return Payment |
| PM-10 | Gridlock Resolution | Execute the gridlock resolution to settle queued payments |

4.2 QUEUE MANAGEMENT USE CASES

Both Buna Participants and Buna operators have access to the cancellation and change of queue management use cases.

Additionally, Buna has access to an additional use case: discard queued transactions at EOD

| ID | NAME | ROLE | DESCRIPTION |
|--------|--|------|---|
| QUE-01 | Cancellation of an unsettled payment by a participant | BPs | Cancel queued payments initiated by a participant |
| QUE-02 | Change the priority of an unsettled payment by a participant | BPs | Change the priority of queued payments initiated by a participant |

| | | | |
|---------------|--|------|---|
| QUE-03 | Cancellation of an unsettled payment by an operator | Buna | Cancel the queued payments initiated by an operator |
| QUE-04 | Change the priority of an unsettled payment by an operator | Buna | Change priority of queued payments initiated by an operator |
| QUE-05 | Manage Payments at EOD | Buna | Cancellation and moving payments to the next business day dates |

4.3 LIQUIDITY MANAGEMENT USE CASES

Both FHIs and Buna Participants have access to all the liquidity management use cases listed in the table with the only exception of “receive notifications about top-up needed” use case which is only allocated to the Buna Participants.

| ID | NAME | ROLE | DESCRIPTION |
|---------------|--|-------------|---|
| LIQ-01 | SOD Funding for BPA | FHI, BPs | The transfer of funds by a participant to its Settlement account held in Buna at the start of the day for the case when a participant has an account in the FHI Payment system |
| LIQ-02 | SOD Funding for BPUCRSB | FHI, BPs | The transfer of funds by a participant to its Settlement account held in Buna at the start of the day. This is for the case when a participant DOES NOT have an account in the FHI Payment system |
| LIQ-03 | Intra-day top-up for BPA | FHI, BPs | The transfer of funds by a participant to its Settlement account held in Buna during the day. This is for the case when a participant has an account in the FHI Payment system |
| LIQ-04 | Intra-day top-up for BPUCRSB | FHI, BPs | The transfer of funds by a participant to its Settlement account held in Buna during the day. This is for the case when a participant DOES NOT have an account in the FHI Payment system |
| LIQ-05 | Intra-day participant withdrawal requests for BPA | FHI, BPs | An Intra-day participant withdrawal from its Settlement account held in Buna upon request. This is for the case when a participant has an account in the FHI Payment system |
| LIQ-06 | Intra-day participant withdrawal requests for BPUCRSB | FHI, BPs | An Intra-day participant withdrawal from its Settlement account held in Buna upon request. This is for the case when a participant DOES NOT have an account in the FHI Payment system |
| LIQ-07 | End-of day participant de-funding of net credit balances for BPA | FHI, BPs | At the end of Buna business day (for a specified currency), Buna transfers fund balances for participants to the FHI Payment system (in case where the participant has NO account in the FHI Payment system) |
| LIQ-08 | End-of day participant de-funding of net credit balances for BPUCRSB | FHI, BPs | At the end of Buna business day (for a specified currency), Buna transfers fund balances for participants to the Payment system of their FHI (this use case is for when the participant does NOT have an account in the FHI Payment system) |

| | | | |
|---------------|--|------------------|--|
| LIQ-09 | Receive notifications about top-up needed | BPs | Receive any notifications about a top-up required from Buna |
| LIQ-10 | Foreign exchange support | BPs, FX Provider | Foreign exchange can be done using Foreign Exchange Trade Instructions |
| LIQ-11 | Foreign exchange Trade Instruction cancellation | BPs, FX Provider | Foreign exchange Trade Instruction cancellation |
| LIQ-12 | Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation | BPs, FX Provider | Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation |
| LIQ-13 | Set FX rate by FX Provider | FX Provider | Register currency pair for the Trade date with optional FX rate data by FX Provider |
| LIQ-14 | Delete FX rate by FX Provider | FX Provider | Remove currency pair for the Trade date by FX Provider |

4.4 REQUEST AND REPORT USE CASES

The Buna Participants have access to the below list of Request and Report use cases, while the FHIs have only access to the “Report Request” use case.

| ID | Name | Role | Description |
|---------------|--|-------------|--|
| RPT-01 | Report Request | FHI, BPs | A use case to describe common behaviors for all report request use cases |
| RPT-02 | Receive EOD Statement | BPs | Receive an EOD Statement at the end of business day |
| RPT-03 | Request and Receive Account Balance Report | BPs | Receive an Account Balance Report when requested by the Participant |
| RPT-04 | Request transaction status | BPs | Request the current status of a transaction |

4.5 NON-PAYMENT MESSAGE FLOWS

The full list of non-payment message use cases is displayed below

| ID | Name | Role | Description |
|---------------|--------------------------------|---------------|---|
| NPM-01 | Non-payment Message validation | CEB, FHI, BPs | The general validation process for all incoming non-payment messages. Validation rules could be extended in other use cases for specific scenarios |
| NPM-02 | Broadcast text message | CEB, FHI | The FHI can send a broadcast text message to all or to selected participants |

| ID | Name | Role | Description |
|---------------|---|---------------|--|
| NPM-03 | Text messages between participants | CEB, FHI, BPs | The FHI or Buna Participant can send messages to each other (one to one) |
| NPM-04 | Receive business day notifications | CEB, FHI, BPs | Automatically receive business day notifications for manual business day changes and automatic change of the settlement window |
| NPM-05 | Request and receive the business day timetable | CEB, FHI, BPs | Request and receive the business day timetable |
| NPM-06 | Change participant status upon CEB's request | CEB | Change a participant's status upon a CEB's request |
| NPM-07 | Change participant status by Buna Financial administrator | Buna | Change a participant's status by a Buna Financial administrator |
| NPM-08 | Request and receive an actual calendar | CEB, FHI, BPs | Receive an actual calendar upon Participant's request |
| NPM-09 | Lock account upon CEB's request | CEB | Lock an account for debit, credit or both upon CEB's request |
| NPM-10 | Lock account upon Buna Financial Administrator request | Buna | Lock an account for debit, credit or both upon Buna Financial Administrator's request |
| NPM-11 | Unlock account upon CEB's request | CEB | Unlock an account for debit, credit or both upon CEB's request |
| NPM-12 | Unlock account upon Buna Financial Administrator request | Buna | Unlock an account for debit or credit or both upon Buna Financial Administrator's request |
| NPM-13 | Currency suspension | BPs | Currency suspension |

4.6 BILLING USE CASES

Currently, there is a single use case in this category, and it is used by Buna Participants to receive invoices generated by the system.

| ID | NAME | ROLE | DESCRIPTION |
|----|------|------|-------------|
|----|------|------|-------------|

| | | | |
|----------------|---|-----|--|
| BILL-01 | Receive invoices on a periodic basis | BPs | Receive invoices, generated by Buna |
| BILL-02 | Request for payment of charges processing | BPs | Request for payment of charges from one participant to another |

4.7 COMMUNICATION AND INQUIRY USE CASES

Only Buna Participants have access to the customer relationship use case.

| ID | NAME | ROLE | DESCRIPTION |
|---------------|---|------------------------|---|
| COM-01 | Buna Participant – Buna Participant Process Inquiry | BPs | Process Inquiry between BP and BP via the Communication and Inquiry Management Module |
| COM-02 | Compliance officer - BP Process Inquiry | Compliance officer, BP | Process Inquiry between Compliance officer and BP via the Communication and Inquiry Management Module |

4.8 PRE-VALIDATION AND CONSULTATION SERVICE USE CASES

Only Buna Participants have access to the customer relationship use case.

| ID | NAME | ROLE | DESCRIPTION |
|----------------|--|------|--|
| CONS-01 | Request exchange rate from the FX Provider | BPs | Request exchange rate from the FX Provider |

4.9 MESSAGE TYPES

4.9.1 The Incoming Messages Processed by The System

The messages below can be sent by Commercial banks, FHLs and Buna Administrators according to their access rights.

| MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-------------------------|---------------------------------|
| MT103 | pacs.008 | Single Customer Credit Transfer |
| MT202 | pacs.009 | Interbank transfer |
| MT202 | pacs.009 | Withdrawal request |
| MT202 | pacs.004 | Return transfer |

| MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-------------------------|---|
| MT192 | camt.056 | Request for cancellation |
| MT292 | camt.056 | Request for cancellation |
| MT195 | camt.087 | Request to change priority |
| MT295 | camt.087 | Request to change priority |
| MT920 | camt.060 | Requesting balance report or Interim transaction report |
| MT999 | camt.998 | Text message |
| MT999 | camt.998 | Changing participant status |
| MT999 | camt.998 | Locking/unlocking account |
| MT195 | pacs.028 | Requesting status of transfer |
| MT295 | pacs.028 | Requesting status of transfer |
| MT999 | camt.018 | Requesting business day schedule |
| MT999 | reda.064 | Requesting system calendar |
| MT298/300 | fxtr.014 | Foreign exchange trade instruction |
| MT298/392 | fxtr.016 | Foreign Exchange Trade instruction Cancellation request |
| MT298/377 | camt.998 | Set currency exchange rate |
| MT298/378 | camt.998 | Delete currency exchange rate |

The messages can be sent by FHI systems.

| MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-------------------------|--|
| MT202 | pacs.009 | Funding, top-up |
| MT296 | pacs.002 | Reply to Mid-day Withdrawal or Defunding |
| MT296 | admi.002 | Message rejection |

4.9.2 The outgoing messages created by the system

The messages can be sent to Commercial banks, FHI and Buna Administrators according to their access rights.

| MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-------------------------|---|
| MT103 | pacs.008 | Single Customer Credit Transfer |
| MT202 | pacs.009 | Interbank transfer |
| MT202 | pacs.004 | Return transfer |
| MT204 | pacs.010 | Financial Markets Direct Debit Message (De-funding message) |
| MT196 | camt.029 | Reply on cancellation or change priority request |
| MT296 | camt.029 | Reply on cancellation or change priority request |
| MT196 | camt.025 | Processing notification |
| MT296 | camt.025 | Processing notification |
| MT996 | camt.025 | Processing notification |
| MT941 | camt.052 | Balance report |
| MT999 | camt.052 | Account status |
| MT999 | camt.998 | Participant status |
| MT999 | camt.019 | Business day schedule |
| MT196 | pacs.002 | Status of transfer |

| MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------------------|--------------------------------|--|
| MT296 | pac.002 | Status of transfer |
| MT196 | admi.002 | Message rejection |
| MT296 | admi.002 | Message rejection |
| MT996 | admi.002 | Message rejection |
| MT999 | reda.065 | System calendar |
| MT999 | camt.998 | Text message |
| MT950 | camt.053 | Statement of account |
| MT986 | camt.052 | Notification of participants about top-up needed |
| MT296 | fxtr.017 | FX Trade Status and Details Notification |
| MT296 | fxtr.013 | Cancellation status message |
| MT298 | camt.017 | Information on current exchange rates |

The messages can be received by FHI systems.

| MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------------------|--------------------------------|---|
| MT202 | pac.009 | Defunding or Withdrawal |
| MT296 | pac.002 | Reply to Top-up or Funding |
| MT296 | admi.002 | Message rejection |
| MT296 | camt.025 | Reply to Top-up or Funding in case of access rights violation |

4.10 Number of messages per each use case

| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|--|-----------------------------|---------------------|---------------------|-------------------------------|-----------------------|-----------------------|
| Use Case PM-06 | Interbank Transfer (successful flow) | In total: 1 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | | | | 1 (one of listed) | MT296 | camt.025 |
| | | | | | | MT296 | pacs.002 |
| | | | | MT296 | admi.002 | | |
| Use Case PM-07 | Customer credit Transfer (successful flow) | In total: 1 | | | In total: 2 | | |
| | | 1 | MT103 | pacs.008 | 1 | MT103 | pacs.008 |
| | | | | | 1 (one of listed) | MT196 | camt.025 |
| | | | | | | MT196 | pacs.002 |
| | | | | MT196 | admi.002 | | |
| Use Case PM-09 | Return Payment (successful flow) | In total: 1 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.004 | 1 | MT202 | pacs.004 |
| | | | | | 1 (one of listed) | MT296 | camt.025 |
| | | | | | | MT296 | pacs.002 |
| | | | | MT296 | admi.002 | | |
| Use Case QUE-01 | Cancellation of Credit Transfer by participant | In total: 1 | | | In total: 1 | | |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|---|-----------------------------|---------------------|----------------------|-------------------------------|----------------------------------|--|
| | | 1 (one of listed) | MT192 MT292 | camt.056 camt.056 | 1 (one of listed) | MT196 MT296 MT196 MT296 | camt.029 camt.029 admi.002 admi.002 |
| Use Case QUE-02 | Change priority of unsettled payment by participant | In total: 1 | | In total: 1 | | | |
| | | 1 (one of listed) | MT195 MT295 | camt.087 camt.087 | 1 (one of listed) | MT196 MT296 MT196 MT296 | camt.029 camt.029 admi.002 admi.002 |
| Use Case QUE-03 | Cancellation of queued payment by operator | In total: 0 | | In total: 1 | | | |
| | | | | | 1 (one of listed) | MT196 MT296 | pacs.002 pacs.002 |
| Use Case QUE-04 | Change priority of unsettled payment by operator | In total: 0 | | In total: 1 | | | |
| | | | | | 1 | MT196 MT296 MT196 | pacs.002 pacs.002 camt.029 |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|---|-----------------------------|---------------------|---------------------|-------------------------------|-----------------------|-----------------------|
| | | | | | (one of listed) | MT296 | camt.029 |
| Use Case QUE-05 | Manage Queued and Suspended Instructions at EOD | In total: 0 | | | In total: 1 | | |
| | | | | | 1 | MT196 | pacs.002 |
| | | | | | (one of listed) | MT296 | pacs.002 |
| Use Case LIQ-01 | SOD Funding for BPA | In total: 1 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | | | | 1 | MT296 | camt.025 |
| | | | | | (one of listed) | MT296 | pacs.002 |
| | | | | | | MT296 | admi.002 |
| Use Case LIQ-02 | SOD Funding for BPUCRSB | In total: 1 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | | | | 1 | MT296 | camt.025 |
| | | | | | (one of listed) | MT296 | pacs.002 |
| | | | | | | MT296 | admi.002 |
| | Intra-day top-up for BPA | In total: 1 | | | In total: 2 | | |

| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------|---|-----------------------------|---------------------|---------------------|-------------------------------|-----------------------|-----------------------|
| Use Case LIQ-03 | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | | | | 1 | MT296 | camt.025 |
| | | | | | (one of listed) | MT296 | pacs.002 |
| | | | | | | MT296 | admi.002 |
| Use Case LIQ-04 | Intra-day top-up for BPUCRSB | In total: 1 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | | | | 1 | MT296 | camt.025 |
| | | | | | (one of listed) | MT296 | pacs.002 |
| | | | | | | MT296 | admi.002 |
| Use case: LIQ-05 | Intra-day participant withdrawal requests for BPA | In total: 2 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | 1 | MT296 | pacs.002 | (one of listed) | MT296 | camt.025 |
| | | | MT296 | admi.002 | | MT296 | pacs.002 |
| | | (one of listed) | MT296 | camt.025 | | MT296 | admi.002 |
| Use case: LIQ-06 | Intra-day participant withdrawal requests for BPUCRSB | In total: 2 | | | In total: 2 | | |
| | | 1 | MT202 | pacs.009 | 1 | MT202 | pacs.009 |
| | | 1 | MT296 | pacs.002 | (one of listed) | MT296 | camt.025 |
| | | | MT296 | admi.002 | | MT296 | pacs.002 |
| | | (one of listed) | MT296 | camt.025 | | MT296 | admi.002 |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|---|-----------------------------|---------------------|---------------------|-------------------------------|-----------------------|-----------------------|
| Use case LIQ-07 | End-of day participant defunding of net credit balances for BPA | In total: 1 | | | In total: 2 | | |
| | | 1 (one of listed) | MT296 | pacs.002 | 1 | MT202 | pacs.009 |
| | | | MT296 | admi.002 | 1 | MT204 | pacs.010 |
| | | | MT296 | camt.025 | | | |
| Use case LIQ-08 | End-of day participant defunding of net credit balances for BPUCRSB | In total: 1 | | | In total: 2 | | |
| | | 1 (one of listed) | MT296 | pacs.002 | 1 | MT202 | pacs.009 |
| | | | MT296 | admi.002 | 1 | MT204 | pacs.010 |
| | | | MT296 | camt.025 | | | |
| Use Case LIQ-09 | Receive notification about top-up needed | In total: 0 | | | In total: 1 | | |
| | | | | | 1 | MT986 | camt.052/ TPND |
| Use Case LIQ-10 | Foreign exchange support | In total: 2 | | | In total: 11 | | |
| | | 2 | MT298/300 | fxtr.014 | 7 | MT296 | fxtr.017 |
| | | | | | 2 | MT900 | camt.054 |
| | | | | | 2 | MT910 | camt.054 |
| Use Case LIQ-11 | Foreign exchange Trade Instruction cancellation | In total: 1 | | | In total: 1 | | |
| | | 1 | MT298/392 | fxtr.016 | | MT296/FX CX | fxtr.013 |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|--|-----------------------------|---------------------|---------------------|-------------------------------|-----------------------|-----------------------|
| | | | | | 1 | MT296 | camt.025 |
| | | | | | (one of listed) | MT996 | admi.002 |
| Use Case LIQ-12 | Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation | In total: 2 | | | In total: 11 | | |
| | | 2 | MT298/300 | fxtr.014 | 7 | MT296 | fxtr.017 |
| | | | | | 2 | MT900 | camt.054 |
| | | | | | 2 | MT910 | camt.054 |
| Use Case LIQ-13 | Set FX rate by FX Provider | In total: 1 | | | In total: 2 | | |
| | | 1 | MT298/377 | camt.998 | 1 | MT298 | camt.017 |
| | | | | | 1 | MT296 | camt.025 |
| | | | | | 1 (negative scenario) | MT996 | admi.002 |
| Use Case LIQ-14 | Delete FX rate by FX Provider | In total: 1 | In total: 1 | | | | |
| | | 1 | MT298/378 | camt.998 | 1 | MT296 | camt.025 |
| | | | | | (one of listed) | MT996 | admi.002 |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA | |
|------------------------|--|-----------------------------|---------------------|---------------------|-------------------------------|-----------------------|-----------------------|----------|
| Use Case RPT-02 | Receive EOD Statement | In total: 0 | | | In total: 1 | | | |
| | | | | | 1 | MT950 | Camt.053 | |
| Use Case RPT-03 | Request and receive Account Balance Report | In total: 1 | | | In total: 1 | | | |
| | | 1 | MT920/ 941 | camt.060/BALR | 1 (one of listed) | MT998/ RJCT | admi.002 | |
| | | | | | | MT998/ | camt.025 | |
| | | | | | | ERRC MT941 | camt.052/ BALR | |
| Use Case RPT-04 | Request Transaction Status | In total: 1 | | In total: 1 | | | | |
| | | 1 | MT195 | pacs.028 | 1 (one of listed) | MT196 | pacs.002 | |
| | | (one of listed) | MT295 | pacs.028 | | MT296 | pacs.002 | |
| | | | | | | | MT196 | camt.025 |
| | | | | | | | MT296 | camt.025 |
| | | | MT198/ RJCT | admi.002 | | | | |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|------------------------------------|--|---------------------|---------------------------|--|-----------------------|---------------------------|
| | | | | | | MT298/ RJCT | admi.002 |
| Use Case NPM-02 | Broadcast text message | In total: 0 | | | In total: 1 | | |
| | | | | | 1 | MT999/ TEXT | camt.998/ text Message |
| Use Case NPM-03 | Text messages between participants | In total: 1 (or 0 in a case of sending via portal) | | | In total: 1 (or 0 in a case of sending via portal) | | |
| | | 1 | MT999 | camt.998/ text Message | 1 (one of listed) | MT999/ TEXT | camt.998 |
| | | | | | | MT998/ ERRC | camt.025 |
| | | | | | | MT998/ RJCT | admi.002 |
| Use Case NPM-04 | Receive business day notifications | In total: 0 | | | In total: 1 | | |
| | | | | | 1 | MT999/ SCDW | camt.019 |

| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|--|-----------------------------|---------------------|--------------------------------------|-------------------------------|-----------------------|-------------------------------------|
| Use Case NPM-05 | Request and receive business day timetable or template | In total: 1 | | | In total: 1 | | |
| | | 1 | MT999/ GSCD | camt.018 | 1 (one of listed) | MT999/ SCDW | camt.019 |
| | | | | | | MT998/ ERRC | camt.025 |
| | | | | | | MT998/ RJCT | admi.002 |
| Use Case NPM-06 | Receive Change participant status notification | In total: 0 | | | In total: 1 | | |
| | | | | | 1 | MT999 | camt.998 |
| Use Case NPM-07 | Change participant status upon CEB's request | In total: 1 | | | In total: 1 | | |
| | | 1 | MT999/ MPST | camt.998/ change Partic Status | 1 (one of listed) | MT999/ PSTS | camt.998/ participant Sts Rep |
| | | | | | | MT998/ RJCT | admi.002 |
| | | | | | | MT998/ ERRC | camt.025 |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA |
|------------------------|-------------------------------------|-----------------------------|---------------------|---------------------------|-------------------------------|-----------------------|--|
| Use Case NPM-08 | Request and receive actual calendar | In total: 1 | | | In total: 1 | | |
| | | 1 | MT999/ GCLD | reda.064 | 1 (one of listed) | MT999/ CLDR | reda.065 |
| | | | | | | MT998/ RJCT | admi.002 |
| | | | | | | MT998/ ERRC | camt.025 |
| Use Case NPM-11 | Lock account upon CEB's request | In total: 1 | | | In total: 1 | | |
| | | 1 | MT999/ LCKA | camt.998/ lock Account | 1 (one of listed) | MT999/ ACST | camt.052/ ACST account Status |
| | | | | | | MT998/ RJCT | admi.002 |
| | | | | | | MT996/ ERRC | camt.025 |
| | | In total: 1 | | In total: 1 | | | |



| ID | NAME | NUMBER OF INCOMING TO BUNA* | MT INCOMING TO BUNA | MX INCOMING TO BUNA | NUMBER OF OUTGOING FROM BUNA* | MT OUTGOING FROM BUNA | MX OUTGOING FROM BUNA | |
|--------------------|-----------------------------------|-----------------------------|---------------------|--------------------------------|-------------------------------|-----------------------|--|----------|
| Use Case NPM-11 | Unlock account upon CEB's request | 1 | MT999/ ULKA | camt.998/ unlock Account | 1 (one of listed) | MT999/ ACST | camt.052/ ACST account Status | |
| | | | | | | | MT998/ RJCT | admi.002 |
| | | | | | | | MT996/ ERRC | camt.025 |

*Only successful flows were accounted. Negative scenarios will have equal or less messages (please, see each use case for details).

4.11 MESSAGES FOR FUND HOLDINGS INSTITUTIONS

| Case # | Use Case Name | Description | Messages from FHI | Messages to FHI | Comment |
|--------|------------------------------|--|---------------------------------------|--|---------|
| LIQ-01 | SOD Funding for BPA. | Transfer of funds by a participant to its settlement account held in Buna at the start of the day for the case when a participant has an account in the FHI Payment system | MT202/ pacs.009 Funding, top-up | MT296/ camt.025 Processing notification MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection | |
| LIQ-02 | SOD Funding for BPUCRSB | Transfer of funds by a Participant to its Settlement account held in Buna at the start of the day for the case when a participant has NO account in the FHI Payment system | MT202/ pacs.009 Funding, top-up | MT296/ camt.025 Processing notification MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection | |
| UC018 | Intra-day top-up for BPA. | Transfer of funds by a participant to its Settlement account held in Buna during the day for the case when a participant has an account in the FHI Payment system | MT202/ pacs.009 Funding, top-up | MT296/ camt.025 Processing notification MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection | |
| UC019 | Intra-day top-up for BPUCRSB | The transfer of funds by a participant to its Settlement account held in Buna during the day | MT202/ pacs.009 Funding, top-up | MT296/ camt.025 Processing notification | |

| | | | | | |
|-----------|---|---|--|---|--|
| | | for the case when the participant does NOT have an account in the FHI Payment system | | MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection | |
| UC02 0 | Intra-day participant withdrawal requests for BPA. | Intra-day participant withdrawal from its Settlement account held in Buna upon request for the case when a participant has account in the FHI Payment system. | MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection MT296/ camt.025 Processing notification | MT202/ pacs.009 Withdrawal request | |
| UC02 1 | Intra-day participant withdrawal requests for BPUCRSB | Intra-day participant withdrawal request from its Settlement account held in Buna upon request for the case when the participant does NOT have an account in the FHI Payment system | MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection MT296/ camt.025 Processing notification | MT202/ pacs.009 Withdrawal request | |
| UC02 2 | End-of day participant de-funding of net credit | At the end of Buna operating day for a currency, Buna transfers excess balances for | MT296/ pacs.002 Status of transfer | MT202/ pacs.009 De-funding message | |

| | | | | | |
|-----------|--|--|---|--|-------------|
| | balances for BPA | participants during the de-funding window via the FHI Payment system back to the participant account (for a case when the participant has an account in the FHI Payment system) | MT296/ admi.002 Message rejection | | |
| | | | MT296/ camt.025 Processing notification | | |
| UC02 3 | End-of day participant de-funding of net credit balances for BPUCRSB | At the end of Buna operating day for a currency, Buna transfers excess balances for participants during the de-funding window via the FHI Payment system back to the correspondent bank (whenever the participant has NO account in the FHI Payment system). Afterwards, the correspondent bank credits the participant account in its Core banking system | MT296/ pacs.002 Status of transfer MT296/ admi.002 Message rejection MT296/ camt.025 Processing notification | MT202/ pacs.009 De-funding message | |
| UC02 5 | Report Request | This Use case describes common behavior for all report request use cases initiated by a participant from the WEB Front GUI (Portal) | – | – | Buna Portal |
| UC03 0 | Broadcast text message | FHIs can send broadcast text messages to all or to selected participants of the system | | MT999/TEXT - camt.998/ text Message Text Message | |

| | | | | | |
|-----------|--|---|--|---|----------------------------------|
| UC03 2 | Receive business day notifications | Automatically receive business day notifications for manual business day changes and automatic changes in the window. | | MT999/SCDW - camt.019 Business day notifications | |
| UC03 3 | Request and receive a business day timetable or template | Request and receive a business day timetable or template for future date template | MT999/GSCD - camt.018 Request for the business day timetable | MT999/SCDW - camt.019 Timetable/template. MT996/ERRC - camt.025 Error message. MT996/RJCT - admi.002 Rejection message. | |
| UC03 4 | Receive a change participant status notification | Automatically receive notifications for a participant's status changes | | MT999/ camt.998 Change participant status notification | |
| UC03 5 | Change participant's status upon CEB's request | Change participant's status based on a request from National Central Banks | MT999/MPST - camt.998/changeParticStatus Change participant status request | | Only applicable to Central Banks |

| | | | | | |
|-----------|--|---|--|--|----------------------------------|
| UC03 6 | Receive a Calendar change notification | Automatically receive notifications for calendar changes for an FHI (for an example, when an additional holiday occurs) | | <p>MT999/PSTS - camt.998/ participantStsRep Change participant status notification.</p> <p>MT996/ERRC - camt.025 Error message.</p> <p>MT996/RJCT - adm.002 Rejection message.</p> | |
| UC03 7 | Request and receive an actual calendar | Receive the actual calendar when requested by the Participant | MT999/GCLD - reda.064 Requesting system calendar | <p>MT999/CLDR - reda.065 System calendar</p> <p>MT996/ERRC - camt.025 Error message</p> <p>MT996/RJCT - adm.002 Rejection message</p> | |
| UC03 8 | Lock an account upon the CEB's request | Lock an account for debit or credit or both upon CEB's request | MT999/LCKA - camt.998/lock Account Locking account | <p>MT999/ASTS - camt.052/ASTS Account status</p> <p>MT996/ERRC - camt.025 Error message</p> <p>MT996/RJCT - adm.002 Rejection message</p> | Only applicable to Central Banks |
| UC03 9 | Unlock an account | Unlock an account for debit or credit or both | MT999/ULKA - camt.998/unlock Account | MT999/ASTS - camt.052/ASTS Account status | Only applicable to |

| | | | | | |
|--|--------------------|---------------------------|-------------------|--|---------------|
| | upon CEB's request | following a CEB's request | Unlocking account | MT996/ERRC - camt.025 Processing error MT996/RJCT - adm.002 Rejection message | Central Banks |
|--|--------------------|---------------------------|-------------------|--|---------------|

4.12 USE CASES USING PORTAL

| ID | NAME |
|----------------|--------------------------------------|
| Use Case UC025 | Report Request |
| Use Case UC030 | Broadcast text message |
| Use Case UC031 | Text messages between participants |
| Use Case UC040 | Receive Invoices on a periodic basis |
| Use Case UC041 | Request Return |

4.13 TRANSACTION TYPE CODES

| TRANSACTION TYPE CODE (PURPOSE) | TRANSACTION & BUSINESS CATEGORY |
|---------------------------------|--|
| | Dedicated business processes |
| 090 | Fee for participation and activity in the system |
| 091 | Start-of-day Funding |
| 092 | Mid-day top-up |
| 093 | Return |
| 094 | Mid-day withdrawal |
| 095 | End-of-day Defunding |
| | CROSS-BORDER SETTLEMENT CONDUCTED FOR TRADE IN GOODS |
| 101 | Individual retail consumptions |
| 102 | General merchandise |
| 103 | Goods for processing |
| 104 | Goods required for repairing |
| 105 | Goods procured in ports by carriers |
| 106 | Transactions to be settled by a letter of credit |
| 107 | Bills for collection |
| 108 | Payment of import equipment |
| 109 | Advanced payment |
| | CROSS-BORDER SETTLEMENT CONDUCTED FOR TRADE IN SERVICES |
| 201 | Services or fees relating to transportation |
| 202 | Individual bill payments |
| 203 | Travel |
| 204 | Communications |

| TRANSACTION TYPE CODE (PURPOSE) | TRANSACTION & BUSINESS CATEGORY |
|---------------------------------------|---|
| 205 | Construction services |
| 206 | Installation projects and their subcontract services |
| 207 | Insurance |
| 208 | Financial services |
| 209 | Computer and information services |
| 210 | Royalties and license fees |
| 211 | Sports and entertainment |
| 212 | Water, electricity and gas bills to be paid by corporations or financial institutions |
| 213 | Rent |
| 214 | Audit fees |
| 215 | Hotel accommodation fees |
| 216 | Legal fees |
| 217 | Advertising and promotion fees |
| 218 | Research and development fees |
| 219 | Company registration fees |
| 220 | Medical expenses |
| 221 | Government services not mentioned above and other |
| 222 | Copyright and design fees |
| 223 | Commercial services |
| | CROSS-BORDER SETTLEMENT CONDUCTED FOR CAPITAL ACCOUNT TRANSACTIONS |
| 301 | Capital transfers and acquisition/disposal of non-productive or non-financial assets |
| 302 | Capital injection |
| 303 | Capital reduction |
| 304 | Capital payment |
| 305 | Direct investments |
| 306 | Securities investments |
| 307 | Other investments |
| 308 | Shareholder's loan/repayment |
| 309 | Fund transfers for foreign direct investment ("FDI") |
| 310 | Bonds |
| 311 | Fund transfer between enterprises |
| 312 | Individual investments |
| | CROSS-BORDER SETTLEMENT CONDUCTED FOR OTHER TRANSACTIONS |
| 401 | Remittance of profits |
| 402 | Income and current transfers |
| 403 | Bonus |
| 404 | Dividend payment |
| 405 | Tax payment and scholarships |
| 406 | Cross-border settlement conducted for Donation to charities (non-profit organizations (ngos)) |

4.14 REASON CODES FOR RETURNS

| CODE | TYPE | REASON |
|-------------|----------------|---|
| AC01 | Account Number | Format of the account number specified is not correct |
| AC02 | Account Number | Format of the account number specified is non-numeric |
| AC03 | Account Number | Format of the account number specified is not valid for local sort/national clearing code |
| AC04 | Account Number | Account number specified has been closed on the receiver's books |
| AC05 | Account Number | Account number specified is not a valid account at the Account with Institution |
| AC06 | Account Number | Account specified is blocked, prohibiting posting of transactions against it |
| AM01 | Amount | Specified transaction/message amount is equal to zero |
| AM02 | Amount | Specified transaction/message amount is greater than allowed maximum |
| AM03 | Amount | Specified transaction/message amount is in a non-processable currency outside of existing agreement |
| AM04 | Amount | Amount of funds available to cover specified transaction/message amount is insufficient |
| AM05 | Amount | This transaction/message appears to have been duplicated |
| AM06 | Amount | Specified transaction amount is less than agreed minimum |
| AM07 | Amount | Amount specified in transaction/message has been blocked by regulatory authorities |
| BE01 | Beneficiary | Specification of beneficiary is not consistent with associated account number |
| BE02 | Beneficiary | Beneficiary specified is not known at associated sort/national clearing code |
| BE03 | Beneficiary | Beneficiary specified no longer exists in the books |
| BE04 | Beneficiary | Specification of beneficiary address, which is required for payment, is missing/not correct |
| AG01 | Agreement | No agreement is on file at the receiver for affecting associated transaction/message |
| AG02 | Agreement | Bank Operation code specified in the transaction/message is not valid for receiver |
| DT01 | Date | Invalid date (for example, wrong settlement date, holiday or future value date is more than allowed maximum date) |
| MS01 | General | Reason has not been specified due to sensitivities |
| PY01 | Party | Unknown Account-With Institution |

| CODE | TYPE | REASON |
|-------------|--------------|--|
| RF01 | Reference | Transaction reference is not unique within the message |
| RC01 | Routing Code | Routing code specified in the transaction/message has an incorrect format |
| RC02 | Routing Code | Routing code specified in the transaction/message is not numeric |
| RC03 | Routing Code | Routing code specified in the transaction/message is not valid for local clearing |
| RC04 | Routing Code | Routing code specified in the transaction/message refers to a closed branch |
| TM01 | Receipt Time | Associated transaction/message was received after agreed processing cut-off time |
| X001 | Bilateral | Sender is not allowed to send messages of current format for current business day period |
| X002 | Bilateral | Sender is not allowed to debit debited account |
| X003 | Bilateral | Wrong priority value |
| X004 | Bilateral | Credit account cannot be equal to debit account |
| X005 | Bilateral | Sender has no rights to send message of this type |
| X006 | Bilateral | BIC is invalid |
| X007 | Bilateral | Transaction type code is not allowed for participant |
| X008 | Bilateral | Other access rights restrictions |

4.15 ERROR MESSAGES – TYPES TO ERROR CASES LINKS

| MT TYPE | MX TYPE | ERROR CASE |
|-------------------|----------------|---|
| MTn96 | admi.002 | Format error, access rights error |
| MTn96 | camt.025 | System can't create incoming document or transaction |
| MTn96 | pacs.002 | Error after creation of transaction |
| MTn96 | camt.029 | In a case of unsuccessful validation of change priority request or cancellation request |
| MT296/FXSD | fxtr.017/INVA | Business validation of foreign exchange trade instruction was failed |

5 USE CASES SCHEMES NOTATION DESCRIPTION

The following legend will be used to describe all of the business process use cases.

Use Cases Scheme Legend

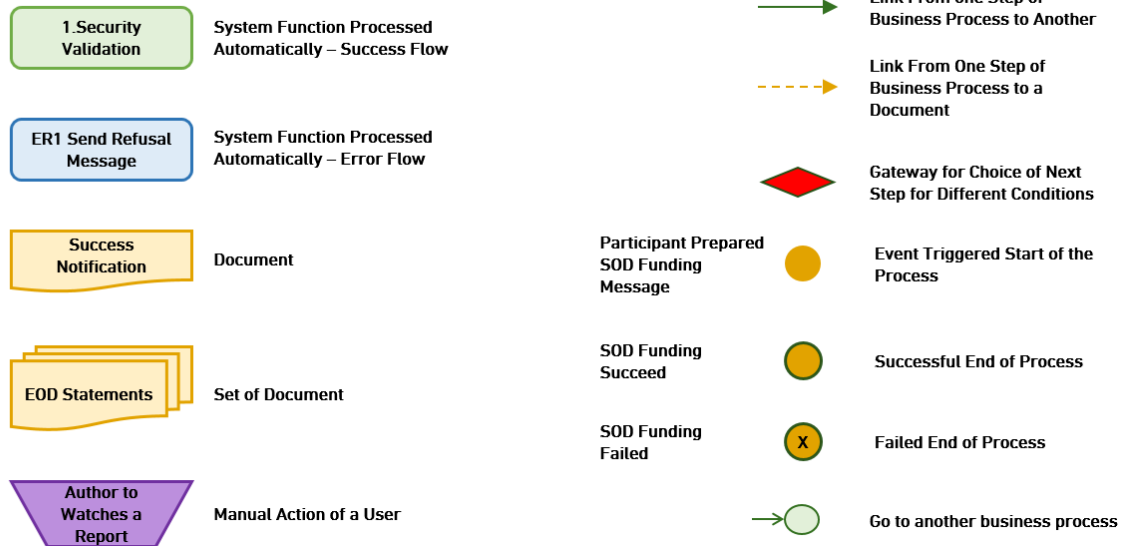


Figure 4: Use Cases Scheme Notation Description

6 BUSINESS PROCESS USE CASES

6.1 PAYMENT PROCESSING USE CASES

6.1.1 Use Case PM-01: General Payment Processing

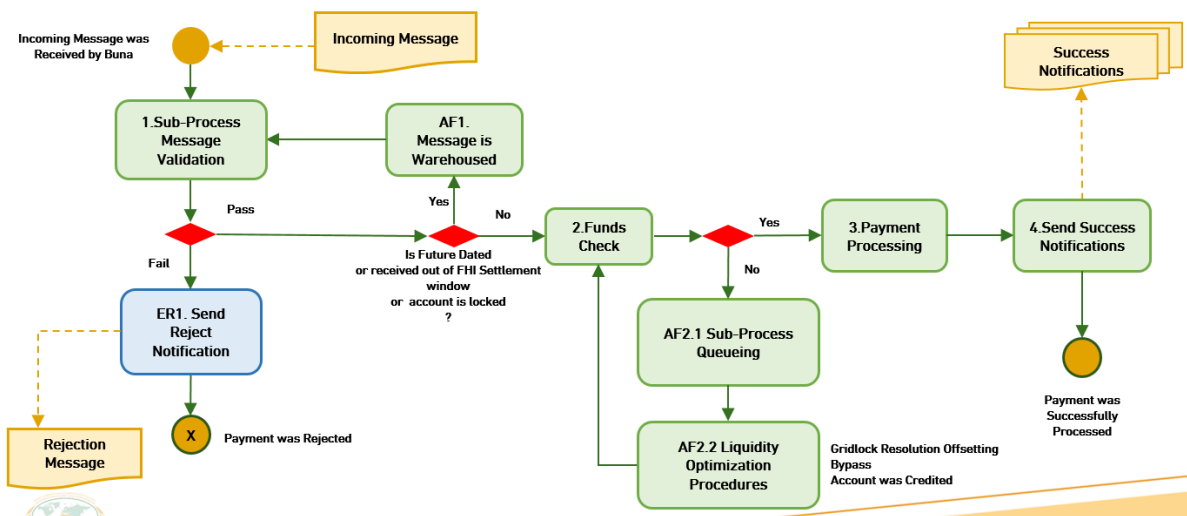


Figure 5: General Payment Processing

| | |
|--|---|
| Use Case ID | PM-01 |
| Use Case Name | General Payment Processing |
| Use Case Description | An abstract use case to describe the general payment processing flow. In the main use cases, this flow will be specialized |
| End Objective | Incoming message is processed |
| Primary Actors | Buna Participants (Central Banks can also act as a Buna Participant when sending their payments) |
| Trigger Event | <ol style="list-style-type: none"> 1. A sending participant in Arab region country 1 send a payment instruction to Buna for a receiving participant in Arab region country 2 (to make a payment in one of the selected currencies). Buna receives the incoming payment message 2. Value date of the future dated payment has been received (Wave 2 functionality) |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> ▪ The solution will process all payments in real-time, except for single payments or batch file payments that are specified for a future value-date ▪ The solution will support payments being conducted only in ‘single circuits’, i.e., both the sending and receiving leg of a cross-border payment will be in the same currency held by the same FHI. The solution will NOT conduct / provide foreign exchange services and payments in the same currency, but debiting is linked to different FHIs. This will be conducted outside of the system | |
| Includes | |
| Use Cases: <ul style="list-style-type: none"> ▪ Message validation ▪ Queueing ▪ Gridlock Resolution | |
| Pre-Conditions | |
| Business day period allows for the current type of payment for the appropriate currency and FHI | |
| Post Conditions | |
| Transaction can be processed, queued or warehoused for a future date | |
| Basic Flow | |
| 1 | <p>Execute Use Case: Message Validation</p> <p>Passed and value date = today and received during FHI settlement window– proceed to 2</p> |

| | |
|------------------------|--|
| | Passed and value date is in future/received outside of FHI settlement window/ account is locked– proceed to AF1 Failed – proceed to ER1 |
| 2 | Funding check. Passed – proceed to 3. Failed – proceed to AF2.1 |
| 3 | Payment processing <ul style="list-style-type: none"> ▪ Debit: account of Debiting participant ▪ Credit: Settlement account of Crediting participant(s) |
| 4 | Buna sends status message (MT196/ACSC on MT103, MT296 on MT202, pacs.002 on MX payments) to Debiting Participant |
| 5 | Buna sends copy of payment to Crediting Participant(s) |
| Alternate Flows | |
| AF1 | Transaction is Future Dated |
| 1 | Payment is warehoused until the value date |
| 2 | Payment Status Notification is sent to the Debiting Participant (MT196 on MT103, MT296 on MT202 == pacs.002) |
| 3 | When value date will occur – proceed to step 1 (validation) of Basic flow |
| AF2 | Debit account has insufficient funds |
| 1 | Queue transaction. Execute Use Case: Queueing |
| 2 | Payment Status Notification is sent to Debiting Participant (MT196 on MT103, MT296 on MT202 == pacs.002) |
| 3 | Execute liquidity optimization procedures If gridlock was detected go to step 4 If succeed Proceed to step 3 of Basic flow |
| 4 | Execute Use Case: Gridlock Resolution If succeed Proceed to step 3 of Basic flow |
| Exceptions | |
| ER1 | Transaction didn't pass validation |
| 1 | Buna sends reject or error notification to the Debiting Participant (MTn96/RJCT == admi.002) or MTn96/ERRC == camt.025) |

6.1.2 Use Case PM-02: Payment message validation

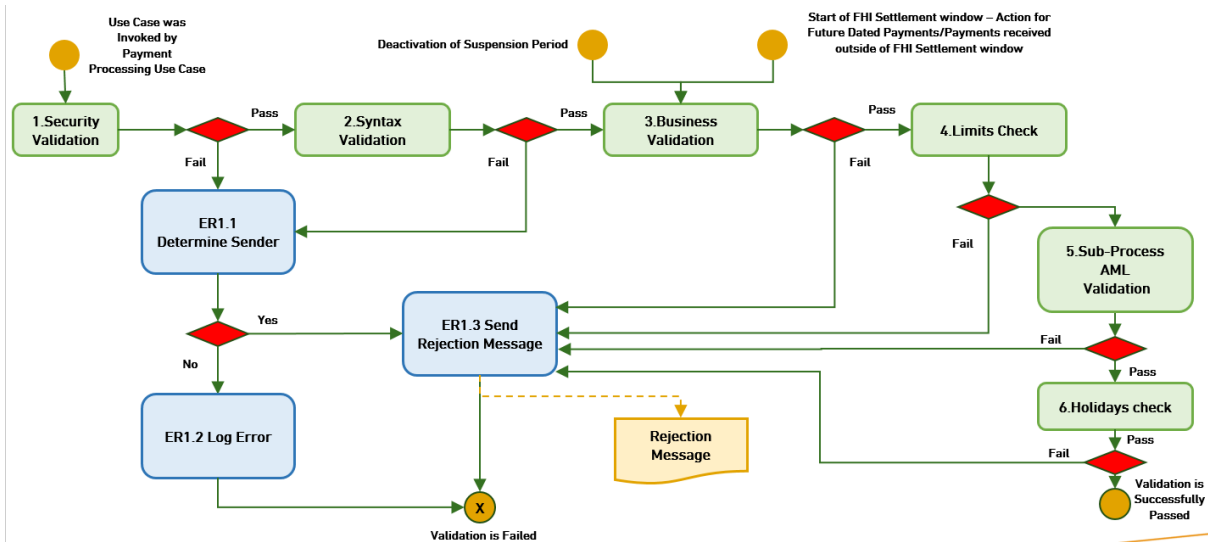


Figure 6: Payment message validation

| | |
|---|---|
| Use Case ID | PM-02 |
| Use Case Name | Payment Message validation |
| Use Case Description | General validation process for all incoming payment messages. Validation rules could be extended in other use cases for specific scenarios |
| End Objective | Incoming message is validated |
| Primary Actors | Validation is a sub process. It is invoked by primary use cases |
| Trigger Event | Incoming payment message |
| Use Case Business Rules | |
| Security Validation: | |
| 1. Incoming message signature is valid for the sender | |
| Structural (Syntax) Validation: | |
| 1. Incoming message conforms to the XSD scheme | |
| Business Validation: | |
| 1. Message type is allowed in the current window. | |

2. Future value date falls on a business day and does not exceed the maximum allowed number of days (at Wave 1 Future dated payments are not allowed and have to be rejected).
3. Sender is in state "Active".
4. Incoming messages are not blocked for the sender.
5. Access Rights: The following rules must be met:
 - a. The sender has permission for the message type for the current business day window
 - b. The sender has permission to act on behalf of the originator.
6. Currency of the payment is in a list of selected currencies.
7. Holidays check. Payments with value day = holiday (system or currency or country) are rejected.
8. Payment sender has one registered inside Buna core participant with the same 8 first symbols of BIC.

Limits check:

1. Check if transaction execution will not lead to exceeding the limit threshold:
 - Per transaction
 - Per fhi currency (daily)
 - Per account

AML:

1. AML check (via integration with en.filtering solution)

Holidays check:

1. Value date of the payment is not a holiday for the system/currency/country

Pre-Conditions

Incoming message received from either the Swift network or VPN

Post Conditions

Incoming message is successfully validated or rejected

Basic Flow

| | |
|----------|---|
| 1 | Security Validation: Check signature against the sender of the message. On failure execute ER1.1 |
| 2 | Syntax Validation: Perform XSD validation of the incoming message. On failure execute ER1.1 |
| 3 | Business validation: Check all business rules. In the case of failure execute ER1.3 |
| 4 | Limits check: check limits thresholds. On failure execute ER1.3 |
| 5 | AML Validation: Described in 6.1.3 Use Case PM-03: AML Check |

| | |
|------------------------|---|
| | On failure execute ER1.3 |
| 6 | Holidays check: check holidays. On failure execute ER1.3 |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| ER1.1 | Try to determine the sender. If the sender of the message can be determined, then execute ER1.3. else execute ER1.2 |
| ER1.2 | Log error |
| ER1.3 | Send reject notification to the sender of the incoming message. Transaction status becomes "Rejected" |

6.1.3 Use Case PM-03: AML Check

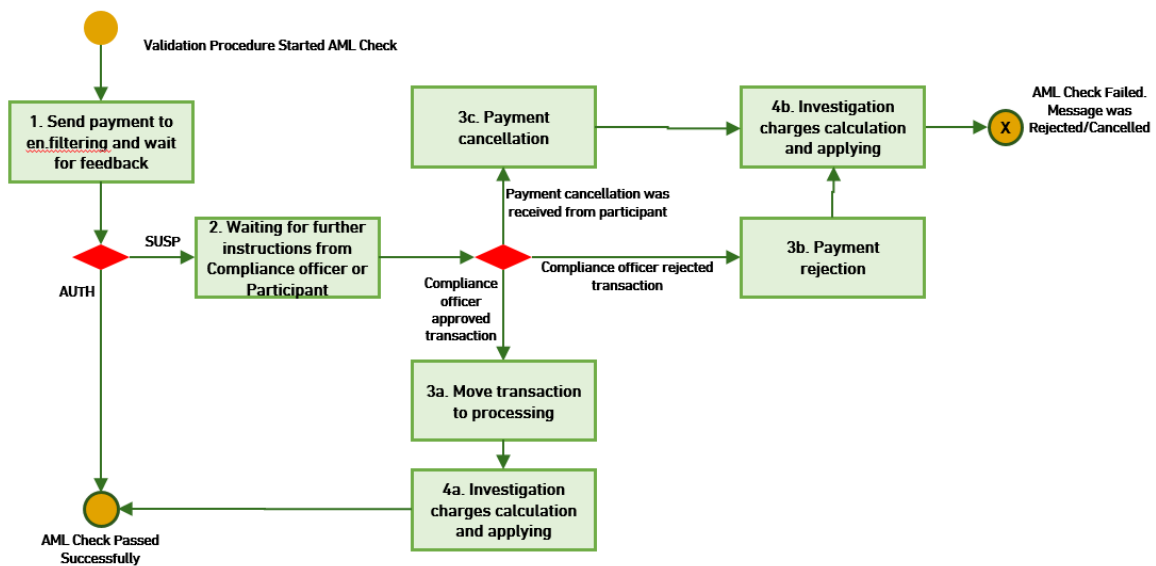


Figure 7: AML Check

| | |
|---|--|
| Use Case ID | PM-03 |
| Use Case Name | AML Check |
| Use Case Description | AML Check processing |
| Primary Actors | Buna |
| Trigger Event | Automatically after Limits check |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Result of AML check was rendered to Validation process | |
| Basic Flow | |
| 1 | Buna core sends pacs.008 payment to AML module and waits for the feedback If pacs.002/AUTH was received – return successful AML check result to Validation process If pacs.002/SUSP was received – go to 2 |
| 2 | Waiting for further instructions (what will happen first). If compliance officer approves transaction – go to 3a |
| 3a | Buna moves the transaction for processing. Go to 4. |
| 3b | Buna rejects the transaction. Go to 4. |
| 3c | Buna cancels the transaction. Go to 4. |
| 4 | Buna calculates and applies Investigation charges based on the fact of Investigation (happened or not) and the case after suspension. |

6.1.4 Use Case PM-04: Queuing

| | |
|--------------------|--------------|
| Use Case ID | PM-04 |
|--------------------|--------------|

| | |
|--------------------------------|--|
| Use Case Name | Queueing |
| Use Case Description | Describes the process of queueing a payment. |
| Primary Actors | Buna |
| Trigger Event | Debtor has not enough funds in Buna to ensure payment processing. Invoked by Use Case PM-01 |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Payments are queued | |
| Basic Flow | |
| 1 | Payment is held in a lack of liquidity queue |

6.1.5 Use case PM-05: Resolve Queue

| | |
|--------------------------------|---|
| Use Case ID | PM-05 |
| Use Case Name | Resolve Queue |
| Use Case Description | Describes the process of changes in queue processing |
| Primary Actors | Buna |
| Trigger Event | <ol style="list-style-type: none"> 1. Debtor's account was credited 2. Payment in a queue was cancelled 3. Payment in a queue changed priority |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| Payments are queued | |
| Post Conditions | |

| | |
|------------------------|---|
| Changes in a queue | |
| Basic Flow | |
| 1 | Payments were settled |
| 2 | Notification about the payment settlement is sent to the Buna Participant (MTn96 == pacs.002) |
| Alternate Flows | |
| AF1 | Changes in a queue without settlement |

6.1.6 Use Case PM-06: Interbank Transfer

| | |
|---|---|
| Use Case ID | PM-06 |
| Use Case Name | Interbank Transfer |
| Use Case Description | Execute payment processing on the Buna Participant's accounts for interbank transfers |
| Primary Actors (Sender) | Buna Participants |
| Trigger Event | Interbank Transfer message (MT 202 == pacs.009) |
| Use Case Business Rules | |
| N/A | |
| Extends | |
| <abstract> UC-001: General Payment processing | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Transfer is either processed, queued or rejected | |
| Basic Flow | |
| | Similar to the basic flow in General Payment processing |
| Alternate Flows | |
| | Similar to the alternative flows in General Payment processing |

| Exceptions | |
|------------|---|
| | Similar to the exceptions in General Payment processing |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|--------------------|
| Buna Participants (CEBs acting as BPs also) | MT202 | pacs.009 | Interbank transfer |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|--------------------------------------|
| Buna Participants (CEBs acting as BPs also) | MT202 | pacs.009 | Copy of payment (Interbank transfer) |
| Buna Participants (CEBs acting as BPs also) | MT296 | camt.025 | Processing error |
| Buna Participants (CEBs acting as BPs also) | MT296 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | admi.002 | Message rejection |

6.1.7 Use Case PM-07: Customer credit Transfer

| | |
|--------------------------------|---|
| Use Case ID | PM-07 |
| Use Case Name | Customer credit Transfer |
| Use Case Description | Execute payment processing on the Buna Participant's accounts for customer transfers. |
| Primary Actors (Sender) | Buna Participants |
| Trigger Event | Customer credit Transfer message (MT 103 == pacs.008). |
| Use Case Business Rules | |
| N/A | |
| Extends | |

| | |
|--|--|
| <abstract> UC-001: General Payment processing | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Transfer is either processed, queued or rejected | |
| Basic Flow | |
| | Similar to the basic flow in General Payment processing |
| Alternate Flows | |
| | Similar to the alternate flows in General Payment processing |
| Exceptions | |
| | Similar to the exceptions in General Payment processing |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|-----------------------|--------------------------------|---------------------------------|
| Buna Participants (CEBs acting as BPs also) | MT103 | pacs.008 | Single Customer Credit Transfer |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|-----------------------|--------------------------------|---|
| Buna Participants (CEBs acting as BPs also) | MT103 | pacs.008 | Copy of payment (Single Customer Credit Transfer) |
| Buna Participants (CEBs acting as BPs also) | MT196 | camt.025 | Processing error |
| Buna Participants (CEBs acting as BPs also) | MT196 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT196 | admi.002 | Message rejection |

6.1.8 Use Case PM-09: Return Payment

| | |
|--------------------|--------------|
| Use Case ID | PM-09 |
|--------------------|--------------|

| | |
|---|--|
| Use Case Name | Return Payment |
| Use Case Description | Return Payment |
| Primary Actors (Sender) | Buna Participants |
| Trigger Event | Return Payment (MT202 == pacs.004) |
| Use Case Business Rules | |
| Return Payments could not be queued | |
| Extends | |
| <abstract> UC-001: General Payment processing | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Payment is either processed or rejected | |
| Basic Flow | |
| | Similar to the basic flow in General Payment processing |
| Alternate Flows | |
| | Similar to the alternate flows in General Payment processing |
| Exceptions | |
| | Similar to the exceptions in General Payment processing |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|-----------------|
| Buna Participants (CEBs acting as BPs also) | MT202 | pacs.004 | Return transfer |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------|----------------|-------------------------|-------------|
|-----------|----------------|-------------------------|-------------|

| | | | |
|---|-------|----------|----------------------------------|
| Buna Participants (CEBs acting as BPs also) | MT202 | pacs.004 | Copy of payment (Return Payment) |
| Buna Participants (CEBs acting as BPs also) | MT296 | camt.025 | Processing error |
| Buna Participants (CEBs acting as BPs also) | MT296 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | admi.002 | Message rejection |

6.1.9 Use Case PM-10: Gridlock Resolution

| | |
|---|--|
| Use Case ID | PM-11 |
| Use Case Name | Gridlock Resolution |
| Use Case Description | Execute gridlock resolution to process queued payments |
| Primary Actors | Buna |
| Trigger Event | Manual trigger by the Operator or automatically detected Gridlock by the System |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Payments are settled (all or part of the queued) or still queued | |
| Basic Flow | |
| 1 | The system detects a gridlock situation and selects those payments that can be settled on a Net basis whilst preserving the normal business conditions attached to the transactions. The gridlock resolution can be scheduled to run automatically at both the start-of-day and end-of-day, but needs to be triggered manually if required during the operating window |

6.2 QUEUE MANAGEMENT USE CASES

6.2.1 Use Case QUE-01: Cancellation of Credit Transfer by participant

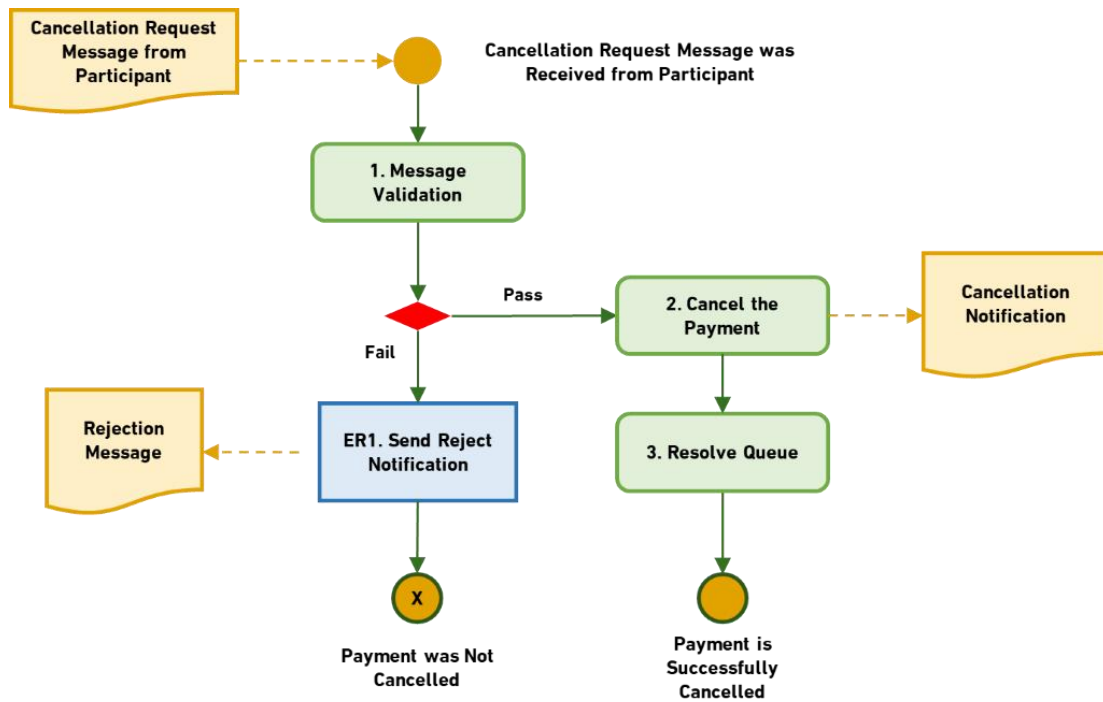


Figure 8: Cancellation of Credit Transfer by participant

| | |
|--|---|
| Use Case ID | QUE-01 |
| Use Case Name | Cancellation of a queued payment by a participant |
| Use Case Description | Cancel queued payments initiated by a participant |
| Primary Actors (Sender) | Buna Participant, Buna |
| Trigger Event | A cancellation request message is received from a Buna Participant (MTn92 or camt.056) or Participant requested cancellation via Buna Portal GUI |
| Use Case Business Rules | |
| The sender of the cancellation request must be the sender of the original payment | |
| Pre-Conditions | |
| The original payment has not been settled, i.e. it is in the state “queued” | |
| Post Conditions | |
| Original Transaction is cancelled | |
| Basic Flow | |
| 1 | Execute use case UC029: Non-payment message validation. Additional business validation for the cancellation request: <ul style="list-style-type: none"> 1. The sender of the cancellation request must be the sender of the payment to be cancelled 2. The payment is in the queue If the validation fails, then go to ER1 |
| 2 | The status of the original payment is set to “cancelled”. A cancellation confirmation MTn96/CNCL == camt.029) is generated to Sender of the request (Buna Participant) |
| 3 | Execute UC004a: Resolve queue |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER: Original Transaction has already been settled |

| | |
|-----|---|
| ER1 | Buna sends a rejection message to the Sender of the request (Buna Participant) (MTn96/RJCR == camt.029 or MTn96/RJCT == admi.002) |
|-----|---|

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|--------------------------|
| Buna Participants (CEBs acting as BPs also) | MT192 | camt.056 | Request for cancellation |
| Buna Participants (CEBs acting as BPs also) | MT292 | camt.056 | Request for cancellation |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|--|
| Buna Participants (CEBs acting as BPs also) | MT196 | camt.029 | Reply on cancellation or change priority request |
| Buna Participants (CEBs acting as BPs also) | MT296 | camt.029 | Reply on cancellation or change priority request |
| Buna Participants (CEBs acting as BPs also) | MT196 | admi.002 | Message rejection |
| Buna Participants (CEBs acting as BPs also) | MT296 | admi.002 | Message rejection |

6.2.2 Use Case QUE-02: Change priority of unsettled payment by participant

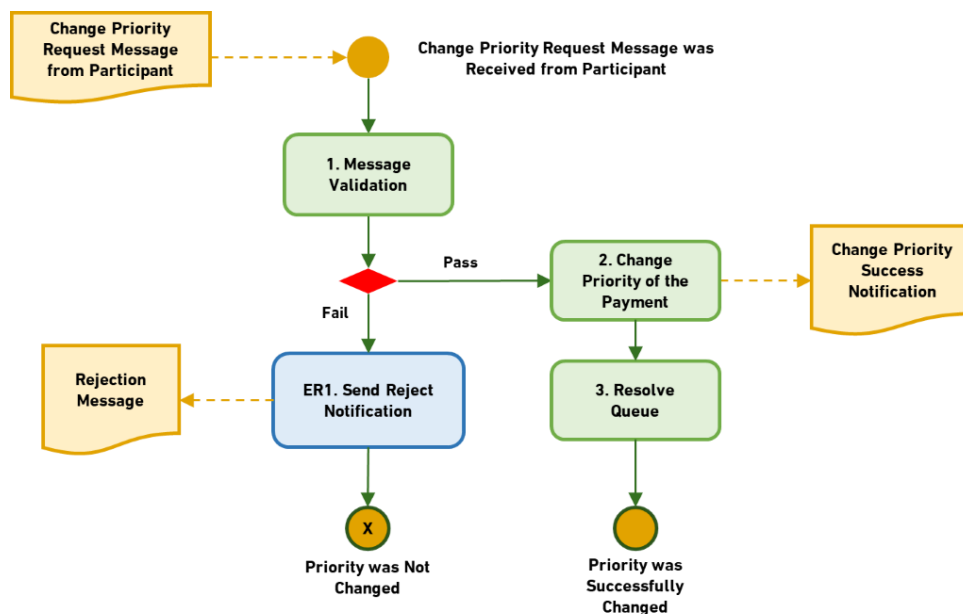


Figure 9: Change priority of unsettled payment by participant

| | |
|---|---|
| Use Case ID | QUE-02 |
| Use Case Name | Change priority of unsettled payment by a participant |
| Use Case Description | Change priority of unsettled payments initiated by a participant |
| Primary Actors (Sender) | Buna Participant, Buna |
| Trigger Event | A change priority message is received from Buna Participant (MTn95/PRTY == camt.087) or Participant requested priority change via Buna Portal GUI |
| Use Case Business Rules | |
| The sender of the change priority request must be the sender of the original payment | |
| Pre-Conditions | |
| Original payment has not been settled, i.e. it is in the “queued” state | |
| Post Conditions | |
| Priority of payment was changed | |
| Basic Flow | |
| 1 | Execute use case UC029: Non-payment message validation. Additional business validation for change priority requests: <ol style="list-style-type: none"> 1. The sender of a change priority request must be the sender of the payment 2. The payment is in a queue If validation the fails, then go to ER1 |
| 2 | Buna changes the priority of payment. A request confirmation for the Sender of the request (Buna Participant) is generated (MTn96/PRTY == camt.029) |
| 3 | Execute UC004a: Resolve queue |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER: Original Transaction has already been settled |
| ER1 | Buna sends a reject message to the Sender of the request (Buna Participant) (MTn96/RJCT == admi.002/camt.029/Error) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|----------------------------|
| Buna Participants (CEBs acting as BPs also) | MT195 | camt.087 | Request to change priority |
| Buna Participants (CEBs acting as BPs also) | MT295 | camt.087 | Request to change priority |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|--|
| Buna Participants (CEBs acting as BPs also) | MT196 | camt.029 | Reply on cancellation or change priority request |
| Buna Participants (CEBs acting as BPs also) | MT296 | camt.029 | Reply on cancellation or change priority request |
| Buna Participants (CEBs acting as BPs also) | MT196 | admi.002 | Message rejection |
| Buna Participants (CEBs acting as BPs also) | MT296 | admi.002 | Message rejection |

6.2.3 Use Case QUE-03: Cancellation of queued payment by operator

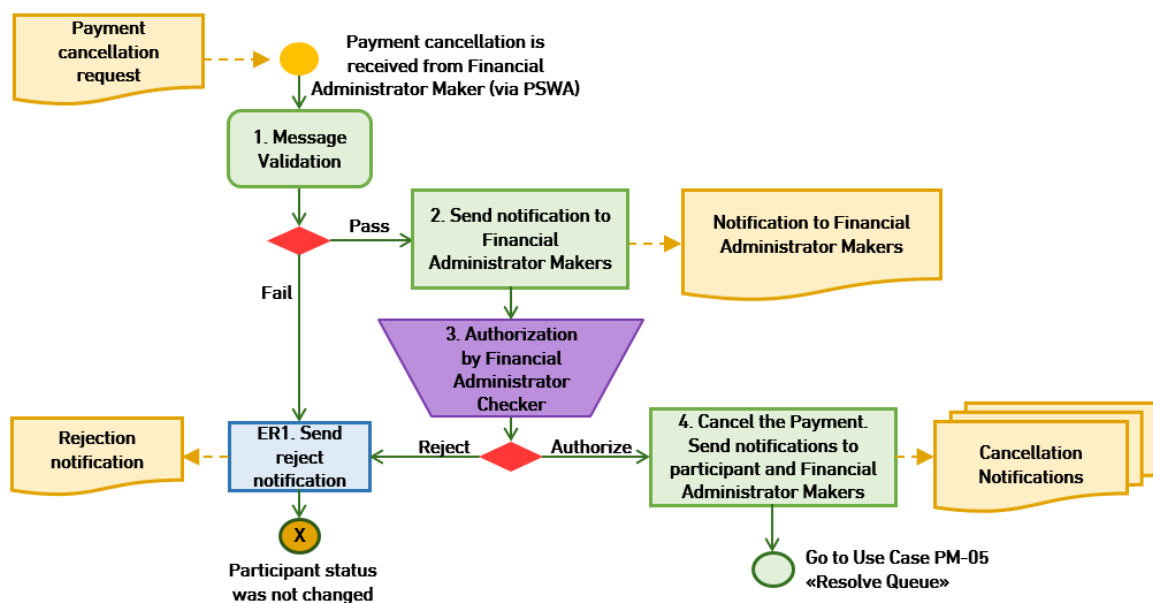


Figure 10: Cancellation of queued payment by operator

| | |
|--|--|
| Use Case ID | QUE-03 |
| Use Case Name | Cancellation of a queued payment by an operator |
| Use Case Description | Cancel queued payments initiated by Buna Financial Administrators |
| Primary Actors (Sender) | Buna Financial Administrators |
| Trigger Event | Buna Financial Administrator Maker cancels a transaction using the PSWA GUI |
| Use Case Business Rules | |
| Buna Financial Administator Checker has to approve the request | |
| Pre-Conditions | |
| The original payment has not been processed, i.e. it is in the state “queued” | |
| Post Conditions | |
| Transaction is cancelled | |
| Basic Flow | |
| 1 | Execute use case NPM-01: Non-payment message validation. If the validation fails, then go to ER1 |
| 2 | Buna system sends confirmation in non-final state to Buna Financial Administrator Maker (camt.029) |
| 3 | Buna Financial Administrator Checker approves Maker’s request. In case of rejection go to ER1. |
| 4 | Notification about the payment cancellation is sent as a payment status message to the Buna Participant (MTn96/RJCT == pacs.002) The Buna Financial Administrator Makerreceives a request confirmation notification (camt.029) Go to Use case PM-05: Resolve Queue |
| Alternate Flows | |
| | N/A |
| Exceptions | |

| | |
|------------|--|
| | ER1: Validation failed or Buna Financial Administrator checker declines the request |
| ER1 | Buna sends a reject message to the Sender of the request (Buna Financial AdministratorMakers) (camt.029) |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|-----------------------------------|
| Buna Participants (CEBs acting as BPs also) | MT196 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | pacs.002 | Status of transfer |
| Buna Financial Administrator Makers | - | camt.029/CNCL | Cancellation request confirmation |
| Buna Financial Administrator Makers | - | camt.029/RJCR | Cancellation request rejection |

6.2.4 Use Case QUE-04: Change priority of unsettled payment by operator

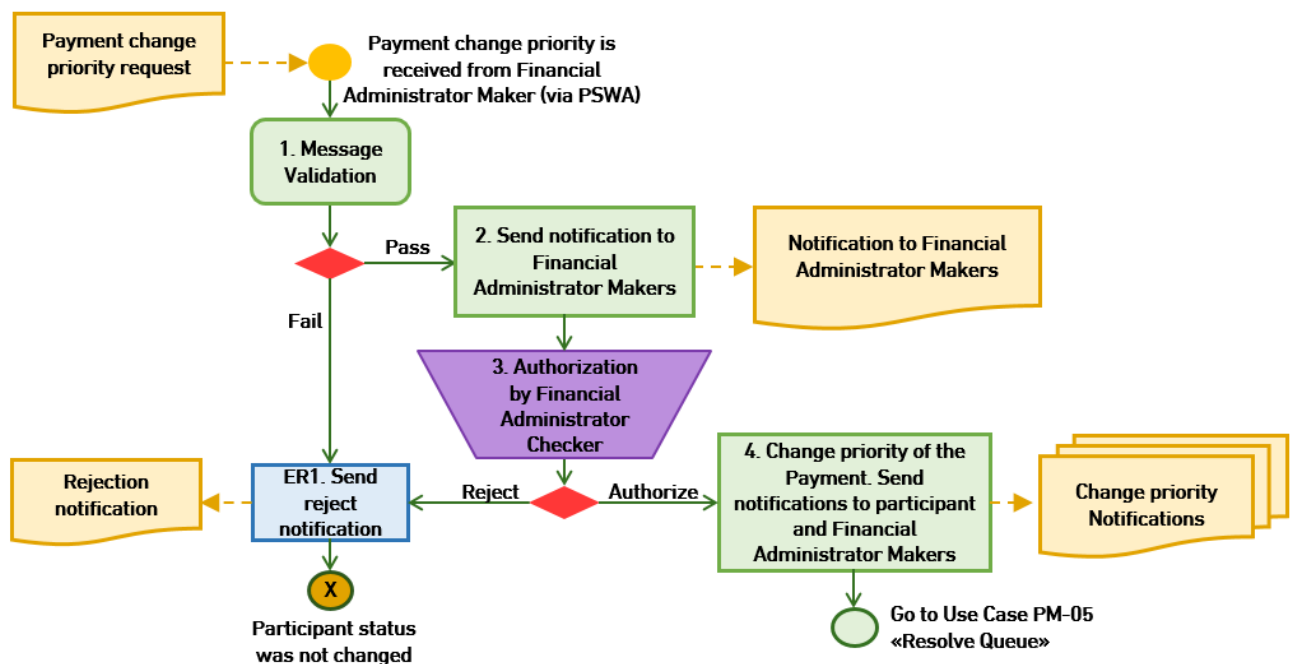


Figure 11: Change priority of unsettled payment by operator

| | |
|----------------------|--|
| Use Case ID | QUE-04 |
| Use Case Name | Change the priority of a queued payment by an operator |

| | |
|--|--|
| Use Case Description | Change the priority of a queued payment by the Buna Financial Administrators |
| Primary Actors (Sender) | Buna Financial Administrators |
| Trigger Event | An operator changes the priority of the transaction using the PSWA GUI. |
| Use Case Business Rules | |
| Buna Financial Administator Checker has to approve the request | |
| Pre-Conditions | |
| The original payment has not been processed, i.e. it is in the “queued” state | |
| Post Conditions | |
| The original Transaction is reordered or re-prioritized | |
| Basic Flow | |
| 1 | Execute use case NPM-01: Non-payment message validation. If the validation fails, then go to ER1 |
| 2 | Buna system sends confirmation in non-final state to Buna Financial Administrator Maker (camt.029) |
| 3 | Buna Financial Administrator Checker approves Maker’s request. In case of rejection go to ER1. |
| 4 | The Participant receives a notification on changing priority (MTn96 ==camt.029). The Buna Financial Administrator Maker receives a request confirmation notification (camt.029) Go to Use case PM-05: Resolve Queue |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Validation failed or Buna Financial Administrator checker declines the request |
| ER1 | Buna sends a reject message to the Sender of the request (Buna Financial AdministratorMakers) (camt.029) |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|-----------------------|--------------------------------|-----------------------------------|
| Buna Participants (CEBs acting as BPs also) | MT196 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also), Buna Financial Administrator Makers | MT196 | camt.029 | Notification on priority changing |
| Buna Participants (CEBs acting as BPs also), Buna Financial Administrator Makers | MT296 | camt.029 | Notification on priority changing |

6.2.5 Use Case QUE-05: Manage Payments at EOD

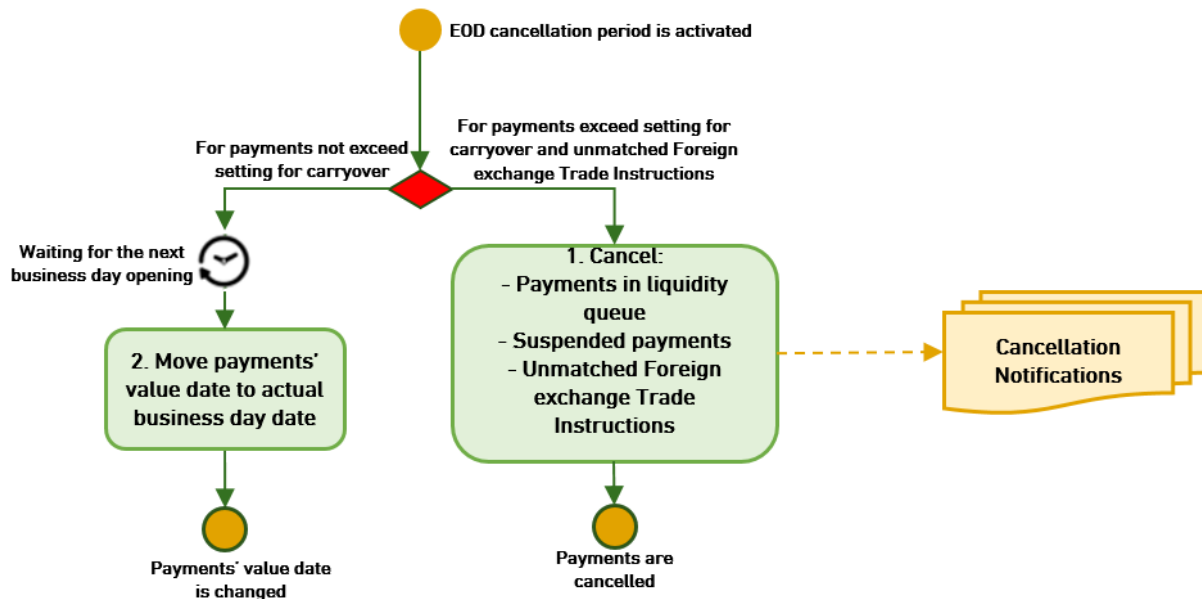


Figure 12: Manage Payments at EOD

| | |
|---|---|
| Use Case ID | QUE-05 |
| Use Case Name | Manage Payments at EOD |
| Use Case Description | Cancellation and moving payments to the next business day dates |
| Primary Actors (Sender) | BUNA |
| Trigger Event | EOD Window Activated in the BUNA |
| Use Case Business Rules | |
| <p>Buna will follow the algorithm:</p> <ul style="list-style-type: none"> ▪ Find all transactions in Queued and Suspended (Inactive) statuses. ▪ Calculate Current day – Value date of the payment in original Payment document = N. ▪ For transactions with $N \geq$ Setting «Number of calendar days for value date carryover» automatic cancellation will be proceeded. ▪ For all unmatched Foreign Exchange Trade Instructions automatic cancellation will be proceeded. | |

| | |
|--|--|
| <ul style="list-style-type: none"> For the remaining transactions value date will be changed in database to the next calendar day when next business day will be effective. <p>For non-authorized documents (which are not transactions yet) setting «Number of calendar days for authorization waiting» will be used with value (-1), so documents will never be automatically rejected (can be changed anytime).</p> | |
| Pre-Conditions | |
| System is in the EOD cancellation period | |
| Post Conditions | |
| Original Transaction is cancelled or moved to the next business day date | |
| Basic Flow | |
| 1 | <p>BUNA rejects queued (because of a lack of liquidity) and suspended payments, which exceed «Number of calendar days for value date carryover» and unmatched Foreign Exchange Trade Instructions.</p> <p>Status of payments are set to “X” (Cancelled). Cancellation notifications are sent:</p> <ul style="list-style-type: none"> For the senders of each cancelled Interbank transfer/Customer Credit transfer/Return payment (MTn96/RJCT == pacs.002) For FX Trade Instructions to Participant A and Participant B/Foreign Exchange provider (MT296/RSCD == fxtr.017) |
| 2 | On the new business day activation Queued and Suspended Payments will be moved to actual business day date. |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|-----------------------------|
| Buna Participants (CEBs acting as BPs also) | MT196 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | pacs.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | fxtr.017 | Cancellation status message |

6.3 LIQUIDITY MANAGEMENT USE CASES

6.3.1 Use Case LIQ-01 - SOD Funding for BPA

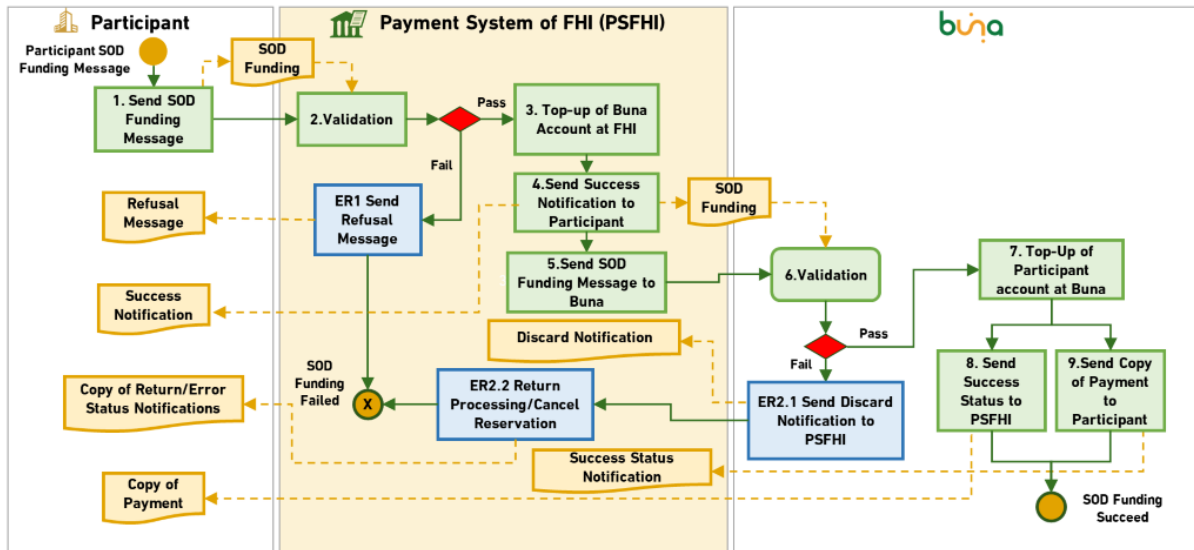


Figure 13: SOD Funding for BPA

| | |
|--|--|
| Use Case ID | LIQ-01 |
| Use Case Name | SOD Funding for BPA. |
| Use Case Description | Transfer of funds by a participant to its settlement account held in Buna at the start of the day for the case when a participant has an account in the FHI Payment system |
| Primary Actors | Buna Participant, FHI Payment system, Buna |
| Trigger Event | Participant initiates the transaction in the FHI Payment system |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> ▪ Buna will work in tandem with all the FHI Payment systems in each of the participating Arab countries. Buna will maintain a single account at the FHI of issue of each of the participating Arab currencies. As to the global currencies (USD, EUR, etc.), more than one FHI can be registered as FHI for each global currency. As such, Buna will use the FHI Payment system for funding and de-funding of participant accounts in Buna ▪ Participants will pre-fund the applicable single Buna account at the FHI of issuance per currency through the FHI Payment system ▪ Buna might set up a minimum level of SOD funding for all the participants ▪ Funding message can contain BIC of the Non-registered participant 8*** as an Instructed Agent, in this case registered inside the Buna core Participant with the same 8 first digits will be credited. | |

| Uses | |
|--|---|
| N/A | |
| Pre-Conditions | |
| The start of day window is triggered | |
| Post Conditions | |
| Funds are transferred from the FHI Payment system to Buna and the accounts are updated | |
| Basic Flow | |
| 1 | The Participant sends a transfer to the FHI Payment system. |
| 2 | FHI Payment system validates the transfer. In a case of error proceed to ER1.1 |
| 3 | The FHI Payment system processes the top-up of Buna account: <ul style="list-style-type: none"> ▪ Debits settlement account of the participant ▪ Credits account of Buna system |
| 4 | The FHI Payment system sends a success notification to the Participant |
| 5 | The FHI Payment system sends a transfer to Buna (MT202 == pacs.009) |
| 6 | Buna validates the transfer. In the case of an error proceed to ER2.1 |
| 7 | Buna <ul style="list-style-type: none"> ▪ Debits the technical account of the appropriate currency linked to the FHI ▪ Credits the Participant's Settlement Account linked to the FHI |
| 8 | Buna sends a Success status Notification MT296 == pacs.002 to the FHI Payment system |
| 9 | Buna sends a copy of the payment to the Participant (MT202 == pacs.009) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1: Error in FHI Payment system |
| ER1.1 | The FHI Payment system sends a Refusal message to the Buna Participant |

| | |
|--------------|--|
| | E2. Error in Buna |
| ER2.1 | Buna sends a Discard Notification to the FHI Payment system(MTn96/RJCT == pacs.002/admi.002) |
| ER2.2 | The FHI Payment system processes the Return Payment /Cancels the reservation and sends a notification to the participant |

Incoming messages

| SENDER | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--------|----------------|-------------------------|-----------------|
| FHIs | MT202 | pacs.009 | Funding, top-up |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|-------------------------|-----------------------------------|
| Buna Participant | MT202 | pacs.009 | Copy of payment (Funding, top-up) |
| FHIs | MT296 | camt.025 | Processing notification |
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |

6.3.2 Use Case LIQ-02 - SOD Funding for BPUCRSB

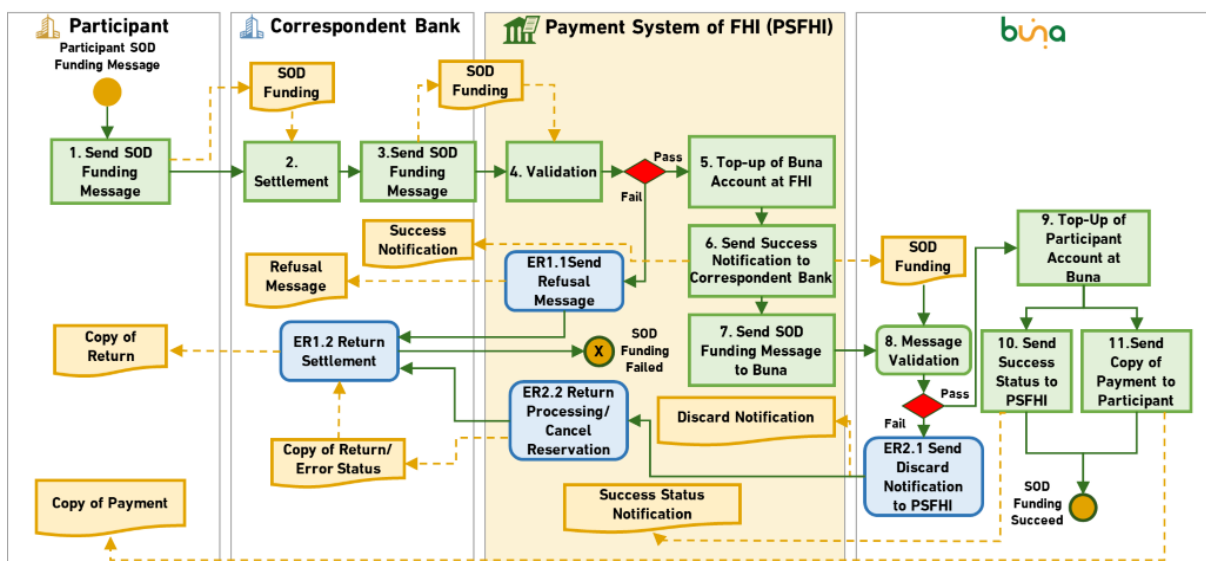


Figure 14: SOD Funding for BPUCRSB

| | |
|----------------------|-------------------------|
| Use Case ID | LIQ-02 |
| Use Case Name | SOD Funding for BPUCRSB |

| | |
|--|--|
| Use Case Description | Transfer of funds by a Participant to its Settlement account held in Buna at the start of the day for the case when a participant has NO account in the FHI Payment system |
| Primary Actors | Buna Participant, Correspondent Bank, FHI Payment system, Buna |
| Trigger Event | The Participant initiates the transaction via its correspondent bank |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> ▪ If a participant wants to top-up its account in a currency but it has no account in the FHI Payment system for this currency, the participant should use a correspondent bank ▪ Buna might set up a minimum level of SOD funding for participants ▪ Funding message can contain BIC of the Non-registered participant 8*** as an Instructed Agent, in this case registered inside the Buna core Participant with the same 8 first digits will be credited. | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| The start of day window is triggered | |
| Post Conditions | |
| Funds are transferred from the Participant to Buna and accounts are updated | |
| Basic Flow | |
| 1 | The Participant sends the SOD Funding message to a correspondent bank |
| 2 | The Correspondent bank settles the transfer (according to its operating rules) in its Core Banking system. |
| 3 | The Correspondent bank sends a SOD Funding message to the FHI Payment system |
| 4 | The FHI Payment system validates the message In the case of an error proceed to ER1.1 |
| 5 | The FHI Payment system processes the top-up of Buna account: <ul style="list-style-type: none"> ▪ Debits settlement account of the correspondent bank ▪ Credits account of Buna system |
| 6 | The FHI Payment system sends a success notification to the correspondent bank |
| 7 | The FHI Payment system sends a SOD Funding message to Buna (MT202 == pacs.009). |

| | |
|------------------------|--|
| 8 | Buna validates the transfer. In a case of error proceed to ER2 |
| 9 | Buna debits the technical account of the appropriate currency linked to the FHI and credits the participant's Settlement Account linked to the FHI |
| 10 | Buna sends a Success status Notification MT296/ACSC == pacs.002 to the FHI Payment system |
| 11 | Buna sends a copy of the payment to the Participant (MT202 == pacs.009). |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1: Error in FHI Payment system |
| 1 | The FHI Payment system sends a Refusal message to the Correspondent bank |
| 2 | The Correspondent bank creates and settles the return |
| 3 | The Correspondent bank sends a copy of the return to the Participant |
| | E2. Error in Buna |
| 1 | Buna sends a Discard Notification to the FHI Payment system(MTn96/RJCT == pacs.002/admi.002) |
| 2 | The FHI Payment system processes the Return Payment /Cancels the reservation and sends a notification to the Correspondent bank |
| 3 | The Correspondent bank creates and settles the return |
| 4 | The Correspondent bank sends a copy of the return to the Participant |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---------|----------------|-------------------------|-----------------|
| FHIs | MT202 | pacs.009 | Funding, top-up |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|-------------------------|-----------------------------------|
| Buna Participant | MT202 | pacs.009 | Copy of payment (Funding, top-up) |
| FHIs | MT296 | camt.025 | Processing notification |
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |

6.3.3 Use Case LIQ-03 - Intra-day top-up for BPA

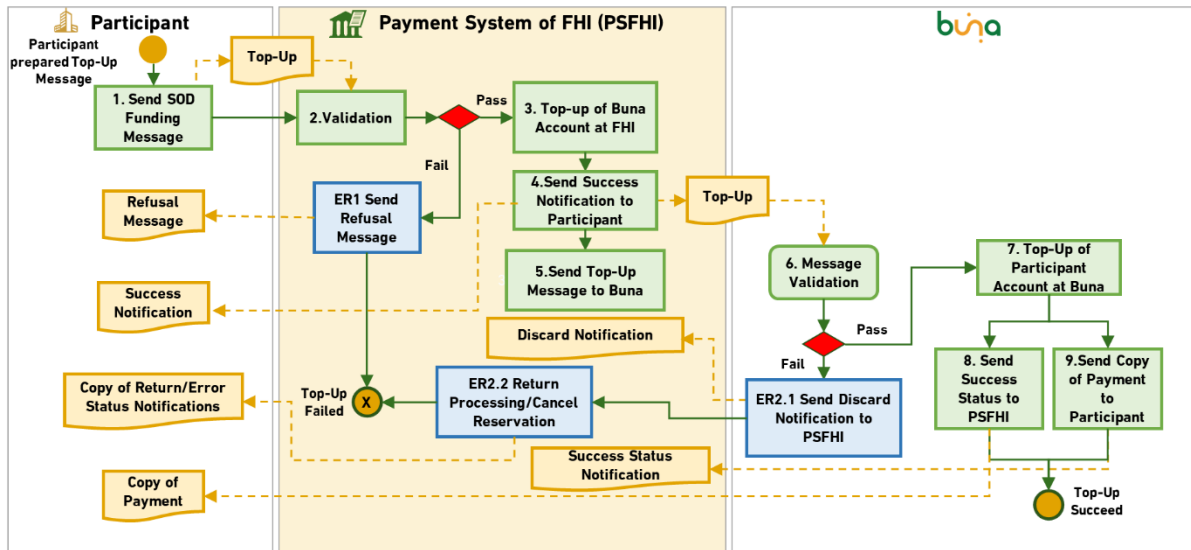


Figure 15: Intra-day top-up for BPA

| | |
|---|---|
| Use Case ID | LIQ-03 |
| Use Case Name | Intra-day top-up for BPA. |
| Use Case Description | Transfer of funds by a participant to its Settlement account held in Buna during the day for the case when a participant has an account in the FHI Payment system |
| Primary Actors | Buna Participant, FHI Payment system, Buna |
| Trigger Event | Participant in the FHI Payment system initiates the transaction |
| Use Case Business Rules | |
| Participant could top-up its account during the day if needed | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| The Start of Day window is triggered | |
| Post Conditions | |
| Funds are transferred from the FHI Payment system to Buna, and the accounts are updated | |

| Basic Flow | |
|------------------------|---|
| 1 | The Participant sends a top-up message to the FHI Payment system |
| 2 | The FHI Payment system validates the transfer. In the case of an error proceed to ER1 |
| 3 | The FHI Payment system processes the top-up of Buna account: <ul style="list-style-type: none"> ▪ Debits Settlement Account of the participant ▪ Credits Account of Buna system |
| 4 | The FHI Payment system sends a success notification to the Participant |
| 5 | The FHI Payment system sends a transfer to Buna (MT202 == pacs.009) |
| 6 | Buna validates the transfer. In a case of error, proceed to ER2 |
| 7 | Buna Debits the technical account in the appropriate currency linked to the FHI and credits the FHI Participant's Settlement Account |
| 8 | Buna sends a Success status Notification MT296/ACSC == pacs.002 to FHI the FHI Payment system |
| 9 | Buna sends a copy of the payment to the Participant (MT202 == pacs.009) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1: Error in FHI Payment system |
| 1 | The FHI Payment system sends a Refusal message to the Buna Participant. |
| | E2. Error in Buna |
| 1 | Buna sends a Discard Notification to the FHI Payment system(MTn96/RJCT == pacs.002/admi.002). |
| 2 | The FHI Payment system settles the Return Payment /Cancels the reservation and sends a notification to the participant. |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-----------------------|--------------------------------|--------------------|
| FHIs | MT202 | pacs.009 | Funding, top-up |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 2022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|------------------------|---------------------------------------|
| Buna Participant | MT202 | pacs.009 | Copy of the payment (Funding, top-up) |
| FHIs | MT296 | camt.025 | Processing notification |
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |

6.3.4 Use Case LIQ-04 - Intra-day top-up for BPUCRSB

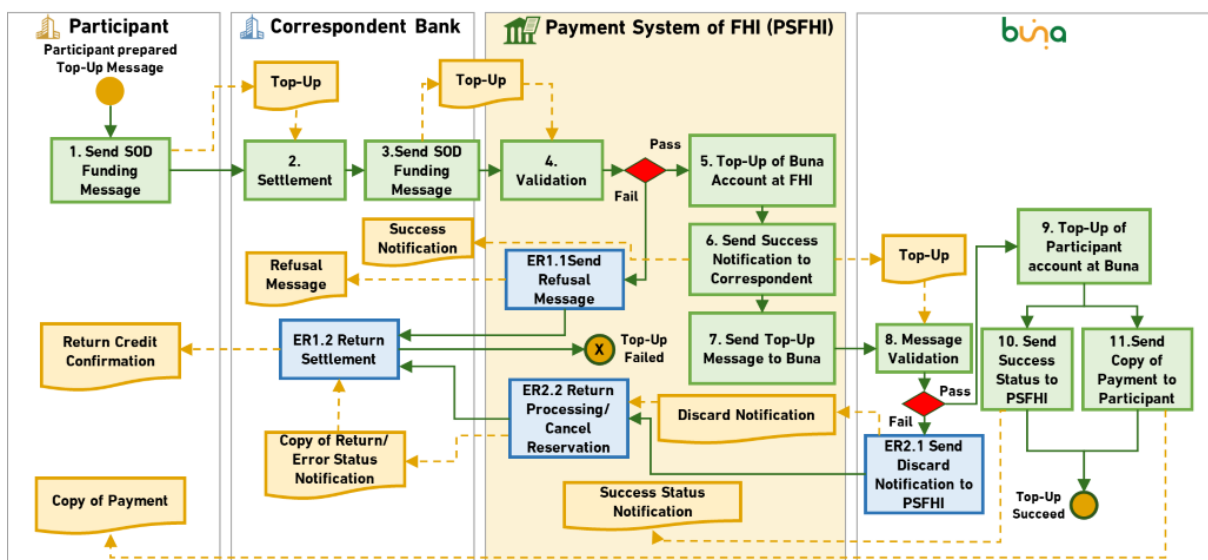


Figure 16: Intra-day top-up for BPUCRSB

| | |
|---|--|
| Use Case ID | LIQ-04 |
| Use Case Name | Intra-day top-up for BPUCRSB |
| Use Case Description | The transfer of funds by a participant to its Settlement account held in Buna during the day for the case when the participant does NOT have an account in the FHI Payment system |
| Primary Actors | Buna Participant, Correspondent Bank, FHI Payment system, Buna |
| Trigger Event | The Participant in the FHI Payment System initiates a transaction |
| Use Case Business Rules | |
| A Participant could top-up its account during the day if it's needed | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| Start of day window is triggered | |
| Post Conditions | |
| Funds are transferred from the FHI Payment system to Buna and its accounts are updated | |
| Basic Flow | |
| 1 | The Participant sends a Top-up message to the correspondent bank. |
| 2 | The correspondent bank settles the transfer (according to its operating rules) in its Core Banking system. |
| 3 | The correspondent bank sends a Top-up message to the FHI Payment system |
| 4 | The FHI Payment system validates the message. In the case of an error proceed to ER1.1 |
| 5 | The FHI Payment system processes the top-up of Buna account: <ul style="list-style-type: none"> ▪ Debits settlement account of the correspondent bank ▪ Credits account of Buna system |
| 6 | The FHI Payment system sends a success notification to the correspondent bank |
| 7 | The FHI Payment system sends a Top-up message to Buna (MT202 == pacs.009) |

| | |
|------------------------|---|
| 8 | Buna validates the transfer. In the case of an error proceed to ER2 |
| 9 | Buna debits the technical account of the appropriate currency linked to the FHI and credits the participant's Settlement Account linked to the FHI. |
| 10 | Buna sends a Success status Notification MT296 == pacs.002 to the FHI Payment system |
| 11 | Buna sends a copy of the payment to the Participant (MT202 == pacs.009) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1: Error in the FHI Payment system |
| 1 | The FHI Payment system sends a Refusal message to the Correspondent bank |
| 2 | The Correspondent bank creates and settles the return |
| 3 | The Correspondent bank sends a copy of the return to the Participant |
| | E2. Error in Buna |
| 1 | Buna sends a Discard Notification to the FHI Payment system (MTn96/RJCT == pacs.002/admi.002) |
| 2 | The FHI Payment system processes the Return Payment /Cancels the Reservation and sends a notification to the Correspondent bank |
| 3 | The Correspondent bank creates and settles the return |
| 4 | The Correspondent bank sends a return credit confirmation to the Participant |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 2022 EQUIVALENT | DESCRIPTION |
|---------|----------------|------------------------|-----------------|
| FHIs | MT202 | pac.009 | Funding, top-up |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 2022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|------------------------|-----------------------------------|
| Buna Participant | MT202 | pac.009 | Copy of payment (Funding, top-up) |
| FHIs | MT296 | camt.025 | Processing notification |
| FHIs | MT296 | pac.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |

6.3.5 Use case: LIQ-05 - Intra-day participant withdrawal requests for BPA

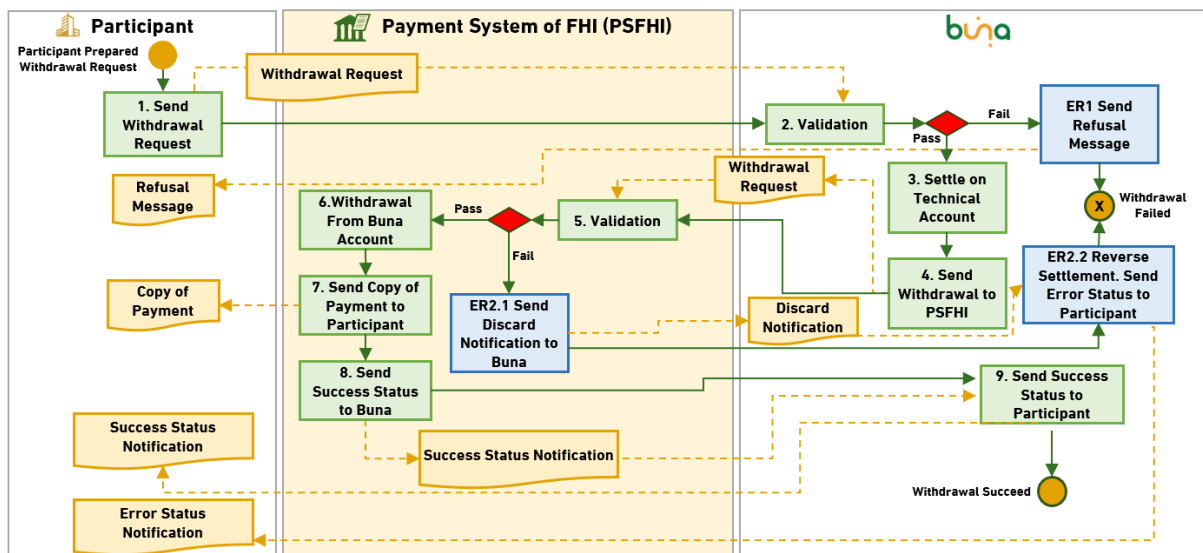


Figure 17: Intra-day participant withdrawal requests for BPA

| | |
|---|--|
| Use Case ID | LIQ-05 |
| Use Case Name | Intra-day participant withdrawal requests for BPA. |
| Use Case Description | Intra-day participant withdrawal from its Settlement account held in Buna upon request for the case when a participant has account in the FHI Payment system. |
| Primary Actors | Buna Participant, FHI Payment system, Buna |
| Trigger Event | The Participant sent a withdrawal request to Buna (MT202 == pacs.009) |
| Use Case Business Rules | |
| <p>Buna will work in tandem with all the Payment systems of FHI systems in all of the participating Arab countries. For global currencies (USD, EUR, etc.), more than one FHI can be registered as the FHI for each global currency. Buna will maintain a single account at the Central Bank of issue of each of the participating Arab currencies. As such, Buna will use the FHI Payment system for funding and de-funding participant accounts in Buna.</p> | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| <p>Funds are transferred from Buna to the FHI Payment system and accounts are updated.</p> | |
| Basic Flow | |
| 1 | Buna Participant sends Withdrawal request (MT202 == pacs.009). to Buna as a receiver |
| 2 | Buna validates the transfer In a case of failure, proceed to ER1 |
| 3 | Buna reserves the funds: <ul style="list-style-type: none"> ▪ Debit BP settlement account linked to the FHI ▪ Credit technical account in the FHI currency linked to the FHI |
| 4 | Buna sends a transfer to the FHI Payment system (MT202 == pacs.009). |
| 5 | FHI Payment system validates the transfer. |

| | |
|------------------------|--|
| | In the case of failure proceed to ER2. |
| 6 | The FHI Payment system debits Buna account and credits the Participant Settlement Account. |
| 7 | The FHI Payment system sends a copy of the Transfer to the Participant |
| 8 | The FHI Payment system sends a success status to Buna (MT296/ACSC == pacs.002) |
| 9 | Buna sends success status to Participant |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1: Error in Buna |
| 1 | Buna sends an Error status to the Buna Participant (MT296/RJCT== pacs.002) |
| | E2. Error in FHI Payment system |
| 1 | The FHI Payment system sends a Discard Notification to Buna (MT296/RJCT == pacs.002 (business validation failed)/admi.002 (syntax validation failed, or access rights validation failed)). |
| 2 | Buna cancels the reservation and sends an Error status to the Participant (MT296/RJCT == pacs.002) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 2002 EQUIVALENT | DESCRIPTION |
|-------------------------|----------------|------------------------|-------------------------|
| Buna Participant | MT202 | pacs.009 | Withdrawal request |
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |
| FHIs | MT296 | camt.025 | Processing notification |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 2002 EQUIVALENT | DESCRIPTION |
|-------------------------|----------------|------------------------|-------------------------|
| FHIs | MT202 | pacs.009 | Withdrawal request |
| Buna Participant | MT296 | camt.025 | Processing notification |
| Buna Participant | MT296 | pacs.002 | Status of transfer |
| Buna Participant | MT296 | admi.002 | Message rejection |

6.3.6 Use case: LIQ-06 - Intra-day participant withdrawal requests for BPUCRSB

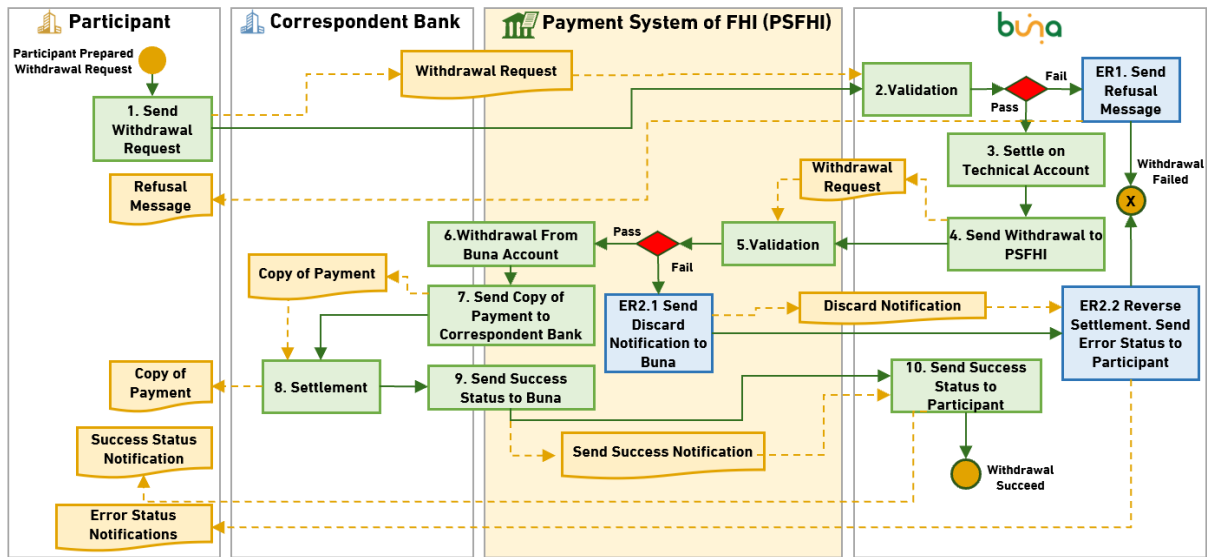


Figure 18: Intra-day participant withdrawal requests for BPUCRSB

| | |
|--|---|
| Use Case ID | LIQ-06 |
| Use Case Name | Intra-day participant withdrawal requests for BPUCRSB |
| Use Case Description | Intra-day participant withdrawal request from its Settlement account held in Buna upon request for the case when the participant does NOT have an account in the FHI Payment system |
| Primary Actors | Buna Participant, Correspondent Bank, FHI Payment system, Buna |
| Trigger Event | Participant sent a withdrawal request to Buna (MT202 == pacs.009) |
| Use Case Business Rules | |
| <p>Buna will work in tandem with all the Payment systems of FHI systems in all of the participating Arab countries. Buna will maintain a single account at the Central Bank of issue of each of the participating Arab currencies. As to global currencies (USD, EUR, etc.), more than one FHI can be registered as the FHI for each global currency. As such, Buna will use the FHI Payment system for funding and de-funding participant accounts in Buna</p> | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| N/A | |

| Post Conditions | |
|--|--|
| Funds are transferred from Buna to the account of the Participant at the Correspondent bank Core Banking System | |
| Basic Flow | |
| 1 | The Buna Participant sends a Withdrawal request to Buna as a receiver |
| 2 | Buna validates the transfer In the case of failure proceed to ER1 |
| 3 | Buna reserves the funds: <ul style="list-style-type: none"> ▪ Debits BP settlement account linked to FHI ▪ Credits technical account in the FHI currency linked to the FHI |
| 4 | Buna sends a transfer to the FHI Payment system (MT202 == pacs.009). |
| 5 | The FHI Payment system validates the transfer. In the case of failure proceed to ER2.1. |
| 6 | The FHI Payment system: <ul style="list-style-type: none"> ▪ Debits Buna account ▪ Credits participant settlement account |
| 7 | The FHI Payment system sends a Copy of the Payment to the Correspondent Bank |
| 8 | The Correspondent bank credits the participant account according to its operating rules and sends appropriate notifications |
| 9 | The FHI Payment system sends a Success status message to Buna (MT296/STAT ≡ pacs.002) |
| 10 | Buna sends success status to Participant |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1: Error in Buna |
| 1 | Buna sends the Error status to the Buna Participant (MT296/RJCT == pacs.002) |
| | E2. Error in FHI Payment system |
| 1 | The FHI Payment system sends a Discard Notification to Buna (MT296/RJCT == pacs.002/admi.002) |

| | |
|---|---|
| 2 | Buna cancels the reservation and sends the Error status to the Participant (MT296/RJCT == pacs.002) |
|---|---|

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 2022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|------------------------|-------------------------|
| Buna Participant | MT202 | pacs.009 | Withdrawal request |
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |
| FHIs | MT296 | camt.025 | Processing notification |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 2022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|------------------------|-------------------------|
| FHIs | MT202 | pacs.009 | Withdrawal request |
| Buna Participant | MT296 | camt.025 | Processing notification |
| Buna Participant | MT296 | pacs.002 | Status of transfer |
| Buna Participant | MT296 | admi.002 | Message rejection |

6.3.7 Use case LIQ-07 - End-Of Day Participant De-Funding of Credit Balances for BPA

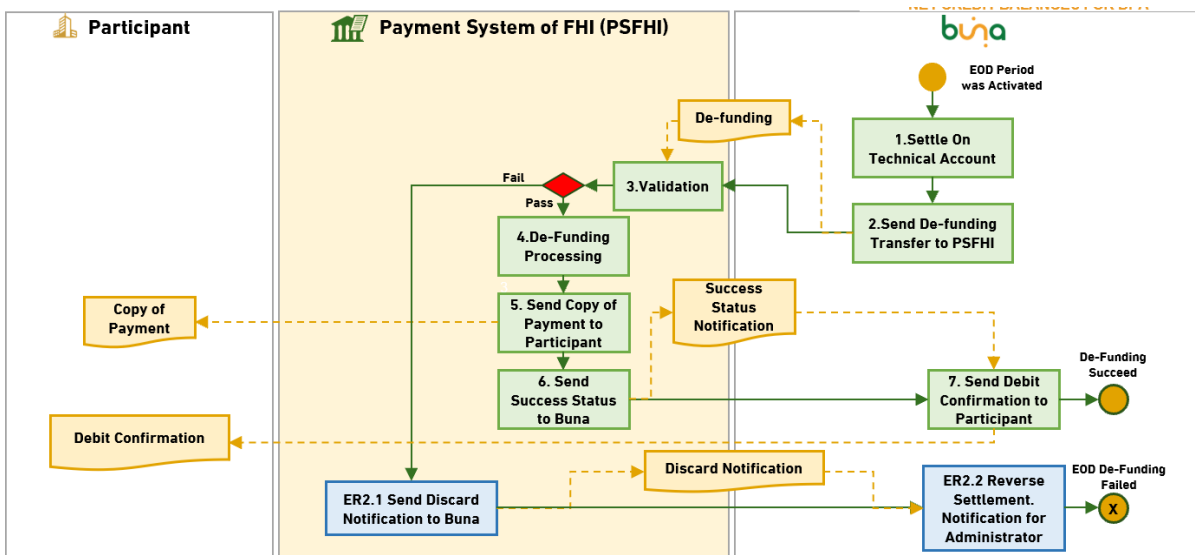


Figure 19: End-of day participant de-funding of credit balances for BPA

| | |
|-------------|--------|
| Use Case ID | LIQ-07 |
|-------------|--------|

| | |
|---|---|
| Use Case Name | End-of day participant de-funding of net credit balances for BPA |
| Use Case Description | At the end of Buna operating day for a currency, Buna transfers excess balances for participants during the de-funding window via the FHI Payment system back to the participant account (for a case when the participant has an account in the FHI Payment system) |
| Primary Actors | Buna Participant, FHI Payment system, Buna |
| Trigger Event | EOD window is activated |
| Use Case Business Rules | |
| <p>Buna will work in tandem with all the Payment systems of FHI systems in each of the participating Arab countries. Buna will maintain a single account at the Central Bank of issue of each of the participating Arab currencies. For global currencies (USD, EUR, etc.), more than one FHI can be registered as FHI for each global currency. As such, Buna will use the FHI Payment system for funding and de-funding participant accounts in Buna</p> | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| End of day window is triggered | |
| Post Conditions | |
| Funds are transferred from Buna to the FHI Payment system and accounts are updated. | |
| Basic Flow | |
| 1 | <p>Buna reserves the funds:</p> <ul style="list-style-type: none"> ▪ Debits BP settlement account linked to FHI ▪ Credits technical account in the FHI currency |
| 2 | Buna sends a transfer to the FHI Payment system (MT202 = = pacs.009) |
| 3 | <p>The FHI Payment system validates the transfer.</p> <p>In the case of failure proceed to ER1.1.</p> |
| 4 | <p>The FHI Payment system:</p> <ul style="list-style-type: none"> ▪ Debits Buna technical account ▪ Credits the participant settlement account. |
| 5 | The FHI Payment system sends a Copy of the payment to the participant |

| | |
|--|---|
| 6 | The FHI Payment system sends a success status to Buna (MT296/ACSC == pacs.002) |
| 7 | Buna sends a debit confirmation to the Participant (MT204 == pacs.010) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| E1. Error in the FHI Payment system (validation failed) | |
| 1 | Send a Discard notification to Buna (MT296/RJCT == pacs.002/admi.002) |
| 2 | Buna generates a notification for the Administrator to manually solve the error |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---------|----------------|-------------------------|-------------------------|
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |
| FHIs | MT296 | camt.025 | Processing notification |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|-------------------------|--------------------|
| FHIs | MT202 | pacs.009 | De-funding message |
| Buna Participant | MT204 | pacs.010 | Debit confirmation |

6.3.8 Use case LIQ-08 - End-of day participant de-funding of credit balances for BPUCRSB

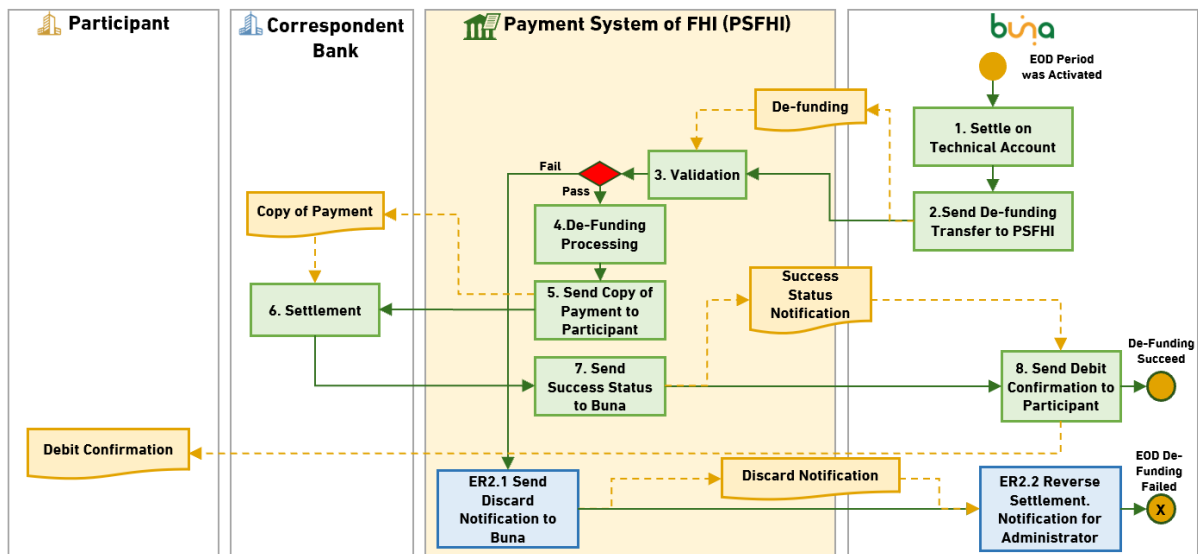


Figure 20: End-of day participant de-funding of credit balances for BPUCRSB

| | |
|---|--|
| Use Case ID | LIQ-08 |
| Use Case Name | End-of day participant de-funding of net credit balances for BPUCRSB |
| Use Case Description | At the end of Buna operating day for a currency, Buna transfers excess balances for participants during the de-funding window via the FHI Payment system back to the correspondent bank (whenever the participant has NO account in the FHI Payment system). Afterwards, the correspondent bank credits the participant account in its Core banking system |
| Primary Actors | Buna Participant, FHI Payment system, Buna, Correspondent bank |
| Trigger Event | EOD window is activated |
| Use Case Business Rules | |
| Buna works in tandem with all of the Payment systems of the FHI systems in each of the participating Arab countries. Buna will maintain a single account at the Central Bank of issue of each of the participating Arab currencies. For global currencies (USD, EUR, etc.), more than one FHI can be registered as FHI for each global currency. As such, Buna will use the Payment system of each FHI system for funding and de-funding participant accounts in Buna | |
| Uses | |
| N/A | |
| Pre-Conditions | |

| | |
|---|--|
| End of day window is triggered | |
| Post Conditions | |
| Funds are transferred from Buna to the Buna Participant and the accounts are updated | |
| Basic Flow | |
| 1 | Buna reserves the funds: <ul style="list-style-type: none"> ▪ Debits: BP settlement account linked to the FHI ▪ Credits: Technical account in the FHI currency |
| 2 | Buna sends a transfer to the FHI Payment system (MT202 = pacs.009) |
| 3 | The FHI Payment system validates the transfer. In a case of failure proceed to ER1 |
| 4 | The FHI Payment system: <ul style="list-style-type: none"> ▪ Debits Buna technical account ▪ Credits the participant settlement account |
| 5 | The FHI Payment system sends a Copy of the payment to the Correspondent bank |
| 6 | The Correspondent bank credits the participant account according to its operating rules and sends appropriate notifications |
| 7 | The FHI Payment system sends a success status to Buna (MT296/ACSC = pacs.002) |
| 8 | Buna sends a settlement notification to the Participant (MT204 == pacs.010) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | E1. Error in FHI Payment system (validation failed) |
| 1 | Send a Discard notification to Buna (MTn96/RJCT == pacs.002/admi.002) |
| 2 | Buna generates a notification for the Administrator to manually solve this error |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------|----------------|-------------------------|-------------------------|
| FHIs | MT296 | pacs.002 | Status of transfer |
| FHIs | MT296 | admi.002 | Message rejection |
| FHIs | MT296 | camt.025 | Processing notification |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|-------------------------|--------------------|
| FHIs | MT202 | pac.009 | De-funding message |
| Buna Participant | MT204 | pac.010 | Debit confirmation |

6.3.9 Use Case LIQ-09 – Receive Notifications About Top-Up Needed

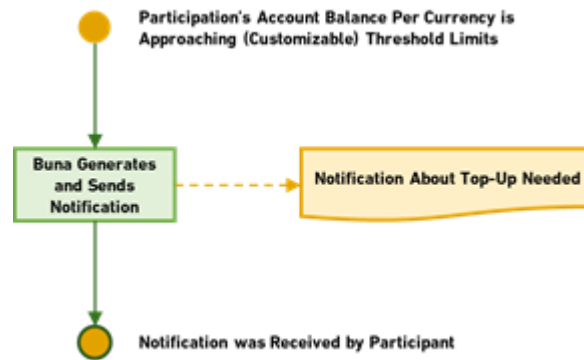


Figure 21: Receive notifications about top-up needed

| | |
|--|--|
| Use Case ID | LIQ-09 |
| Use Case Name | Notification of participants about top-up needed |
| Use Case Description | Buna sends a notification about the top-up needed |
| Primary Actors | Buna, Buna Participants |
| Trigger Event | <ul style="list-style-type: none"> ▪ There is a new payment in the liquidity queue ▪ The Participant's settlement account balance is approaching (customizable) threshold limits |
| Use Case Business Rules | |
| Buna DBO Administrator manages threshold per each account via DBO workplace. | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Message is distributed to Buna participant with top-up needed | |
| Basic Flow | |

| | |
|------------------------|---|
| 1 | Buna generates the notification (MT986/STAT == camt.052/TPND) |
| 2 | The notification is received by the Buna Participant |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|-------------------------|----------------------------------|
| Buna Participant | MT986/STAT | camt.052/TPND | Notification about top-up needed |

6.3.10 Use Case LIQ-10 – Foreign exchange support

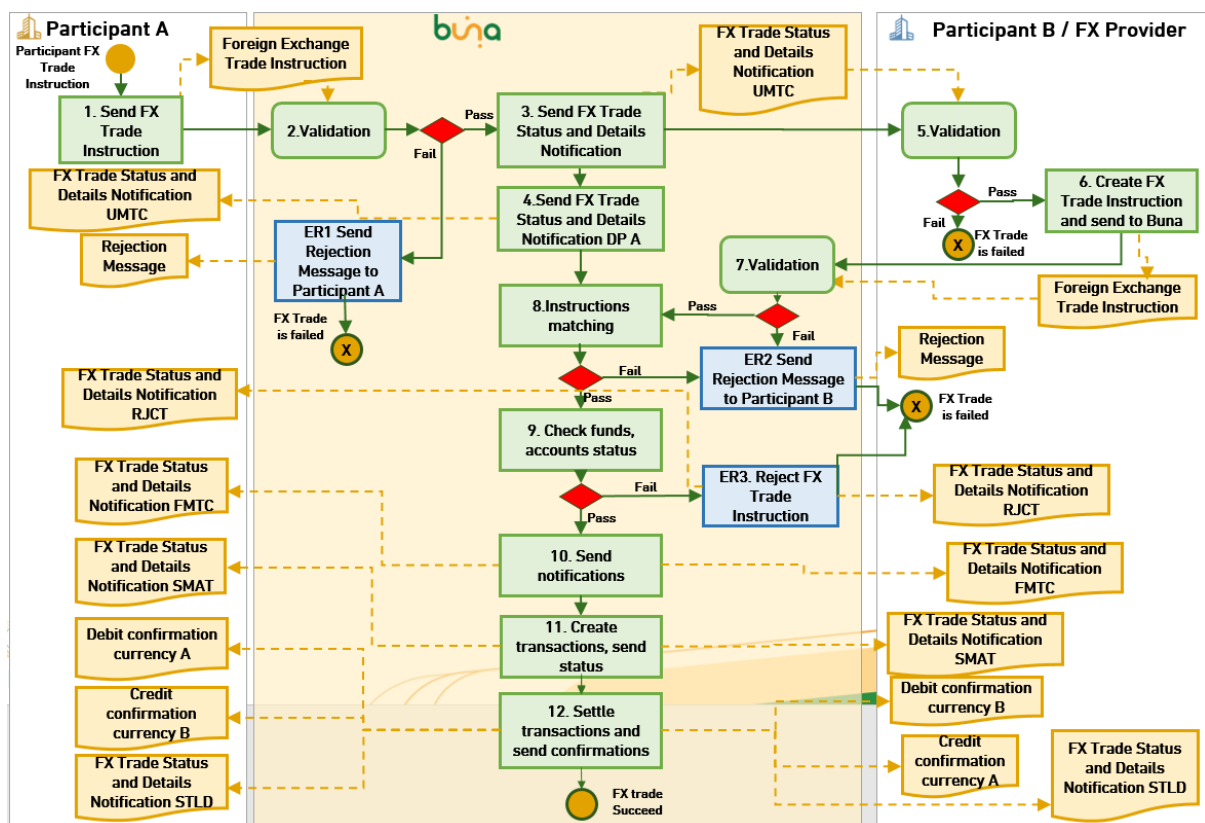


Figure 22: Foreign Exchange support

| | |
|---------------|--------------------------|
| Use Case ID | LIQ-10 |
| Use Case Name | Foreign exchange support |

| | |
|--|---|
| Use Case Description | Foreign exchange can be done using Foreign Exchange Trade Instructions |
| Primary Actors | Buna Participant, Foreign exchange provider |
| Trigger Event | The Participant sends Foreign Exchange Trade instruction to Buna |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> ▪ Participant A sends Foreign Exchange Trade instruction (it wants to sell currency A and to buy currency B), Participant B/Foreign exchange provider sends Foreign Exchange Trade instruction with appropriate values (sells currency B and buys currency A) and Buna system matches them. If 2 instructions were matched, then 2 transactions will be processed simultaneously. ▪ Future trade date is prohibited. ▪ Buna system will check whether currency pair is registered for FX Provider for the current Trade date ▪ Total value in base/counter currency can include FX Provider's commission, Buna system will not check total amounts in base, counter currencies with the exchange rate. It will be a matter of the deal between Buna Participant and FX Provider. ▪ Buna system will not process FX Provider's commission separately. Total amounts in the base currency and counter currency will be used for the transactions creation. | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| Data for the FX operation can be requested from FX Provider using 6.8.1 Use Case CONS-01: Request exchange rate from the FX Provider | |
| Post Conditions | |
| Transactions in 2 currencies are settled | |
| Basic Flow | |
| 1 | The Participant A sends Foreign Exchange Trade instruction (MT298/300 == fxtr.014) to Buna |
| 2 | <p>Buna validates the message:</p> <ul style="list-style-type: none"> • Non-payment message validation (6.5.1 Use Case NPM-01 - Non-payment message validation) • Trade date is not in the past. <p>In a case of error proceed to ER1</p> |

| | |
|------------------------|---|
| 3 | Buna sends FX Trade Status and Details Notification (MT296/FXSD/UMTC == fxtr.017/UMTC) to Participant B/Foreign Exchange provider |
| 4 | Buna sends FX Trade Status and Details Notification UMTC (MT296/FXSN/UMTC == fxtr.017/UMTC) to BP A |
| 5 | Participant B/Foreign Exchange provider validates FX Trade Status and Details Notification In case of error – no further actions, 2 nd instruction will not be sent. |
| 6 | Participant B/Foreign Exchange provider creates FX Trade Instruction (MT298/300 == fxtr.014) and sends to Buna |
| 7 | Buna validates the message: <ul style="list-style-type: none"> • Non-payment message validation (6.5.1 Use Case NPM-01 - Non-payment message validation) • Trade date is not in the past. In a case of error proceed to ER2 |
| 8 | Buna executes Instructions matching (For details refer to Message formats document) In a case of error proceed to ER2 |
| 9 | Buna checks funds availability and account status (unlocked for debit/credit) Enough funds and accounts unlocked – proceed to 10 Failed –proceed to ER3 |
| 10 | Buna sends FX Trade Status and Details Notification (MT296/FXSD == fxtr.017/FMTC) to Participant A and status FMTS (MT296/FXSN/FMTC == fxtr.017/FMTC) to Participant B |
| 11 | Transaction creation and FX Trade Status and Details Notification ((MT296/FXSN/SMAT == fxtr.017/SMAT) |
| 12 | Buna settles transactions and sends confirmations: <ul style="list-style-type: none"> • Debit confirmation currency A (MT900 == camt.054) and Credit confirmation currency B (MT910 == camt.054) and FX Trade Status and Details Notification (MT296/FXSN/STLD == fxtr.017/STLD) to Participant A • Debit confirmation currency B (MT900 == camt.054) and Credit confirmation currency A (MT910 == camt.054) and FX Trade Status and Details Notification (MT296/FXSN/STLD == fxtr.017/STLD) to Participant B |
| Alternate Flows | |
| | N/A |
| Exceptions | |

| | |
|---|--|
| | ER1: Validation of Participant A instruction is failed |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 ==camt.025) |
| | ER2: Validation of Participant B instruction is failed |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 ==camt.025) |
| | ER3: Not enough funds on debited account or account is locked |
| 1 | Buna sends FX Trade Status and Details Notification with rejection code (MT296/RJCT == fxtr.017/RJCT) to Participant A and Participant B |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------------|----------------|-------------------------|------------------------------------|
| BP, FX Provider | MT298/300 | fxtr.014 | Foreign exchange trade instruction |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------------|----------------|-------------------------|--|
| BP, FX Provider | MT296 | fxtr.017 | FX Trade Status and Details Notification |
| BP, FX Provider | MT296 | camt.025 | Message rejection |
| BP, FX Provider | MT996 | admi.002 | Message rejection |
| BP, FX Provider | MT900 | camt.054 | Debit confirmation |
| BP, FX Provider | MT910 | camt.054 | Credit confirmation |

6.3.11 Use Case LIQ-11 – Foreign exchange Trade Instruction cancellation

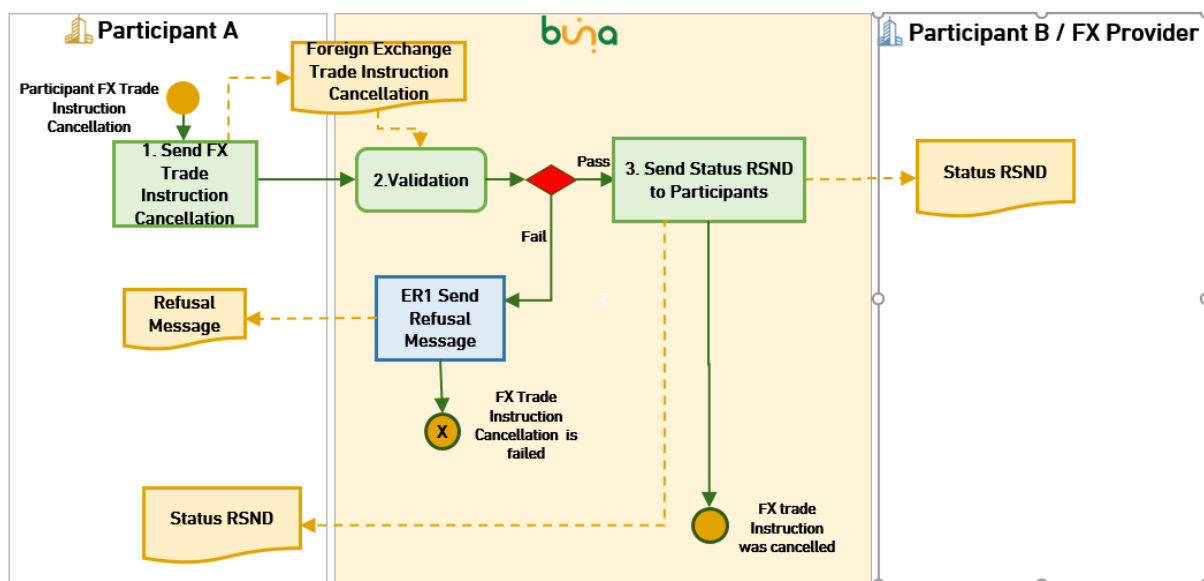


Figure 23: Foreign Exchange support

| | |
|---|---|
| Use Case ID | LIQ-11 |
| Use Case Name | Foreign exchange Trade Instruction cancellation |
| Use Case Description | Foreign exchange Trade Instruction cancellation |
| Primary Actors | Buna Participant, Foreign exchange provider |
| Trigger Event | The Participant sends Foreign Exchange Trade Instruction Cancellation to Buna |
| Use Case Business Rules | |
| Participant A can send cancellation for FX Trade instruction that hasn't matched yet | |
| Uses | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| FX Trade Instruction was cancelled | |
| Basic Flow | |
| 1 | The Participant A sends Foreign Exchange Trade Instruction Cancellation request (MT298/392 ≡ fxtr.016) to Buna |
| 2 | Buna validates the message: <ul style="list-style-type: none"> • Non-payment message validation (6.5.1 Use Case NPM-01 - Non-payment message validation) • FX Trade instruction that hasn't settled yet In a case of error proceed to ER1 |
| 3 | Buna sends camt.025 (successful processing status) and FX Trade Cancellation Status (MT296/RSCD == fxtr.013) to Participant A and Participant B/Foreign Exchange provider |
| Alternate Flows | |
| | N/A |
| Exceptions | |

| | |
|---|---|
| | E1: Validation of Participant A instruction is failed |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 ==camt.025) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---------|----------------|-------------------------|---|
| BP | MT298/392 | fxtr.016 | Foreign Exchange Trade instruction Cancellation request |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------|----------------|-------------------------|---|
| BP | MT296/RSCD | fxtr.013 | Cancellation status message |
| BP | MT296 | camt.025 | Processing notification/message rejection |
| BP | MT996 | admi.002 | Message rejection |

6.3.12 Use Case LIQ-12: Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation

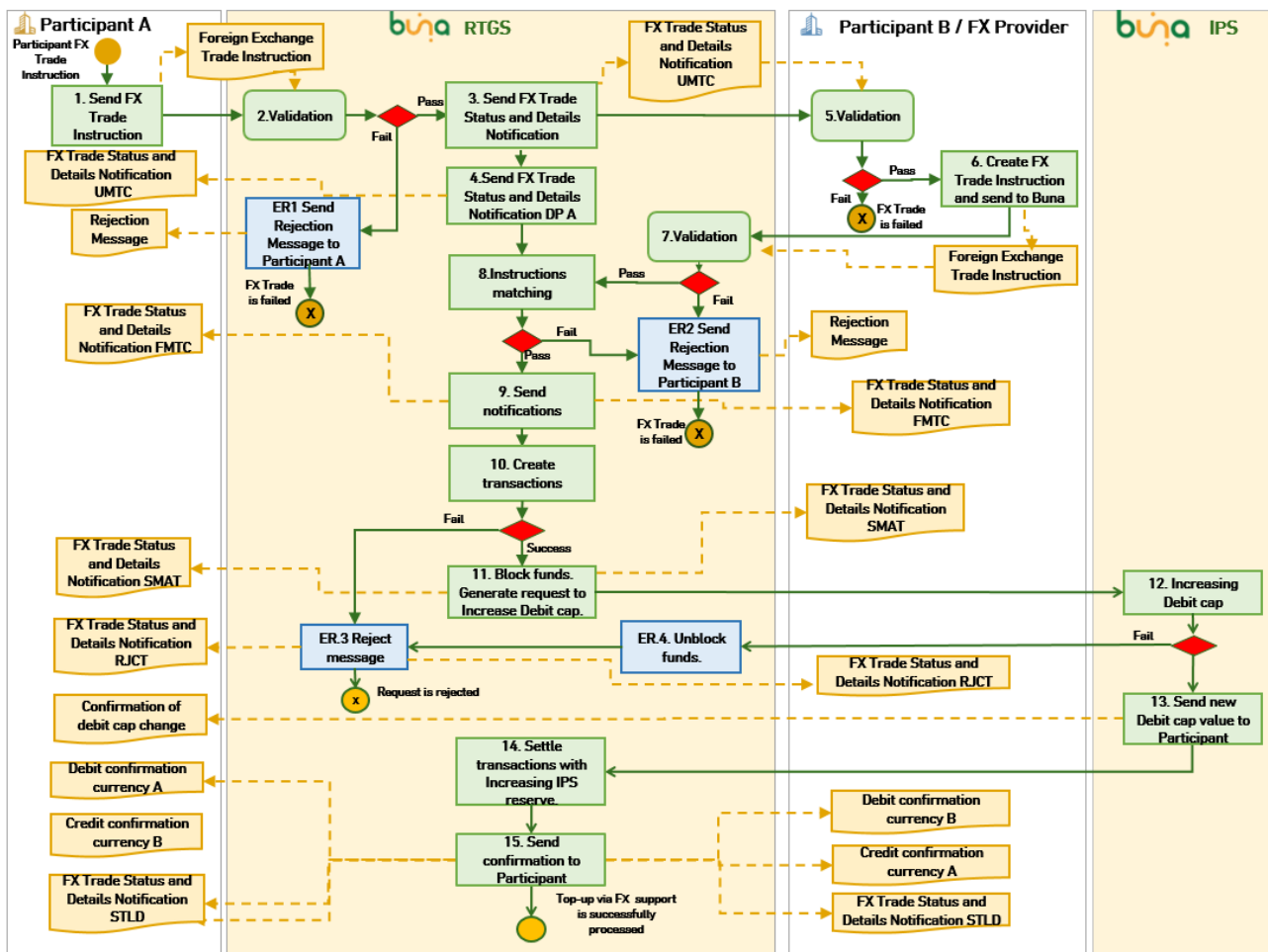


Figure 24: Top-up (increase) of Settlement limit account Debit cap after foreign exchange support operation

| | |
|--|---|
| Use Case ID | IPS-LIQ-12 |
| Use Case Name | Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation |
| Use Case Description | Top-up (increase) of IPS Settlement limit account Debit cap after foreign exchange support operation |
| Primary Actors | Direct Participant, FX Provider, Buna IPS, Buna RTGS |
| Trigger Event | The Participant sends Foreign Exchange Trade instruction to Buna with crediting IPS Reserve |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> ▪ Participant A sends Foreign Exchange Trade instruction, Participant B/Foreign exchange provider sends Foreign Exchange Trade instruction with appropriate values and Buna system matches them. If 2 instructions were matched, then 2 transactions will be processed simultaneously. ▪ Future trade date is prohibited. ▪ IPS reserve can be credited only. Only main debit can be debited. <p>For more details about Foreign exchange support use RTGS appropriate Use Cases:</p> <ol style="list-style-type: none"> 1. LIQ-11 «Foreign exchange Trade Instruction cancellation» 2. QUE-05 «Manage Payments at EOD» | |
| Post Conditions | |
| Transactions in 2 currencies are settled. Top-up of Settlement limit account occurred. | |
| Basic Flow | |
| 1 | The Participant A sends Foreign Exchange Trade instruction (MT298/300 == fxtr.014) to Buna RTGS. IPS reserve is crediting. |
| 2 | <p>Buna RTGS validates the message:</p> <ul style="list-style-type: none"> • Non-payment message validation (6.5.1Use Case NPM-01 - Non-payment message validation) • Trade date is not in the past. <p>In a case of error proceed to ER1</p> |
| 3 | Buna RTGS sends FX Trade Status and Details Notification (MT296/FXSD/UMTC == fxtr.017/UMTC) to Participant B/Foreign Exchange provider. |
| 4 | Buna sends FX Trade Status and Details Notification UMTC (MT296/FXSN/UMTC == fxtr.017/UMTC) to BP A. |

| | |
|----|---|
| 5 | <p>Participant B/Foreign Exchange provider validates FX Trade Status and Details Notification</p> <p>In case of error – no further actions, 2nd instruction will not be sent.</p> |
| 6 | <p>Participant B/Foreign Exchange provider creates FX Trade Instruction (MT298/300 == fxtr.014) and sends to Buna RTGS</p> |
| 7 | <p>Buna RTGS validates the message:</p> <ul style="list-style-type: none"> • Non-payment message validation (6.5.1Use Case NPM-01 - Non-payment message validation) • Trade date is not in the past. <p>In a case of error proceed to ER2</p> |
| 8 | <p>Buna RTGS executes Instructions matching (For details refer to Message formats document)</p> <p>In a case of error proceed to ER2</p> |
| 9 | <p>Buna sends FX Trade Status and Details Notification (MT296/FXSD == fxtr.017/FMTC) to Participant A and status FMTC (MT296/FXSN/FMTC == fxtr.017/FMTC) to Participant B</p> |
| 10 | <p>Transaction creation.</p> <p>Success – go to 11</p> <p>Failed (because of lack of funds or account lock) – go to ER3</p> |
| 11 | <p>Buna RTGS</p> <ul style="list-style-type: none"> • sends FX Trade Status and Details Notification (MT296/FXSN/SMAT == fxtr.017/SMAT) • blocks funds for IPS reserve • generates internal request to increase Debit cap to Buna IPS. |
| 12 | <p>Buna IPS increases the Settlement limit account Debit cap.</p> <p>Success – go to 13</p> <p>Failed – go to ER3</p> |
| 13 | <p>Buna IPS sends new Debit cap value (camt.010) to Participant</p> |
| 14 | <p>Buna RTGS settles the transactions</p> |
| 15 | <p>Buna RTGS sends confirmations:</p> <ul style="list-style-type: none"> • Debit confirmation currency A (MT900 == camt.054) and Credit confirmation currency B (MT910 == camt.054) and FX Trade Status and Details Notification (MT296/FXSN/STLD == fxtr.017/STLD) to Participant A |

| | |
|------------------------|---|
| | Debit confirmation currency B (MT900 == camt.054) and Credit confirmation currency A (MT910 == camt.054) and FX Trade Status and Details Notification (MT296/FXSN/STLD == fxtr.017/STLD) to Participant B |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Validation of Participant A instruction is failed |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 ==camt.025) |
| | ER2: Validation of Participant B instruction is failed |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 ==camt.025) |
| | ER3: Transactions were not created because of lack of funds or account lock. |
| 1 | Buna RTGS rejects Request and sends FX Trade Status and Details Notification RJCT (MT296/FXSN/RJCT == fxtr.017/RJCT)) to Settlement limit account holder |
| | ER4: Attempt to increase settlement limit account Debit Cap was failed. |
| 1 | Buna RTGS unblocks funds. |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------------|----------------|-------------------------|------------------------------------|
| BP, FX Provider | MT298/300 | fxtr.014 | Foreign exchange trade instruction |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------------|----------------|-------------------------|--|
| BP, FX Provider | MT296 | fxtr.017 | FX Trade Status and Details Notification |
| BP, FX Provider | MT296 | camt.025 | Processing notification |
| BP, FX Provider | MT996 | admi.002 | Message rejection |
| BP, FX Provider | MT900 | camt.054 | Debit confirmation |
| BP, FX Provider | MT910 | camt.054 | Credit confirmation |

| | | | |
|----|---------------------------------------|----------|------------------|
| BP | N/A (as will be sent via IPS channel) | camt.010 | Debit cap change |
|----|---------------------------------------|----------|------------------|

6.3.13 Use Case LIQ-13: Set FX rate by FX Provider

Set FX rate

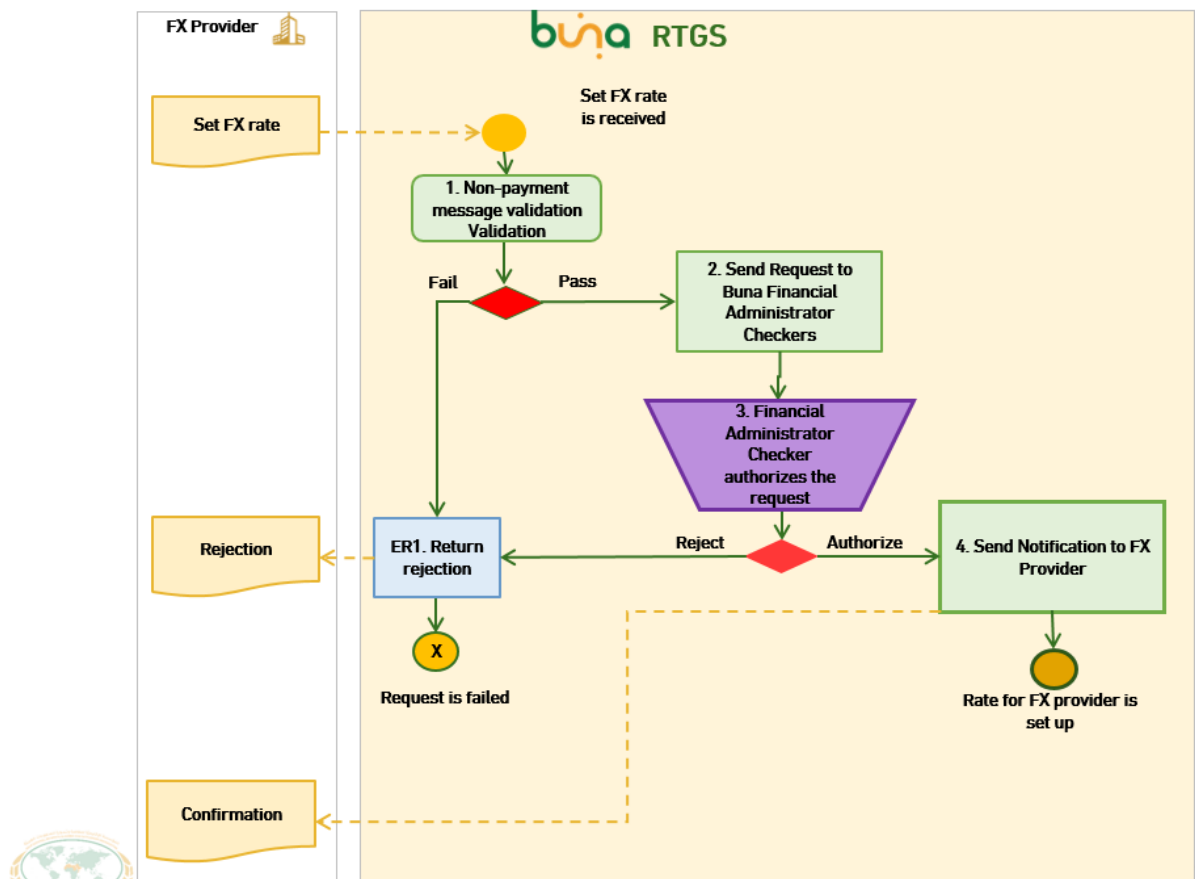


Figure 25: Set FX rate by FX Provider

| | |
|--|---|
| Use Case ID | IPS-LIQ-13 |
| Use Case Name | Set FX rate by FX Provider |
| Use Case Description | Register currency pair for the Trade date with optional FX rate data by FX Provider |
| Primary Actors | FX Provider, Buna RTGS |
| Trigger Event | The Participant sends Set FX rate instruction to Buna with registering currency pair for the Trade date |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> ▪ Set FX rate instruction can contain several trade dates. ▪ Set FX rate instruction can contain several currency pairs in one message. | |

| | |
|--|---|
| <p>▪ Currency pair for the Trade date can be registered either with FX or without it.</p> | |
| Post Conditions | |
| Currency pair for the Trade date is registered | |
| Basic Flow | |
| 1 | <p>FX provider sends Set FX rate instruction (MT298/377 == camt.998 set FX rate) to Buna RTGS.</p> <p>Buna RTGS validates the message:</p> <ul style="list-style-type: none"> Non-payment message validation (6.5.1 Use Case NPM-01 - Non-payment message validation) <p>In a case of error proceed to ER1</p> |
| 2 | Optional step (depends on the current settings): Buna RTGS sends instruction to the Buna Financial Administrator Checker |
| 3 | <p>Buna Financial Administrator Checker makes a decision:</p> <p>Authorize – go to 4.</p> <p>Reject – go to ER1.</p> |
| 4 | Buna saves currency pairs for the Trade dates for current FX provider and sends Notifications about successful operation (MT298/379 == camt.017 and MT296 == camt.025) to FX Provider |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Financial Administrator rejected an operation |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 == camt.025) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------|----------------|-------------------------|-------------------------|
| FX Provider | MT298/377 | camt.998 set FX rate | Set FX rate instruction |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-----------|----------------|-------------------------|-------------|
|-----------|----------------|-------------------------|-------------|

| | | | |
|-------------|-----------|----------|------------------------------------|
| FX Provider | MT298/379 | camt.017 | Information about current FX rates |
| FX Provider | MT296 | camt.025 | Processing notification |
| FX Provider | MT996 | admi.002 | Message rejection |

6.3.14 Use Case LIQ-14: Delete FX rate by FX Provider

Delete FX rate

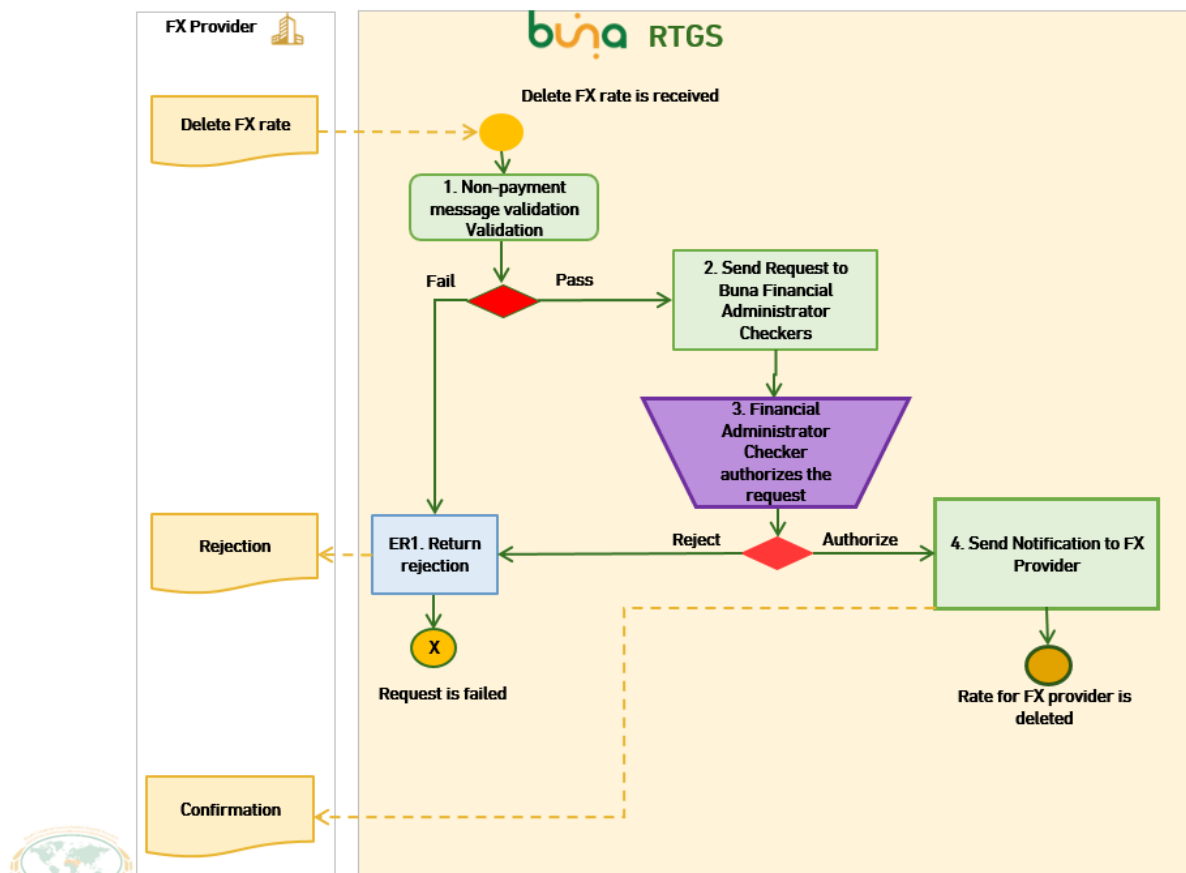


Figure 26: Delete FX rate by FX Provider

| | |
|-----------------------------|--|
| Use Case ID | IPS-LIQ-14 |
| Use Case Name | Delete FX rate by FX Provider |
| Use Case Description | Remove currency pair for the Trade date by FX Provider |
| Primary Actors | FX Provider, Buna RTGS |
| Trigger Event | The Participant sends Delete FX rate instruction to Buna |

| Use Case Business Rules | |
|---|---|
| <ul style="list-style-type: none"> ▪ Delete FX rate instruction can contain several trade dates. ▪ Delete FX rate instruction can contain several currency pairs in one message. ▪ | |
| Post Conditions | |
| Currency pair for the Trade date is deleted | |
| Basic Flow | |
| 1 | FX provider sends Delete FX rate instruction (MT298/378 == camt.998 delete FX rate) to Buna RTGS. Buna RTGS validates the message: <ul style="list-style-type: none"> • Non-payment message validation (6.5.1 Use Case NPM-01 - Non-payment message validation) In a case of error proceed to ER1 |
| 2 | Optional step (depends on the current settings): Buna RTGS sends instruction to the Buna Financial Administrator Checker |
| 3 | Buna Financial Administrator Checker makes a decision: Authorize – go to 4. Reject – go to ER1. |
| 4 | Buna removes currency pairs for the Trade dates for current FX provider and sends Notification about successful operation (MT296== camt.025) to FX Provider |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Financial Administaror rejected an operation |
| 1 | Buna sends rejection message to Participant (MT996 == admi.002 OR MT296 ==camt.025) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-----------------------|--------------------------------|----------------------------|
| FX Provider | MT298/378 | camt.998 delete FX rate | Delete FX rate instruction |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------|----------------|-------------------------|-------------------------|
| FX Provider | MT296 | camt.025 | Processing notification |
| FX Provider | MT996 | admi.002 | Message rejection |

6.4 REQUEST AND REPORT USE CASES

6.4.1 Use Case RPT-01 - Report Request

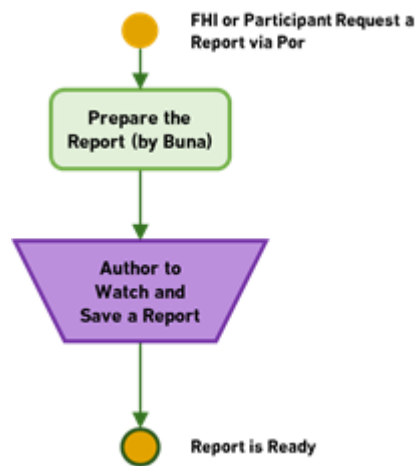


Figure 27: Report Request

| | |
|--|---|
| Use Case ID | RPT-01 |
| Use Case Name | Report Request |
| Use Case Description | This Use case describes common behavior for all report request use cases initiated by a participant from the WEB Front GUI (Portal) |
| Primary Actors | BP/FHI/CEB GUI User |
| Trigger Event | GUI User captures a report request through the WEB Front GUI (Portal) |
| Use Case Business Rules | |
| The user has permission to request the report. | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| The Report is returned to the BP/FHI User through the WEB Front GUI (Portal) | |
| Basic Flow | |
| 1 | The user generates a report request and the request instruction is sent to Buna |
| 2 | The report is generated |
| 3 | The report is available to requesting BP/FHI/CEB GUI Users through the WEB Front GUI (Portal) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

6.4.2 Use Case RPT-02 - Receive EOD Statement

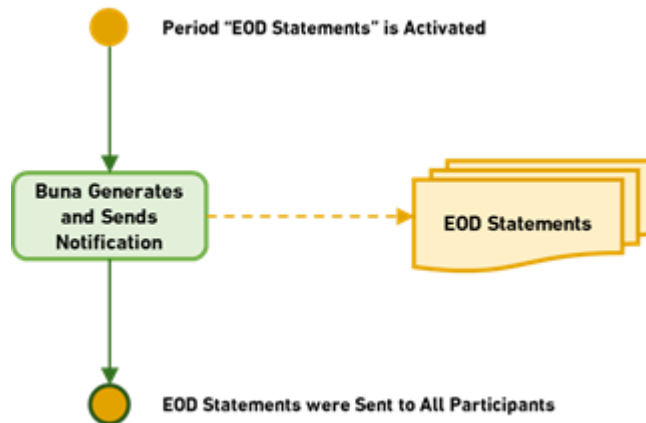


Figure 28: Receive EOD Statement

| | |
|--|--|
| Use Case ID | RPT-02 |
| Use Case Name | Receive the End of Day Statement |
| Use Case Description | Receive the End of Day Statement sent by Buna |
| Primary Actors | Buna, Buna Participants |
| Trigger Event | EOD Window is initiated at Buna |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Message is received by participants | |
| Basic Flow | |
| 1 | Buna generates the End of Day Statements (MT950 == camt.053) |
| 2 | The statements are received by the BP |
| Alternate Flows | |
| N/A | |

| Exceptions | |
|------------|-----|
| | N/A |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------|----------------|-------------------------|----------------------|
| Buna Participant | MT950 | camt.053 | End of Day Statement |

6.4.3 Use Case RPT-03 – Request and receive Account Balance Report

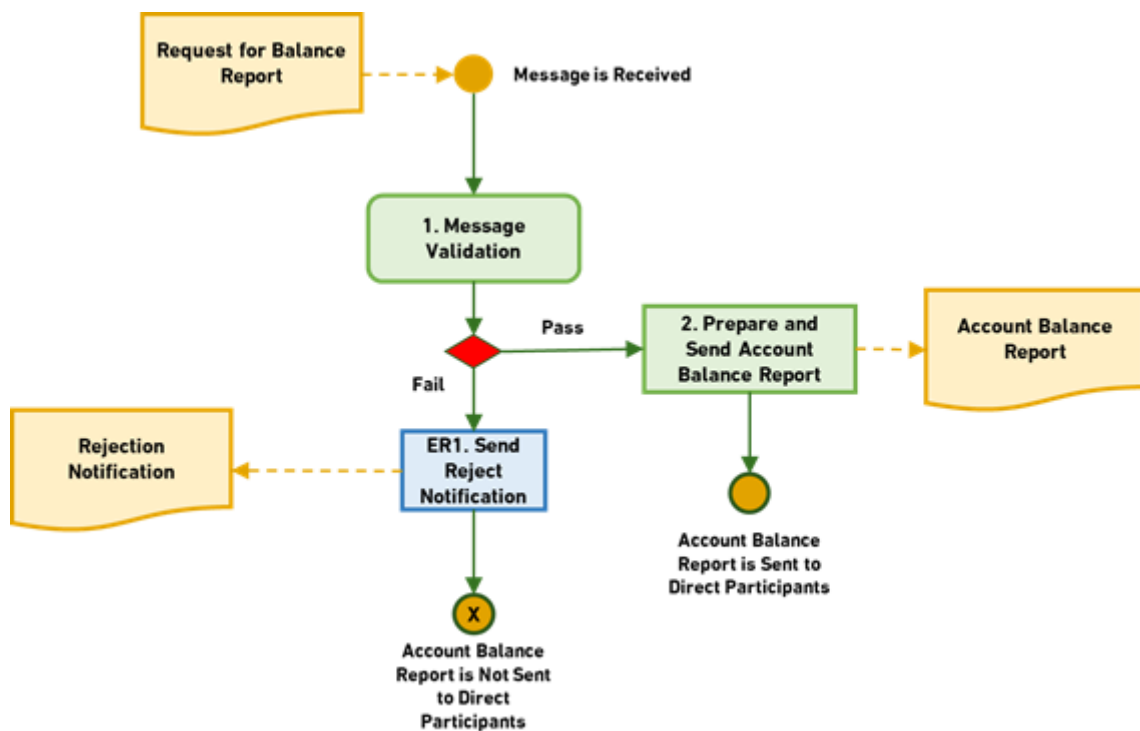


Figure 29: Request and receive Account Balance Report

| | |
|--|--|
| Use Case ID | RPT-03 |
| Use Case Name | Request and Receive the Account Balance Report |
| Use Case Description | Request and Receive the Account Balance Report following the Participant's request |
| Primary Actors | Buna Participants |
| Trigger Event | MT920/941 == camt.060/BALR: Balance request message was received. |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| The Account Balance report is received by the participant | |
| Basic Flow | |
| 1 | Execute UC029 Non-Payment message validation (alternative flow description can be seen in this UC029). |
| 2 | Buna generates the Account Balance Report MT941 == camt.052/BALR and sends it to the participant. |
| 3 | The Account Balance report is received by the participant |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|-----------------------|--------------------------------|--------------------|
| Buna Participants (CEBs acting as BPs also) | MT920/941 | camt.060/BALR | Balance request |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|-------------------|
| Buna Participants (CEBs acting as BPs also) | MT941 | camt.052/BALR | Balance Report |
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT996/ERRC | camt.025 | Error message |
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT996/RJCT | admi.002 | Rejection message |

6.4.4 Use Case RPT-04 - Request Transaction Status

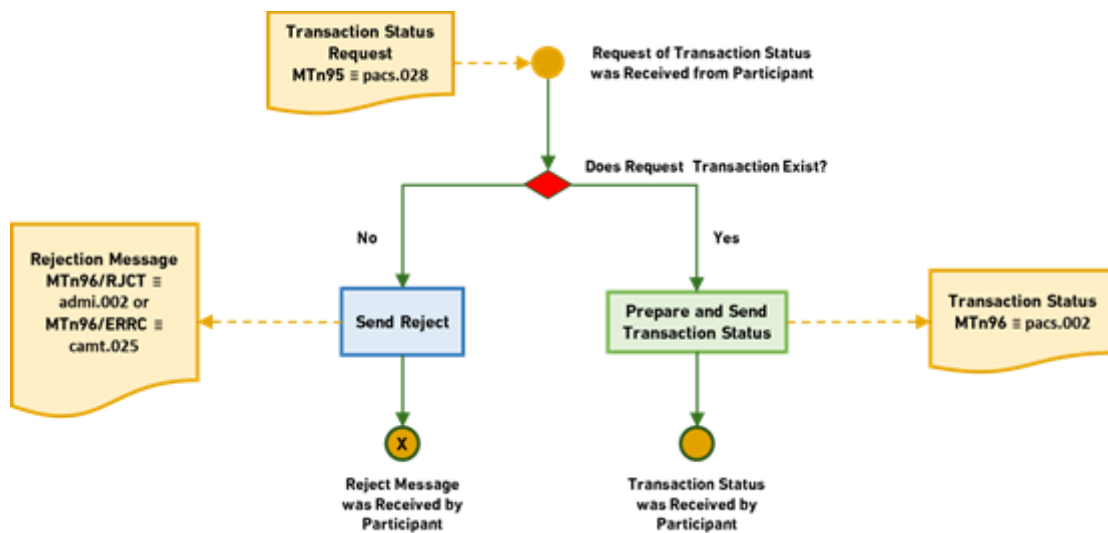


Figure 30: Request Transaction Status

| | |
|--------------------------------|--|
| Use Case ID | RPT-04 |
| Use Case Name | Request Transaction Status |
| Use Case Description | Request the current status of a transaction |
| Primary Actors | Buna Participant, Buna |
| Trigger Event | Transaction status request message (MTn95 == pacs.028) |
| Use Case Business Rules | |

| | |
|--|--|
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Status is sent to the sender of the request | |
| Basic Flow | |
| 1 | Buna generates and sends a transaction status message to the sender of the request (MTn96 == pacs.002). |
| 2 | The Buna Participant receives the transaction status |
| Alternate Flows | |
| 1 | If an error occurs when the request is processing, a rejection notification will be sent to the sender of the request (MTn96/RJCT == admi.002 or MTn96/ERRC == camt.025) |
| Exceptions | |
| | N/A |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------------|----------------|-------------------------|----------------------------|
| Buna Participants | MT195 | pac.028 | Transaction status request |
| Buna Participants | MT295 | pac.028 | Transaction status request |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|--------------------|
| Buna Participants (CEBs acting as BPs also) | MT196/ERRC | camt.025 | Processing error |
| Buna Participants (CEBs acting as BPs also) | MT296/ERRC | camt.025 | Processing error |
| Buna Participants (CEBs acting as BPs also) | MT198/RJCT | admi.002 | Rejection message |
| Buna Participants (CEBs acting as BPs also) | MT298/RJCT | admi.002 | Rejection message |
| Buna Participants (CEBs acting as BPs also) | MT196 | pac.002 | Status of transfer |
| Buna Participants (CEBs acting as BPs also) | MT296 | pac.002 | Status of transfer |

6.5 NON-PAYMENT MESSAGE FLOWS

6.5.1 Use Case NPM-01 - Non-payment message validation

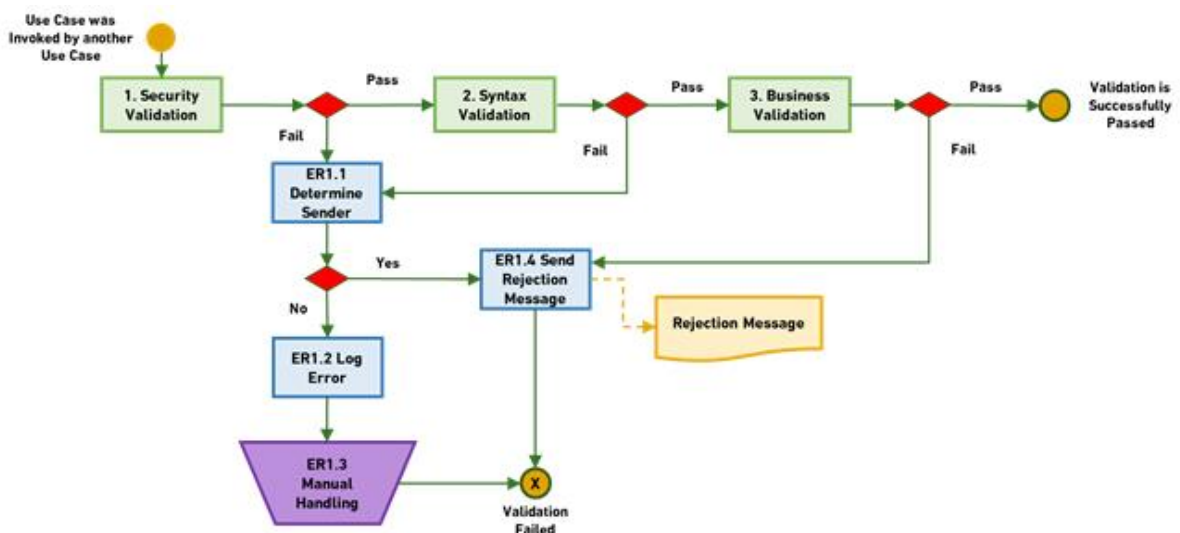


Figure 31: Non-payment message validation

| | |
|--|---|
| Use Case ID | NPM-01 |
| Use Case Name | Non-payment Message validation |
| Use Case Description | The General validation process for all incoming non-payment messages. Validation rules could be extended in other use cases for specific scenarios |
| End Objective | Incoming message is validated |
| Primary Actors | Validation is a sub process. It is invoked by primary use cases |
| Trigger Event | Incoming non-payment message |
| Use Case Business Rules | |
| <p>Security Validation:</p> <ol style="list-style-type: none"> The Incoming message signature is valid for the sender <p>Structural Validation:</p> <ol style="list-style-type: none"> The Incoming message conforms to the XSD scheme <p>Business Validation:</p> <ol style="list-style-type: none"> The Message type is allowed in the current window (business day period) Sender's incoming messages are not blocked Access Rights: The following rules must be met: <ol style="list-style-type: none"> The sender has permission to use the message type for the current business day window The sender has permission to act on behalf of the originator | |
| Pre-Conditions | |
| The Incoming message received from either the Swift network or VPN | |
| Post Conditions | |
| The Incoming message is successfully validated or rejected | |
| Basic Flow | |
| 1 | Security Validation: Check the signature against the sender of the message. On failure execute ER1.1 |
| 2 | Syntax Validation: Perform XSD validation of the incoming message. On failure execute ER1.1 |
| 3 | Business validation: Check all business rules. In cases of failure execute ER1.3 |

| Alternate Flows | |
|-----------------|---|
| | N/A |
| Exceptions | |
| ER1.1 | Try to determine the sender. If the sender of the message can be determined, then execute ER1.3. else execute ER1.2 |
| ER1.2 | Log error |
| ER1.3 | Manual handling |
| ER1.4 | Send reject notification to the sender of the incoming message: MTn96/ERRC == camt.025 or MTn96/RJCT == admi.002 |

6.5.2 Use Case NPM-02 - Broadcast text message

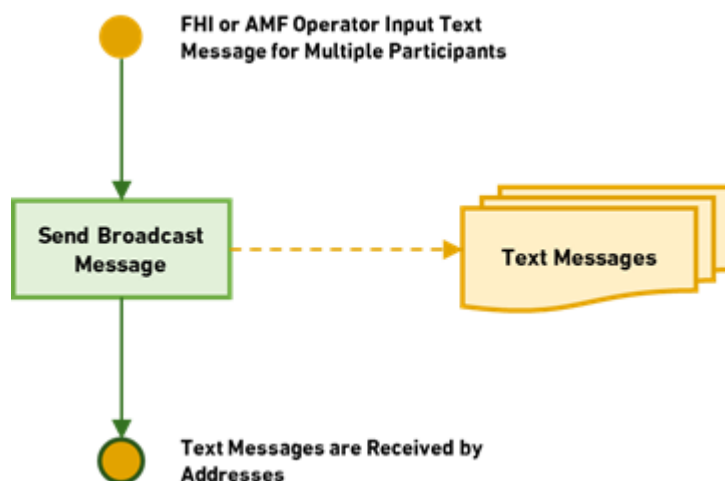


Figure 32: Broadcast text message

| | |
|-----------------------------|---|
| Use Case ID | NPM-02 |
| Use Case Name | Broadcast text message |
| Use Case Description | FHIs can send broadcast text messages to all regulated or having linked accounts participants or to selected participants of the system |
| Primary Actors | Buna, FHI, Buna Participants |
| Trigger Event | FHI GUI User captured a Broadcast text message through the WEB Front GUI (Portal) |

| Use Case Business Rules | |
|--|--|
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Message is received by addressees | |
| Basic Flow | |
| 1 | Buna/FHI inputs a message via the Portal |
| 2 | A Message is sent to addressees (camt.998 == MT999/TEXT) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|-----------------------|--------------------------------|--------------------|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/TEXT | camt.998/ text Message | Text Message |

6.5.3 Use Case NPM-03- Text messages between participants

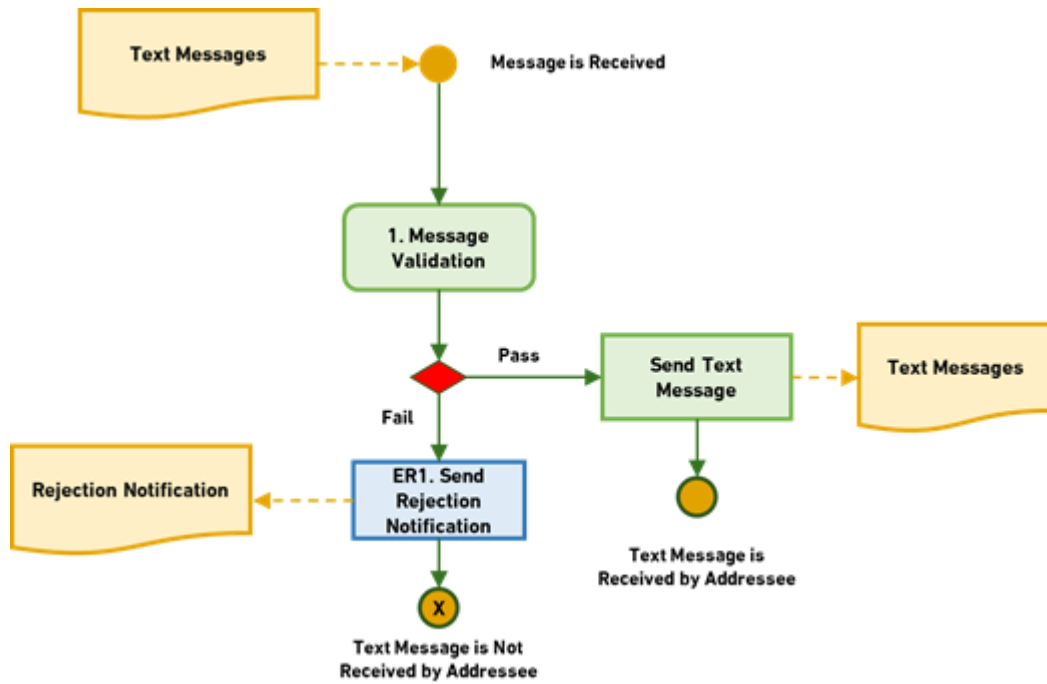


Figure 33: Text messages between participants

| | |
|---|---|
| Use Case ID | NPM-03 |
| Use Case Name | Text messages between participants |
| Use Case Description | Buna Participants can send messages to each other (one to one) |
| Primary Actors | Buna Participants |
| Trigger Event | A GUI User captures the text message through the WEB Front GUI (Portal) |
| Use Case Business Rules | |
| Buna Participants can send a message to just one addressee | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Message is received by the addressee | |
| Basic Flow | |
| 1 | A Buna Participant inputs a message via the Portal |
| 2 | A Message is received by the addressee (camt.998 == MT999) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|--------------|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/TEXT | camt.998 | Text Message |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|-------------------|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/TEXT | camt.998/ text Message | Text Message |
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT996/ERRC | camt.025 | Error message |
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT996/RJCT | admi.002 | Rejection message |

6.5.4 Use Case NPM-04 - Receive Business Day Notifications

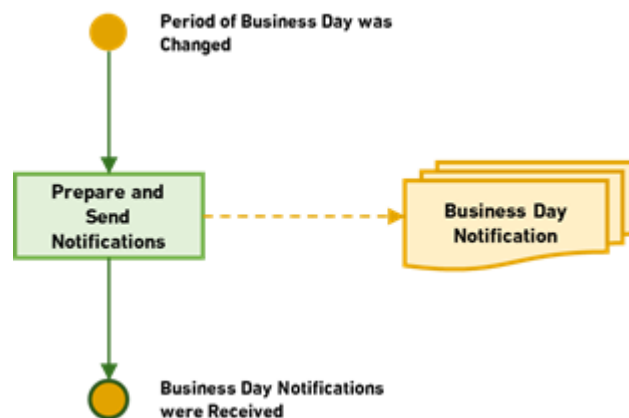


Figure 34: Receive business day notifications

| | |
|--|---|
| Use Case ID | NPM-04 |
| Use Case Name | Receive business day notifications |
| Use Case Description | Automatically receive business day notifications for manual business day changes and automatic changes in the window. |
| Primary Actors | Buna, BP, FHI |
| Trigger Event | Change of window in Buna |
| Use Case Business Rules | |
| <p>Buna will send notifications for activation of new business day periods (for each FHI separately) to notify Participants:</p> <ul style="list-style-type: none"> ▪ At Start time of FHI Schedule ▪ At Closing time of FHI Schedule ▪ At start of Defunding ▪ At start of common Schedule business day periods for which participant has subscription | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Message is distributed to Buna participants | |
| Basic Flow | |
| 1 | Buna generates business day notifications |
| 2 | Notifications are received by participants /FHIs (camt.019 == MT999/SCDW) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|----------------------------|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/SCDW | camt.019 | Business day notifications |

6.5.5 Use Case NPM-05 – Request and Receive Business Day Timetable

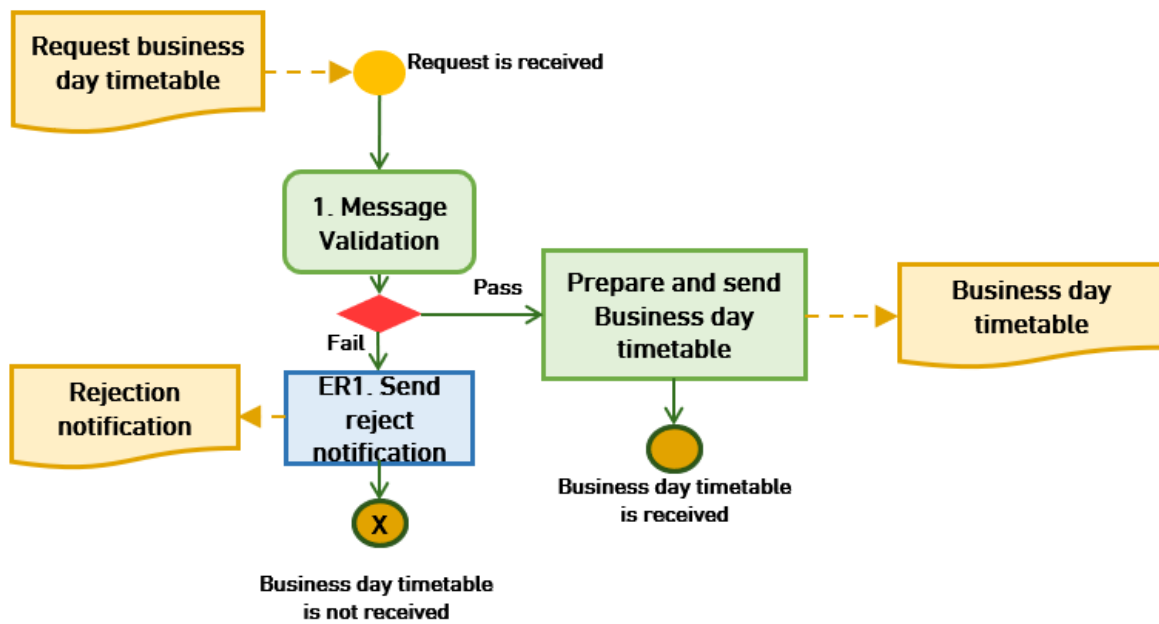


Figure 35: Request and receive business day timetable

| | |
|--|---|
| Use Case ID | NPM-05 |
| Use Case Name | Request and receive a business day timetable |
| Use Case Description | Request and receive a business day timetable |
| Primary Actors | Buna, BP, FHI, CEB |
| Trigger Event | A Request for a business day timetable was received from BP/ FHI/ CEB (MT999/GSCD == camt.018: Requesting business day timetable) |
| Use Case Business Rules | |
| Participant can request actual timetable for the current Business day | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Timetable is distributed to the sender of the request | |
| Basic Flow | |
| 1 | Execute UC029 Non-Payment message validation (Alternative flow description can be checked under UC029) |
| 2 | Buna generates a timetable and sends it to the sender of the request |
| 3 | Timetable is received by participants /FHIs (camt.019 == MT999) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | N/A |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|--|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/GSCD | camt.018 | Request for the business day timetable |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|----------------|-------------------------|--------------------|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/SCDW | camt.019 | Timetable |
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT996/ERRC | camt.025 | Error message. |
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT996/RJCT | admi.002 | Rejection message. |

6.5.6 Use Case NPM-06 - Change Participant Status Upon CEB's Request

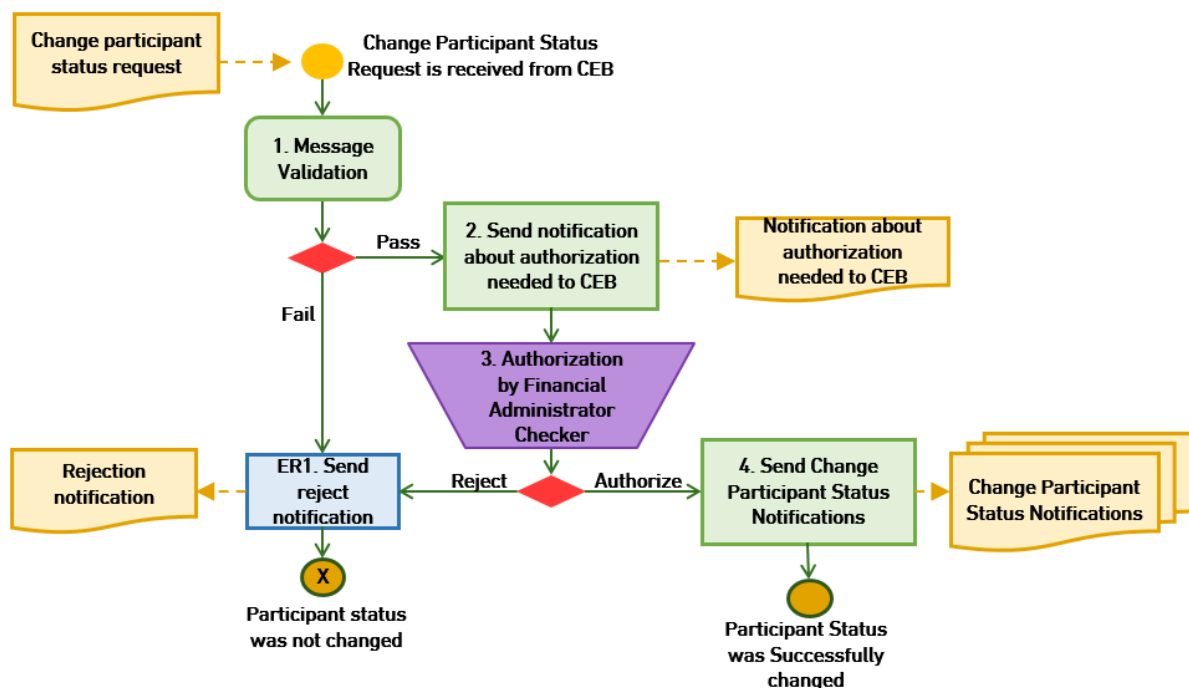


Figure 36: Change participant status upon CEB's request

| | |
|---|--|
| Use Case ID | NPM-06 |
| Use Case Name | Change participant's status upon CEB's request |
| Use Case Description | Change participant's status based on a request from Central Banks |
| Primary Actors (Sender) | CEB, Buna |
| Trigger Event | A change participant's status request message is received from the CEB (MT999/MPST == camt.998/changeParticStatus) |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> • The sender of the change participant request must be the CEB of the Participant's country • During the defunding procedure money will be defunded normally for suspended participants. • Queued payments will be moved to «Suspended (Inactive)» Status and rejected according to the settings 6.2.5 Use Case QUE-05: Manage Payments at EOD • Inactive status is a final block of the Participant. Central bank cannot change the status of the Inactive Participant. • Buna Financial Administrator Checker approves the request | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| The Participant's status was changed | |
| Basic Flow | |
| 1 | Execute use case NPM-01: Non-payment message validation. There is an additional business validation for a lock account request: <ol style="list-style-type: none"> 1. The sender of the change participant request must be the CEB of the Participant's country If the validation fails, then go to ER1 |
| 2 | Buna system sends notification about authorization needed to CEB (MT996 ≡ camt.025) |
| 3 | Buna Financial Administrator Checker approves CEB's request. In case of rejection go to ER1. |

| | |
|------------------------|---|
| 4 | Buna changes the participant's status and sends a notification to the users of active and suspended participants(MT999/PSTS ≡ camt.998/participantStsRep) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Validation failed or Buna Financial Administrator checker declines the request |
| ER1 | Buna sends a reject message to the Sender of the request (CEB) (MT996/ERRC == camt.025)/admi.002 |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|----------------|-----------------------|--------------------------------|-----------------------------------|
| CEBs | MT999/MPST | camt.998/changeParticStatus | Change participant status request |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---------------------------------|-----------------------|--------------------------------|---|
| CEBs, Participants, Buna | MT999/PSTS | camt.998/ participantStsRep | Change participant status notification. |
| CEBs | MT996 | camt.025 | Notification about authorization needed |
| CEBs | MT996/ERRC | camt.025 | Error message. |
| CEBs | MT996/RJCT | admi.002 | Rejection message. |

6.5.7 Use Case NPM-07- Change Participant Status by Buna Financial Administrator

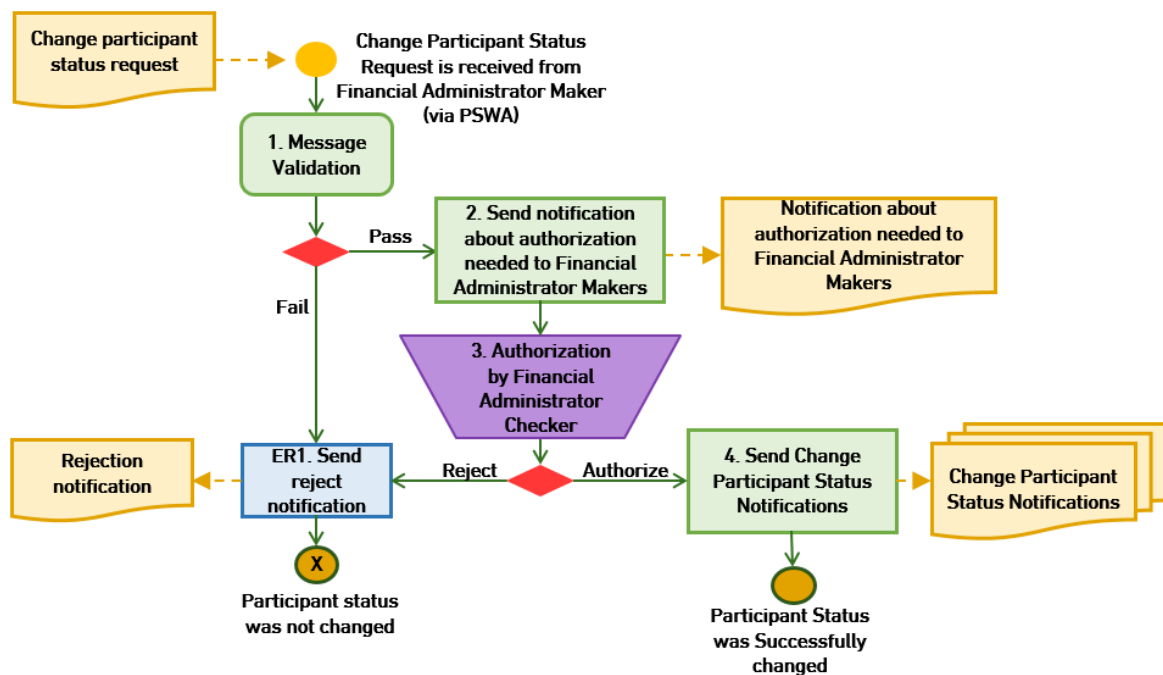


Figure 37: Change participant status by Buna Financial administrator

| | |
|--|---|
| Use Case ID | NPM-07 |
| Use Case Name | Change a participant’s status by a Buna Financial administrator |
| Use Case Description | Change a participant’s status by a Buna Financial administrator |
| Primary Actors (Sender) | Buna Financial Administrators |
| Trigger Event | The Buna Financial Administrator Maker sends a request to Change the status of a Participant via PSWA |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> • During the defunding procedure money will be defunded normally for suspended participants. • Queued payments will be moved to «Suspended (Inactive)» Status and rejected according to the settings 6.2.5 Use Case QUE-05: Manage Payments at EOD • Buna Financial Administrator can Suspend FHI. • Suspended FHI cannot send transactions, only receive. Withdrawal and defunding are possible for suspended FHI. • Inactive status is a final block of the Participant. Financial Administrator cannot change the status of the Inactive Participant. | |

| | |
|--|--|
| <ul style="list-style-type: none"> Buna Financial Administrator Checker approves the request | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Participant status was changed | |
| Basic Flow | |
| 1 | Execute use case NPM-01: Non-payment message validation. If the validation fails, then go to ER1 |
| 2 | Buna system sends notification about authorization needed to Buna Financial Administrator Maker (camt.025) |
| 3 | Buna Financial Administrator Checker approves Maker's request. In case of rejection go to ER1. |
| 4 | Buna changes the participant's status and sends a notification to the users of active and suspended participants (MT999/PSTS ≡ camt.998/participantStsRep) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Validation failed or Buna Financial Administrator checker declines the request |
| ER1 | Buna sends a reject message to the Sender of the request (Buna Financial AdministratorMakers) (MT996/ERRC == camt.025) |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--|-----------------------|--------------------------------|---|
| CEBs, Participants, Buna | MT999/PSTS | camt.998/ participantStsRep | Change participant status notification |
| Buna Financial Administrator Makers | MT996 | camt.025 | Notification about authorization needed |
| Buna Financial Administrator Makers | MT996/ERRC | camt.025 | Error message. |

6.5.8 Use Case NPM-08 – Request and Receive Actual Calendar

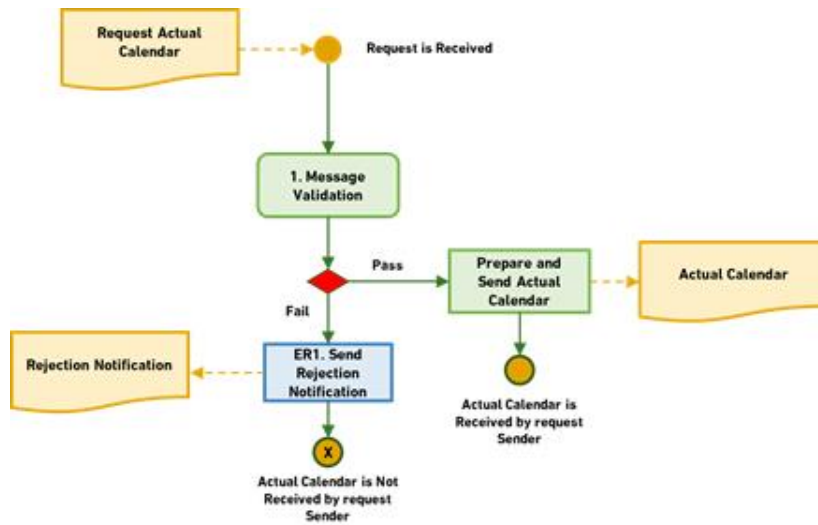


Figure 38: Request and receive actual calendar

| | |
|---|--|
| Use Case ID | NPM-08 |
| Use Case Name | Request and receive an actual calendar |
| Use Case Description | Receive the actual calendar when requested by the Participant |
| Primary Actors | BPs (Buna Participants), CEB, FHI |
| Trigger Event | MT999/GCLD == reda.064: A Calendar message was received |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| The Actual calendar has been received by the participant | |
| Basic Flow | |
| 1 | Buna generates the actual calendar message MT999/CLDR == reda.065: Return Calendar and sends it to the participant |
| 2 | The Actual calendar is received by the participant |

| Alternate Flows | |
|-----------------|-----|
| | N/A |
| Exceptions | |
| | N/A |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---|----------------|-------------------------|----------------------------|
| Buna Participants, FHIs, CEBs, Correspondent Banks | MT999/GCLD | reda.064 | Requesting system calendar |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|------------------------|----------------|-------------------------|-------------------|
| BPs, FHIs, CEBs | MT999/CLDR | reda.065 | System calendar |
| BPs, FHIs, CEBs | MT996/ERRC | camt.025 | Error message |
| BPs, FHIs, CEBs | MT996/RJCT | admi.002 | Rejection message |

6.5.9 Use Case NPM - 09- Lock Account Upon CEB's Request

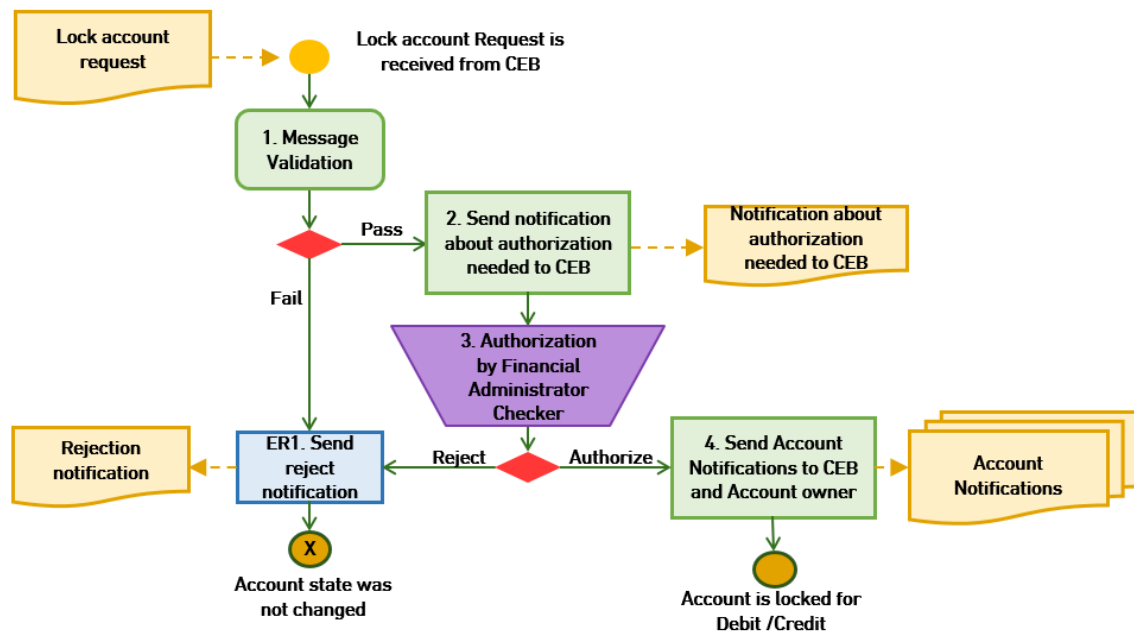


Figure 39: Lock account upon CEB's request

| | |
|--|--|
| Use Case ID | NPM-09 |
| Use Case Name | Lock an account upon the CEB's request |
| Use Case Description | Lock an account for debit or credit or both upon CEB's request |
| Primary Actors (Sender) | CEB, Buna |
| Trigger Event | A Lock account request is received from the CEB(MT999/LCKA == camt.998/lock Account) |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> • The sender of the lock account request must be the CEB of the Participant's country • Buna Financial Administrator Checker approves the request | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |

| | |
|------------------------|--|
| Account was locked | |
| Basic Flow | |
| 1 | Execute use case UC029: Non-payment message validation. There is an additional business validation for a lock account request: 1. The sender of the change participant request must be the CEB of the Participant's country If validation fails, then go to ER1 |
| 2 | Buna system sends notification about authorization needed to CEB (MT996 == camt.025) |
| 3 | Buna Financial Administrator Checker approves CEB's request. In case of rejection go to ER1. |
| 4 | Buna locks the account for debit or credit or both and sends a notification to the CEB (MT999/ ACST == camt.052/ACST: Account status) and account owner (MT999/LCKA == camt.998/lock Account) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER: Validation failed |
| ER1 | Buna sends a reject message to the Sender of the request (CEB) (MT996 == camt.025) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------|----------------|-------------------------|-----------------|
| CEBs | MT999/LCKA | camt.998/lock Account | Locking account |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|--------------------|----------------|-------------------------|-------------------|
| CEBs | MT999/ ACST | camt.052/ ACST | Account status |
| CEBs | MT996/ERRC | camt.025 | Error message |
| CEBs | MT996/RJCT | admi.002 | Rejection message |
| Participant | MT999/LCKA | camt.998/lock Account | Locking account |

| | | | |
|-------------|--------------|-----------------|---------------------------|
| CEBs | MT996 | camt.025 | Notification about |
|-------------|--------------|-----------------|---------------------------|



| | | | |
|--|--|--|---------------------------------|
| | | | authorization needed |
|--|--|--|---------------------------------|

6.5.10 Use Case NPM-10- Lock Account Upon Buna Financial Administrator Request

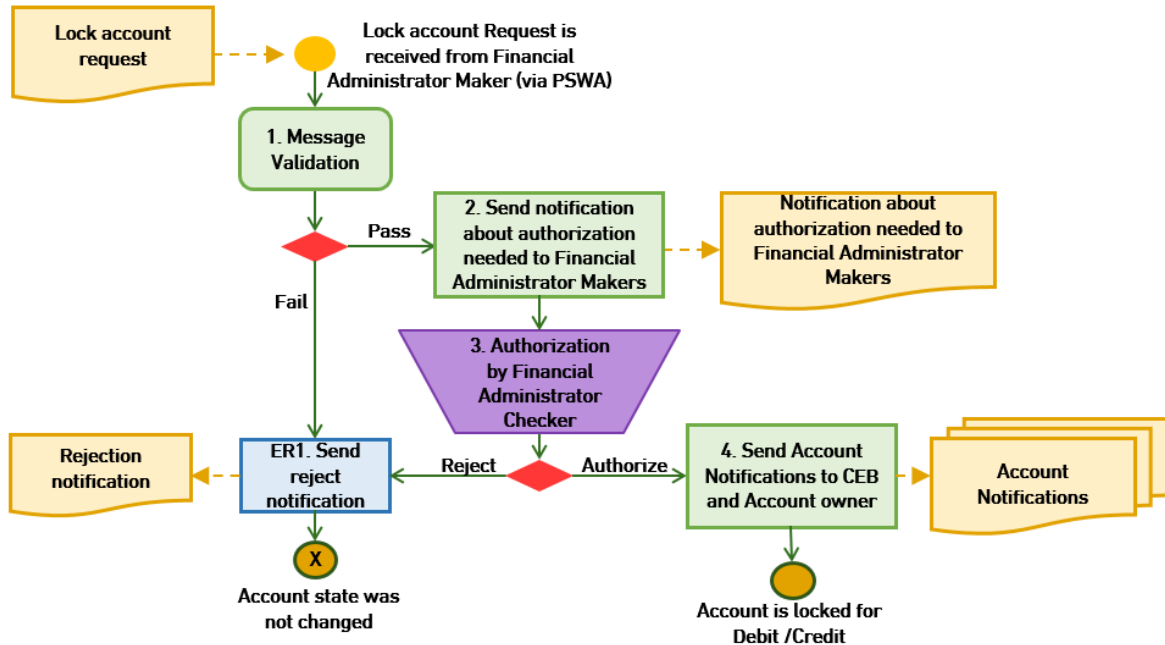


Figure 40: Lock account upon Buna Financial Administrator request

| | |
|---|---|
| Use Case ID | NPM-10 |
| Use Case Name | Lock an account upon Buna Financial Administrator request |
| Use Case Description | Lock account for debit or credit or both following a Buna Financial Administrator request |
| Primary Actors (Sender) | Buna |
| Trigger Event | The Buna Financial Administrator sent a request to Lock an account |
| Use Case Business Rules | |
| Buna Financial Administrator Checker approves the request | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |

| | |
|------------------------|---|
| Account was locked | |
| Basic Flow | |
| 1 | Execute use case NPM-01: Non-payment message validation. If the validation fails, then go to ER1 |
| 2 | Buna system sends notification about authorization needed to Buna Financial Administrator Maker (camt.025) |
| 3 | Buna Financial Administrator Checker approves Maker's request. In case of rejection go to ER1. |
| 4 | Buna locks an account for debit or credit or both and sends a notification to Financial Administrator (MT999/ ACST == camt.052/ ACST: Account status) and account owner (MT999/LCKA == camt.998/lock Account) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Validation failed or Buna Financial Administrator checker declines the request |
| ER1 | Buna sends a reject message to the Sender of the request (Buna Financial AdministratorMakers) (MT996/ERRC == camt.025) |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 2002 EQUIVALENT | DESCRIPTION |
|--|----------------|------------------------|---|
| Financial administrator | MT999/ ACST | camt.052/ ACST | Account status |
| Participant | MT999/LCKA | camt.998/lock Account | Locking account |
| Buna Financial Administrator Makers | MT996 | camt.025 | Notification about authorization needed |
| Buna Financial Administrator Makers | MT996/ERRC | camt.025 | Error message |

6.5.11 Use Case NPM-11- Unlock Account Upon CEB's Request

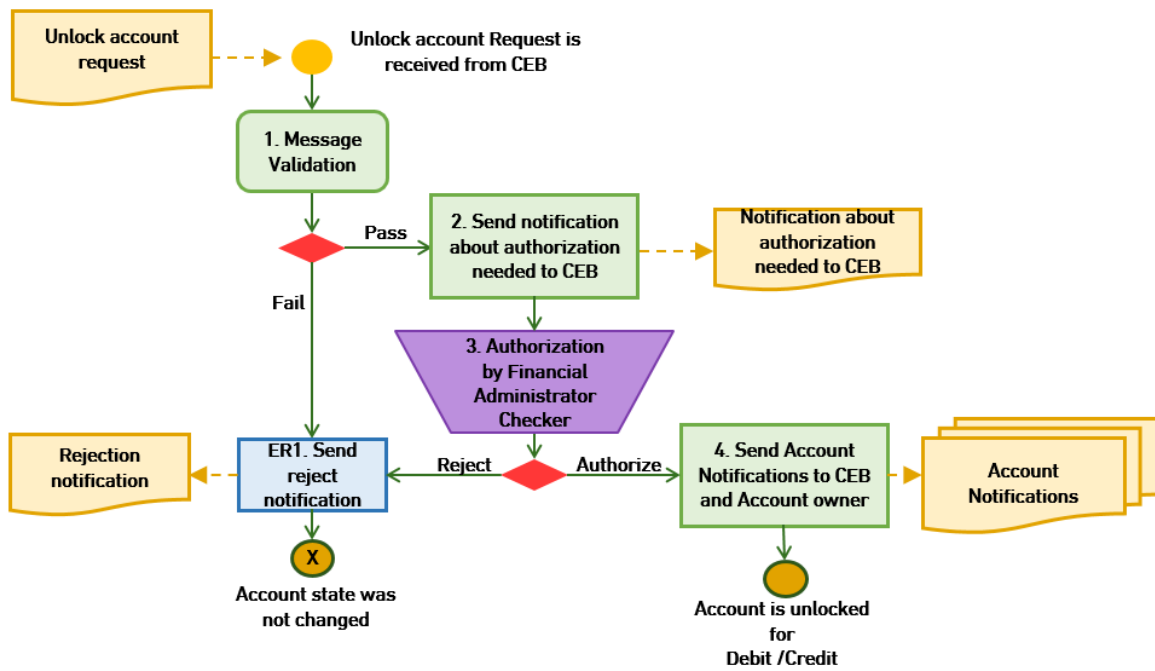


Figure 41: Unlock account upon CEB's request

| | |
|--|---|
| Use Case ID | NPM-11 |
| Use Case Name | Unlock an account upon CEB's request |
| Use Case Description | Unlock an account for debit or credit or both following a CEB's request |
| Primary Actors (Sender) | CEB, Buna |
| Trigger Event | An Unlock an account request is received from the CEB (MT999/ULKA == camt.998/unlock Account) |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> • The sender of the unlock account request must be the CEB of the Participant's country • Buna Financial Administrator Checker approves the request | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Account was unlocked | |
| Basic Flow | |
| 1 | Execute use case UC029: Non-payment message validation. Additional business validation for the unlock account request: 1. The sender of the change participant request has to be the CEB of the Participant's country If validation fails, go to ER1 |
| 2 | Buna system sends notification about authorization needed to CEB (MT996 ≡ camt.025) |
| 3 | Buna Financial Administrator Checker approves CEB's request. In case of rejection go to ER1. |
| 4 | Buna unlocks the account for debit or credit or both and sends a notifications to the CEB (<i>MT999/ACST = camt.052/ACST: Account status</i>) and account owner (MT999/ULKA == camt.998/unlock Account) |
| Alternate Flows | |
| | N/A |

| Exceptions | |
|------------|--|
| | ER: Validation failed |
| ER1 | Buna sends a reject message to the Sender of the request (CEB) (MT996 == camt.025) |

Incoming messages

| SENDERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|---------|----------------|--------------------------|-------------------|
| CEBs | MT999/ULKA | camt.998/ unlock Account | Unlocking account |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------|----------------|-------------------------|---|
| CEBs | MT999/ ACST | camt.052/ ACST | Account status |
| CEBs | MT996/ERRC | camt.025 | Processing error |
| CEBs | MT996/RJCT | admi.002 | Rejection message |
| Participant | MT999/ULKA | camt.998/unlock Account | Unlock account message |
| CEBs | MT996 | camt.025 | Notification about authorization needed |

6.5.12 Use Case NPM-12- Unlock Account Upon Buna Financial Administrator Request

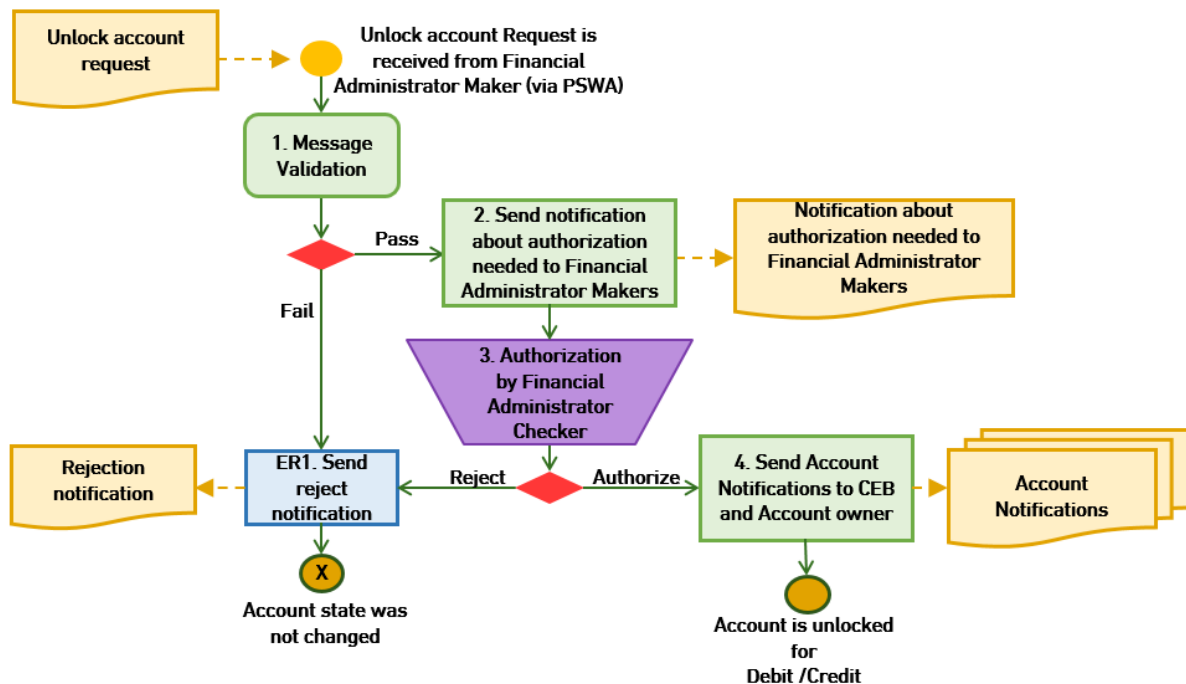


Figure 42 Unlock account upon Buna Financial Administrator request

| | |
|--|---|
| Use Case ID | NPM-12 |
| Use Case Name | Unlock an account following a Buna Financial Administrator request |
| Use Case Description | Unlock an account for debit or credit or both following a Buna Financial Administrator request |
| Primary Actors (Sender) | Buna |
| Trigger Event | A Buna Financial Administrator sent a request for Unlocking an account |
| Use Case Business Rules | |
| Buna Financial Administrator Checker approves the request | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Account was unlocked | |
| Basic Flow | |
| 1 | Execute use case NPM-01: Non-payment message validation. If the validation fails, then go to ER1 |
| 2 | Buna system sends notification about authorization needed to Buna Financial Administrator Maker (camt.025) |
| 3 | Buna Financial Administrator Checker approves Maker's request. In case of rejection go to ER1. |
| 4 | Buna unlocks an account for debit or credit or both and sends a notification to Financial Administrator (MT999/ ACST == camt.052/ ACST: Account status) and account owner (MT999/ULKA == camt.998/unlock Account) |
| Alternate Flows | |
| | N/A |
| Exceptions | |
| | ER1: Validation failed or Buna Financial Administrator checker declines the request |
| ER1 | Buna sends a reject message to the Sender of the request (Buna Financial AdministratorMakers) (camt.025) |

Outgoing messages

| RECEIVERS | MT FIN MESSAGE | MX ISO 20022 EQUIVALENT | DESCRIPTION |
|-------------------------------------|----------------|-------------------------|---|
| Financial administrator | MT999/ ACST | camt.052/ ACST | Account status |
| Participant | MT999/ULKA | camt.998/unlock Account | Unlock account message |
| Buna Financial Administrator Makers | MT996 | camt.025 | Notification about authorization needed |
| Buna Financial Administrator Makers | MT996/ERRC | camt.025 | Error message |

6.5.13 Use Case NPM-13- Suspend currency Upon Buna Database Administrator Request

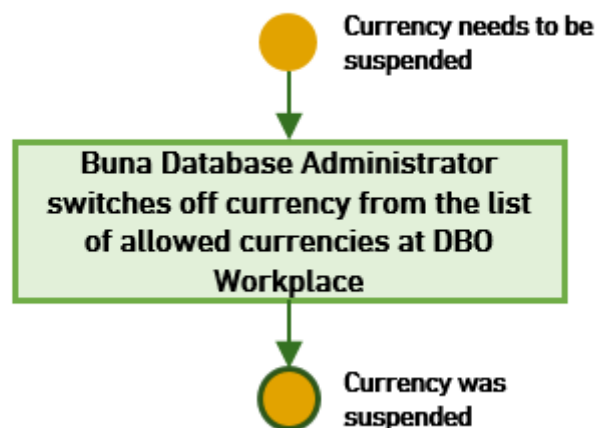


Figure 43 Suspend currency Upon Buna Database Administrator Request

| | |
|---|--|
| Use Case ID | NPM-13 |
| Use Case Name | Currency suspension |
| Use Case Description | Currency suspension |
| Primary Actors (Sender) | Buna |
| Trigger Event | A Buna Database Administrator removes currency from the list of allowed currencies at DBO Access Rights ARM for all the roles/participants with unique roles that cannot use this currency |
| Use Case Business Rules | |
| Participants linked to roles/participants with unique roles for whom this currency was switched off will be not allowed to send payments in this currency (payments will be rejected) | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Currency was suspended | |
| Basic Flow | |
| 1 | Buna suspends currency |

6.6 BILLING USE CASES

6.6.1 Use Case BILL-01 – Receive Invoices on A Periodic Basis

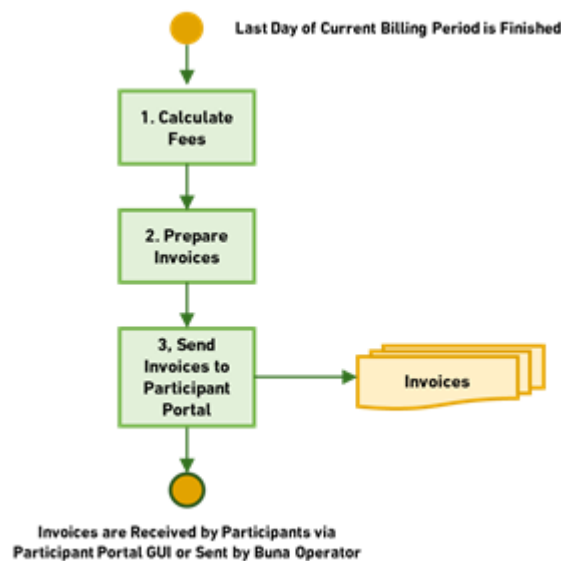


Figure 44: Receive Invoices on a periodic basis



| | |
|--|---|
| Use Case ID | BILL-01 |
| Use Case Name | Receive Invoices on a periodic basis |
| Use Case Description | Receive invoices, generated by Buna at a pre-set time |
| Primary Actors | Buna, Buna Participant |
| Trigger Event | The last business day of the current billing period was finished |
| Use Case Business Rules | |
| N/A | |
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Invoices are received by participants | |
| Basic Flow | |
| 1 | Buna calculates the charges |
| 2 | Buna generates the invoices |
| 3 | Buna sends the invoices to the Participant's Portal |
| 4 | The Buna Participant receives the invoice via their Participants Portal GUI |
| Alternate Flows | |
| 1 | A Buna Operator can download the invoices for all participants and send them without using the system |
| Exceptions | |
| | N/A |

6.6.2 Use Case BILL-02 - Request for payment of charges processing

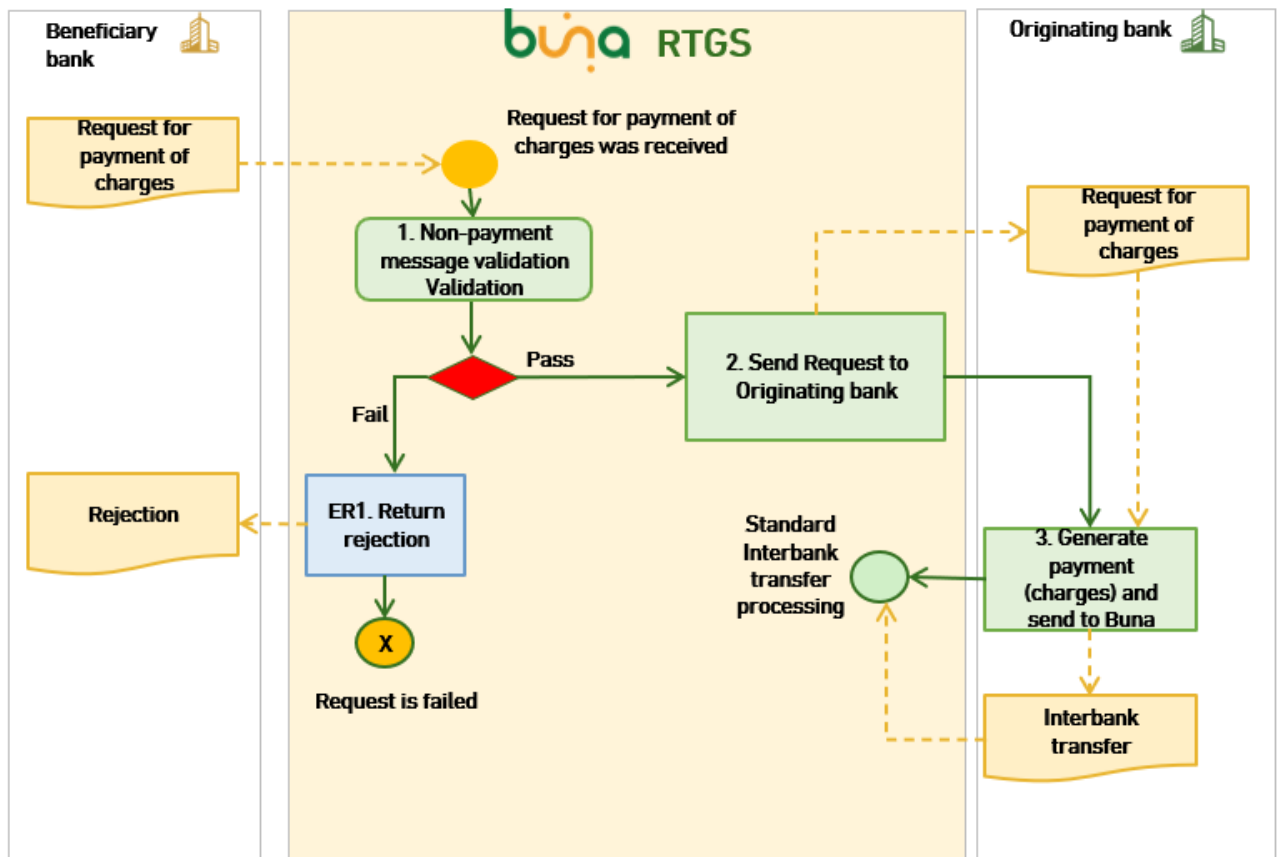


Figure 45: Request for payment of charges processing

| | |
|---|--|
| Use Case ID | NPM-14 |
| Use Case Name | Request for payment of charges processing |
| Use Case Description | Request for payment of charges from one participant to another |
| Primary Actors | Buna Participants |
| Trigger Event | Request for payment of charges charges (MT191 == camt.998) was received from Participant |
| Use Case Business Rules | |
| <ul style="list-style-type: none"> - If market participants do not wish to disclose their bank charges, they can still adopt the Request for payment of charges approach which will also be facilitated through the platform through the MT 191 / camt.998 message type (refer to section Error! Reference source not found. for MT191/camt.998 message formats and mapping details). - Buna does not match further payment (charges) (MT202 ==pacs.009) with MT191 message, and does not check whether MT191/camt.998 was paid or not. | |

| | |
|--|---|
| Pre-Conditions | |
| N/A | |
| Post Conditions | |
| Beneficiary bank received requested charges payment | |
| Basic Flow | |
| 1 | Buna RTGS validates the incoming request (MT191/camt.998): Body field values corresponds to required formats and value ranges. If validation fails, go to ER1 |
| 2 | Buna RTGS sends Request for payment of charges (MT191 = = camt.998) to Originating bank. |
| 3 | Originating bank sends payment (charges) (MT202 ==pacs.009) to Buna for Beneficiary bank of original payment (processed as normal interbank transfer). |
| Alternate Flows | |
| N/A | |
| Exceptions | |
| ER1 | Participant's application receives an error code with description. |

6.7 COMMUNICATION AND INQUIRY USE CASES

6.7.1 Use Case COM-01 – Buna Participant – Buna Participant Process Inquiry

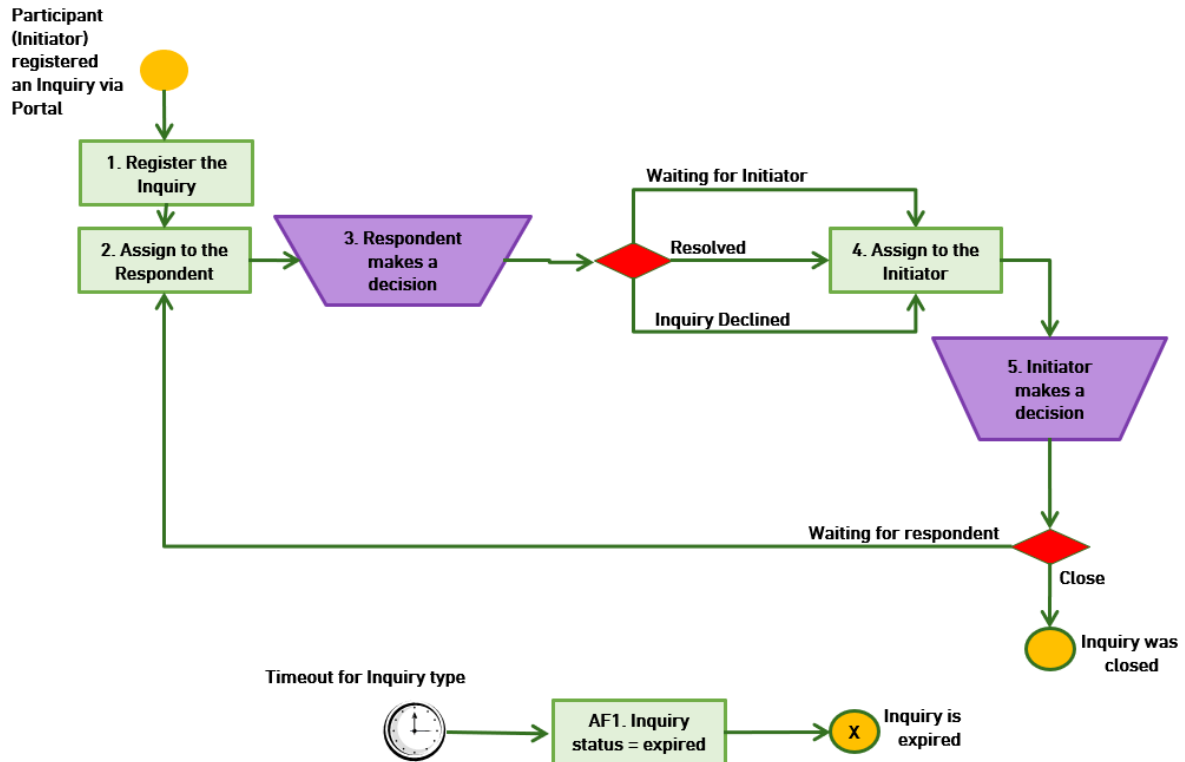


Figure 46: Process Inquiry between BP and BP

| | |
|-------------------------------------|---|
| Use Case ID | COM-01 |
| Use Case Name | Buna Participant – Buna Participant Process Inquiry |
| Use Case Description | Process Inquiry between BP and BP via the Communication and Inquiry Management Module |
| Primary Actors | Buna Participants |
| Trigger Event | Participant registers an Inquiry through the Participant Portal in maker/checker mode. Inquiry is finally registered and appears on monitoring view only after approval from the checker. |
| Use Case Business Rules | |
| Arbitration process is not included | |
| Pre-Conditions | |

| | |
|--------------------------|---|
| Payment was sent to Buna | |
| Post Conditions | |
| Inquiry is closed | |
| Basic Flow | |
| 1 | Buna registers an Inquiry |
| 2 | Buna assigns the Inquiry to the Respondent (appropriate party) |
| 3 | Respondent chooses an action: <ul style="list-style-type: none"> 1) To change status to «Waiting for Initiator» 2) To change status to «Inquiry declined» 3) To change status to «Resolved» |
| 4 | Buna assigns the Inquiry to the Initiator |
| 5 | Initiator chooses an action: <ul style="list-style-type: none"> 1) To change status to «Waiting for respondent» - go to 2 2) To change status to «Close» - end of process |
| Alternate Flows | |
| AF1.1 | When expiration date is effective then Inquiries in non-final statuses receive status «Expired» |

6.7.2 Use Case COM-02 – Compliance officer - BP Process Inquiry

As a result of changes described within current CR document, Use Case 'UC041a' will be added as shown on the diagram below and described subsequently.

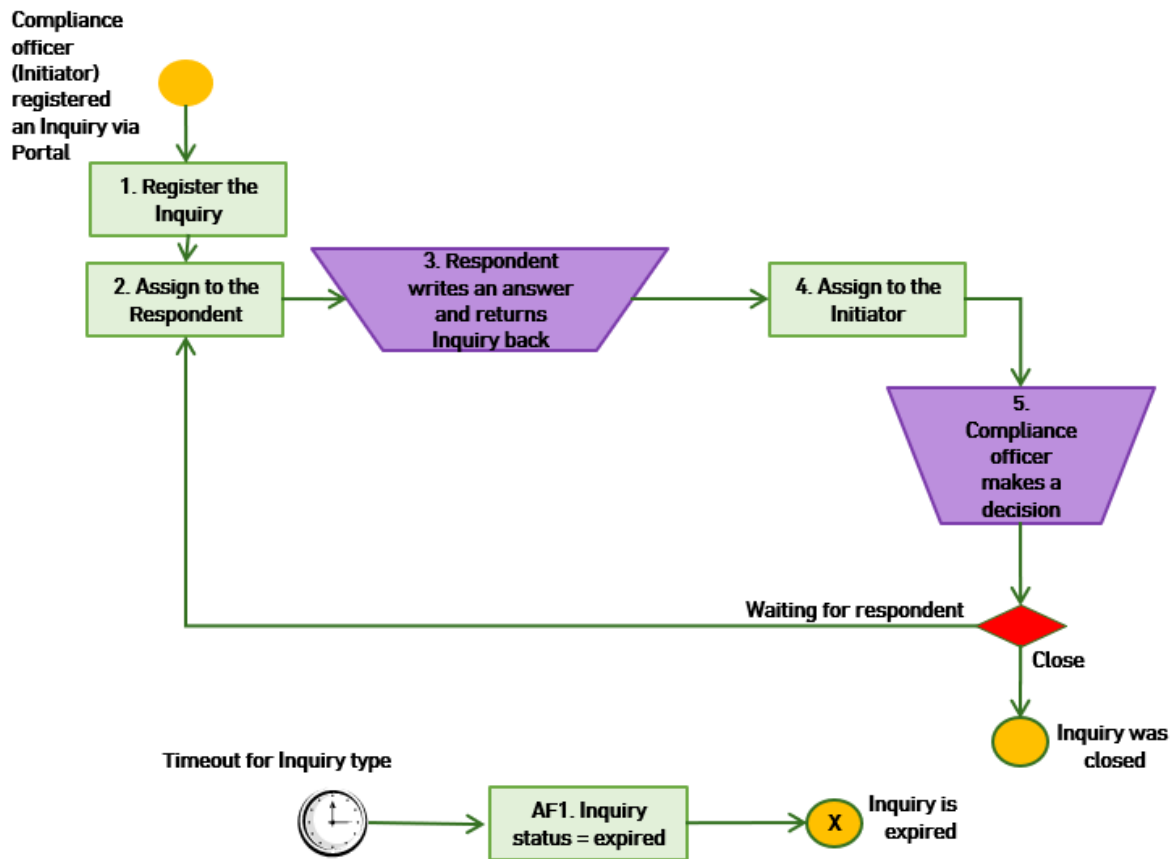


Figure 47: Process Inquiry between BP and BP

| | |
|-------------------------------------|--|
| Use Case ID | COM-02 |
| Use Case Name | Compliance officer - BP Process Inquiry |
| Use Case Description | Process Inquiry between Compliance officer and BP via the Communication and Inquiry Management Module |
| Primary Actors | Buna Participants, Buna compliance officers |
| Trigger Event | Compliance officer registers an Inquiry through the Participant Portal in maker/checker mode. Inquiry is finally registered and appears on monitoring view only after approval from the checker. |
| Use Case Business Rules | |
| Arbitration process is not included | |
| Pre-Conditions | |
| Payment was sent to Buna | |
| Post Conditions | |

| | |
|------------------------|---|
| Inquiry is closed | |
| Basic Flow | |
| 1 | Buna registers an Inquiry |
| 2 | Buna assigns the Inquiry to the Respondent (appropriate party) |
| 3 | Respondent captures an answer and changes the status to WAITING FOR COMPLIANCE in Maker/checker mode |
| 4 | Buna assigns the Inquiry to the Compliance officer |
| 5 | Compliance officer chooses an action: 1) To change status to «Waiting for respondent» - go to 2 2) To change status to «Close» - end of process |
| Alternate Flows | |
| | N/A |

6.8 PRE-VALIDATION AND CONSULTATION SERVICE USE CASES

6.8.1 Use Case CONS-01: Request exchange rate from the FX Provider

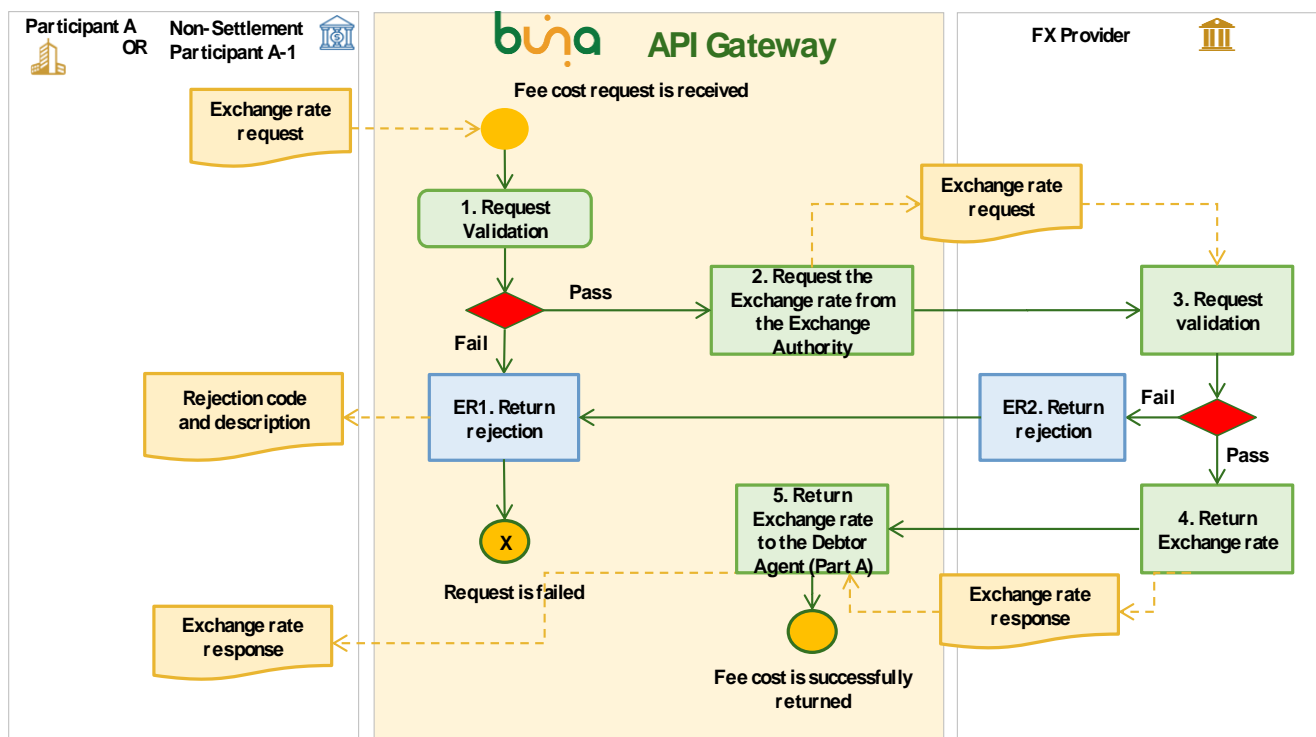


Figure 48: Request exchange rate from the FX Provider

| | | |
|--|---|--|
| Use Case ID | CONS-01 | |
| Use Case Name | Request exchange rate from the FX Provider | |
| Use Case Description | Requesting exchange rate and total amount in base/counter currency from the FX Provider | |
| Primary Actors | Participant's application | |
| Trigger Event | "Request counter currency amount" or "Request base currency amount" method is called by the participant's application | |
| Use Case Business Rules | | |
| <p>For the currency exchange Buna Participant can ask for rates from different FX providers to provide competitive rate for its client using «Get exchange rate» method as a preliminary step.</p> <p>For the detailed information regarding Pre-validation and consultation API, kindly refer to the «Buna pre-validation and consultation service REST API specification»</p> <p>Request will be sent from the Bank's point of view. It means that base currency is a currency which Bank will buy, but FX Provider will sell. Counter currency in the request is a currency which Bank will sell and FX Provider will buy.</p> | | |
| Pre-Conditions | | |
| N/A | | |
| Post Conditions | | |
| Buna Participant received exchange rate information from API and provided it to the Client A. | | |
| Basic Flow | | |
| 1 | Validations for the request: <ol style="list-style-type: none"> 1. Body fields values corresponds to required formats and value ranges. If validation fails, go to ER1 | |
| 2 | Buna API Gateway requests exchange rate and total amount in base/counter currency from the FX Provider | |
| 3 | The FX Provider validates the request If validation fails, go to ER2 | |
| 4 | The FX Provider returns exchange rate and total amount in base/counter currency information | |
| 5 | Buna API Gateway returns exchange rate and total amount in base/counter currency information to the Buna Participant | |
| Alternate Flows | | |
| N/A | | |
| Exceptions | | |

| | |
|------------|---|
| ER1 | Participant's application receives an error code with description. |
| ER2 | The FX Provider application returns Reject to Buna API Gateway. Go to ER1 |

7 MONITORING

7.1 DASHBOARDS

For monitoring purposes, there will be dashboards with real time metrics accessible through the Portal.

The Dashboard will show all the financial information for payments in the FHI's currency.

The dashboards will **contain**:

1. A quick statistics bar located at the top of the screen;
2. A main area with widgets.

The **quick statistics area** provides the most important and frequently used summary figures or metrics for the current business day (per FHI currency):

- Net position
- Number of messages
- Number of payments
- Sum of debit entries
- Sum of credit entries
- Number of debit entries
- Number of credit entries
- Number of payments in a queue

This area is preconfigured.

The **widget** is an area with visualization of aggregated data for analysis and monitoring purposes.

The Dashboard can have several widgets in the main area. The following widgets are available:

- Payment statistics
- Message statistics
- Minimum liquidity requirements calculations
- Funding and Defunding statistics

7.2 MONITORING FACILITIES SUMMARY BY ROLE

| MONITORING AREA/ROLES | FHI | CEB | SYSTEM OPERATOR | BUNA PARTICIPANT | CORRESPONDENT BANK |
|--|---------------------------------|--|------------------------|-------------------------|---------------------------|
| Balances: <ul style="list-style-type: none"> • Account code | For accounts linked to this FHI | All banks using its currency and all banks | All | Its own | |

| MONITORING AREA/ROLES | FHI | CEB | SYSTEM OPERATOR | BUNA PARTICIPANT | CORRESPONDENT BANK |
|--|-----|--|-----------------|------------------|--------------------|
| <ul style="list-style-type: none"> • Account type • Currency • FHI • Opening balance • Available balance • Debit entries count • Credit entries count • Debit entries amount • Credit entries amount | | under their jurisdiction using different currencies | | | |
| <p>Payments (with statuses):</p> <ul style="list-style-type: none"> • Transaction ID • Message ID • Message type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • FHI • Priority • Value Date • Remittance info • Instrument • Status | TBD | All banks using its currency and all banks under their jurisdiction using different currencies | All | Its own | |

| MONITORING AREA/ROLES | FHI | CEB | SYSTEM OPERATOR | BUNA PARTICIPANT | CORRESPONDENT BANK |
|--|---|--|------------------------|-------------------------|---------------------------|
| Message audit (incoming and outgoing messages): <ul style="list-style-type: none"> • Message ID • Message type • Sender • Receiver • Date Time • Status | Messages for funding and de-funding operations via this FHI | All banks using its currency and all banks under their jurisdiction using different currencies | All | Its own | |
| Participants: <ul style="list-style-type: none"> • BIC • Name • Address • Phone • Email • Postal address | All | All | All | All | Of Correspondents |
| Participants' accounts <ul style="list-style-type: none"> • Code • Type • Correspondent • Currency • FHI • Correspondent BIC | All | All | All | All | Of Correspondents |
| Account Limits <ul style="list-style-type: none"> • Account • Limit type • Participant • Amount • Currency • FHI | Its own | All banks using its currency and all banks under their jurisdiction using different currencies | All | Its own | |
| Funding and de-funding | Operations via this FHI | All banks using its currency and all | All | Its own | Of Correspondents |

| MONITORING AREA/ROLES | FHI | CEB | SYSTEM OPERATOR | BUNA PARTICIPANT | CORRESPONDENT BANK |
|---|----------|---|-----------------|------------------|--------------------|
| <p>operations (with statuses)</p> <ul style="list-style-type: none"> • Transaction ID • Transaction type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • Date • Status | | banks under their jurisdiction using different currencies | | | |
| <p>Business day schedule:</p> <ul style="list-style-type: none"> • FHI • Operation day Date • Period name • Period status • Start time (planned and actual) • Finish time (planned and actual) | All FHIs | All FHIs | All FHIs | All FHIs | All FHIs |
| <p>Calendars:</p> <ul style="list-style-type: none"> • FHI • Currency • Date • Status (workday or not) | All FHIs | All FHIs | All FHIs | All FHIs | All FHIs |

| MONITORING AREA/ROLES | FHI | CEB | SYSTEM OPERATOR | BUNA PARTICIPANT | CORRESPONDENT BANK |
|---|-------------|-------------|--------------------|---------------------|-----------------------|
| Tasks (alerts): <ul style="list-style-type: none"> • Description • Appropriate actions | Its own | Its own | Its own | Its own | |
| Text messages: <ul style="list-style-type: none"> • Sender • Text | One to many | One to many | One to many | One to one | |

7.3 FHI MONITORING FACILITIES

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|--|---|--|
| Balances | <ul style="list-style-type: none"> • Account code • Account type • Currency • Opening balance • Available balance • Number of Debit entries • Number of Credit entries • Sum of Debit entries • Sum of Credit entries | In owner's currency | Actual on-line information about balance of accounts linked to FHI |
| Message audit | <ul style="list-style-type: none"> • Message ID • Message type • Sender • Receiver • Date Time • Status | Messages for funding and de-funding operations via this FHI | List of incoming and outgoing messages |
| Participants | <ul style="list-style-type: none"> • BIC • Name • Address • Phone • Email • Postal address | All | List of all participants of the system |
| Participants' accounts | <ul style="list-style-type: none"> • Code • Type • Correspondent • Currency • Correspondent BIC | All | Overall information for accounts of all participants in the system |
| Daily Limits | <ul style="list-style-type: none"> • Limit type • Amount • Currency | Its own | There will be minimum limits for SOD funding for each FHI currency, liquidity intraday thresholds for each FHI currency (with the current amount of liquidity above this threshold for each participant in the area) and transaction limits. |
| Funding and de-funding operations (with statuses) | <ul style="list-style-type: none"> • Transaction ID • Transaction type • Debit BIC • Debtor Name • Debit account • Credit BIC | Operations via this FHI | There will be a view for funding and de-funding operations (including intraday top-ups and withdrawals) related to the FHI. |

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|------------------------------|---|-------------|---|
| | <ul style="list-style-type: none"> • Creditor name • Credit account • Amount • Currency • Date • Status | | |
| Business day schedule | <ul style="list-style-type: none"> • FHI • Business Day Date • Period name • Period status • Start time (planned and actual) • Finish time (planned and actual) | All FHIs | There will be a separate Business day schedule for each FHI. |
| Calendars | <ul style="list-style-type: none"> • FHI • Currency • Date • Status (workday or not) | All FHIs | There will be separate calendars for each FHI. |
| Tasks (alerts) | <ul style="list-style-type: none"> • Description • Appropriate actions <p>Alerts will be for:</p> <ul style="list-style-type: none"> • Fraud • AML • Liquidity • And other issues | Its own | Users will receive important information via alerts called tasks in Buna. |

Note: Monitoring will be via the Portal

7.4 CEBS MONITORING FACILITIES

| CEBS MONITORING FACILITIES MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|---|--|---|---|
| Balances | <ul style="list-style-type: none"> • Account code • Account type • Currency • FHI • Opening balance • Available balance • Number of Debit entries • Number of Credit entries • Sum of Debit entries | All banks using its currency and all banks under their jurisdiction using different currencies. | Actual on-line information about the balance of accounts. |

| CEBS MONITORING FACILITIES MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|--|---|---|
| | <ul style="list-style-type: none"> • Sum of Credit entries | | |
| Payments | <ul style="list-style-type: none"> • Transaction ID • Message ID • Message type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • FHI • Priority • Value Date • Remittance info • Instrument • Status | All banks using its currency and all banks under their jurisdiction using different currencies. | List of payments for the current day. |
| Message audit | <ul style="list-style-type: none"> • Message ID • Message type • Sender • Receiver • Date Time • Status | All banks using its currency and all banks under their jurisdiction using different currencies. | List of incoming and outgoing messages. |
| Participants | <ul style="list-style-type: none"> • BIC • Name • Address • Phone • Email • Postal address | All | List of all participants of the system. |
| Participants' accounts | <ul style="list-style-type: none"> • Code • Type • Currency • FHI • Correspondent • Currency • Correspondent BIC | All | Overall information of accounts for all participants in the system. |
| Daily Limits | <ul style="list-style-type: none"> • Limit type | All banks using its currency | There will be minimum limits for |

| CEBS MONITORING FACILITIES MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|---|--|---|
| | <ul style="list-style-type: none"> Amount | and all banks under their jurisdiction using different currencies | SOD funding for each currency and FHI, liquidity intraday thresholds for each currency and FHI (with the current amount of liquidity above this threshold for each participant in the area), limit for a transaction. |
| Funding and de-funding operations (with statuses) | <ul style="list-style-type: none"> Transaction ID Transaction type Debit BIC Debtor Name Debit account Credit BIC Creditor name Credit account Amount Currency FHI Date Status | All banks using its currency and all banks under their jurisdiction using different currencies | There will be a view for funding and de-funding operations (included intraday top-ups and withdrawals). |
| Business day schedule | <ul style="list-style-type: none"> Business Day Date Period name Period status Start time (planned and actual) Finish time (planned and actual) | All FHIs | There will be a separate Business day schedule for each FHI. |
| Calendars | <ul style="list-style-type: none"> FHI Currency Date Status (workday or not) | All FHIs | There will be separate calendars for each FHI. |
| Tasks (alerts) | <ul style="list-style-type: none"> Description Appropriate actions <p>Alerts will be for:</p> <ul style="list-style-type: none"> Fraud AML | Its own | Users will receive important information via alerts called tasks in Buna |

| CEBS MONITORING FACILITIES MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|---|------|----------|
| | <ul style="list-style-type: none"> • Liquidity • And other issues | | |

Note: Monitoring will be via the Portal

7.5 SYSTEM OPERATOR MONITORING FACILITIES

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--------------------|--|------|--|
| Balances | <ul style="list-style-type: none"> • Account code • Account type • Currency • FHI • Opening balance • Available balance • Number of Debit entries • Number of Credit entries • Sum of Debit entries • Sum of Credit entries | All | Actual on-line information about balance of accounts |
| Payments | <ul style="list-style-type: none"> • Transaction ID • Message ID • Message type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • FHI • Priority • Value Date • Remittance info • Instrument • Status | All | List of payments for the current day |

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|---|------|--|
| Message audit | <ul style="list-style-type: none"> • Message ID • Message type • Sender • Receiver • Date Time • Status | All | List of incoming and outgoing messages |
| Participants | <ul style="list-style-type: none"> • BIC • Name • Address • Phone • Email • Postal address | All | List of all participants of the system |
| Participants' accounts | <ul style="list-style-type: none"> • Code • Type • Correspondent • Currency • FHI • Correspondent BIC | All | Overall information of accounts of all participants of the system |
| Daily Limits | <ul style="list-style-type: none"> • Limit type • Amount | All | There will be minimum limits for SOD funding for each currency and FHI, liquidity intraday thresholds for each currency and FHI (with the current amount of liquidity above this threshold for each participant in the area), limit for transaction. |
| Funding and de-funding operations (with statuses) | <ul style="list-style-type: none"> • Transaction ID • Transaction type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • FHI • Date • Status | All | There will be a view for funding and de-funding operations (included intraday top-ups and withdrawals) |

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|------------------------------|---|----------|--|
| Business day schedule | <ul style="list-style-type: none"> • Business Day Date • Period name • Period status • Start time (planned and actual) • Finish time (planned and actual) | All FHIs | There will be a separate Business day schedule for each FHI. |
| Calendars | <ul style="list-style-type: none"> • FHI • Currency • Date • Status (workday or not) | All FHIs | There will be separate calendars for each FHI. |
| Tasks (alerts) | <ul style="list-style-type: none"> • Description • Appropriate actions <p>Alerts will be for:</p> <ul style="list-style-type: none"> • Fraud • AML • Liquidity • And other issues | Its own | Users will receive important information via alerts called tasks in Buna |

System operator will use Administrator Workstations for monitoring purposes.

7.6 BUNA PARTICIPANT MONITORING FACILITIES

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|----------------------|--|---------|--|
| Balances | <ul style="list-style-type: none"> • Account code • Account type • Opening balance • Available balance • Number of Debit entries • Number of Credit entries • Sum of Debit entries • Sum of Credit entries | Its own | Actual on-line information about balance of accounts |
| Payments | <ul style="list-style-type: none"> • Transaction ID • Message ID • Message type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • FHI • Priority • Value Date • Remittance info • Instrument • Status | Its own | List of payments for the current day |
| Message audit | <ul style="list-style-type: none"> • Message ID • Message type • Sender • Receiver • Date Time • Status | Its own | List of incoming and outgoing messages |
| Participants | <ul style="list-style-type: none"> • BIC • Name • Address • Phone • Email • Postal address | All | List of all participants of the system |

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|---|----------|--|
| Participants' accounts | <ul style="list-style-type: none"> • Code • Type • Correspondent • Currency • FHI • Correspondent BIC | All | Overall information on accounts of all participants of the system |
| Daily Limits | <ul style="list-style-type: none"> • Limit type • Amount | Its own | There will be minimum limits for SOD funding for each currency and FHI, liquidity intraday thresholds for each currency and FHI (with current amount of liquidity above this threshold for each participant), and a limit for a transaction. |
| Funding and de-funding operations (with statuses) | <ul style="list-style-type: none"> • Transaction ID • Transaction type • Debit BIC • Debtor Name • Debit account • Credit BIC • Creditor name • Credit account • Amount • Currency • FHI • Date • Status | Its own | There will be a view for funding and de-funding operations (included intraday top-ups and withdrawals) |
| Business day schedule | <ul style="list-style-type: none"> • Business Day Date • Period name • Period status • Start time (planned and actual) • Finish time (planned and actual) | All FHIs | There will be a separate Business day schedule for each FHI. |
| Calendars | <ul style="list-style-type: none"> • FHI • Currency • Date • Status (workday or not) | All FHIs | There will be separate calendars for each FHI. |

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|-----------------------|---|---------|--|
| Tasks (alerts) | <ul style="list-style-type: none"> Description Appropriate actions <p>Alerts will be for:</p> <ul style="list-style-type: none"> Fraud AML Liquidity And other issues | Its own | Users will receive important information via alerts called tasks in Buna |

Note: Monitoring will be via the Portal

7.7 CORRESPONDENT BANK MONITORING FACILITIES

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|--|---|-------------------|--|
| Participants | <ul style="list-style-type: none"> BIC Name Address Phone Email Postal address | Of Correspondents | List of all participants of the system |
| Participants' accounts | <ul style="list-style-type: none"> Code Type Correspondent Currency FHI Correspondent BIC | Of Correspondents | Overall information on all accounts of the banks participating at Buna |
| Funding and de-funding operations (with statuses) | <ul style="list-style-type: none"> Transaction ID Transaction type Debit BIC Debtor Name Debit account Credit BIC Creditor name Credit account Amount Currency FHI Date Status | Of Correspondents | There will be a view for funding and de-funding operations (included intraday top-ups and withdrawals) |
| Business day schedule | <ul style="list-style-type: none"> Business Day Date Period name | All FHIs | There will be a separate Business day schedule for each FHI. |

| MONITORING AREA | ATTRIBUTES | AREA | COMMENTS |
|------------------|--|----------|--|
| | <ul style="list-style-type: none"> • Period status • Start time (planned and actual) • Finish time (planned and actual) | | |
| Calendars | <ul style="list-style-type: none"> • FHI • Currency • Date • Status (workday or not) | All FHIs | There will be separate calendars for each FHI. |

Note: Monitoring will be via the Portal

8 REPORTING

Buna will include a set of main reports for monitoring, analysis and decision-making purposes.

The Participant GUI User will request a report via the Portal and will receive actual information from database.

Buna will define a list of reports that will be sent automatically, and a list of reports that will be sent on a request basis.

At a first stage, Buna suggests sending the following:

1. Statement report (MT950 == camt.053) automatically at EOD via SWIFT.
2. Account balance report (camt.052) via SWIFT upon request (camt.060)
3. Interim transaction report (camt.052) via SWIFT upon request (camt.060)
4. Other reports will be available (in PDF format) at portal upon request.
5. Some of PDF reports can be created at the EOD and send to the portal

8.1 REPORTS FOR FHI

8.1.1 Funding/de-funding report

8.1.1.1 Report parameters

1. Business Day date
2. Currency

8.1.1.2 Report attributes

1. Participant
2. Sum of SOD Funding
3. Sum of Intraday top-ups
4. Sum of Intraday withdrawals
5. Sum of EOD De-funding

8.1.2 Balance report for the technical account for FHI's currency

8.1.2.1 Report parameters

1. Date From
2. Date To
3. Currency
4. FHI

8.1.2.2 Report attributes

1. Account number
2. Currency
3. Owner of the account
4. Opening Balance
5. Sum of debit entries
6. Sum of credit entries
7. Closing Balance
8. Number of debit entries
9. Number of credit entries

8.1.3 Future dated payments

8.1.3.1 Report parameters

1. Date From
2. Date To

8.1.3.2 Report attributes

1. Date
2. Number of future dated payments for that date
3. Amount of future dated payments for that date in FHI's currency
4. FHI
5. Currency

8.1.4 Transaction statuses

8.1.4.1 Report parameters

1. Date

8.1.4.2 Report attributes

1. Transaction status
2. Number of transactions, having this status

8.1.5 Queue summary

8.1.5.1 Report attributes

1. Total number of queued transactions for the FHI's currency
2. Total sum of queued transactions for the FHI's currency
3. Number of queued transactions for the FHI's currency for each of the priority groups
4. Sum of queued transactions for the FHI's currency for each of the priority groups

8.1.6 Minimum Liquidity Requirements report

8.1.6.1 Report parameters

1. Number of days
2. FHI
3. Currency

8.1.6.2 Report attributes

1. Participant
2. Initial liquidity requirement value
3. Historical Cumulative intraday liquidity usage per hour
4. Historical Liquidity Usage per business day hour basis
5. Historical Future value dated payment values (average per days) (Wave 2 functionality)

8.1.7 Billing report

8.1.7.1 Report attributes

1. Period
2. Fee receiver
3. Payer

4. Currency of Invoice
5. Fee amount divided into fee categories

8.2 REPORTS FOR BUNA PARTICIPANTS

8.2.1 Balance Report

8.2.1.1 Report parameters

1. Date From
2. Date To
3. Account number

8.2.1.2 Report attributes

1. Opening Balance
2. Sum of debit entries
3. Sum of credit entries
4. Closing Balance
5. Number of debit entries
6. Number of credit entries
7. FHI
8. Currency

8.2.2 Account Statement

8.2.2.1 Report parameters

1. Date From
2. Date To
3. Account number

8.2.2.2 Report attributes

1. Currency
2. FHI
3. Opening Balance
4. Sum of debit entries
5. Sum of credit entries
6. Closing Balance
7. Entries information:
 - a. Sequence number of entries within the report
 - b. Transaction Type Code
 - c. Amount of entry (transaction)
 - d. Credit/Debit indicator
 - e. Posting date time
 - f. Message Id
 - g. UETR
 - h. Sending institution
 - i. Debit Account
 - j. Receiving institution
 - k. Credit Account
 - l. Local Instrument
 - m. Message Received Date/Time

8.2.3 Daily Incoming / Outgoing Transactions Report

8.2.3.1 Report Parameters

1. Date From
2. Date To
3. Account number
4. Message type
5. Status
6. Transaction type code

8.2.3.2 Report Attributes

1. Ref. No
2. Posting Date Time
3. Transaction Type Code
4. Message type
5. Credit/debit indicator
6. Currency
7. FHI
8. Amount
9. Debit account
10. Credit account
11. Sending institution
12. Receiving institution
13. Status

8.2.4 Future dated payments

8.2.4.1 Report Parameters

1. Date From
2. Date To

8.2.4.2 Report Attributes

1. Date
2. Currency
3. FHI
4. Number of future dated payments for that date
5. Number of future dated payments for that date for each FHI separately
6. Total amount of future dated payments for that date for each FHI separately

8.2.5 Transaction statuses

8.2.5.1 Report Parameters

1. Date

8.2.5.2 Report Attributes

1. Transaction status
2. Number of transactions, having this status

8.2.6 Queue details

8.2.6.1 Report Parameters

1. Priority group
2. Currency

3. Doc type
4. Transaction Type Code
5. Account

8.2.6.2 Report Attributes

1. Priority group
2. Priority of payment
3. Doc Type – type code of the document that was queued
4. Account
5. Currency
6. FHI
7. Amount of transaction
8. Transaction Type code of a queued transaction
9. Message Receiving Date/Time

8.2.7 Queue Summary

8.2.7.1 Report Parameters

1. FHI
2. Currency

8.2.7.2 Report Attributes

1. FHI
2. Currency
3. Total number of queued transactions for a Participant
4. Total sum of queued transactions for a Participant
5. Number of queued transactions for a Participant for each priority group
6. Sum of queued transactions for a Participant for each priority group

8.2.8 Minimum Liquidity Requirements Report

8.2.8.1 Report Parameters

1. Number of days
2. FHI

8.2.8.2 Report Attributes

1. FHI
2. Currency
3. Participant
4. Initial liquidity requirement value
5. Historical Cumulative intraday liquidity usage per hour
6. Historical Liquidity Usage per business day on an hourly basis
7. Historical Future value dated payment values (average per days) (Wave 2 functionality)

8.2.9 Participants Directory Report

8.2.9.1 Report Attributes

1. ID
2. BIC
3. Institution Type

4. Name
5. Short Name
6. Country
7. Status of the participant
8. Currency – FHI (section) – this and the following attributes will be repeated for each section, where the participant takes part
9. Status of participation in section
10. Participation type in section (Buna Participant)

8.2.10 Billing Report (Invoice)

8.2.10.1 Report Parameters

1. Participant
2. Year
3. Month

8.2.10.2 Report Attributes

1. Period
2. Fee receiver
3. Payer
4. Currency of Invoice
5. Fee amount divided to fee categories

8.2.11 Participant Billing statement report

8.2.11.1 Report parameters

1. Year
2. Month
3. Participant
4. Account code

8.2.11.2 Report attributes

1. Aggregated Financial Invoice ref
2. Aggregated Financial Invoice date
3. Billing period year
4. Billing period month
5. Date
6. Reference
7. Fee category
8. Description
9. Currency
10. Fee payer
11. Gross Fees
12. Discount
13. Net Fees

8.2.12 Report «List of FX providers and currencies pairs»

8.2.12.1 Report Parameters:

1. Trade date from

2. Trade date to
3. FX provider
4. Currency from
5. Currency to

8.2.12.2 Report attributes:

1. Trade date
2. FX provider
3. Currency from
4. Currency to
5. Rate