

## Cross Border Outward QR

[</>](#) See also API reference for DuitNow QR

[Check API](#) >

### Introduction

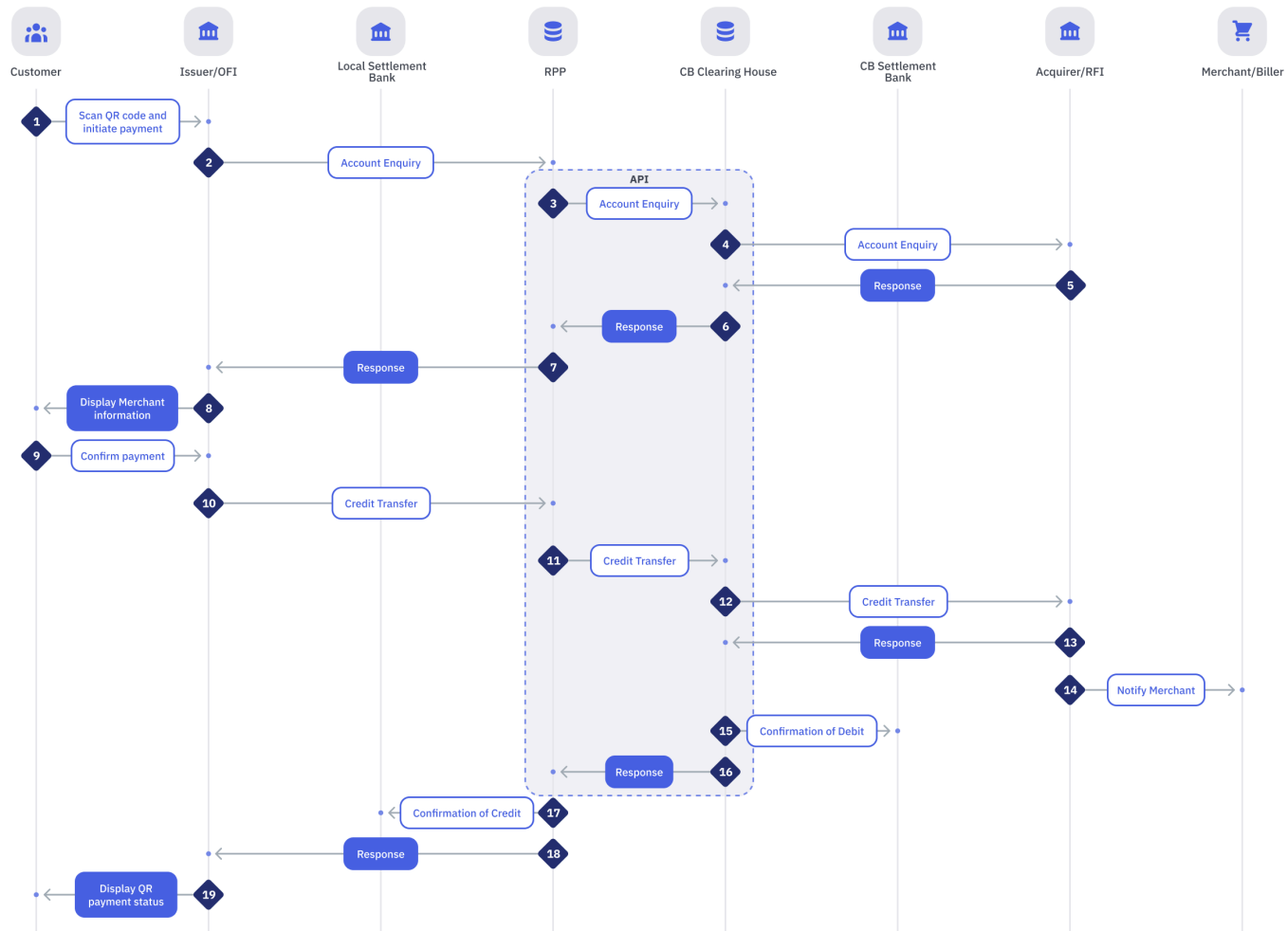
#### Supported Regions

China	Indonesia	Korea	Philippines	Singapore	Thailand
✓	✓	Coming Soon	Coming Soon	✓	✓

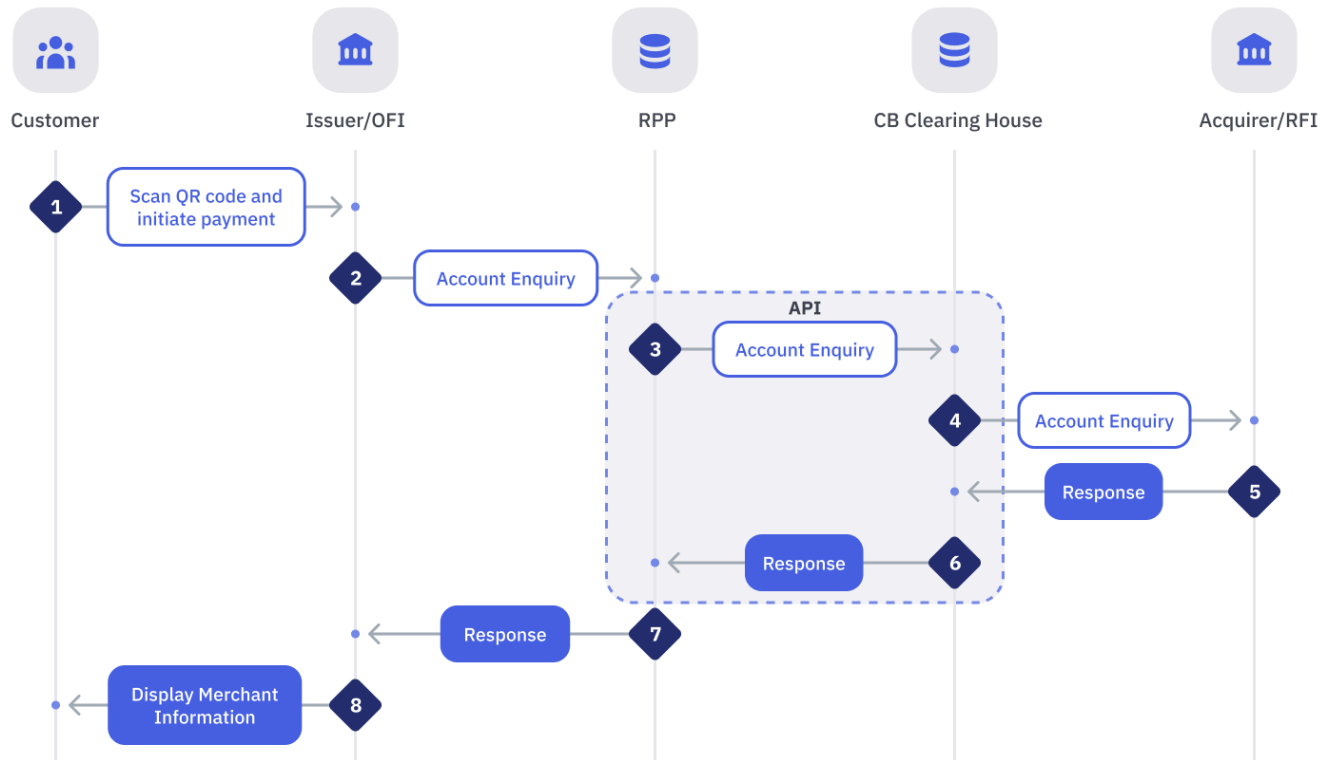
KEY ✓ Available ✕ Not Available

DuitNow Outward Cross-Border QR enables Malaysians abroad to make payments via their mobile banking or e-payment application by scanning the merchants' QR code.

The figure below shows the end-to-end process of DuitNow Outward Cross-Border QR.



## Account Enquiry Flow (Steps 1-8)



Step	Sender	Receiver	Process
1	Customer	Issuer	Customer scans a Cross Border merchant's QR code via Issuer's Mobile App and initiates a QR Payment request.
2	Issuer	RPP	Issuer performs the following: <ul style="list-style-type: none"> <li>• Authorize and validate the QR Payment request</li> <li>• Parse the QR code to extract:               <ul style="list-style-type: none"> <li>◦ Application Identifier (AID)</li> <li>◦ Acquirer ID</li> </ul> </li> </ul>

Step	Sender	Receiver	Process
			<ul style="list-style-type: none"> <li>◦ Merchant Name</li> <li>◦ QR ID</li> <li>◦ Transaction Amount</li> </ul> <ul style="list-style-type: none"> <li>• Any other validations</li> </ul> <p>If all validations are successful:</p> <ul style="list-style-type: none"> <li>• If AID belongs to PayNet, Issuer will: <ul style="list-style-type: none"> <li>◦ For On-Us Merchant <ul style="list-style-type: none"> <li>▪ <b>NOT</b> route the request to RPP</li> </ul> </li> <li>◦ For Off-Us Merchant <ul style="list-style-type: none"> <li>▪ Send Account Enquiry request to RPP</li> </ul> </li> </ul> </li> <li>• If AID does not belong to PayNet or QR code is not parse-able, Issuer will: <ul style="list-style-type: none"> <li>◦ Send Account Enquiry request to RPP using transaction code 521</li> </ul> </li> </ul> <p>Notes: Issuer to set timeout as 60 seconds.</p>
3	RPP	CB Clearing House	<p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• <b>Message Validations</b></li> <li>• <b>Business Validations</b></li> </ul> <p>If any Message Validation fails, RPP will send a <b>REJECT</b> response to Issuer.</p>

Step	Sender	Receiver	Process
			<p>If any Business Validation fails, RPP will send a <b>NEGATIVE</b> response to Issuer.</p> <p>If all validations are successful, RPP will:</p> <ul style="list-style-type: none"> <li>• Send the Account Enquiry request to CB Clearing House</li> </ul>
4	CB Clearing House	Acquirer/RFI	<ul style="list-style-type: none"> <li>• Sends Account Enquiry request to Acquirer bank</li> </ul>
5	Acquirer	CB Clearing House	<p>Acquirer performs the following:</p> <ul style="list-style-type: none"> <li>• <b>Message Validations</b></li> <li>• <b>Business Validations</b></li> </ul> <p>If any Message Validation fails, Acquirer will send a <b>REJECT</b> response to CB Clearing House.</p> <p>If any Business Validation fails, Acquirer will send a <b>NEGATIVE</b> response to CB Clearing House.</p> <p>If all validations are successful, Acquirer will:</p> <ul style="list-style-type: none"> <li>• Send a <b>SUCCESSFUL</b> response to CB Clearing House.</li> </ul> <p>Notes:</p> <p>Acquirer shall validate the QR string, validation can be done via:</p> <ul style="list-style-type: none"> <li>• Hash validation</li> <li>• Key fields comparison (i.e. Merchant Account Information, Merchant Category Code, Merchant</li> </ul>

Step	Sender	Receiver	Process
			<p>Name, Transaction Amount, etc)</p> <ul style="list-style-type: none"> <li>Entire QR string comparison</li> </ul> <p>For Dynamic QR, Acquirer will need to check for validity period</p>
6	CB Clearing House	RPP	<p>CB Clearing House performs the following:</p> <ul style="list-style-type: none"> <li>Send response to RPP</li> </ul>
7	RPP	Issuer	<p>RPP performs the following:</p> <ul style="list-style-type: none"> <li><b>Message Validations</b></li> </ul> <p>If all validations are successful, RPP will:</p> <ul style="list-style-type: none"> <li>Send a <b>SUCCESSFUL</b> response to Issuer</li> <li>A <b>SUCCESSFUL</b> Account Enquiry response shall contain the following information for subsequent process/validation: <ul style="list-style-type: none"> <li>Merchant Name</li> <li>Type of QR Payment</li> <li>Acceptable Source of Fund</li> </ul> </li> </ul>
8	Issuer	Customer	<p>Issuer performs the following:</p> <ul style="list-style-type: none"> <li><b>Message Validations</b></li> </ul> <p>If all validations are successful, Issuer will:</p> <ul style="list-style-type: none"> <li>For <b>SUCCESSFUL</b> Account Enquiry response received: <ul style="list-style-type: none"> <li>Display Merchant Name</li> </ul> </li> </ul>

Step	Sender	Receiver	Process
			<ul style="list-style-type: none"> <li>◦ Identify Type of QR Payment and Acceptable Source of Fund</li> <li>• For <b>UNSUCCESSFUL</b> Account Enquiry response received: <ul style="list-style-type: none"> <li>◦ Display an error message on the customer screen</li> </ul> </li> </ul>

## Exception Handling

Step(s)	Event	Action
2	Timeout - No response from RPP	<p>RPP:</p> <ul style="list-style-type: none"> <li>• If RPP received the request and processed it but RPP's response failed to return to Issuer, then the transaction is logged</li> <li>• If RPP never received the request, no action on RPP's side</li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Display an error message on the customer screen</li> </ul>

Step(s)	Event	Action
2	Rejection - Rejected by RPP	<p>RPP:</p> <ul style="list-style-type: none"> <li>• Send the relevant Reject Response Code (refer to <b>Response Codes</b>)</li> <li>• Include a copy of the request message in FULL in the response message under the AddtlData field for the Sender to investigate the issue</li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> </ul>
3	Timeout - No response from CB Clearing House	<p>When no response is received from CB Clearing House after X period of time, the following steps should be taken:</p> <p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• Transaction Logging</li> <li>• Message Validation - if any fail, send <b>REJECT</b> response to Issuer</li> <li>• Business Validation - if any fail, send <b>NEGATIVE</b> response to Issuer</li> </ul> <p>Issuer performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> </ul>

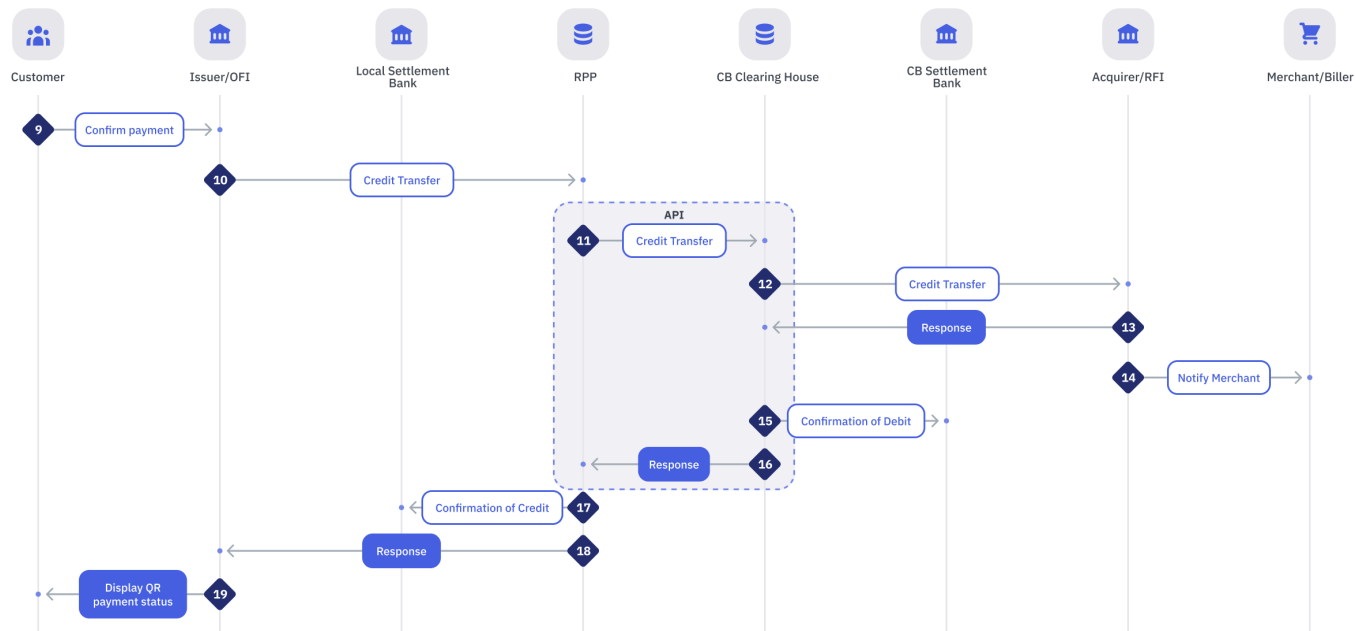


Step(s)	Event	Action
		<ul style="list-style-type: none"> <li>If all validations are successful, display an error message on the customer screen</li> </ul>
3	Rejection - Rejected by CB Clearing House	<p>CB Clearing House:</p> <ul style="list-style-type: none"> <li>If any validation fails, send a <b>NEGATIVE</b> response to RPP</li> </ul> <p>RPP:</p> <ul style="list-style-type: none"> <li>Stop timer</li> <li>Message Validation</li> <li>If all validations are successful, send the <b>Account Enquiry</b> response to Issuer</li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>Stop timer</li> <li>Message Validation</li> <li>If all validations are successful, display an error message on the customer screen</li> </ul>
4	Timeout - No response from Acquirer	<p>When no response is received from Acquirer after X period of time, the following steps should be taken:</p> <p>CB Clearing House performs the following:</p> <ul style="list-style-type: none"> <li>Stop timer</li> <li>Send a <b>NEGATIVE</b> response to RPP</li> </ul>

Step(s)	Event	Action
		<p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• Transaction Logging</li> <li>• Message Validation - if any fail, send <b>REJECT</b> response to Issuer</li> <li>• Business Validation - if any fail, send <b>NEGATIVE</b> response to Issuer</li> </ul> <p>Issuer performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful, display an error message on the customer screen</li> </ul>
4	Rejection - Rejected by Acquirer	<p>Acquirer:</p> <ul style="list-style-type: none"> <li>• If any Message Validation fails, send a <b>REJECT</b> response to CB Clearing House</li> <li>• If any Business Validation fails, send a <b>NEGATIVE</b> response to CB Clearing House</li> <li>• Include a copy of the request message in FULL in the response message under the AddtlData field for the Sender to investigate the issue</li> </ul> <p>CB Clearing House:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Send response to RPP</li> </ul>

Step(s)	Event	Action
		<p>RPP:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful, send the <b>Account Enquiry</b> response to Issuer</li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful, display an error message on the customer screen</li> </ul>

## Credit Transfer Flow (Steps 9-19)



Step	Sender	Receiver	Process
9	Customer	Issuer	Customer confirms the QR Payment.
10	Issuer	RPP	<p>Issuer performs the following:</p> <ul style="list-style-type: none"> <li>• Authorize and validate the Credit Transfer request</li> <li>• Any other validations</li> </ul> <p>If all validations are successful, Issuer will:</p> <ul style="list-style-type: none"> <li>• Send Credit Transfer request to RPP</li> </ul> <p>Notes:</p> <p>Issuer to set timeout as 60 seconds.</p>
11	RPP	CB Clearing House	<p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• <b>Message Validations</b></li> </ul>

Step	Sender	Receiver	Process
			<ul style="list-style-type: none"> <li>• <b>Business Validations</b></li> </ul> <p>If any Message Validation fails, RPP will send a <b>REJECT</b> response to Issuer.</p> <p>If any Business Validation fails, RPP will send a <b>NEGATIVE</b> response to Issuer.</p> <p>If all validations are successful, RPP will proceed to:</p> <ul style="list-style-type: none"> <li>• Send the QR Payment request to CB Clearing House</li> </ul>
12	CB Clearing House	Acquirer	<p>CB Clearing House performs the following:</p> <ul style="list-style-type: none"> <li>• Send request to Acquirer</li> </ul>
13	Acquirer	CB Clearing House	<p>Acquirer performs the following:</p> <ul style="list-style-type: none"> <li>• <b>Message Validations</b></li> <li>• <b>Business Validations</b></li> </ul> <p>If any Message Validation fails, Acquirer will send a <b>REJECT</b> response to CB Clearing House.</p> <p>If any Business Validation fails, Acquirer will send a <b>NEGATIVE</b> response to CB Clearing House.</p> <p>If all validations are successful, Acquirer will:</p> <ul style="list-style-type: none"> <li>• Send <b>SUCCESSFUL</b> response to CB Clearing House</li> </ul>
14	Acquirer	Merchant	Acquirer notifies Merchant on QR Payment status.

Step	Sender	Receiver	Process
15	CB Clearing House	CB Settlement Bank	Confirmation of Debit based on EOD Report.
16	CB Clearing House	RPP	CB Clearing House performs the following: <ul style="list-style-type: none"> <li>• Send response to RPP</li> </ul>
17	RPP	Local Settlement Bank	Confirmation of Credit based on EOD Report.

Step	Sender	Receiver	Process
18	RPP	Issuer	<p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• <b>Message Validations</b></li> </ul> <p>If all validations are successful, RPP will:</p> <ul style="list-style-type: none"> <li>• Set Settlement Date and Cycle</li> <li>• Update liquidity positions of both Issuer and Acquirer</li> <li>• Update settlement totals</li> <li>• Notify settlement bank on credit confirmation status</li> <li>• Send <b>SUCCESSFUL</b> response to Issuer</li> </ul> <p>Notes:</p> <p>If the signature received from Acquirer could not be verified, RPP will send an <b>ACCEPTED</b> (Signature error) response to the Issuer regardless of transaction response from Acquirer. This should take care of any message manipulation done within the data when a signature cannot be verified.</p>
19	Issuer	Customer	<p>Issuer performs the following:</p> <ul style="list-style-type: none"> <li>• <b>Message Validations</b></li> </ul> <p>If all validations are successful, Issuer will:</p> <ul style="list-style-type: none"> <li>• Display a successful message on the customer screen</li> </ul> <p>Notes:</p> <p>If the signature received from RPP could not be verified, Issuer will base the status of the transaction on the actual transaction status received from RPP.</p>

## Exception Handling

Step(s)	Event	Action
10	Timeout - No response from RPP	<p>When no response is received from RPP after x period of time, the following steps should be taken:</p> <p>Issuer performs the following:</p> <ul style="list-style-type: none"><li>• Send a Single <b>Transaction Enquiry</b> request to RPP</li><li>• Start timer</li></ul> <p>RPP performs the following:</p> <ul style="list-style-type: none"><li>• Transaction Logging</li><li>• Message Validation - if any fail, send <b>REJECT</b> response</li><li>• If all validations are successful, send the <b>Transaction Enquiry</b> response to Issuer</li></ul> <p>Issuer performs the following:</p> <ul style="list-style-type: none"><li>• Stop timer</li><li>• Message Validation</li><li>• If all validations are successful, display a successful message on the customer screen</li></ul>
10	Rejection - Rejected by RPP	<p>RPP:</p> <ul style="list-style-type: none"><li>• If any Message Validation fails, send <b>REJECT</b> response to Issuer</li></ul>



Step(s)	Event	Action
		<ul style="list-style-type: none"> <li>• If any Business Validation fails, send <b>NEGATIVE</b> response to Issuer</li> <li>• Include a copy of the request message in FULL in the response message under the AddtlData field for the Sender to investigate the issue</li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful, display an error message on the customer screen</li> </ul>
11	Timeout - No response from CB Clearing House	<p>When no response is received from CB Clearing House after x period of time, the following steps should be taken:</p> <p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• Timeout</li> <li>• Stop timer</li> <li>• Set Settlement Date and Cycle</li> <li>• Update liquidity positions of both Issuer and CB Clearing House</li> <li>• Update settlement totals</li> <li>• Send an ACCEPTED response back to Issuer</li> <li>• Trigger Transaction Status Enquiry via SAF</li> </ul> <p>Issuer performs the following:</p>

Step(s)	Event	Action
		<ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful, display <b>ACCEPTED</b> message on customer screen</li> </ul>
11	Rejection - Rejected by CB Clearing House	<p>If any validation fails, the following steps should be taken:</p> <p>CB Clearing House performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Send <b>NEGATIVE</b> response to RPP</li> </ul> <p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful: <ul style="list-style-type: none"> <li>◦ Not update liquidity and settlement positions of both Issuer and Acquirer</li> <li>◦ For <b>NEGATIVE</b> response, send <b>NEGATIVE</b> response to Issuer</li> <li>◦ For <b>REJECT</b> response, send <b>REJECT</b> response to Issuer</li> </ul> </li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> </ul>

Step(s)	Event	Action
		<ul style="list-style-type: none"> <li>If all validations are successful, display an error message on the customer screen</li> </ul>
12	Timeout - No response from Acquirer	<p>When no response is received from Acquirer after x period of time, the following steps should be taken:</p> <p>CB Clearing House performs the following:</p> <ul style="list-style-type: none"> <li>Timeout</li> <li>Store the Credit Transfer Transaction in SAF</li> <li>Update liquidity positions of both Acquirer and Local Settlement Bank</li> <li>Stop timer</li> <li>Send an <b>ACCEPTED</b> (Timeout reason) response back to RPP</li> </ul> <p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>Stop timer</li> <li>Message Validation</li> <li>If all validations are successful: <ul style="list-style-type: none"> <li>Not update liquidity and settlement positions of both Issuer and Acquirer</li> <li>For <b>NEGATIVE</b> response, send <b>NEGATIVE</b> response to Issuer</li> <li>For <b>REJECT</b> response, send <b>REJECT</b> response to Issuer</li> </ul> </li> </ul>

Step(s)	Event	Action
		<p>Issuer performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful, display <b>ACCEPTED</b> message on customer screen</li> </ul>
12	Rejection - Rejected by Acquirer	<p>Acquirer:</p> <ul style="list-style-type: none"> <li>• If any Message Validation fails, send a <b>REJECT</b> response to CB Clearing House</li> <li>• If any Business Validation fails, send a <b>NEGATIVE</b> response to CB Clearing House</li> <li>• Include a copy of the request message in FULL in the response message under the AddtlData field for the Sender to investigate the issue (might not be applicable)</li> </ul> <p>CB Clearing House performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Send response to RPP</li> </ul> <p>RPP performs the following:</p> <ul style="list-style-type: none"> <li>• Stop timer</li> <li>• Message Validation</li> <li>• If all validations are successful: <ul style="list-style-type: none"> <li>◦ Not update liquidity and settlement positions of both Issuer and Acquirer</li> </ul> </li> </ul>

Step(s)	Event	Action
		<ul style="list-style-type: none"> <li>For <b>NEGATIVE</b> response, send <b>NEGATIVE</b> response to Issuer</li> <li>For <b>REJECT</b> response, send <b>REJECT</b> response to Issuer</li> </ul> <p>Issuer:</p> <ul style="list-style-type: none"> <li>Stop timer</li> <li>Message Validation</li> <li>If all validations are successful, display an error message on the customer screen</li> </ul>

## Validation Rules

Message Validation	Business Validation
<ul style="list-style-type: none"> <li>Message Format Validation</li> <li>Digital Signature Verification</li> </ul>	<p><b>RPP:</b></p> <ul style="list-style-type: none"> <li>Mandatory and conditional fields validation</li> <li>Business Message Identifier validation</li> <li>Issuer Check</li> <li>Acquirer Check</li> <li>Repeat Check</li> <li>Date Tolerance Check</li> <li>Minimum &amp; Maximum Amount Check</li> <li>Liquidity Position Check</li> </ul>

Message Validation	Business Validation
	<ul style="list-style-type: none"><li>• Account Enquiry Exist Check (only in Step 11)</li></ul> <p><b>Acquirer:</b></p> <ul style="list-style-type: none"><li>• Mandatory and conditional fields validation</li><li>• QR Validation (Only in Step 5)</li><li>• Beneficiary Account Validation (Only in Step 5)</li><li>• Any other validations</li></ul>