

# **NATIONAL PAYMENT SWITCH (NPS)**

## **Operating Rules NEPALPAY QR (Domestic QR Scheme & Inter-network transaction as per NepalQR)**

**Ver 1.1**

**(Approved by PSD-NRB vide Letter Ref. No. PSD/Policy 04/41/078/79, dated 17<sup>th</sup> Kartik 2078)**

**November 2021**

**Kathmandu, Nepal**

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## Document Control

Document Name:		NPS_NEPALPAY QR Operating Rules			
Document Owner:		NCHL			
Version	Date	Created/ Modified By	Reviewed By	Approved By	Remarks/ Amendment
Ver. 0.1	Feb-2021	Prajana Kayastha			Draft Created
Ver 0.2	August 2021	Subash Thapa, Chhabi Sapkota	Munni Rajbhandari, COO, NCHL Neelesh Man Singh Pradhan, CEO, NCHL		Review & Updated
Ver 1.0	October 2021		<u>NPS Workgroup</u> Saurav Pokharel, Deputy Director, Nepal Rastra Bank Prakash Poudel, Head Transaction Banking & Card Operations, Global IME Bank Ltd. Rasjit Ale, Incharge E-Banking Operations, Machhapuchchhre Bank Ltd. Sushil Nepal, Head of Operations Dept., Nepal Bank Ltd. Sishir Paudel, Head Digital Innovaton, NIC Asia Bank Ltd. Sunny Maharjan, Head Operations, NIC Asia Bank Ltd. Sakar Shrestha, Manager Central Operations, NMB Bank Ltd. Mohan Dhungel, Officer CADC Operations, NMB Bank Ltd. Niraj Raj Shrestha, Relationship Manager-Digital Banking Business, Sanima Bank Ltd. Shishir Gautam, Country Technology Manager, Standard Chartered Bank Nepal Ltd. Ronesh Chitrakar, IT Chief, ICFC Finance Ltd. Arvind Sah, Director, SparrowPay P Ltd. Jonaam Bhurtel, BDM, SparrowPay P Ltd. Pranaya Rajbhandari, CEO, FocusOne Payment Services P Ltd. Adish Shrestha, CEO, FocusOne Payment Services P Ltd. Bipin Lal Shrestha, BDM, Smart Choice Technologies Ltd. Neelesh Man Singh Pradhan, CEO, NCHL Munni Rajbhandari, COO, NCHL Chhabi Sapkota, Head Payment Systems, NCHL Subash Thapa, Head Product and System Dvpt, NCHL Prajana Kayastha, Head Risk & Compliance, NCHL		Reviewed for rollout of NEPALPAY QR as per NPS requirements
Ver. 1.0	October 2021			NCHL Board	Approved by 181 <sup>st</sup> Board of NCHL dated 8 <sup>th</sup> Oct 2021
Ver. 1.1	November 2021		Prjana Kayastha, Head Risk & Compliance, NCHL Munni Rajbhandari, COO, NCHL Neelesh Man Singh Pradhan, CEO, NCHL	NCHL Board	- Amended as per PSD-NRB vide Letter Ref. No. PSD/Policy 04/41/078/79, dated 17 <sup>th</sup> Kartik 2078 - Approved by 184 <sup>th</sup> Board of NCHL dated 25 <sup>th</sup> Nov 2021

## Abbreviations and General Definition

### Abbreviations

1. "NRB" refers to Nepal Rastra Bank, the Central Bank of Nepal.
2. "NCHL" refers to Nepal Clearing House Ltd.
3. "BFIs" refers to Banks and Financial Institutions.
4. "NPI" refers to National Payments Interface.
5. "CVV" refers to Card Verification Value.
6. "KYC" refers to Know Your Customer.
7. "KYM" refers to Know Your Merchant.
8. "MCC" refers to Merchant Category Code.
9. "MDR" refers to Merchant Discount Rate.
10. "P2P" refers to Person to Person.
11. "PIN" refers to Personal Identification Number.
12. "PSO" refers to Payment System Operator.
13. "PSP" refers to Payment Service Provider.
14. "QR" refers to Quick Response.
15. "UI" refers to User Interface.
16. "UX" refers to User Experience.

### Definitions

1. "Acquirer" refers to the financial institutions or the payment service provider (e-money operators) or any other authorized merchant aggregators, responsible for enrolling merchants, assigning merchant IDs, maintaining merchant records/accounts and settling merchants. Acquirers are the network members who create and own merchants as well as facilitate generation of merchant presented NEPALPAY QR code.
2. "Customer" refers to the individuals or entities using Issuer's application for NEPALPAY QR based payment services.
3. "Issuer" refers to the network members who create and own customer and facilitate QR code based payments from current accounts, saving accounts, mobile based e-money accounts and cards.
4. "Merchant(s)" refers to entities registered with acquirers who accept NEPALPAY QR based payments.
5. "NEPALPAY QR Network" refers to the network developed by NCHL allowing transaction and payment routing among and within the network members.
6. "NEPALPAY QR Network Members" or "Participants" refer to the existing members and the new members agreeing to subscribe membership for NEPALPAY QR under National Payment Switch operated and owned by NCHL.
7. "Other Network" refers to the QR network developed by the network providers other than NCHL.
8. "Net Clearing Position" (NCP) represents the financial position for each member at the closure of each clearing session. The NCP might be net debit or credit, and it is calculated on a multilateral basis.
9. "Net Debit Position" refers to a member's negative balance after having summed up the value of all transactions related to the member in any particular system or category purpose/payment at any particular point of time.
10. "Net Credit Position" refers to a member's positive balance after having summed up the value of all transactions related to the member in any particular system or category purpose/payment at any particular point of time.
11. "Payment System Operator (PSO)" refers to the entities licensed as PSO by NRB.
12. "Payment Service Provider (PSP)" refers to the entities licensed as PSP by NRB.
13. "QR Code" refers to ISO 18004 compliant encoding and visualization of data.
14. "Core System" refers to *connectIPS* system operated by NCHL, which is a faster payment system established as a single payments platform to allow the banks' customers for fund transfer and service payments from various channels. As part of National Payment Switch, it has now been disintegrated

into real-time Retail Payment Switch (RPS) and the existing channels of the system including mobile App, web application, gateway and APIs. RPS has been scaled up and enhanced to incorporate additional instruments and use cases being part of the National Payment Switch, where as the existing channel will continue to be identified as *connectIPS* or *connectIPS* System and collectively with retail payment switch will be called as Retail Payment System.

15. "Retail Payment Switch" or "*connectIPS* Switch" or "RPS Switch" refers to the real-time retail switch, earlier part of the *connectIPS* e-Payment System for routing, switching and processing of the financial transactions between the member participants and generates net clearing position for clearing & settlement.

## 1. Introduction

### 1.1. Background

As per the mandate of Nepal Rastra Bank “to develop a secure, healthy and efficient system of payments”, it is required to implement national payment and settlement systems in Nepal.

Implementation of nationwide electronic image based cheque clearing (NCHL-ECC) system and interbank payment system (NCHL-IPS), *connectIPS* e-Payment System and Real-Time Gross Settlement (RTGS) were major transition in the payment systems of Nepal. National Payments Interface (NPI) was implemented and in operation as an extended interface of the underlying NCHL-IPS system, *connectIPS* (real-time retail payment system operated by NCHL) and for integrating with BFIs and service providers. And now, in process of extending the payment systems in Nepal and as part of the National Payment Switch - NPS (implementation as per NRB's approval Ref. No. PSD/11/6/077/78, dated 19<sup>th</sup> Kartik 2077), it is required to scale-up the existing NPI for interoperability of all non-card retail payments including implementing infrastructure of NepalQR, extending overlaying services, introduce debit instrument, PSO settlement and establish it as an open API for extending future use cases of digital payments.

'NepalQR Standardization Framework and Guidelines' was issued by NRB in February 2021 to standardize QR codes as per EMVCo standard by bringing uniformity for interoperability, scalability and security. Hence, an implementing infrastructure for NepalQR, as a part of the National Payment Switch and the system operated by NCHL as a clearing house, has been mandated by NRB to establish and operate national QR scheme/network and internetwork transaction settlement, corresponding to which NEPALPY QR has been implemented.

### 1.2. NEPALPAY QR

NEPALPAY QR is an implementing infrastructure of NepalQR, operated by NCHL, to establish QR scheme/network for its participating members and inter-network interoperable QR transaction settlement for participating other QR scheme operators, with underlying transactions processed through one of the switches of National Payment Switch (NPS). Issuers or Issuer Networks provide instruments to their customers to read/ scan QR presented by Acquirer or Acquirer Network as creditor (beneficiary member or service provider or merchant). Issuers and Acquirers are normally BFIs or PSP and can use their own system or instruments or instrument provided by NCHL.

The transactions initiated from an Issuer or Issuer Network will be routed through NPI, based on the business process of the QR Core Engine, towards Acquirer or Acquirer Network and upon validation, the financial transactions to debit and credit the settlement banks of the Issuer/ Issuer Network and credit Acquirer/ Acquirer Network respectively are processed by the switch, which will also process the Nostro settlement of the BFIs on deferred basis. All the participants will access the system through National Payments Interface (NPI).

### 1.3. Objectives of NEPALPAY QR

The objective of the QR is to:

- Establish QR scheme/ network as per NepalQR standard.
- Establish interoperability for inter-network QR transactions in Nepal.
- Provide interfacing to NEPALPAY QR for Issuers/Issuer Networks and Acquirers/Acquirer Networks.

## 2. Legal and Regulatory Framework

This Operating Rules is established to define the procedure for operation of NEPALPAY QR with underlying transactions processed through one of the switch and as part of the National Payment Switch (NPS). The legal authority of the NEPALPAY QR Operating Rules shall be Nepal Rastra Bank Act 2058 BS (2002) as per the provisions of Clause 5, Sub-Clause 1 (i) and the prevailing Payment & Settlement Act 2075 and Payment & Settlement Bylaw 2077. NEPALPAY QR is a NepalQR standard domestic QR scheme/network and inter-network interoperable QR switch as per Clause 4.2 and Clause 4.14(1) respectively of 'Nepal QR Standardization Framework and Guidelines'. This Operating Rules shall be the regulatory framework that must be followed by the concerned parties of NEPALPAY QR scheme and as Inter-network Settlement Guidelines for interoperability of QR transactions of multiple networks, which shall be effective from the day of its issuance. The approvals and regulations already issued by NRB, if any, with regards to NepalQR and its usage shall also be valid and binding for all the stakeholders and shall be read as part of this Operating Rules. In order to establish QR interoperability, mitigate risks and monitoring of such transactions in Nepal, NRB may instruct and mandate the licensed BFIs and/or PSOs to utilize all or some of the use cases of National Payment Switch by issuing directive/circulars, as may be required.

The NEPALPAY QR, as part of the National Payment Switch (NPS), is implemented and operated by Nepal Clearing House (NCHL) as a clearing house, licensed and regulated by NRB as a payment system operator (PSO). Any modification in this Operating Rules shall be amended as per the recommendation of NCHL and upon approval by NRB. The participating members and other relevant stakeholders shall be notified accordingly by NCHL.

## 3. Operating Rules

This Operating Rules is documented to manage NEPALPAY QR and its transaction effectively, such that a complete business process is understood along with the roles and the responsibilities of each participating members. The purpose of this Operating Rules is to create and document rules, procedures and standards for the operation of NEPALPAY QR.

This Operating Rules shall govern the operations and use of NEPALPAY QR. It sets the standards for the followings:

- Roles and responsibilities of the participating members and the settlement banks.
- Roles and responsibilities of NCHL as operator.
- Detailed operational rules, procedures and other authoritative information to the participants and relevant parties as to how the system functions in different business situations.

### 3.1. Currency

NEPALPAY QR shall process QR payments in Nepalese Rupee (NPR) or any other currency as approved by NRB.

### 3.2. Threshold

Threshold shall be applied for the transaction amount processed through NEPALPAY QR. The thresholds shall be defined and validated automatically by the system as follows.

- System Threshold: This is the limit defined in the underlying core system through which financial transaction is processed. It shall be as per the existing limits/ arrangement in the Operating Rules of the core system. All other limits defined in NEPALPAY QR shall be less than or equal to the core system threshold.
- Participant Threshold: This is the total net amount limit allowed for each member participant in a specific settlement session. The participant threshold shall be the net debit cap for the participant

as per the provision of the Operating Procedure for SGF, which includes all the transactions processed through the underlying core system including that of NEPALPAY QR.

- **Transaction Threshold:** This is the limit defined by the Issuer in its payment application (issuing instrument), which is as defined by NRB for QR payments.

### 3.3. Response Mode

The transactions sent/ received by Issuer or Issuer Network and Acquirer or Acquirer Network shall be immediately responded by both the debtor bank and creditor bank. The transaction shall not be processed unless debit leg is confirmed by the debtor bank. Such debit leg shall be processed either by NPI or as per confirmation from Issuer for customer Debit Not Required. The Acquirer or Acquirer Network's settlement bank will be credited on deferred net basis, who in turn will credit the beneficiary creditor account as per its creditor/ merchant settlement cycle but the Acquirer or Acquirer Network settlement account credit shall be SGF backed. The return or refund of transactions shall be handled as exceptional case as per the exception handling provision of this operating rules or as per the Dispute Management Procedure, to be issued separately by NCHL. Special case of immediate credit to Acquirer or its beneficiary account prior to the settlement session shall also be handled through NEPALPAY QR. Settlement between the settlement banks of the Issuer/ Issuer Network and Acquirer/ Acquirer Network shall be as per the rules of underlying core system.

## 4. Participant Management

### 4.1. Participant Membership

Participants in NEPALPAY QR can be enrolled as Issuer and Acquirer Member or as Other Network Member. All Banks and Financial Institutions (BFIs) and Payment Service Providers (PSPs) or any other entity at the discretion of NRB can participate as Issuer and Acquirer, whereas, Payment System Operators (PSOs) or any other entity at the discretion of NRB can participate as Other Network Member (Issuer Network and Acquirer Network). All members shall access NEPALPAY QR through NPI. Direct and Technical Members can use Third Party Integrator of NPI as an intermediary who provides issuing or acquiring systems or integrations for such members.

#### 4.1.1. Direct Member

Direct members shall be banks and financial institutions licensed by Nepal Rastra Bank or any other entity as prescribed by NRB, such that they hold settlement account at NRB to settle in RTGS for the financial obligations to other members. The BFIs can also aggregate Issuers and/or Acquirers for and on the behalf of such prescribed entities. They shall have a direct communication link and fully integrated with NPI enabling the member to exchange financial and non-financial messages of NEPALPAY QR. Such Direct Member may have roles of Issuer (payer agent) and Acquirer (payee agent). The Issuing instrument provided by Issuer to its customers may be any of the channels provided by NCHL or other alternate channels of the Issuer. Similarly, the Acquirer may use merchant management system/ module provided by NCHL or its own system to acquire its merchants/ creditors. The acquired merchants of Direct Members shall also be extended and available to all the Issuers and Other Issuer Network for transaction initiation.

#### 4.1.2. Technical Member

Technical Members shall be Payment Service Providers (PSPs) having roles of Issuer and/or Acquirer or Payment System Operator having role of Other Scheme/Network (identified under NEPALPAY QR as Issuer Network or Acquirer Network) or any other entity as prescribed by NRB. The PSPs can also aggregate the Issuers and/or Acquirers for and on the behalf of such prescribed entities. Technical Members shall have direct communication link and fully integrated with NPI but do not have settlement account at NRB to settle the financial obligations. Therefore, they need to settle their positions through Direct Member as a settlement bank that has an account at NRB. The acquired merchants of Technical

Members shall also be extended and available to all the Issuers and Other Issuer Network for transaction initiation and interoperability.

#### 4.2. Participant Prerequisites

Following shall be the eligibility criteria and prerequisites for Direct Member with roles as Issuer and/or Acquirer.

1. Shall be licensed as bank and financial institution in Nepal and shall hold an account in NRB or RTGS for settlement.
2. Shall be a direct member of retail payment switch and participant in Settlement Guarantee Fund (SGF) as per their operating rules/ procedures.
3. Shall have a direct secured communication link with NCHL and shall have capability to fully integrate with NPI to exchange messages as Issuer and Acquirer of NEPALPAY QR. Such exchange of message will be required as Issuer in its issuing app/instrument and as Acquirer in merchant acquiring/ management system.
4. Shall allow to extend its acquired merchants to be used by other Issuers or Issuer Networks.
5. Shall be able to cover its liabilities and to pay its debts once they fall due, and not be insolvent as defined in accordance with any Insolvency Act applicable to the member.
6. Shall agree to comply with the terms of this Operating Rules and any other criteria and/or conditions as may be prescribed by NRB and/or NCHL.
7. Shall pay the applicable fees and charges to NCHL.

The existing banks and financial institutions who have already entered into membership agreement or participation in NPI will be eligible as Direct Member of NEPALPAY QR.

Following shall be the eligibility criteria and prerequisites for Technical Member.

1. Shall be licensed as payment service provider (PSP) for Issuer and/or Acquirer or shall be licensed as payment system operator (PSO) operating other QR scheme/ network.
2. Shall have established a legal agreement with one of the BFIs as settlement bank, who holds an account in NRB, to act as its settlement bank for processing of the transactions and settlement.
3. Shall agree to provide necessary fund in the Settlement Guarantee Fund (SGF) through its settlement bank and as per the Operating Procedure for SGF.
4. Shall have a direct secured communication link with NCHL and have capability to fully integrate with NPI to exchange messages as Issuer or Acquirer or inter-network transaction settlement of NEPALPAY QR. Such exchange of message will be required as Issuer in its issuing app/instrument, as Acquirer in merchant acquiring/management system, as Other Network for inter-network settlement.
5. Shall allow to extend its acquired merchants to be used by other Issuers or Issuer Networks.
6. Shall be able to cover its liabilities and to pay its debts once they fall due, and not be insolvent as defined in accordance with any Insolvency Act applicable to the member.
7. Shall agree to comply with the terms of this Operating Rules and any other criteria and/or conditions as may be prescribed by NRB and/or NCHL.
8. Shall pay the applicable fees and charges to NCHL and its settlement bank, if any.

Existing indirect/ technical members who have already entered into membership agreement and onboarded as indirect/technical participant in NPI will be eligible as Technical Member of NEPALPAY QR.

#### 4.3. Participant Agreement

1. Each participant shall sign an agreement or amend the existing main agreement with NCHL to subscribe for NEPALPAY QR through NPI as Issuer and/or Acquirer or Other Network.

2. Technical members shall also have an agreement or arrangement with BFIs as its settlement bank, which shall be included as part of the Technical member agreement. A debit and/or credit authority of such settlement account shall also be provided to NCHL through settlement bank. Technical members can have separate arrangement with its settlement bank for settlement of its merchants acquired for NEPALPAY QR.
3. For Other Networks as Technical Member, addition details regarding network integration, transaction routing and settlement arrangements shall also be part of the member agreement to facilitate interoperability of QR transactions at inter-network level.
4. NCHL shall notify to all other concerned participants when any participant is added or removed.

#### 4.4. Participant Suspension

A participant shall be suspended for the following reasons but shall not be limited to:

1. License revoked or declared as problematic by NRB and/or by the concerned regulator.
2. Participant declared itself as insolvent or declared insolvent pursuant to prevailing Insolvency Act.
3. Suspended as per the prevailing Operating Rule/Procedure of the other underlying System.
4. Fails to comply with the terms of this Operating Rules and/or Operating Procedures for SGF and/or Operating Rules/ Procedures of the underlying core system.
5. Fails to comply with the terms of the membership agreement.

The suspension shall be immediately effective after being identified by NCHL or being informed to NCHL or as directed by NRB. The participant shall not be able to exchange and process any transaction further. However, the transactions already initiated from an issuer and processed shall be deemed as accepted. Therefore, the suspended participant shall continue to be liable to NCHL and other participants in respect of all its outstanding obligations and liabilities.

#### 4.5. Participant Resumption

Resumption of a suspended participant in NEPALPAY QR may happen in case that the reason for suspension has been rectified to the satisfaction of NCHL or as prescribed by NRB.

#### 4.6. Participant Termination

Termination of a participant shall be accomplished when decision for permanent removal is made. A participant shall be terminated in case the participant satisfies one of the following conditions:

1. Fails to comply with the terms of this Operating Rules.
2. Terminated as per the Operating Rule/Procedure of the core system(s).
3. License revoked by NRB or by any other statutory body authorized to do so,
4. Declared insolvent or participant declared insolvency or similar, or
5. Withdrawal requested by the participant.

Termination of a participant is permanent, where terminated participant will no longer be accessible to NEPALPAY QR, although the participant information will remain for future reference. Once terminated, re-registration shall be necessary for participation.

#### 4.7. Participant Withdrawal

Any participant who would like to withdraw from NEPALPAY QR, as per its business decision, must send an official request ninety (90) days in advance. Once withdrawn, re-registration shall be required for participation.

#### 4.8. Participant Identification

Each participant shall be represented in NEPALPAY QR with a unique identification member number (Id), provided by NCHL. However, for existing members of NCHL, identification number already allocated for existing system(s) will be re-utilized for the NEPALPAY QR.

#### 4.9. Participant Notification

Upon receipt of an official communication and a member added or suspended or terminated or withdrawn or resumed, NCHL shall notify to all other participants via electronic means.

### 5. System Architecture

NEPALPAY QR is an implementing infrastructure of NepalQR, to establish QR scheme/network for its participating members and inter-network interoperable QR transaction settlement for participating other QR schemes, with underlying transactions processed through one of the switches of National Payment Switch (NPS). Issuers or Issuer Networks provide instruments to their customers to read/ scan QR presented by Acquirer or Acquirer Network as creditor.

The transactions initiated from an Issuer or Issuer Network will be routed by NPI, based on the business process of the QR Core Engine, towards Acquirer or Acquirer Network and upon validation, the financial transactions to debit and credit the settlement bank of the Issuer/ Issuer Network and Acquirer/ Acquirer Network respectively are processed by the switch, which will also process the Nostro settlement of the BFIs on deferred basis.

#### 5.1. NPI

National Payments Interface (NPI) is a set of standard Application Programming Interfaces (APIs), operated in a hosted model by NCHL, for connecting multiple underlying core systems and services for routing of financial and non-financial messages and for interfacing with the participating members for transfers and service payments. The members shall use NPI to access, initiate and process messages of NEPALPAY QR, which shall internally route the transactions towards underlying core systems for clearing and settlement of financial transactions.

#### 5.2. QR Code Standard

NEPALPAY QR code shall be as per NepalQR standard, which is Merchant Presented EMVCo standard. The technical details and specification of the QR code shall be as per NEPALPAY QR Technical and API Specification document, published and/or updated separately by NCHL.

#### 5.3. Issuing Instrument

It is an instrument provided by Issuer to its customers, which is capable to scan, read and process standard QR payments. It will be integrated with NEPALPAY QR through NPI and will establish a user interface (UI) for such processing. Such instruments could be owned by the Issuer or may use channel platforms provided by other operators.

#### 5.4. QR Engine

The core engine of NEPALPAY QR is the main QR switch to handle routing of transactions between Issuer/ Issuer Network and Acquirer/ Acquirer Network. Technical and business logics of QR payments including validation, parsing of QR string, routing to acquirer or acquirer network, processing at underlying core system for financial transaction, are handled by the core engine. It is integrated with NPI for exchanging messages with the members.

### 5.5. Underlying Core System

It is the underlying payment system (Retail Payment Switch) through which the financial transactions are processed, cleared and settled between the settlement banks of Issuer and Acquirer and are integrated through NPI.

### 5.6. Merchant Management Engine

It is a component to facilitate participating acquirers to manage its creditors/ merchants including merchant acquiring, on-boarding with issuance of QR code (static or dynamic), fees setup, transaction monitoring/notification and merchant settlement. APIs are available through NPI for the Acquirer to establish its own merchant management system or alternatively the direct members can use existing Bank Central module for such purpose.

### 5.7. Archive Module

The transaction data of NEPALPAY QR shall be maintained in the Archive Module of the underlying core system for at least seven (7) years. The data shall be archived automatically within three (3) months, after which the data retrieval shall be done by NCHL upon request from the participating member BFIs.

## 6. System Operation

### 6.1. Daily Operation

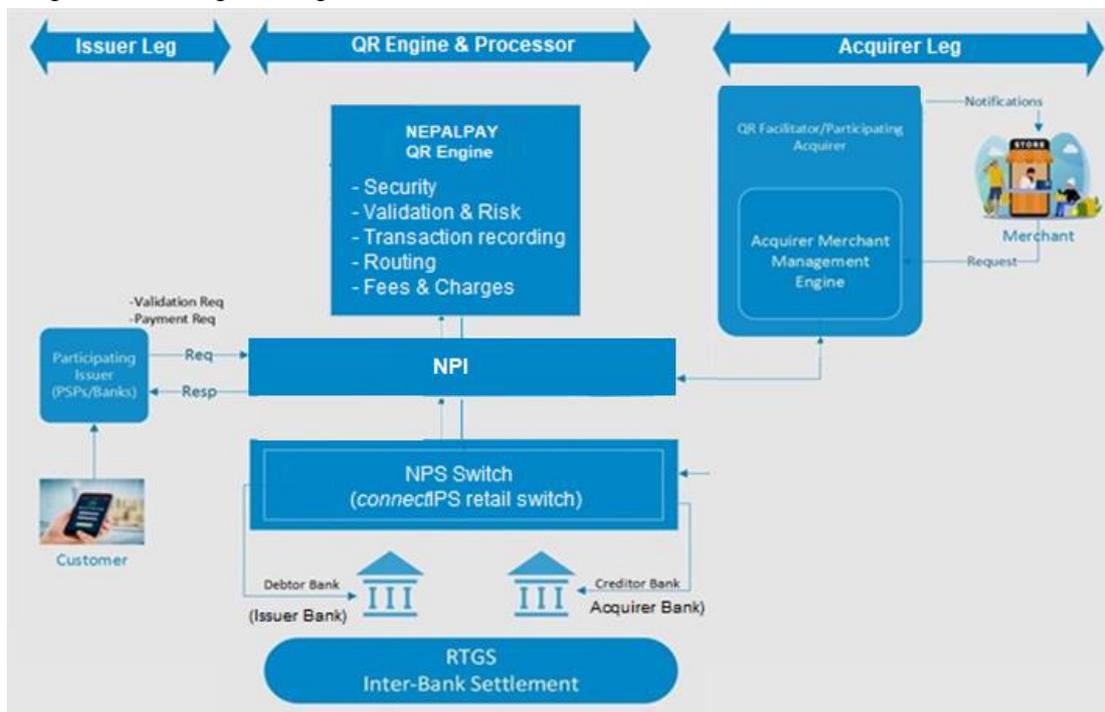
NCHL shall operate and manage the daily operations of the NEPALPAY QR by:

1. Configuring required setups and limits for the participants in the system.
2. Monitoring of the NEPALPAY QR components and messages presented and/or replied through NPI.
3. Monitoring and overall management of the transaction life cycle and taking corrective actions and/or decisions appropriately.
4. Ensuring settlement of QR transactions through underlying core system.
5. Provide necessary support to the participating members.

### 6.2. Transaction Workflow

#### 6.2.1. General Workflow

Following shall be a high level general workflow of NEPALPAY QR.



1. NPI shall authenticate the member prior to receiving and/ or processing a message based on multi-layer security controls.
2. Process and validate the received message from issuer against system and business validations.
3. Record the transactions for audit trail and for further processing.
4. Except in case of Debit Not Required, transmit valid transactions to NPI for Issuer or its customer account debit. Transmits transaction, upon confirmation of debit leg, to underlying core system for Acquirer or merchant account credit on deferred basis, except for specific case of immediate credit.
5. Transmits payment confirmation to acquirer and the response sent to issuer indicating either acceptance or rejection.
6. Pushes or allows the members to pull reports and reconciliation information based on the status of the transaction in the underlying payment system.
7. Based on the reconciliation and settlement at the underlying payment system, the acquirer will initiate its merchant settlement as per its arrangement with the merchant. Direct members using merchant management system within Bank Central Module may enable feature to credit merchants account.
8. The standard response codes of the system are listed under Annexure and other responses shall be passed as received from the participant BFIs. Except payment confirmation response code '000' from acquirer, all other return reasons will be treated as failed and accordingly customer credit transaction will be reversed.

Detailed process flow indicating technical QR API specifications, necessary controls of specific use cases for Issuer, Acquirer and Other Network shall be published separately as guidelines by NCHL.

#### **6.2.2. On-Us Transactions Workflow**

This is related to a case where Issuer and Acquirer are using NEPALPAY QR scheme. A general transaction flow of NEPALPAY QR shall be as follows.

1. Customer will initiate a transaction from a channel provided by issuer, which is integrated with NPI.
2. The message will be sent by the issuer to NPI, which will perform technical and business validation.
3. It will then transmit a message to QR engine which will identify the parties in the payment chain to initiate an instruction.
4. The QR engine will send the request to NPI for debit leg of the transaction which will be processed on real-time basis through underlying payment system, whereas credit leg to the acquirer will be done on deferred basis, except in specific merchant categories.
5. In case of PSPs being Issuers, settlement accounts of such entities maintained with its settlement BFIs will be debited. However, if BFI is an Issuer, account of the customer/initiator would be debited, unless for Debit Not Required case.
6. Deferred credit will be on acquirer's account at specified schedule, who will further credit the creditor/merchant account, except for specific merchant categories where direct merchant account will be credited.
7. The Issuer and Acquirer will use reporting APIs in NPI to extract the status of transaction, settlement and fees details.
8. The final settlement between the BFIs will be done on multilateral net basis through RTGS system and as part of the settlement arrangement of underlying core system.
9. Acquirers will have option to process their merchant settlement through underlying payment system in NPI, for further credit to creditor/merchants on net basis or may have its own arrangement.

#### **6.2.3. Inter-network Transactions Workflow**

This is related to the cases where Issuer or Acquirer or both is Other Scheme/ Network. A general transaction flow of inter-network transaction and settlement shall be as follows.

1. If one or both of the Issuer or Acquirer are in different QR networks, then such QR payment will be considered as inter-network transaction and will be processed through NPI. All such QRs shall be as per NepalQR or EMVCo standard and shall be identified by tags prescribed by NRB.
2. For inter-network QR payment, the issuer network will send the QR details to NPI, which will route the information to acquirer or acquirer network.
3. Response received from the acquirer or acquirer network will be routed to the issuer or issuer network through NPI.
4. Respective networks will further transmit the information and response to their issuer and acquirer.
5. Inter-network settlement will be done between the settlement banks of issuer network and acquirer network based on the NSI generated by NPI through its underlying payment system.

### 6.3. Exception Handling

A transaction processed through NPI either on credit or debit may fail or services not updated after the transaction success due to various reasons such as loss of network connectivity, failure of system of BFI or Issuer or Acquirer or merchant, failure of integration middleware or other business reasons. Such cases of transaction failure and process for exception handling of payment transactions shall be as per the Operating Rules of the underlying core systems, whereas for failure in services shall be through the acquiring member. The members shall ensure that the necessary arrangements are in place while acquiring such merchants. Following are the major cases of transaction failure and the process for exception handling:

1. In case of timed-out during debit instruction at Issuer such that it is not able to receive a response, the system shall not process the transaction for payment confirmation to the Acquirer. And the issuer will receive a transaction failure response and such transaction will not be included in NCP settlement. In case the customer's account has been debited for the transaction, the Issuer will have to proceed for auto reversal if debit time-out auto reversal is enabled in the Issuer bank or manually reversed. Issuer's bank will be able to view the report in system for such time-out failed transaction.
2. In case the customer's account is debited but the system is unable to process payment confirmation to the acquirer due to any technical reason except time out, the system shall mark it as failed. And the customer will receive a transaction failure response and such transaction will not be included in NCP settlement. The transaction shall be auto reversed at the debit leg immediately if auto reverse is enabled at Issuer's banks or shall be manually reversed where auto reversal is not enabled. Also if auto reversal transaction also failed, bank shall reverse such transaction manually after reconciliation from reversal transaction list.
3. In case of time out during the payment confirmation to acquirer, same will be notified to the issuer. The timed out payment confirmation shall have to be re-tried for predefined number of times to the acquirer. On successful confirmation from acquirer, issuer will be notified.
4. In case of transaction where service is already rendered based on debit instruction but such transaction is not included in the NCP settlement, then issuer will have to facilitate to proceed for settlement with the merchant's bank upon confirmation/request from the merchant and/or merchant bank for final credit to the merchant.
5. In case service not rendered identified by the merchant and /or its bank but the payment instruction from customer has been processed, the merchant and/or acquirer will have to facilitate to proceed for a reversal/adjustment to the debtor bank and/or debtor against the original transaction.
6. However, in all cases, the issuer, acquirer, the settlement bank and merchant shall ensure that they have reconciled their transactions at the end of the sessions or latest by end of the business day. And for all cases, identified or raised shall be resolved and necessary refund/reversal made, if required, against the original transaction, within 2 business days for On-Us (same bank), within 7 business days for Off-us (different bank) and within 14 business days for Other Network, except for the transactions under dispute which shall be dealt as per the Dispute Management Policy of NCHL

In order to streamline the exception handling, including procedure for dispute handling, NCHL may issue a separate Dispute Handling Procedure to further detail scenarios of disputes, procedure and handling mechanism including charge backs, as may be required. NCHL may implement Dispute Management System to automate and enforce the dispute handling procedure.

#### 6.4. Debit Cap Management

Debit cap shall be defined in the underlying core system for each participating member, as per the Operating Procedure for SGF and BFIs may assign debit cap to its technical members. The system will validate the debit cap for every transaction and the transaction will be restricted once the debit cap is exhausted. The participant BFIs can monitor the debit cap online during the session. Debit Cap limit for each participant BFIs shall be refreshed after the settlement completion at RTGS.

#### 6.5. System Validations

The system shall perform validation of every transaction presented against pre-defined technical setups prior to routing for processing which includes, but are not limited to, the following:

- Transaction Thresholds: Transaction value does not exceed per transaction threshold limit.
- Debit Cap: The system shall validate that upon processing of the transaction the issuer will not exceed its debit cap.
- Member Status: Participant of the transactions are not suspended or at default.
- Payment Types: The issuer is allowed to send the payment message and the acquirer is allowed to send refund message type.
- Transaction Currency: Payment instruction currency is one of the supported currency.
- Settlement Session: There is an open clearing session for the message type, currency, settlement date and purpose code, prior to initiating credit leg of the transaction to Acquirer or Acquirer Network or during merchant settlement (if processed from Bank Central).

### 7. Settlement Management

#### 7.1. Settlement Sessions and Schedules

1. Settlement sessions shall be as per the sessions and schedules of the underlying core system (retail payment switch), that shall be used for Nostro clearing settlement of the participating BFIs corresponding to NEPALPAY QR.
2. Settlement of technical members shall be through one of the direct members as its settlement banks.
3. It shall be the responsibility of the respective members to manage and fund their settlement accounts of the underlying core systems or at its settlement bank.
4. Settlement shall include settlement of transaction at each session, whereas, fees, charges & penalties shall be settled on a stipulated frequency.

#### 7.2. Finality of Settlement

The finality of payment and settlement shall be as per the Operating Rules or Procedures of the underlying core system. The transactions in NEPALPAY QR shall be backed by settlement guarantee fund (as per the Operating Procedure for SGF), hence the transaction shall be irrevocable once response of debit confirmation is received by the core system from the debtor bank and the service is rendered or credit leg of the transaction initiated at the merchant's end.

#### 7.3. Merchant Settlement

The responsibility and onus for merchant settlement shall remain with acquirer or acquirer network, which shall be executed after the final settlement of each session. Acquirer shall ensure that such merchant settlements are done on same day (T+0) or at least by the next business day (T+1). The specific merchants (or as identified by merchant category) requiring immediate credit shall also be handled by Acquirer. The Acquirer members using NCHL's merchant management system (through

Bank Central) shall handle the merchant settlement that will credit the net amount to the merchant account.

## 8. Responsibilities

### 8.1. Responsibilities of Acquirer

The Acquirer members shall have responsibilities to:

1. Comply with the responsibilities of Acquirer referred in the prevailing 'NepalQR Standardization Framework and Guidelines' published by NRB.
2. Maintain uninterrupted and secured connectivity with NEPALPAY QR through NPI based on the underlying protocols that are supported to ensure that the systems or channels or instruments are integrated properly.
3. Ensure that adequate infrastructure and security arrangements in the system, integrations and associated services are implemented, timely upgraded and monitored. It shall be the responsibility of the acquirer member to ensure security standards and controls in their system and acquiring instrument/ channels, as may be prescribed by NCHL and/or NRB. NCHL may specify additional security and integration checklist to maintain a minimum technical and process standard for acquirer.
4. Ensure that the financial and non-financial instruction messages are transmitted electronically as per the defined workflows. For financial instruction, it shall also ensure that it is correct and has credited acquirer or merchant's account and debited the account before initiating any refund instructions. The member shall be liable for any wrong data entry of payment instruction and shall make sure that the instructions validated by it or refund initiated are valid, complete and necessary authorization or supporting are obtained from its merchant.
5. Ensure that technical setups are completed and tested prior to rollout of each channel or use case or instrument and also confirm controls for data integrity and security of transactions initiated from such channels. Necessary checklist or certification details may be issued by NCHL for integration in acquiring system and settlement.
6. Own and apply authentication credentials at network and application layers along with the validations as prescribed in NEPALPAY QR Technical Specification document. Member shall be responsible to safeguard such credentials.
7. Ensure that the brand/ logo of NEPALPAY QR within the acquiring instrument (QR display) is placed alphabetically with comparable sizing to avoid inappropriate placement or to patronize any one scheme, in case of multiple scheme/network integrated by the Acquirer in single QR code and shall be as per the brand guideline issued by NCHL.
8. Provide its creditors/merchants with sufficient information to understand payment process through NEPALPAY QR, its underlying systems such that their obligations, responsibilities, processing timelines and other information including return/reversal reasons are informed. It shall be the responsibility of the member to enter into an agreement or obtain consent to debit and/or credit its creditor/merchant bank accounts and ensuring compliance to KYC.
9. Acquire merchants for NEPALPAY QR with proper setup of the beneficiary account, MCC and other arrangements such that merchants can receive payments within settlement cycle and the merchants properly identifiable by Issuer/ Issuer network. Acquirer shall also allow to extend or use the acquired merchants by other members (Issuer or Issuer Network) for QR interoperability.
10. Ensure that the MDR applied to it merchants are non-discriminatory within MCC.
11. For the cases of Technical Member as Acquirer, ensure that arrangement with one of the direct members as its settlement bank is established.
12. Ensure validity and legality of transactions initiated including compliance to AML/ CFT, sanction checks or other relevant legislations as may be required. The member as settlement bank of technical member may reject and/or withhold any transactions that it deems violates such policies and timely report such cases as per the regulation.

13. Ensure settlements accounts at RTGS (at settlement bank for Technical Members) are properly funded and debit cap limits monitored for settlement guarantee fund requirements.
14. Ensure timely reconciliations of transactions in NEPALPAY QR and in the underlying system, as per this operating rules and that of the underlying payment systems.
15. Comply with the Operating Rules of NPI, underlying payment systems, any other guidelines, checklists as advised by NCHL and/or any other instructions by NRB.

## 8.2. Responsibilities of Issuer

The Issuer members shall have responsibilities to:

1. Comply with the responsibilities of Issuer referred in the prevailing 'NepalQR Standardization Framework and Guidelines' published by NRB.
2. Maintain uninterrupted and secured connectivity with NEPALPAY QR through NPI based on the underlying protocols that are supported to ensure that the systems or channels or instruments are integrated properly.
3. Ensure that adequate infrastructure and security arrangements in the system, integrations and associated services are implemented, timely upgraded and monitored. It shall be the responsibility of the issuer member to ensure security standards and controls in their system and issuing instrument/ channels, as may be prescribed by NCHL and/or NRB. NCHL may specify additional security and integration checklist to maintain a minimum technical and process standard for issuer.
4. Ensure that the financial and non-financial instruction messages are transmitted electronically as per the defined workflows. For financial instruction, it shall also ensure that it is correct and has debited issuer's or customer's account. The member shall be liable for any wrong data entry of payment instruction and shall make sure that the instructions validated by it are complete and necessary authorization or supporting are obtained from its customer.
5. Ensure that technical setups are completed and tested prior to rollout of each channel or use case or instrument and also confirm controls for data integrity and security of transactions initiated from such channels. Necessary checklist or certification details may be issued by NCHL for integration in issuing channel/ instrument.
6. Own and apply authentication credentials at network and application layers along with the validations as prescribed in NEPALPAY QR Technical Specification document. Member shall be responsible to safeguard such credentials.
7. Ensure that the brand/ logo of the NEPALPAY QR within the issuing instrument/ channel of Issuer is placed alphabetically with comparable sizing to avoid inappropriate placement or to patronize any one scheme, in case of multiple scheme/network integrated by the Issuer in its issuing instrument and shall be as per the brand guideline issued by NCHL.
8. Provide its customers with sufficient information to understand payment process through NEPALPAY QR, its underlying systems such that their obligations, responsibilities, processing timelines and other information including return/reversal reasons are informed. It shall be the responsibility of the member to enter into an agreement or obtain consent to debit its customers bank accounts and ensuring compliance to KYC.
9. Enroll its customers for NEPALPAY QR and its instrument to route for Other Network QR such that their customers can initiate payment transaction.
10. Ensure that the transaction fee or surcharge fee is applied only for the specific cases, as prescribed by NCHL and/or NRB.
11. For the cases of Technical Member as Issuer, ensure that arrangement with one of the direct members as its settlement bank is established.
12. Ensure validity and legality of transactions initiated including compliance to AML/ CFT, sanction checks or other relevant legislations as may be required. The member as settlement bank of technical member may reject and/or withhold any transactions that it deems violates such policies and timely report such cases as per the regulation.

13. Ensure settlements accounts at RTGS (at settlement bank for Technical Members) are properly funded and debit cap limits monitored for settlement guarantee fund requirements.
14. Ensure timely reconciliations of transactions in NEPALPAY QR and in the underlying system, as per this operating rules and that of the underlying payment systems.
15. Comply with the Operating Rules of NPI, underlying payment systems, any other guidelines, checklists as advised by NCHL and/or any other instructions by NRB.

### 8.3. Responsibilities of NCHL

NCHL, as the operator of NEPALPAY QR scheme and inter-network settlement, shall have the responsibilities to:

1. Comply with the responsibilities of Scheme/Network referred in the prevailing 'NepalQR Standardization Framework and Guidelines' published by NRB.
2. Publish NEPALPAY QR standard code related technical specification and API specification for QR and internetwork transaction processing.
3. Maintain uninterrupted and secured connectivity with NEPALPAY QR through NPI, underlying systems and members to ensure that systems, channels and instruments are integrated properly.
4. Ensure that adequate infrastructure and security arrangements for NEPALPAY QR, underlying payment systems, integrations with members & services are implemented, timely upgraded and monitored. It shall be the responsibility of NCHL to maintain the systems and data in a secured environment for a period of Seven years with replication to Disaster recovery (DR) site and make it available to the participants when needed.
5. Support members for technical setups and integration of their system and channel/instrument. It shall be the responsibility of NCHL to implement controls for data integrity and security of the messages routed through NCHL, however, it shall be the responsibility of the members to confirm such setup and testing.
6. Specify additional security and integration checklist to maintain a minimum technical and process standard for issuer and acquirer members.
7. Ensure that financial and non-financial instruction messages are received from Issuer/Issuer Network and routed to respective Acquirer/Acquirer Network and toward underlying system for financial message, as per defined workflows. For financial instruction, it shall ensure that debited leg is confirmed, unless for the case of Debit Not Required, prior to routing of such instructions.
8. Ensure settlements are executed for the underlying payment systems as per their Operating Rules/Procedure of the underlying payment systems and also monitor the debit cap limits along with settlement guarantee fund requirements of the members.
9. Provide necessary settlement details to the participating members including that of the transactions and fees & charges.
10. Establish Helpdesk for 1<sup>st</sup> line of support to all the participating members and 2<sup>nd</sup> line of support to their customers during business hours.
11. Inform all participants of any event, which might affect operations of NEPALPAY QR including any contingent events, known or planned disconnection or significant changes at members' end or at NCHL. Necessary notification to members shall be made by NCHL through an appropriate communication channel.
12. Monitor participating members, integrated channels, services and underlying systems to avoid misuse of the system and to ensure that the members comply with the Operating Rules. NCHL shall act as a custodian of data, information received and or stored with regards to the transactions.
13. Publish related user manuals, guidelines, fees and charges schedule, as may be required, to facilitate members, their customers and/or creditors/merchants.
14. NCHL as an operator of the system shall not be held liable under any circumstances for any fraudulent cases involving transactions initiated from members.

#### 8.4. Responsibilities of NRB

Nepal Rastra Bank shall have the responsibilities to:

1. Settle the transactions processed through underlying core system as per their Operating Rules. The settlement done by NRB shall be final and irrevocable.
2. Terminate, suspend, resume or withdraw member.
3. Amend provisions of this Operating Rules upon recommendation of NCHL and/or member BFIs.
4. NRB shall not be held liable under any circumstances for fraudulent cases involving transactions.

All the above responsibilities requiring notification to the members will be made by NCHL through an appropriate communication channel.

#### 8.5. Responsibilities of Other Network

Other Network enrolled with NEPALPAY QR for establishing interoperability of QR transactions and settlement shall have the responsibilities to:

1. Comply with the responsibilities of Scheme/Network referred in the prevailing 'NepalQR Standardization Framework and Guidelines' published by NRB.
2. Maintain uninterrupted and secured connectivity with NEPALPAY QR through NPI to ensure that the networks are integrated properly.
3. Ensure that adequate infrastructure and security arrangements for integrations are implemented, timely upgraded and monitored. It shall be the responsibility of Other Network to maintain their systems and data in a secured environment. NCHL may specify additional security and integration checklist to maintain a minimum technical and process standard for Other Network.
4. Ensure that an arrangement with one of the direct members as its settlement bank is established.
5. Ensure that the financial and non-financial instruction messages for internetwork transactions and routed through NEPALPAY and are appropriately validated prior to delivery to its Issuer or Acquirer, as the case may be. Following cases of inter-network transaction settlement and accordingly the responsibilities shall be handled.
  - 5.1. For the case of Issuer on Other Network, it shall ensure that debited leg at Issuer or its customer has been confirmed prior to routing such instructions to NEPALPAY, which will debit the settlement account of the Other Network (as Issuer Network) for further processing. Confirmation message will be provided after the session settlement for Acquirer.
  - 5.2. For the case of Acquirer on Other Network, it shall respond after validation of the QR details provided by NEPALPAY QR, corresponding to which the settlement account of the Other Network (as Acquirer Network) will be credited after the session settlement, however, it will be backed by the settlement guarantee fund.
  - 5.3. For the case Issuer and Acquirer in different Other Networks, the Issuer Network shall ensure that the debit leg at its Issuer or its customer has been confirmed prior to routing such instruction to NEPALPAY, which will be routed to Acquirer Network for QR validation, corresponding to which the settlement account of the Issuer Network will be debited. The settlement account of the Acquirer Network will be credited after the session settlement, however, it will be backed by the settlement guarantee fund.
6. Establish Helpdesk for 1<sup>st</sup> line of support to NEPALPAY and 2<sup>nd</sup> line of support to NEPALPAY members during business hours for any dispute and refund/ reversal of internetwork transactions.
7. Inform NEPALPAY of any event, which might affect the operations of internetwork transaction settlement including any contingent events, known or planned disconnection or significant changes. Necessary notification to other members shall be made by NCHL through an appropriate communication channel.
8. Ensure that the settlement details including that of the transactions and fees are shared for reconciliation.
9. Ensure validity and legality of transactions initiated including compliance to AML/ CFT, sanction checks or other relevant legislations as may be required. The member as settlement bank of

technical member may reject and/or withhold any transactions that it deems violates such policies and timely report such cases as per the regulation.

10. Ensure settlements accounts the settlement bank is properly funded and debit cap limits monitored for settlement guarantee fund requirements.
11. Ensure timely reconciliations of transactions in NEPALPAY, as per this operating rules and through its settlement bank.
12. Comply with the Operating Rules of NPI, underlying payment systems, any other guidelines, checklists as advised by NCHL and/or any other instructions by NRB.

## 9. Fees, Charges and Penalties

All members in NEPALPAY QR shall pay fees and charges to NCHL for their participation and usage of the scheme or internetnetwork transaction settlement. NCHL shall reserve the right to define or modify the fees and charges at any time with prior notice with sufficient time provided to the participants. However, the applicable fees, charges and penalties shall be fixed in a fair, reasonable and non-discriminatory manner.

### 9.1. Annual Subscription Fee

Each Member shall pay annual subscription fee to NCHL. Such fee to existing direct and indirect/ technical members shall be waived, who have subscribed to NPI. NEPALPAY QR shall be provided as additional facilitation service to the existing members of NPI.

### 9.2. Interchange Fee

1. Acquirer shall be allowed to charge MDR to its merchants at per its internal policy or as prescribed by NRB. There may be specific case where Surcharge may be allowed to be applied to Issuer, list of such merchant or MCC shall be published appropriately.
2. NCHL shall charge interchange fee to Acquirer or Acquirer Network, which shall be shared at the prescribed sharing ratio with Issuer or Issuer Network. In case of Issuer surcharge, interchange fee shall be applied to Issuer and sharing will be with Acquirer or Acquirer Network.
3. NCHL may specify differentiated interchange fee based MCC, On-Us, Off-Us, or similar other scenario.

### 9.3. Switching Fee

NCHL shall additionally charge switching fee from Other Network for processing of internetnetwork transaction settlement.

### 9.4. Other Charges

NCHL or as per NRB's instruction may define and apply Other Charges/ Penalties on:

- Complaints on delayed customer/merchant account credit.
- Complaints such as Incorrect Rejection Reason.
- Charge backs as per exception handling cases.

## 10. Reports

The system shall provide different set of reports that are relevant for the members of NEPALPAY QR and shall be available through NPI, which includes at least the followings:

1. Transaction Query
2. Fees and Charges Query
3. Billing Summary Report
4. Reconciliation Report
5. Transaction Report/ Advise

## 11. Continuity of Business

This section provides the continuity of business information for the related parties of the system in the unlikely events of disruption to preserve customer confidence, ensure regulatory compliance and mitigate systemic risks. NCHL shall ensure availability, consistency and recoverability of the retail payment system. All participants shall also adopt a business continuity plan to ensure its resilience and preparedness for any such unplanned disruptions.

The participants shall contact the first line support team (Helpdesk) at NCHL through the communication channel made available by NCHL in case of facing any problems in order to get the suitable support during disruptions such as communication failure or line disconnection.

### 11.1. Communication Failure at Member's Site

The member shall immediately inform NCHL in case of facing any communication failure, connectivity problem or any other disruption situation from their end.

NCHL shall evaluate the disruption situation (if it is a communication failure or can be resolved within a short period without having any impact on the continuity of business) and, provide the member with the suitable contingency procedure based on the level of failure or inform NRB and all participants about the disruption (if cannot be resolved within such period).

### 11.2. Failure at NCHL Main Site

NCHL shall immediately inform NRB and all participants of the failure and then activate the Disaster Recovery site to continue or re-start the system accordingly. The members will be connected to the DR site automatically.

### 11.3. NCHL Disaster Recovery Plan

In addition to the high availability provided for the system (from the main site and DR site), NCHL shall maintain and periodically test its disaster recovery plan to address

1. the replication and restoration of NEPALPAY QR systems and services that ensures processing from alternate facility;
2. the backup and recovery of critical data within defined recovery point objective;
3. the operational recovery within defined recovery time objective.

## 12. Helpdesk

A dedicated first-line support team shall be available at the NCHL during the NCHL office hours to support the participant members for smooth operation of the system; troubleshoot and provide the suitable diagnosis if any member faces any problem that might appear at the application level. The participant member shall assign a person to contact the helpdesk and report problems through the proper communication channels that will be circulated by the NCHL.

Moreover, the helpdesk shall have clear prioritization criteria to the requests; such that the reported problems shall be categorized according to their urgencies and priority levels in order to provide a proper handling to each priority level.

Priority	Definition
<b>Urgent</b>	A catastrophic problem which may severely impact NEPALPAY QR operation, or in which NEPALPAY is down and not functioning with no procedural work around available. A prompt response and a quick action must be taken
<b>High</b>	A problem where NEPALPAY QR is functioning but in a severely reduced capacity. The situation is causing significant impact in NEPALPAY QR's business and functions.
<b>Normal</b>	A problem with a medium or low impact to NEPALPAY QR business and functions. Such problem is considered as a "Minor" with limited loss or no loss of functionality or impact to the participant member's daily process.

### 13. Dispute Management

1. NCHL shall not have any duty to determine legality, validity or enforceability of any NEPALPAY QR transaction or to determine whether such transaction is contractually void or voidable. NCHL shall be entitled to consider all transaction(s) executed under the system as legal, valid and enforceable.
2. In case of customer complaints related to NEPALPAY QR transactions, the first point of contact for customer shall be the Issuer/ Issuer Network and for merchant its shall be the Acquirer/ Acquirer Network. In case of payments in which service/product is not rendered, the customer's first point of contact shall be such merchant and/or it's Acquirer. Any information and necessary coordination are required to the Acquirer, then Acquirer shall request to NCHL helpdesk for appropriate support.
3. In case of a disputed transaction reported by an authorized person from member and/or NCHL, the creditor bank shall support in resolving the dispute and/or investigation, until which it shall block the available transaction amount, as may be the case.
4. In order to streamline the exception handling including dispute management between the participants, NCHL may issue separate dispute management procedure with defined SLA to respond and/or to close the issue, which shall be binding to all the participants.
5. In the event of dispute or differences arising between the participants and if the parties are unable to resolve amicably, the matter shall be referred to NCHL for formation of the Arbitration Tribunal and NCHL shall be responsible to appoint an independent sole Arbitrator and same shall be immediately notified to disputed parties. The arbitration proceedings shall be conducted in Kathmandu in accordance with the provisions of the Arbitration Act, 2056 of Nepal, and enactments/ modifications, if any, thereof. The Arbitration decision shall be final and binding upon all the parties. The cost of the arbitration shall be equally borne by the disputed parties.
6. In the event of the dispute between NCHL and the participant(s), which the parties are unable to resolve amicably, the matter shall be referred to a final and binding arbitration.
7. NRB shall be the final authority to interpret this Operating Rules.

### 14. Insurance

NCHL undertakes no responsibility in respect of any failure/defect, forgery, theft, or any wrongful copying of any software, password, or any combination of them, assigned to or designated by a member/participant or NCHL. It is a responsibility of each Member/Participant to have an insurance coverage against such or any other incidents.

### 15. Obligations

#### 15.1. Indemnity

1. Participants shall indemnify and hold harmless NCHL, its directors, officers, and employees from all liabilities or expenses (including but not limited to reasonable attorney fees and costs of investigation and defense) resulting from: (i) any business loss resulting from breach of the terms of this Operating

Rules; (ii) any violation of any statute, ordinance, or regulation; (iii) any act or omission constituting negligence or wilful misconduct or breach of fiduciary duty in connection with NCHL performance or services. Participant hereby represents and warrants that in the event of any suits, claims, disputes or such differences are brought directly against NCHL with respect to NPI, as a consequence of breach of the terms and conditions of this Operating Rules, participants shall assist NCHL in defending such suits, claims, disputes or differences. (iv) in the event that NCHL becomes aware of any obligations, representation or warranty of participants as being false or misleading, participants shall be liable to indemnify NCHL for any such injury, loss or damage arising out of such misrepresentation. For clarity, participants shall only be liable for actions that originated from participants or any third party acting on its behalf and participants shall not be liable for issues arising solely and independently from NCHL.

2. In the event that after a member has participated in the system, NCHL becomes aware of any obligations, representation or warranty of the participant as being false or misleading, participant shall be liable to indemnify NCHL for any such injury, loss or damage arising out of such misrepresentation.
3. The debtor and creditor customer agree, at its own expense, to indemnify, defend and hold harmless NCHL and the participating BFI, its directors and employees, representatives, agents, and its service providers against any claim, suit, action or other proceeding brought against NCHL and/or the BFI, its affiliates, directors and employees, representatives or agents by a third party, to the extent that such claim, suit, action or other proceeding brought against NCHL, BFI, its service provider, directors and employees, representatives or agents is based on or arises in connection with the use of NEPALPAY QR.

## 15.2. Confidentiality

Participant shall use all reasonable endeavors to ensure that all information relating to NEPALPAY QR transactions, which is not in the public domain shall be treated as confidential and shall not be disclosed to anyone except with the prior written consent of NRB and NCHL and except as may be required by Law or by any Government Authority. Nothing in this clause shall, however, prevent any of the parties from disclosing any of the information to their agents and representatives or attorneys provided that such disclosure is on a need to know basis and for the purpose of the normal functioning of the normal business activities. All information provided by each participant regarding NEPALPAY QR process shall not be used to secure a commercial advantage over the other.

## 15.3. Force Majeure

NCHL shall promptly notify the NRB and participants in writing or an appropriate channel of any situation or of the occurrence of any event beyond the control of NCHL, which makes it impossible for NCHL to carry out NEPALPAY QR service. NCHL shall not be liable for any delay in meeting or for failure to provide its services under the NEPALPAY QR Operating Rules due to any cause beyond its reasonable control.

## 16. Annexure

### 16.1. Issuer App Checklist

The issuer shall ensure at least the following requirements are compiled for NEPALPAY QR standard in its customer mobile application:

S.No.	App Checklist	Mandatory/ Optional (M/O)
1	NEPALPAY QR logo on home page or QR scan page	M
2	Space for Promotional Banner	O
3	<b>On Scanner Screen</b> i. NEPALPAY QR logo ii. Flash option iii. Option to select QR from Gallery	M
4	<b>Details on Confirmation Screen</b> Merchant Name Terminal Id Location Transaction Amount Transaction Fee (if any)	M
5	<b>Payment Confirmation Screen</b> Payment Details Respective logo	M
6	Payment Authentication Screen	M
7	Digital Receipt	M
8	Confirmation notification from BFI/PSP	M

### 16.2. Return Reason and Response Codes

Return reasons expected by the system from Acquirer in QR validation and Payment Confirmation response are as follows:

Reason Code	Reason Description	Remarks
000	QR Validation Successful	QR validation success response. All business and technical validation is successful from acquirer in validation request. Could proceed with payment.
000	Payment Transaction Successful	Transaction is accepted/successful and merchant will be notified as successful.
B101	Invalid Amount For the Bill Number	Amount in the payment confirmation request is not equal to bill amount.
B102	Invalid Merchant	Merchant doesn't exist in the system
B103	Merchant Inactive	Merchant is no longer active in the system.
B104	Merchant Transaction Amount Exceeded	Merchant cannot accept the payment amount.
B105	Merchant Transaction Count Exceeded	Merchant allowed transaction count exceeded.
B106	Invalid Acquirer	Acquirer does not exist.
B199	Generic Business Error:<Msg>	Any other business validation failed at acquirer or acquirer network.
T101	Invalid Message Token	Signature token in payment confirmation is mis-match
T102	Time Out	Time out during communication with merchant/system. Merchant transaction will be marked as failed.
T199	Generic Technical Error:<Msg>	Any other technical error at acquirer or acquirer network. Merchant transaction will be marked as failed.

Return reasons provided by the NEPALPAY QR system on NPI API call are as follows:

Reason Code	Reason Description	Remarks
000	SUCCESS	Payment or Validation is successful.
E001	INVALID IP ADDRESS	IP address from where the NPI API is accessed is not whitelisted.
E007	TECHNICAL VALIDATION FAILED	Technically invalid request to the API. Please check the class field error for further details
E003	INVALID TOKEN	Digital signature in the request is not matching.
E004	INVALID ACCOUNT	Debit account provided in the request is not whitelisted.
E019	INVALID DEBTOR AGENT	Debtor agent provided in the request is not valid.
E099	DUPLICATE REQUEST	Duplicate instruction id is used.
E999	ERROR	Generic Error. Need to verify before initiating new transaction.
B001	ACCOUNT DEBIT TIME OUT	Time out while debiting the account.
B002	ACCOUNT DEBIT FAILED	Couldn't debit the account.
B999	INVESTIGATION REQUIRED	Transaction status need manual investigation. Could be refunded only after proper resolution.