National Payment Switch
Unifying Payments for Nepal

NATIONAL PAYMENT SWITCH (NPS)

Operating Rules
NPS-National Card Switch (NPS-NCS) & Domestic Card Scheme (NEPALPAY Card)

Ver 1.0

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Abbreviations

AI - Artificial Intelligence
AML/CFT - Anti Money Laundering/Combating the Financing of Terrorism
ATM - Automated Teller Machine
BFIs - Banks and Financial Institutions
BIN - Bank Identification Number
CPV – Card Personalization Validation
DC – Data Center
DGN – Discover Global Network
DMP - Dispute Management Portal
DMS - Dual Messaging System
DR - Disaster Recovery
DRP - Dispute Resolution Panel
ECC - Electronic Cheque Clearing
EFT – Electronic Fund Transfer Card Switch
EU – European Union
FDR - Fast Track Dispute Resolution
FRM - Fraud and Risk Management
HSM – Hardware Security Module
INR - Indian Rupee
ICS – International Card Scheme
IPS - Interbank Payment System
ISO - International Organization for Standardization
KYC - Know Your Customer
KYB - Know Your Business
MC – Mastercard
MCC - Merchant Category Code
MDR - Merchant Discount Rate
ML – Machine Learning
NCHL - Nepal Clearing House Limited
NCP - Net Clearing Position
NCS - National Card Switch
NPI – National Payments Interface
NPR - Nepalese Rupee
NPS - National Payment Switch
NPS-BO – National Payment Switch-Back Office
NRB - Nepal Rastra Bank, the Central Bank of Nepal
OFAC - Office of Foreign Assets Control
PAN - Permanent Account Number
PCI DSS – Payment Card Industry Data Security Standard
PCI PIN – Payment Card Industry and Personal Identification Number
PIN - Personal Identification Number
POS - Point of Sale
PSO - Payment System Operator
PSP - Payment Service Provider
QR – Quick Response
RPO – Recovery Point Objective
RTO – Recovery Time Objective
RRN - Retrieval Response Number
RPS - Retail Payment Switch
RTGS - Real Time Gross Settlement
SDN - Specially Designated Nationals
SGF - Settlement Guarantee Fund
SMS - Single Messaging System
TPP - Third-Party Payment Processor
UKPT - Unique Key Per Terminal
UN - United Nations
USD - United States Dollar

General Definitions

1. **Acquiring Member or Acquirer** shall mean the participating member who establish relationship with merchant and enable them to accept NEPALPAY card payments. Acquirer shall be either Principal Member or Associate Member.
2. **Associate Member** of NPS-NCS shall mean other entities including Payment Service Providers (PSPs) licensed by Nepal Rastra Bank, such that they hold settlement account at one of the Principal Member commercial banks, to settle the financial obligations related to card transaction and have secured communication link through Principal Member or TPP.
3. **Banks and Financial Institutions (BFIs)** shall mean 'A', 'B' and 'C' class licensed banks and financial institutions in Nepal, having a license from NRB as per the Bank and Financial Institution Act, 2017 (2073 B.S.) or the prevailing Act.
4. **Cardholder** shall mean a customer using NEPALPAY card.
5. **Domestic Card Scheme** refers to the card scheme established and implemented under NPS-NCS and referred as NEPALPAY Card.
6. **Issuing Member or Issuer** shall mean the participating member who issue physical or virtual NEPALPAY payment instruments. Issuer shall be either Principal Member or Associate Member.
7. **Merchant** shall mean an entity that provides goods or services in exchange of payment with NEPALPAY card.
8. **National Card Switch** (**NCS)** shall mean the interoperable national switch and the part of NPS for interconnecting other switches operated by BFIs or network operators or payment processors, for interoperability, routing and settlement of card-based transactions.
9. **National Payment Switch** (**NPS)** shall mean the interoperable national switch for routing and settlement of both card-based and non-card based transactions.
10. **NCS Documents** shall collectively mean the membership agreement, Operating Rules, Operating Procedure, Guidelines, Operating Procedure for SGF, Specifications documents, or any other documents or circulars issued by NRB and/or NCHL related to NPS-NCS and NEPALPAY.
11. **NEPALPAY Card Brand Guidelines** shall mean the guidelines for usage of NEPALPAY Marks.
12. **Net Clearing Position (NCP)** refers to the financial position of each member at the closure of each clearing session. The NCP might be net debit or credit, and is calculated on a multilateral basis.
13. **NPS-NCS Network** shall mean the network, run and operated by NCHL for NPS National Card Switch and NEPALPAY domestic card.
14. **Off-us Transactions** are those transactions in which Issuer and Acquirer are different, such that NEPALPAY transactions are acquired in a terminal with a card issued by other member.
15. **On-us Transactions** are those transactions in which Issuer and Acquirer are same, such that NEPALPAY transaction are acquired in a terminal of the same member.
16. **Participating Member** shall mean the principal member, associate member or third-party payment processor members licensed by NRB, who have duly entered into agreement with NCHL to participate into NPS-NCS Network. It shall also mean Participant or Member.
17. **Principal Member** of NPS-NCS shall mean BFIs, licensed by Nepal Rastra Bank, such that they hold settlement account at NRB to settle in RTGS for the financial obligations and have a direct communication link with NPS-NCS to exchange financial and non-financial messages with other members.
18. **Retail Payment Switch (RPS)** shall mean the interoperable national switch and the part of NPS, for interconnecting retail systems and instruments of BFIs or operators or service providers or networks or payment processors, for routing and settlement of non-card based transactions including QR.
19. **Settlement Account** refers to the account(s) of NPS-NCS member, which shall be used to settle financial obligations of the card transactions and is maintained at NRB to settle in RTGS for Principal and Associate Members, whereas maintained at one of the Principal Members for TPP.
20. **Settlement File** shall mean a file containing details of the card transactions for a session. Such files could be for relevant transaction data or reconciliation details or net settlement report and similar.

21. **Third-Party Payment Processor (TPP)** of NPS-NCS shall mean Payment System Operators (PSOs) licensed by Nepal Rastra Bank, such that they have technical capability to issue or acquire or process card transactions on the behalf of Principal or Associate Member and hold settlement account at one of the Principal Member commercial banks, to settle the financial obligations related to card transaction and have secured direct communication link with NPS-NCS to exchange financial and non-financial messages with other members.

1. Introduction

1.1. Background

Nepal Rastra Bank (NRB) is empowered under Nepal Rastra Bank Act 2058 "to develop a secure, healthy and efficient system of payments" in Nepal. And it has been discharging its responsibilities for modernization of payment systems in Nepal through its policy decisions including NRB Strategic Plan, National Payment Systems Development Strategy, monetary policies and other various policies/directives. As a part of the NRB's Strategic Plan 2017-2021, Pillar Four Objective 1 S.No.3 'Establish National Payment Switch/ Gateway (NPS/ NPG)' and the Payment and Settlement Act 2075, Section 5, Clause 21 for National Payment Switch & Gateway 'Licensed entity and its instruments to be interlinked and transactions routed through NPS', it had been envisioned to establish National Payment Switch (NPS) in Nepal with an objective to consolidate retail payment transactions and ensure interoperability.

National Payment Switch (NPS) has been implemented, as approved by NRB, by Nepal Clearing House Ltd. (NCHL) for Real-time Retail Payment Switch (RPS) and National Payments Interface (NPI) related to non-card based transactions including QR in the initial phase and NPS National Card Switch (NPS-NCS) and NEPALPAY Card related to card based transactions including domestic card scheme. This Operating Rules is related to the NPS-NCS and NEPALPAY Card.

1.2. National Card Switch (NPS-NCS)

NPS-NCS is an interoperable national switch as part of NPS interconnecting other switches operated by BFIs or network operators or payment processors, for interoperability, routing and settlement of card-based transactions including that of NEPALPAY card. The central infrastructure of NPS-NCS includes core switch, back- office, dispute handling and fraud & risk management. NPS-NCS shall facilitate ATM, POS and e-commerce transactions issued and/or acquired in Nepal by the members including NEPALPAY card.

NPS-NCS is currently host integrated with international Discover Network for Nepal, to support international acceptance of NEPALPAY card acquired outside Nepal and for acquiring of international Discover or its partner network cards in Nepal. NPS-NCS shall be used for domestic routing, clearing and settlement of other card schemes including ICS as per the prevailing regulation. In case NEPALPAY card is issued, in future, in collaboration with other card network/ scheme, this Operating Rules and relevant NCS documents including but not limited to specification shall be duly amended and/or revised, to the extent of the variation with such other network scheme.

1.3. Nepal Payment (NEPALPAY) Card

Nepal Payment Card (NEPALPAY) is an EMV compliant domestic card scheme with its base specification derived from EMV member and international network partner, Discover Financial Services (DFS). NEPALPAY Card shall support physical and virtual cards for contact and contact less transactions. And such card shall be issued by Issuer members and transactions acquired by Acquirer members, based on its specification and governance framework. The international acceptance of NEPALPAY card acquired outside Nepal and for acquiring of international Discover or its partner network cards in Nepal shall be through host integration between NPS-NCS and DFS Network.

1.4. Objectives of NPS-NCS & NEPALPAY

The objectives of NPS-NCS and NEPALPAY card, as part of the NPS, is to establish a card switch for routing, clearing and settlement of the card transactions in Nepal with issuance of its domestic card scheme such that it provides mechanism to:

- Achieve a safe and efficient national card payment switch/ gateway for interconnection and interoperability of card instruments and transactions in Nepal with settlements in RTGS.

- Establish a domestic card scheme (NEPALPAY) including scheme rules, specifications and operating mandates to issue and acquire domestic cards.
- Provide enterprise level Fraud and Risk Management for transactions processed through NPS-NCS.

1.5. Legal and Regulatory Framework

This Operating Rule is established to define a legal basis for the operation of NPS-NCS and NEPALPAY as domestic card scheme and as part of the National Payment Switch (NPS). The legal authority of the Operating Rule shall be Nepal Rastra Bank Act 2058 BS (2002 AD) as per the provisions of Section 5, Sub Section 1 (i) and the prevailing Payment & Settlement Act 2075, Payment & Settlement Bylaw 2077 (1st Amendment 2080) and prevailing Unified Payment System Directive. This Operating Rule shall be the regulatory framework that must be followed by all the concerned parties including NRB, NCHL, Members, which shall be effective from the day of its issuance.

The National Card Switch (NCS) and NEPALPAY Card scheme, as part of the NPS, is implemented and operated by Nepal Clearing House Limited (NCHL) as approved by NRB through its approval Ref. No. PSD/11/6/077/78, dated 19th Kartik 2077 (4th November 2020). NCHL is licensed and regulated by Payment Systems Department, NRB as a Payment System Operator (PSO).

The approvals and regulations already issued by NRB, if any, with regards to the NPS and Nepal Payment card and related instruments or use cases shall also be valid and binding for all the stakeholders and shall be read as part of this Operating Rules. In order to establish interoperability, mitigate risks and monitoring of payment card systems in Nepal, NRB may instruct and mandate the licensed BFIs, PSPs and/or PSOs to utilize all or some of the use cases of NPS-NCS and NEPALPAY Card by issuing directive/circulars as required. Any modification in this Operating Rule 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.

NRB shall be the final authority to interpret this Operating Rules in case of dispute related to clauses mentioned or its interpretation.

2. Operating Rules

This Operating Rules is documented to manage the card transactions and use cases established or to be established through NCS and NEPALPAY Card such that a complete business process is understood along with the roles and responsibilities of each participant. The purpose of this Operating Rule is to create and document rules, procedures and standards for the operation of NCS and NEPALPAY Card Scheme.

This Operating Rules shall govern the operations and use of NCS related systems and NEPALPAY as domestic scheme. It sets the standards for the followings:

- Roles and responsibilities of NRB.
- Roles and responsibilities of NCHL as the card network operator and scheme owner.
- Roles and responsibilities of participating members including roles and responsibilities as an Issuer and Acquirer.
- Detailed operational rules, procedures and other authoritative information to the participating members and relevant parties as to how the NCS and NEPALPAY Card function in different business situations.

In case of international transactions, the operation procedure shall be as per the operating rule/ guideline of the international network partner. NCHL may issue separate operating procedure, guideline or circular for same.

2.1. Currency

NPS-NCS shall support cards in NPR or USD or in the currency approved by NRB. NEPALPAY card can be issued in such currencies. Settlement of NPS-NCS Network for international transaction in India and Bhutan shall be in INR for domestic cards and settlement of NPS-NCS Network for other countries shall be in USD or any specific currency as approved by NRB.

2.2. Threshold/Limits

Threshold shall be applied in NPS-NCS system to define maximum count and amount of transaction that can be processed in a terminal or from a card. The thresholds shall be defined and validated automatically by the system as follows.

- Participant Threshold: This is the total net amount limit allowed for each Participating Member in a specific session. The participant threshold shall be the net debit cap for the Participant as per the provision of the Operating Procedure for SGF or alternate guarantee arrangement.
- Transaction Threshold: This is the per transaction limit allowed for processing in NCS, which shall be as follows or as specified by NRB for specific cases. This shall be considered amended as per the prevailing NRB directive.

Transaction Thresholds	Limit
Amount Limit Per Transaction	NPR 10,000,000

- Instrument or Terminal Specific Threshold: This is the transaction limit applied in an instrument or terminal specified by participating member as per its policy or as per the regulation. Such threshold shall be set by the respective members or the operator as per their policy. Various types of thresholds are Amount Limit Per Transaction, Amount Limit Per Day, Amount Limit Per Month, Transaction Count Per Day, Transaction Count Per Month and similar. It shall be less than or equal to the transaction threshold limits specified by NRB for such instrument and/or Terminal.

2.3. Response Mode

Transactions in NPS-NCS shall be immediately responded by both the Acquirer and Issuer. A transaction acquired by an Acquirer or Acquirer Network shall not be processed unless a confirmation or an authorization is received from Issuer or Issuer network. The cardholder (debtor customer) shall receive immediate response for the card transactions that it has initiated. In case of Stand-In processing of card transactions, it shall be responsibility of the Issuer or Issuer network to honor the transaction on behalf of the Issuer. Credit in the account of Acquirer or Acquirer Network shall be on deferred net basis and it shall be SGF backed, corresponding to which the Acquirer shall service the customer or merchant based on the use case. The return or refund shall be considered as disputed transactions and shall be handled as per dispute management procedure elucidated in NPS-NCS Standard Operating Procedure.

2.4. Messaging Mode

A transaction in NPS-NCS shall be processed on following two different messaging modes.

1. SMS: A single messaging system (SMS) is a one-step process for transmitting both authorization and clearing/settlement information through a single message. ATM transactions shall be processed in SMS mode which does not require clearing file from the Members.
2. DMS: A dual messaging system (DMS) is a two-step process having one message for authorization and another for clearing/settlement information. POS and e-commerce transactions shall be processed in DMS mode. Acquirers shall generate its clearing file and send it to NPS-NCS for further settlement purpose.

2.5. Specifications and Certifications

Following are the major specifications and certifications for NPS-NCS and NEPALPAY Card. Participating Members are advised to refer and comply with the respective specification and certification documents for operational, technical setup and certification. Such specification documents, procedures and guidelines shall be considered as an integral part of this Operating Rules.

2.5.1. NEPALPAY Card Specifications

NEPALPAY Card is an EMV compliant domestic card scheme based on the core specifications of the international network partner (current DFS). It shall support both physical and virtual cards, with card types as debit, credit and prepaid with both contact and contactless payment options. While the ownership, specification and governance of NEPALPAY card shall remain under the purview of NCHL, the participating members shall be responsible to manage issuance and acquiring of NEPALPAY cards. The international acceptance of NEPALPAY cards shall be through the aligned international network partners.

The chip card specification and standards of NEPALPAY Card scheme shall be as per the NEPALPAY EMV Card Specification. The physical card specification details including size/ dimension, placement, font, material type, suggested layouts and variants shall be as per the NEPALPAY Card Brand Guidelines or as specified by NRB and/or NCHL. Domestic BIN details for the Members shall be as per NPS_NCS – Domestic BIN Specification or as specified.

2.5.2. Switch Interface Specifications

It shall define the Host-to-Host online message specifications for both single message system and dual message system between NPS-NCS and member's switch. Messages used for the connection between NCHL host, issuer and acquirer shall be based on the ISO-8583 standard. Such interface shall be as per the NPS_NCS- Switching Interface Specification document or as specified by NRB and/or NCHL.

2.5.3. Clearing Specifications

The clearing and settlement related process between NPS-NCS and the Participating Members shall be as per the standard clearing and settlement process, corresponding to specification file/ interface specification shall be provided to the participating members. The technical details of the switch clearing and settlement shall be as per NPS_NCS - Clearing Specification document or as specified by NRB and/or NCHL.

2.5.4. Certification Interface Specifications

Participating Member's switch including issuing module, acquiring module, terminals (at least each model) for the first time and on each change shall undergo a testing and certification process. The technical details and standard test scenarios shall be as per NPS_NCS & NEPALPAY Card Certification Guidelines. Participating member shall test and confirm at its end to assess its technical and operational readiness and for entering into certification process with NCHL prior to the rollout.

2.5.5. Card Design Verification

Participating Member shall submit a design draft of NEPALPAY Card to NCHL as per NEPALPAY Card Brand Guidelines for necessary preliminary verification of artwork. Once this draft is verified by NCHL, it shall be submitted to the international network partner. The approval for the card design verification shall be provided by NCHL to the Participating Member, post approval from the international network partner. Every change in design, be it major or minor shall require card design verification from NCHL and international network partner. Further details of the verification process shall be as per NPS_NCS Standard Operating Procedure.

2.5.6. Card Personalization Validation

Participating Member shall submit the personalized NEPALPAY Card to NCHL as per NPS_NCS - NEPALPAY Card EMV Specification and the international network partner's valid EMV applet. NCHL shall certify such Card Personalization Validation (CPV) using international network partner's listed CPV tool (arranged either by NCHL or through third party). The approval for the card personalization validation shall be provided by NCHL to the Participating Member, post approval from the CPV lab. In case of rejection, the Participating Member shall re-submit the updated personalized NEPALPAY Card for re-validation. Further details of the CPV certification process shall be as per NPS_NCS Standard Operating Procedure.

2.5.7. Mandates and Releases

In accordance with business, regulatory, or requirements from international network partner, changes in NPS-NCS shall be published as Mandates. The Mandates may include compliance to additional or changed regulations, system upgrades for additional security controls, support new features. Participants shall be duly notified of the details, release, testing schedule and implementation timeline for each mandate. Members shall be expected to review each mandate and update their switch/ system and/or processes to ensure compliance with such Mandates.

Mandates shall be normally released twice a year, in April and October. In special urgent cases, there may be intermittent Mandates released. Member shall comply with the Mandates issued in April by the following October and the Mandates issued in October by the following April, or as specified in the release.

3. Participant Management

3.1. Participant Membership

Membership of NPS-NCS shall be open to the BFIs, PSPs, PSOs or any other Network or entity as approved by NRB. The members shall have authority to issue NEPALPAY card, initiate NEPALPAY transactions, route and carry out settlement of domestic card transaction, acquire card transaction (domestic and specified international card) across various channels or terminals. Following are types of membership in NPS-NCS

1. Principal Member
2. Associate Member
3. Third-Party Payment Processor (TPP) Member
4. Special Member

Membership	Member Institutions	RTGS Account	Settlement	Card Switch
Principal Member	Licensed by NRB (A, B & C)	Available	Direct RTGS	Own or TPP
Associate Member	Licensed by NRB (Other BFIs, PSPs, PSOs)	NA	Principal Member or that of TPP	Own or Principal or TPP
Third-Party Payment Processor Member	Licensed by NRB as PSO or Network	NA	Principal Member	Own

3.1.1. Principal Member

Principal Member shall be banks and financial institutions (A, B, C category BFIs) licensed by Nepal Rastra Bank. It shall be provided with individual BINs for identification and may or may not have its own switch. It shall hold settlement account at NRB to settle in RTGS for the settlement of financial obligations to other Participants and the NPS-NCS Network. It shall have a direct communication link and be fully integrated with NPS-NCS enabling it to exchange messages with other Members, either through its own switch or switch of other Principal Member or Third-Party Payment Processor.

Following shall be the eligibility criteria and prerequisites for enrollment as Principal Member:

1. Shall be a licensed as BFI.
2. Shall hold an account in NRB for RTGS settlement.
3. Shall maintain uninterrupted and secured host-to-host connectivity and integration with NPS-NCS based on the specified interface and/or protocol. In case the member does not have its own card switch, then it shall utilize such connectivity and integration via other Principal Member or TPP.
4. Shall obtain NEPALPAY card BINs from NCHL for the issuance and acquiring of such cards.
5. Shall comply with this Operating Rules and any other procedure/ process or guidelines or directives issued by NCHL and/or NRB.
6. Shall participate and contribute in the Settlement Guarantee Fund (SGF) as per its operating procedure.
7. 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.
8. Shall pay the applicable fees and charges to NCHL.

3.1.2. Associate Member

Associate Member shall be other licensed BFIs (other than A, B & C) or payment service provider or payment system operator. It shall be provided with individual BINs for identification and may or may not have its own switch but do not have settlement account at NRB to settle its financial obligations. So, it shall settle its financial obligations directly through a Principal Member or through a Third-Party Payment Processor. There shall be no separate settlement file for Associate Members. The switch used (of Own or Principal or TPP) by Associate Member shall be fully integrated with NPS-NCS enabling it to exchange messages with other members.

Following shall be the eligibility criteria and prerequisites for enrollment as Associate Member:

1. Shall be licensed as BFI (other than A, B & C) or PSP or PSO in Nepal.
2. Shall have established a legal agreement with one of the Principal Members (i.e. a commercial bank), who holds an account in NRB, to act as its sponsor for NEPALPAY issuance and as settlement bank for processing of the transactions and settlement of its position. Alternatively, such legal agreement may also be with one of the TPP in which the settlement position of the Associate Member shall be consolidated with the TPP settlement.
3. Shall maintain uninterrupted and secured host-to-host connectivity and integration with NPS-NCS based on the specified interface and/or protocol, if it has its own card switch, otherwise it shall utilize such connectivity and integration via other Principal Member or Third-Party Payment Processor.
4. Shall obtain NEPALPAY card BINs from NCHL for the issuance and acquiring of such cards.
5. Shall comply with the terms of this Operating Rule and any other rules or procedure/ process or guideline issued by NCHL and/ or NRB.
6. Shall have an arrangement with its Principal Member or TPP to contribute in the Settlement Guarantee Fund (SGF).
7. 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.
8. Shall pay the applicable fees and charges to NCHL and its settlement bank, if any.

3.1.3. Third-Party Payment Processor

Third-Party Payment Processor shall be licensed payment system operator (PSO) or network that has its own switch to issue, acquire and process transactions on the behalf of Principal or Associate Members of NCS or its own members. For the entities not identified as Principal and Associate Members and not having their own BIN, TPPs shall be provided with BINs for identification, which can be used by TPP for downstream identification of its own members. TPP shall not have its own settlement account at NRB and so, it shall settle its financial obligations directly through a Principal Member who has an account in RTGS. TPP may also use multi-lateral PSO settlement instrument via NPI for its own member settlement. The switch used by TPP Member shall be fully integrated with NPS-NCS enabling it to exchange messages with other members.

Following shall be the eligibility criteria and prerequisites for enrollment as Third-Party Payment Processor:

1. Shall be licensed as Payment System Operator (PSO) or Network.
2. Shall have established a legal agreement with one of the Principal Members (i.e. a commercial bank), who holds an account in NRB, to act as its sponsor bank for NEPALPAY issuance and as settlement bank for processing of the transactions and for settlement of its position.
3. Shall obtain NEPALPAY card BINs from NCHL to allocate or create deviations for issuance and acquiring of such cards on the behalf of its own members.
4. Shall take complete responsibility of its own members and arrange to settle its own members (except NPS Principal Members) through its settlement bank. Settlement of Principal Members of NCS shall be done directly at its RTGS and shall not be included in the settlement of the TPP.
5. Shall comply with the terms of this Operating Rule and any other procedure/ process or guidelines or directives issued by NCHL and/or NRB.
6. Shall participate and contribute in the Settlement Guarantee Fund (SGF) as per its operating procedure.
7. 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.
8. Shall pay the applicable fees and charges to NCHL and its settlement bank, if any.

3.1.4. Special Member

Special Member shall be any specific entities like government agencies, international networks or similar institution which are required to be given access to or integrated with NPS-NCS for necessary issuance or acquiring or processing of card transactions. Special Member shall be enrolled as per the business requirements and upon approval of NRB. Criteria for enrollment, access to NCS and other terms of Special Member shall be as per the approval of NRB.

3.2. Participant Due Diligence

1. Each entity seeking membership of NPS-NCS and/or NEPALPAY shall complete a due diligence process prior to granting such membership. The due diligence exercise shall be conducted on annual basis or on significant change at the entity.
2. The due diligence shall form the basis of participant's risk assessment, whereby the participant's legal, compliance, policies, security, financial and operational conditions shall be assessed. A standard due diligence checklist including the list of necessary documents and/or confirmations shall be shared by NCHL for the entity to respond.
3. Any deviation observed during a due diligence shall be communicated to the participant for additional information or its closure, as may be required.
4. Major deviations in due diligence (initial and on continued basis), that may induce major risk to other participants or the NPS-NCS Network, may limit the usage or suspend/ terminate the member.

3.3. Participant Agreement

1. Each member shall sign a membership agreement with NCHL to subscribe to NPS-NCS and NEPALPAY and for necessary settlement arrangements.
2. Associate Member shall also have an agreement or arrangement with one of the Principal Members or TPP for using NPS-NCS and for settlement purpose, which shall be included as part of the Associate membership agreement. A debit and/or credit authority of such settlement account shall also be provided to NCHL through settlement bank.
3. Third-Party Payment Processor shall also have an agreement or arrangement with one of the Principal Members for NPS-NCS settlement purpose, which shall be included as part of the Third-Party Payment Processor agreement. A debit and/or credit authority of such settlement account shall also be provided to NCHL through settlement bank.
4. Principal Member and TPP shall take necessary consent from NCHL as per this Operating Rules for addition of other Principal Member or Associate Member in its switch.
5. NCHL shall notify to all other concerned Participants when new Member is enrolled.

3.4. 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 or by any other statutory body.
2. Participant declared itself as insolvent or declared insolvent pursuant to prevailing Insolvency Act.
3. Fails to comply with the terms of this Operating Rules or related Operating Procedures or Guidelines or Specifications.
4. Major deviation in continual due diligence.
5. Failure to comply with the prevailing laws related to AML and CFT.
6. 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 issue, acquirer or process any transaction further. However, the participant shall be liable to settle its outstanding dues payable to NCHL. Further, the participant shall be liable for transactional claims from the other participants up to 180 days from the last date of its transaction.

3.5. Participant Resumption

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

3.6. Participant Termination

Termination of a participant shall be accomplished when decision for permanent removal of a member is made. The membership of a participant shall be terminated in the system in case the participant satisfies one of the following conditions.

1. Withdrawal requested by the participant as per the membership agreement.
2. Suspended for more than six months due to failure to comply with the terms of this Operating Rules or related Operating Procedures or Guidelines or Specification or international network partner rules.
3. License revoked by NRB or by any other statutory body authorized to do so.
4. Declared insolvent or participant declared insolvency or similar.
5. Any other reason that NRB deems appropriate.

Termination of a participant is permanent, where terminated participant shall no longer be accessible to the NPS-NCS, although the participant information will remain for future reference. The termination shall be effective once NCHL notifies the termination decision with necessary revocation of access and network. However, the participant shall be liable to settle its outstanding dues payable to NCHL prior to termination. Further, the participant shall be liable for transactional claims from the other participants up to 180 days from the last date of its transaction. The participant shall be responsible to inform and manage its cardholders, merchants and its other stakeholder, if any, regarding termination of membership with necessary notice circulated in advance.

Once terminated, re-processing shall be necessary for participation, provided the reason for termination has been rectified satisfactory with complete due diligence process.

3.7. Participant Withdrawal

Any participant who would like to withdraw its membership from NPS-NCS, as per its business decision, must send an official request ninety (90) days in advance. The withdrawal shall be effective once NCHL approves the withdrawal request with necessary revocation of access and network. However, the participant shall be liable to settle its outstanding dues payable to NCHL prior to effectiveness of withdrawal. Further, the participant shall be liable for transactional claims from the other participants up to one hundred and eighty (180) days from the last date of its transaction. Once withdrawn, re-processing shall be necessary for participation in future.

3.8. Participant Identification

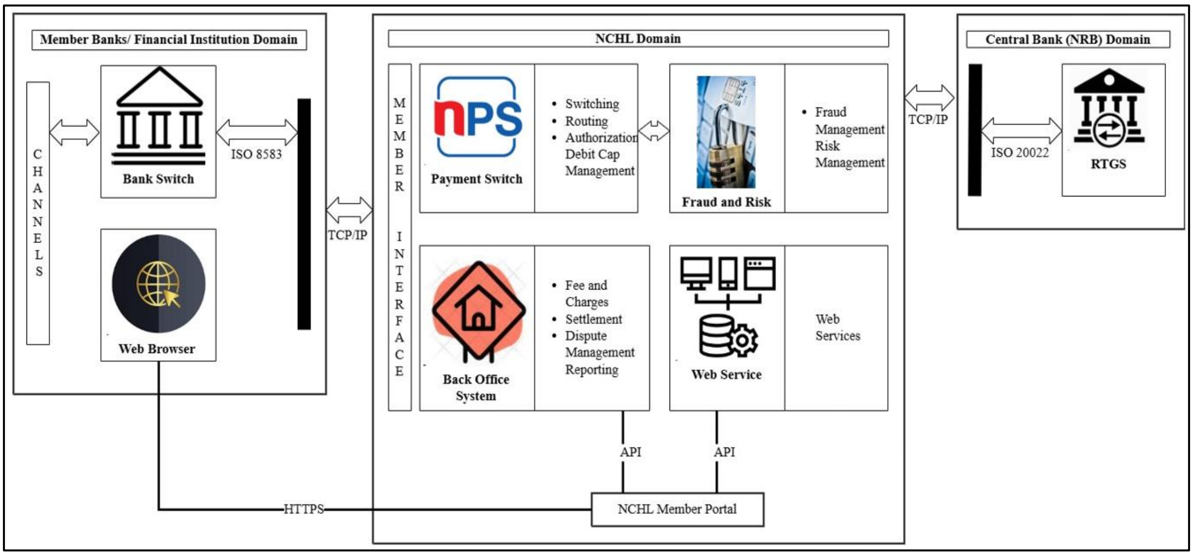
Each participating member shall be represented on NPS-NCS with a unique identification number (id), provided by NCHL. However, for existing members of NCHL, the identification number of NCHL-ECC, NCHL-IPS and Retail Payment Switch will be re-utilized for NPS-NCS.

3.9. 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. Mandates in NPS-NCS and/or NEPALPAY, scheduled maintenance and any amendment in the Operating Rules or related documents shall also be notified to the Members by NCHL, with public documents available in its website and other documents in portal/ system availed to the Members.

4. System Architecture

The NPS-NCS is the National Card Switch for processing, settlement, dispute resolution, and reporting of financial and non-financial card transactions, with domestic card transactions in Nepal processed by NPS-NCS and settled through RTGS, and international card transactions processed by NPS-NCS and settled through RTGS after coordination with the international network partner. Such card transaction shall include NEPALPAY cards. NPS-NCS will utilize the following systems and/or modules.



NPS–NCS System Architecture (Reference Only)

4.1. Core Switch System

The NPS-NCS core switch application provides a unified platform for setup, operation, monitoring, and enforcement of critical controls, ensures interoperability of card transactions between issuers and acquirers. Upon receiving transactions from an Acquirer, it validates and routes them to the Issuer or Issuer network for authentication and authorization and then the Issuer's response is delivered to the Acquirer for necessary processing.

4.2. Fraud and Risk Management System

The Fraud and Risk Management (FRM) system is integrated with the NPS-NCS core switch to detect and prevent fraudulent transactions, utilizing real-time, rule-based controls and AI/ML-enabled models. Based on the cardholder's history, merchant parameters, and intelligence from learning models, the FRM generates a fraud score, which shall be forwarded to the Issuer for further action. The NPS-NCS also includes a decision mechanism to either forward or reject the transaction based on the Issuer's consent.

4.3. Hardware Security Module

The Hardware Security Module (HSM) manages payment security functions, including transaction processing, sensitive data protection, payment credential issuance, mobile and card acceptance, and payment tokenization. NCS is integrated with the payment HSM to deliver EMV card transaction security, incorporating encryption and tokenization to handle both contact and contactless transactions across various channels and terminals.

4.4. Liquidity Management System

The NCS core switch is integrated with the liquidity management system to effectively manage member's liquidity, utilizing the debit cap allocated to a member for card transactions. The integration ensures real-time monitoring and optimization of the liquidity thereby mitigating the possible settlement risk and potential liquidity shortfalls.

4.5. Back Office System

The Back Office (BO) system facilitates the setup, operation, monitoring, and enforcement of clearing, settlement, report, and dispute resolution processes for card transactions. NPS-BO has necessary portals for members to manage their clearing, settlement, reports and dispute activities. The acquiring member generates clearing/outgoing files for DMS transactions in line with NPS_NCS - Clearing Specification, which are then transmitted to the NPS-NCS, which validates the files and initiates settlement in RTGS at the designated schedules. After the settlement, NPS-NCS provides an incoming file to both the issuer and acquirer. Participating members may raise disputes based on their disputed transactions in NPS-BO.

4.6. Monitoring System

The NCS core switch integrates with the monitoring system for NCHL to track real-time transactions and their associated components, ensuring the overall health and stability of the NPS-NCS environment. This system allows for continuous oversight of transaction flows, system performance, and critical infrastructure, enabling proactive identification and resolution of potential issues.

4.7. Issuer & Acquirer Member Switch

Members shall host integrate its switch (for issuance, acquiring and processing) with NCS either directly through the switch of one of the Principal members or TPPs as per its arrangements. The participating member shall play inter-changeable role of issuer and acquirer in the card transactions and shall be responsible for integrating with NCS, processing and settlement of card transactions as per the Operating Rules and related operating procedures/ guidelines or specifications. Integration and configuration for issuance of the member switch shall be as per NPS_NCS - NEPALPAY Card EMV Specification and NPS_NCS - Domestic BIN Specification. Similarly, the switch host integration shall be as per NPS_NCS - Switching Interface Specification and NPS_NCS - Clearing Specification documents.

4.8. Interfaces

The interfaces of NPS-NCS shall be exposed to the participating members to integrate its switch for transaction, settlement and reporting. Such interfaces shall be as per the switching interface specifications, clearing specifications and others as specified. Additional API interfaces shall also be exposed to the members for reporting of On-Us and other transactions not processed directly through NPS-NCS, but required for centralized reporting and other assessments.

4.9. Settlement

NPS-NCS Back Office System shall be integrated with RTGS for settlement of transactions of the participating members. Similarly, settlement of international transactions shall be with the international network partner through designated settlement bank and as per the agreement with the international network partner.

4.10. NEPALPAY Simulator

The participating members shall be provided limited access to NEPALPAY Simulator, as per the certification process and schedule, for their testing and certification. NCHL shall also use the Simulator for its switch and other testing for its specifications, changes and with international network partner. The standard test scenario and test cases shall be available in the Simulator that will be used by NCHL and Members.

4.11. Transaction Archive

The transaction data of NPS-NCS shall be purged and maintained separately for at least seven (7) years. The data shall be archived automatically within three (3) months from the NPS-NCS, after which the data retrieval shall be done by NCHL upon request from the participating member BFIs**.**

5. System Operation

5.1. Daily Operation

NCHL shall operate and manage daily operations of NPS-NCS and related systems/ modules by:

1. Configuring daily settlement session timings for the participants in the system.
2. Monitoring operations and validation of the received transactions and response thereof.
3. Ensuring closure of daily settlement at specified session cutover and settlement of the transactions at NRB's RTGS system.

The main functions and a general workflow of the NPS-NCS shall be as follows:

1. Acquirer shall send a transaction for necessary processing.
2. Process and validate the received transactions against system validations.
3. Sends the transaction to Issuer for authorization, corresponding to which response shall be sent to the Acquirer for processing.
4. Record the transactions and response for settlement at the end of the session settlement cycle.
5. Receive and process dispute between Issuer and Acquirer.
6. Generate net settlement position of the transactions, fees & charges and other obligations for each settlement session cycle.
7. Send settlement message to NRB's RTGS for settlement. For international transaction settlement, journal entries shall be via designated settlement bank.

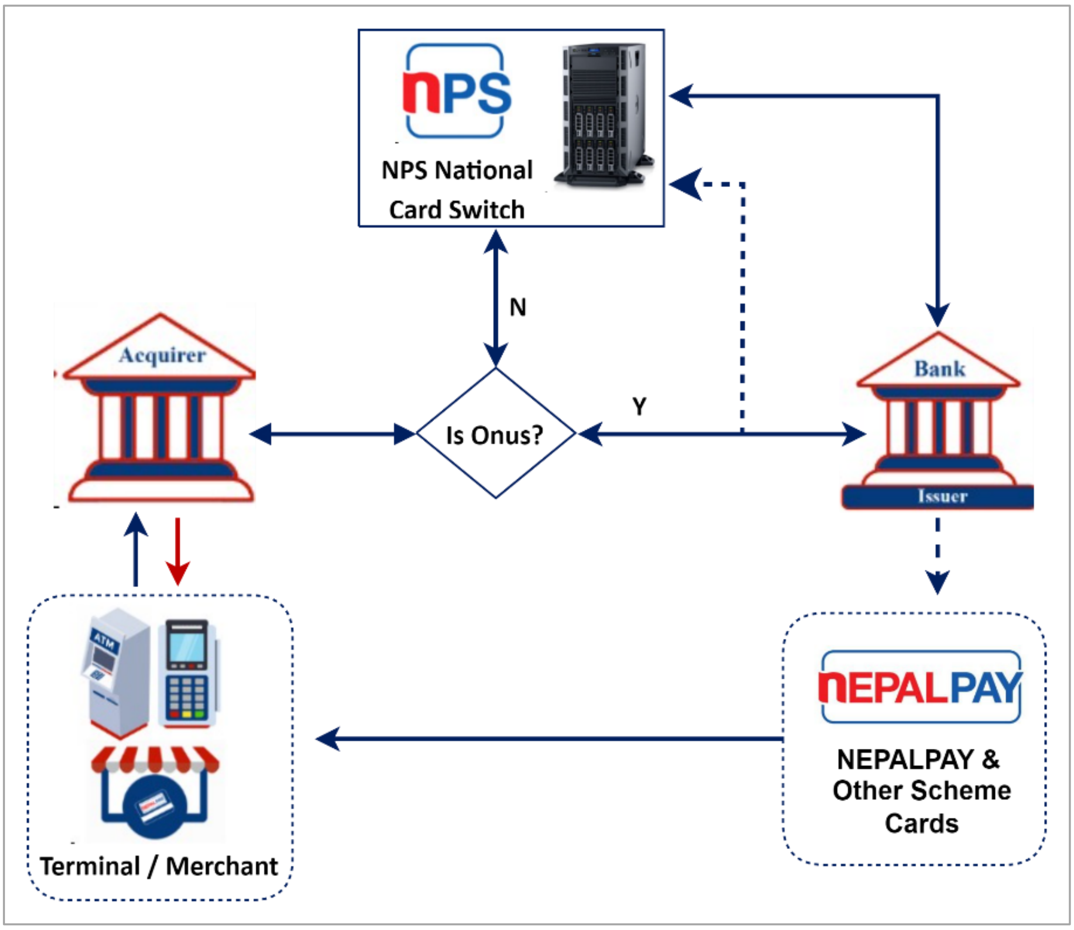
5.2. Process Flow

The NPS-NCS shall be integrated with the payment switches of the members to facilitate card transaction. The final settlement for transaction processed through NPS-NCS shall occur on a deferred basis via the RTGS system. Transaction initiated by a participating member shall be routed through NPS-NCS for authentication and authorization by member banks or third-party payment processors.

The transaction processing flow for different scenarios shall be as outlined below.

5.2.1. Domestic Transaction

When transaction involving card issued in Nepal (including NEPALPAY or any other scheme cards) are initiated from Off-us terminals within Nepal, it shall be routed through NPS-NCS, which shall forward them to the respective issuer for authentication and authorization. Settlement and dispute resolution for the off-us transaction shall be managed through NPS-NCS. For any On-us transactions, a transaction report as per the specified specification shall be submitted to NPS-NCS for centralized reporting. On-Us transaction shall be considered if Issuing and Acquiring is the same.

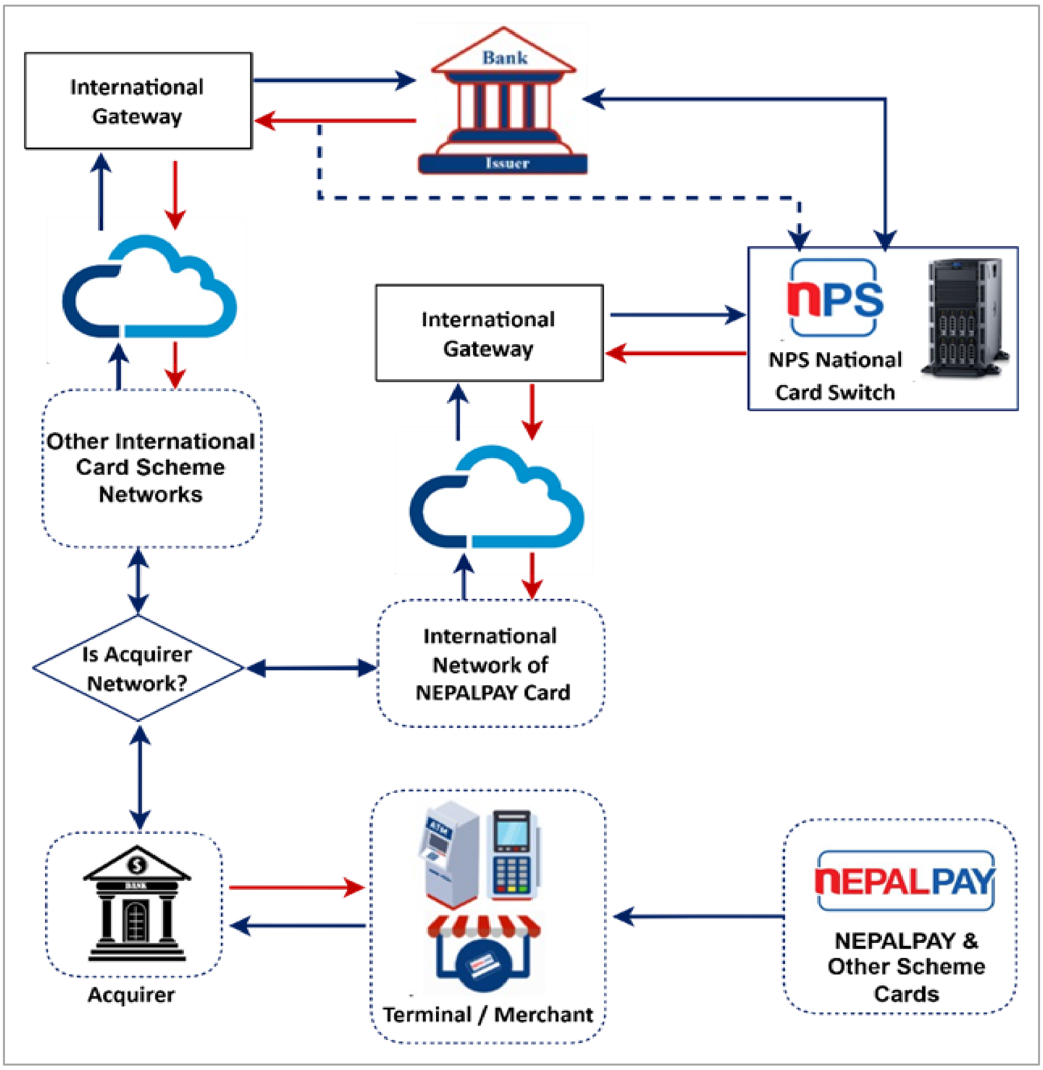


Interconnection for Domestic Card Transaction

5.2.2. International Acceptance of Cards Issued in Nepal

For NEPALPAY card transactions used in international territory, associated international network partner routes the transactions to NPS-NCS, which shall be forwarded to the NEPALPAY issuer for authentication and authorization. The settlement and dispute resolution of these transactions shall be processed through NPS-NCS as per the arrangement with its international network partner.

For other card schemes issued in Nepal, transactions acquired in international terminals shall be routed and processed through the existing arrangements of the respective BFIs in Nepal, unless specifically mandated by NRB for international routing through NPS-NCS. However, such transactions shall be reported to NPS-NCS as per the specified specification.

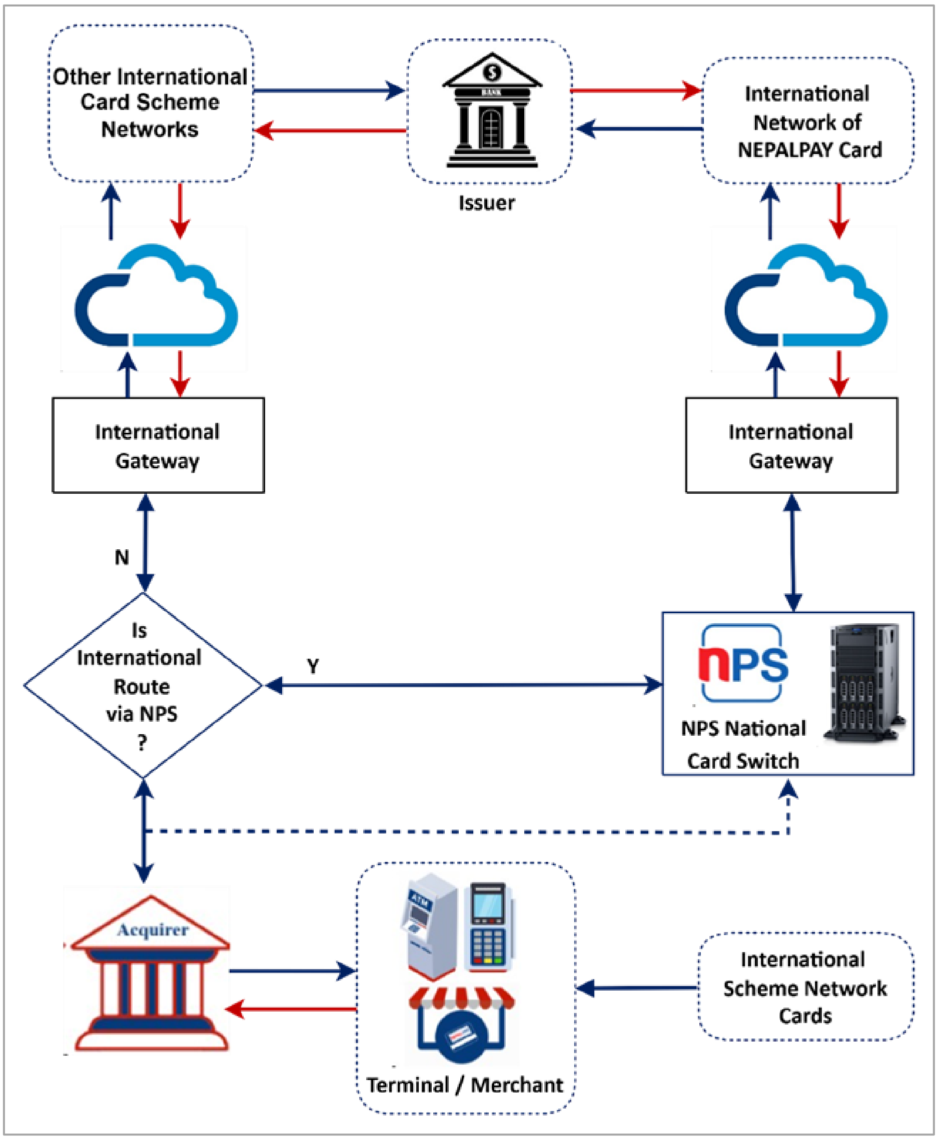


Interconnection for International Acceptance of Cards Issued in Nepal

5.2.3. Acquiring of International Card Transactions

For international card of international network partner and such card acquired in Nepal, the transaction shall be routed through NPS-NCS and then forwarded to the international network partner for authentication and authorization. Settlement and dispute resolution for these transactions shall be processed through NPS-NCS as per the arrangement with the international network partner.

For international cards of other international network schemes and such cards acquired in Nepal, the transactions shall be routed through the existing arrangements between the Acquirer BFIs in Nepal and corresponding international network scheme, unless specifically mandated by NRB for international routing through NPS-NCS. The settlement and dispute management for these transactions shall be managed by respective Acquirer BFIs in coordination with relevant international card networks.



Interconnection for Acquiring International Cards

5.3. Debit Cap Management

A separate debit cap limit shall be defined in the Liquidity Management Module of the system for each of the Principal Members as per the Operating Procedure for SGF and the Principal Member may assign debit cap to its sponsored Associate or TPP member to which it is a settlement bank. The NPS-NCS will validate the debit cap for every transaction in each session cycle and the transactions will be restricted once the debit cap limit is exhausted. Debit cap limit for all the participant BFIs shall be refreshed after the settlement of each session cycle at RTGS. [Note: Debit Cap and corresponding SGF for NPS-NCS shall be different from existing NPS-RPS system.]

5.4. System Validations

NPS-NCS shall perform validation of every transaction against pre-defined validation rules/ setups prior to routing and processing. Such validations shall include, but are not limited to, the followings:

- Member Status: Participants of the transactions are not suspended or at default.
- BIN: Validation against Identification Number assigned to the participating members and for domestic/ international routing BINs
- Message Specification: Ensure that technical validation of the received message shall be as per NPS_NCS - Switching Interface Specification.
- Card Specification: Ensure that technical validation of the NEPALPAY card shall be as per NPS _NCS - NEPALPAY Card EMV Specification.
- Non-Duplication: Ensure the non-duplication of transaction.
- Transaction Types: Ensure that the received transaction shall be supported by the Issuer.
- Transaction Currency: Ensure that transaction currency shall be one of the supported currencies.
- Transaction Thresholds: Transaction value does not exceed per transaction threshold limit.
- Debit Cap: For every transaction, the debtor participant does not exceed its debit cap limit.
- Fraud Score: Validate fraud type and/or score at network level and share the score to Issuer.
- Session Cycle & Cutover: There is an open session cycle for each transaction based on the specified time schedule for processing and settlement of such transaction.

5.5. Liability Shift

The Participating Members shall at all times follow the published specifications, standards, technology controls, operating rules and operating procedures (collectively, referred to as NCS Documents). Any change in specification or standards or similar issued as Mandate shall also be adhered by the Members within the specified time. If a Member fails to adhere to any of NCS documents, the Member following weaker controls shall be liable for any resulting consequences or in dispute settlement. The details regarding liability shall be considered as a per the dispute types and varies according to each dispute case, corresponding to which necessary dispute resolution process shall be followed. However, every Member shall follow the general guidelines in order to resolve such cases in good faith. Various scenarios and corresponding liability shifts shall be as elucidated in NPS-NCS Standard Operating Procedure, which are summarized as follows:

Card Capabilities	Acceptance Device Support	Scenario	Liability
EMV /Cl/Hybrid	EMV Compliant	Counterfeit EMV Transaction without PIN	Acquirer
EMV /Cl/Hybrid	Magnetic Stripe Only (If the Terminal Can't Accept Chip and Pin or Isn't Certified for It)	Magnetic Card Transaction was Completed	Acquirer
EMV /Cl/Hybrid	EMV Compliant	Fallback Transaction Magnetic Card Transaction was Completed	Issuer
EMV /Cl/Hybrid	Chip and Pin (Card Present)	Counterfeit Chip and Pin EMV	Issuer
EMV /Cl/Hybrid	Contactless (Card Present)	Counterfeit Contactless	Issuer
3DS Enabled	Online CNP using 3-D Secure	Counterfeit 3DS	Issuer
3DS Enabled	Online CNP not using 3-D Secure	Counterfeit without 3DS	Acquirer
3DS Enabled	Telephone, mail order, and other offline CNP	Non-3DS/offline	Acquirer
EMV /Cl/Hybrid	Offline/Key Entered	Offline	Acquirer

6. Settlement Management

6.1. Settlement Process

A settlement file is generated for the defined settlement cycle, wherein the system calculates the net settlement position of each participating member on a multi-lateral basis for each currency. It is the net debit or net credit for each participating member based on its total acquiring and issuing transactions. NCHL shall submit the NCP file to RTGS for settlement of the positions of the participants in their settlement accounts at each settlement schedule/cycle.

Fees, charges and penalties files shall also be generated at the closure of settlement session and sent to RTGS by NCHL for settlement on agreed frequency, which shall be notified to the participants. Computation of fees, charges and penalty shall be as defined in the system. Participants shall receive its details in the settlement reports.

NRB shall be the settlement bank for NCS and the arrangements for the settlement of other clearing and settlement systems shall also be applicable for NPS-NCS. The rules for settlement of NPS-NCS shall be as per the RTGS Rules and/or as advised by NRB. It shall be the responsibility of the respective members to manage and fund their settlement accounts.

For domestic transactions, the settlement arrangement shall be as defined by NCHL in coordination with NRB, which shall be up to two (2) settlement cycles in a business day. In case of international transactions, the settlement arrangements shall be as per the rule of the international network partner. The international transactions shall be settled in a single settlement cycle.

It should be noted that NCHL shall not be a counterparty of the NPS-NCS transactions backed by SGF and for the losses arising from such transactions.

6.2. Settlement Sessions and Schedules

Settlement sessions shall be setup in the system with defined timeline and/or business day cutover, such that the transactions up to the cutover shall be included in the settlement for the session cycle. The transactions during holiday shall be included in the settlement of the next business day or available RTGS session. Settlement of the transactions with participating members shall be processed in RTGS. Similarly, the settlement of international transactions shall be processed through one of the banks in coordination with the international network partner and/or its agent.

Following shall be the session schedules in NPS-NCS.

Session	Session Cutover	From NCS to BO	Clearing Submission Cutover	Settlement Preparation	NCP Settlement	Business Days
Cycle 1-ATM	14:00(T-1) - 05:59(T)	06:30(T)	-	07:30(T) - 08:00(T)	08:15(T) - 08:30(T)	Sun To Fri (NPR) Mon To Fri (FCY)
Cycle 2-ATM	06:00(T) - 13:59(T)	14:30(T)	-	15:30(T) - 16:00(T)	16:15(T) - 16:30(T)	Sun To Thu (NPR) Mon To Thu (FCY)
Cycle 1-POS	12:00(T-1) - 23:59(T-1)	00:30(T)	05:00(T) - 07:00(T)	07:30(T) - 08:00(T)	08:15(T) - 08:30(T)	Sun To Fri (NPR) Mon To Fri (FCY)
Cycle 2-POS	00:00(T) - 11:59(T)	12:30(T)	13:00(T) - 15:00(T)	15:30(T) - 16:00(T)	16:15(T) - 16:30(T)	Sun To Thu (NPR) Mon To Thu (FCY)

** Session Cutover for Cycle 2 shall be reduced by 1 Hr during winter timing (mid Kartik to mid Magh). Cycle 2-POS will be rolled out after all the systems of NPS-NCS and members settlement systems are established and stabilized, until then there will be single 24 Hr session for Cycle 1- POS with session cutover at 23:59:59(T).*

The settlement of international transactions shall be included in Cycle 1 as 24 Hr session and shall follow the schedules as per the rules of international network partner. The disputes and adjustments related transactions shall be settled in the Cycle 2 of the day.

6.3. Settlement Session Exceptions

Following are the exceptional cases in which NPS-NCS (Back-office system) shall handle the settlement sessions:

6.3.1. Session Extension

In certain and emergency condition, a member may request for additional time for session settlement. NCHL may extend such session within the available timing of RTGS. Such conditions may be unavailability of fund in RTGS for a participant, in quarter or year ends, technical issue at participants or NCHL or NRB. NCHL shall notify all the members regarding the session extension.

6.3.2. Session Termination

NRB shall have the full authority to terminate a session for any reason it deems appropriate. NCHL shall notify all the members in case a session is terminated. In such case, the payment transactions that are already replied shall be settled in the same session's NCP file either on the same business day or on the next available business day.

6.3.3. Sudden Holiday

In case a sudden holiday or force majeure (unscheduled holiday) is declared, the session that is already open shall be extended or settlement executed in the next available business day. Alternatively, if RTGS is opened for a special session (during holiday or otherwise), necessary changes in NCS (BO) may be done to execute settlement of ongoing session.

6.4. Finality of Settlement

The finality of transaction shall be immediate and after the authorization from Issuer and shall be irrevocable, unless returned/ reversed through dispute management process. Similarly, the settlement of Net Clearing Position (NCP) shall be settled and deemed 'final' and irrevocable after the settlement is completed at NRB through RTGS.

It shall be the responsibility of the respective members to manage and fund their settlement accounts at NRB. In case of insufficient fund for any of the participants and last resort at NRB including ILF facility has been exhausted or is not successful, the SGF shall be invoked to meet the insufficient obligation of the defaulting participant. The settlement of Associate and TPP Member shall be through its sponsor/ settlement bank.

6.5. Settlement Currency

The domestic transactions of NPS-NCS shall be settled to the participants in NPR currency. In case of international transactions carried out at India and Bhutan, the settlement to the participants shall be in NPR/ INR currency. However, in case of international transactions carried out in other territory, the settlement to the participants shall be in USD currency. The settlement report of both domestic and international transactions shall be available to the participants in NPS-NCS Back Office for necessary reconciliation and reporting.

- Domestic transactions of NPR instruments within Nepal and routed in NCS shall be settled in NPR.
- Domestic transactions of USD or other currency instruments within Nepal routed through NCS shall be settled in respective currency, however, if the Acquirer is not allowed to settle in foreign currency, it shall be settled in NPR.
- For NEPALPAY transactions acquired outside Nepal or international network partner's card acquired in Nepal, the settlement with its international network partner (Discover) shall be in:
    - INR for India;
    - INR for domestic card and USD for international card for Bhutan;
    - USD or as allowed by NRB for other countries.

The exchange rate for international settlement will be as per the arrangement with the international network partner. Local settlement to acquirer, if in NPR, shall be as per the local official rate or as specified by NCHL.

6.6. Settlement Guarantee Fund

The card transactions in NPS-NCS shall be backed by the SGF, created separately for settlement of NPS-NCS, and shall be irrevocable once authorization response is received by the system from the Issuer member. The SGF for NCS shall be established separately from existing SGF for RPS. It shall be the responsibility of debtor member to honor such transactions at the time of settlement. The SGF shall be used to cover situations in case of failure to settle by any of the participants in NPS-NCS.

Principal members shall be assigned debit cap limit based on its contribution in SGF or an alternate guarantee mechanism. The member may set such limit at both BIN level and delivery channel level (ATM/POS/Ecom). The principal member may further assign its debit cap limit to its Associate and TPP member.

SGF shall be established from the minimum contribution of the Members and any other arrangements by NCHL/NRB. The principal member may make additional contribution in SGF on behalf of its associate and TPP member, based upon contribution proceed received from them. NCHL shall administrator and manage the fund. The operation of SGF for NCS shall be governed by Operating Procedure for SGF for NCS (necessary amendment in the existing Operating Procedure for SGF for RPS shall be executed).

In case any Member utilizes such SGF at the time of settlement, the recovery of utilized amount and penal charges shall be as per the terms of the Operating Procedure for SGF. However, in all situations including suspension of such member due to utilization of SGF or settlement default, NCHL shall have the first right to settle the utilized amount and the related penal charges from its RTGS settlement account.

7. Roles and Responsibilities

7.1. Principal Member Responsibilities

Principal Member shall adhere to the following roles and responsibilities either directly or through its sponsor Principal Member or TPP:

1. Maintain uninterrupted and secured connectivity with NCS based on the interface and/or protocols specified by NCS to ensure that the systems, channels and instruments are integrated properly for NEPALPAY and domestic transactions routing of other scheme.
2. Ensure that adequate infrastructure, security standards and controls are implemented, monitored and upgraded, as may be prescribed by NCHL and/or NRB. Principal member, having own card switch, and TPP shall be mandatorily PCI DSS and PCI PIN certified for participation.
3. Ensure technical setups and host integrations for NEPALPAY and domestic transactions of specified schemes are completed, tested and certified from NCHL prior to its rollout.
4. Own and apply controls to safeguard authentication credentials.
5. Comply with the Operating Rules and related Operating Procedures, specifications, guidelines and other instructions as advised by NCHL NRB and/or international network partner, as applicable.
6. Conduct risk assessment of its customers (based on high, medium, low risk categorization) as per the requirement of AML/CFT and take decisions based on such risk. Adherence to all relevant local and international regulations regarding KYC and AML/CFT. For sponsored Associate Member and TPP, it shall also conduct due diligence and AML/CFT assessments of such entities. The member may have to submit such assessment report to NCHL and/or NRB.
7. Engage as Issuer and Acquirer of NEPALPAY card. Member shall not discriminate NEPALPAY card, compared to other card schemes, in any sense or under any circumstances.
8. Provide its customers with sufficient information to understand payment process through NCS, such that their obligations, responsibilities, timelines, return/reversals and other details are shared.
9. Handle customer grievances and/or provide support to its customers with requested information in the event of exceptional transactions, disputes and complaints. It shall adhere with the timelines for such disputes and/or exception handling process.
10. Maintain sufficient balance at its RTGS settlement account and related contribution in SGF. Also monitor its Debit Cap limits and Nostro balance for itself and its Associate and TPP members to ensure that the transactions are not halted at any point due to insufficient fund or limit utilization.
11. Ensure timely reconciliations of transactions.
12. Advise NCHL, immediately of any event, which might affect its operations as Principal member, including any contingent event, known or planned disconnection, or any significant changes in its infrastructure or network that will or may restrict NCS transactions.
13. In case any fraudulent activities, security threats and associated risk are detected, it shall immediately report to NCHL and shall take necessary actions to resolve such issue/ incident.
14. Ensure transaction details are retained in a secured manner for at least seven (7) years and is able to produce in case of requirement from other member or NRB or law enforcement agencies.
15. Remain responsible for any inherent risks in the transactions initiated or acquired in NPS-NCS.
16. Pay applicable fees and charges when due.
17. Comply with other responsibilities, standard, regulations or similar as may be specified by NCHL and/or NRB.

NRB and/or NCHL may add any other roles and responsibilities as may be required, which shall be duly informed to the Principal Members.

7.2. Associate Member Responsibilities

Associate Members shall adhere to the following roles and responsibilities through its sponsor Principal Member or TPP:

1. Maintain uninterrupted and secured connectivity with NCS in coordination with Principal Member or TPP based on the interface and/or protocols specified by NCS to ensure that the systems, channels and instruments are integrated properly for NEPALPAY and domestic transactions routing of other scheme.
2. Ensure that adequate infrastructure, security standards and controls are implemented, monitored, upgraded, as may be prescribed by NCHL and/or NRB.
3. Enter into an agreement or contractual arrangement with a Principal Member (commercial bank) or TPP, either for settlement bank or processing switch or both.
4. Ensure technical setups and host integrations through its sponsoring Principal Member or TPP for NEPALPAY and domestic transactions of specified schemes are completed, tested and certified from NCHL prior to its rollout.
5. Own and apply controls to safeguard authentication credentials.
6. Comply with the Operating Rules and related Operating Procedures, specifications, guidelines and other instructions as advised by NCHL NRB and/or international network partner, as applicable.
7. Conduct risk assessment of its customers (based on high, medium, low risk categorization) as per the requirement of AML/CFT and take decisions based on such risk. Adherence to all relevant local and international regulations regarding KYC and AML/CFT.
8. Engage as Issuer and Acquirer of NEPALPAY card. Member shall not discriminate NEPALPAY card, compared to other card schemes, in any sense or under any circumstances.
9. Provide its customers with sufficient information to understand payment process through NCS, such that their obligations, responsibilities, timelines, return/reversal and other details are shared.
10. Handle customer grievances and/or provide support to its customers with requested information in the event of exceptional transactions, disputes and complaints. It shall adhere with the timelines for such disputes and/or exception handling process.
11. Contribute in SGF through its sponsoring settlement bank as per the requirement or as advised.
12. Advise NCHL, immediately of any event, which might affect its operations as Associate Member, including any contingent event, known or planned disconnection, or any significant changes in its infrastructure or network that will or may restrict NCS transactions.
13. Ensure timely reconciliations of transactions.
14. In case any fraudulent activities, security threats and associated risk are detected, it shall immediately report to NCHL and shall take necessary actions to resolve such issue/ incident.
15. Ensure transaction details are retained in a secured manner for at least seven (7) years and is able to produce in case of requirement from other member or NRB or law enforcement agencies..
16. Remain responsible for any inherent risks in the transactions initiated or acquired in NPS-NCS.
17. Pay applicable fees and charges when due.
18. Comply with other responsibilities, standard, regulations or similar as may be specified by NCHL and/or NRB.

NRB and/or NCHL may add any other roles and responsibilities as may be required, which shall be duly informed to the Associate Members.

7.3. Third-Party Payment Processor (TPP) Responsibilities

Third-Party Payment Processor (TPP) shall adhere to the following roles and responsibilities through its sponsor Principal Member:

1. Maintain uninterrupted and secured connectivity with NCS based on the interface and/or protocols specified by NCS to ensure that the systems, channels and instruments are integrated properly for NEPALPAY and domestic transactions routing of other scheme.

~~2.~~ Ensure that adequate infrastructure, security standards and controls are implemented, monitored and upgraded, as may be prescribed by NCHL and/or NRB. TPP shall be mandatorily PCI DSS and PCI PIN certified for participation.

3. Ensure that technical setups and host integrations for NEPALPAY and domestic transactions of specified schemes are completed, tested and certified from NCHL prior to its rollout.

~~4.~~ Enter into an agreement or contractual arrangement with a Principal Member (commercial bank) for sponsoring and to act as its settlement bank.

5. Enter into an agreement or contractual arrangement with other Principal and Associate Members to provide them with switch, issuing and acquiring services as a TPP.
6. Own and apply controls to safeguard authentication credentials.
7. Comply with the Operating Rules and related Operating Procedures, specifications, guidelines and other instructions as advised by NCHL NRB and/or international network partner, as applicable.
8. Conduct risk assessment and due diligence of its members (based on high, medium, low risk categorization) as per the requirement of AML/CFT and take decisions based on such risk. Adherence to all relevant local and international regulations regarding KYC and AML/CFT. The member may have to submit such assessment report to NCHL and/or NRB.
9. Enable Issuing and Acquiring of NEPALPAY card on the behalf of Principal or Associate Members, in which it shall also comply with the responsibilities of Issuer and Acquirer. The respective Principal or Associate Members shall authorize TPP for the same. However, the TPP shall not discriminate NEPALPAY card, compared to other card schemes, in any sense or under any circumstances.
10. Support the members in onboarding, processing, settlement, reconciliation and dispute resolution. Fulfill the settlement obligations of the Associate Members that are serviced by the TPP through one of the Principal Members.
11. Provide its members with sufficient information to understand payment process through NCS, such that their obligations, responsibilities, timelines, return/reversals and other details are shared.
12. Handle customer grievances and/or provide support to its members and/or its customers, as per its arrangement with its members, in the event of exceptional transactions, disputes and complaints. It shall adhere with the timelines for such disputes and/or exception handling process.
13. Contribute necessary fund in SGF through its settlement bank as per the requirement of its settlement bank to ensure that transactions are not halted at any point of time due to limit utilization.
14. Advise NCHL, immediately of any event, which might affect its operations as TPP Member, including any contingent event, known or planned disconnection, or any significant changes in its infrastructure or network that will or may restrict NCS transactions.
15. In case any fraudulent activities, security threats and associated risk are detected, it shall immediately report to NCHL and shall take necessary actions to resolve such issue/ incident.
16. Ensure transactions details are retained in a secured manner for at least seven (7) years and is able to produce in case of requirement from other member or NRB or law enforcement agencies.
17. Remain responsible for any inherent risks in the transaction initiated or acquired in NPS-NCS.
18. Pay applicable fees and charges when due.
19. Comply with other responsibilities, standard, regulations or similar as may be specified by NCHL and/or NRB.

NRB and/or NCHL may add any other roles and responsibilities as may be required, which shall be duly informed to the TPP Members.

7.4. NCHL Responsibilities

NCHL shall have the following roles and responsibilities to as an operator of NPS-NCS and NEPALPAY:

1. Maintain uninterrupted and secured host-to-host connectivity between NCS and the switches of the members to ensure that the systems, channels and instruments are integrated properly for NEPALPAY and domestic transactions of other scheme.
2. Maintain uninterrupted and secured host-to-host connectivity between NCS and international network partner to ensure international acceptance of NEPALPAY card and international card acquiring in Nepal.
3. Operate and maintain all the components of NPS-NCS including core switch, back office system, reporting, fraud & risk management system, settlement arrangment, interfaces, simulator, etc.
4. Ensure that adequate infrastructure, security standards and controls are implemented, monitored and upgraded, as may be required for extending service or use cases or as prescribed NRB or international network partner..
5. Maintain the systems and data in a secured environment with necessary replications at disaster recovery (DR) site with defined RTP and RPO. Ensure NPS-NCS infrastrcuture is PCI DSS certified and regularly reassessed as per the standard.
6. Conduct due diligence of the participating members during enrollment and on intermittent basis and upon technical integraiton and testing certify such members. Certification shall be for acquiring, issuing, terminals and card CPV.
7. Ensure that the financial and non-financial transaction messages are received and routed to the respective system/switch or member or service provider, as per the defined process.
8. Ensure timely generation of NCP and FCP as per the settlement schedule and maintain interface with RTGS for settlement at session cutover.
9. Monitor debit cap utilization and notify participants in case of reaching upper limit for necessary funding of SGF for itself and its Associate or TPP Members to ensure that the transactions are not halted at any point of time due to limit utilization.
10. Generate fraud and risk score of transactions processed through NCS, which shall be passed to the Issuer for its decision during transaction authorization. For specific cases and depending on the risk score, NCS may restrict the transactions at the switch level itself.
11. Provide necessary system access to the members for dispute management.
12. Establish Helpdesk support mechanism for the participating members.
13. Inform members of any event, which might affect the operations of NCS including any contingent events, known or planned disconnection or any significant changes at NCHL or other members.
14. Monitor participating members, network, integrated channels and inter-related systems to avoid their misuse and to ensure that the members comply with the Operating Rules.
15. Act as a custodian of data and information received and/or stored with regards to the transactions. Ensure transactions details are retained in a secured manner for at least seven (7) years and make it available to the members on request as per the Archive process.
16. Define network level fees and charges for enrollment, transactions, instruments, exceptions/ disputes and others.
17. Publish related interface specifications, guidelines, manuals, checklist, fees & charges schedule and similar related to NCS and NEPALPAY, as may be required. Any change in technical and operaitonal specificaiton shall be released as Mandates of NCS and NEPALPAY.
18. NCHL as an operator of the system shall not be held liable under any circumstances for any fraudulent cases involving transactions initiated from the members.
19. Comply with other responsibilities, standard, regulations or similar as may be specified by NRB and/or its international network partner.

NRB may add any other roles and responsibilities, as required, which shall be duly fulfilled by NCHL.

7.5. Issuer Responsibilities

Issuer of NEPALPAY shall have the following roles and responsibilities, which are in addition to the designated responsibilities as a member:

1. Ensure that NEPALPAY card is issued and the terms and conditions of usage are adhered with the Operating Rules, local laws and NRB regulation during issuance and its lifecycle.
2. Ensure that the card issued adhere to NEPALPAY EMV card specification and in line with the minimum standards as specified in the Brand Guidelines of NEPALPAY and that of its international network partner to ensure its acceptance.
3. Obtain BIN from NCHL prior to issuance of NEPALPAY card.
4. Provide an option to its customers to choose NEPALPAY card in a non-discriminatory way compared to other card schemes, in any sense or under any circumstances. Provide its customers with sufficient information to understand payment process, obligations, timelines, return/reversals, fees & charges.
5. Maintain or obtain services of Card Management System and a Personalization System to manage the requirements of card pre-issuance, issuance, and post-issuance.
6. Manage all aspects of card production, encoding & embossing, storage and distribution processes.
7. Allocate personal identification numbers (PINs), as required, to each card. Issuers shall not retain PIN in a clear text format under any circumstances. Length of PINs shall be four (4) to twelve (12) digits and shall be encrypted in transit and at rest with the prevailing encryption standards.
8. Verify Card & PIN and check transaction limits and other controls during authentication, authorization and card transactions.
9. Ensure that a transaction is not initiated unless its customer account is debited or on hold and such transaction included in the available session for the settlement and reconciliation.
10. Mandatorily screen its customers and transactions to comply with the local and international regulations related to KYC and AML/ CFT. For international transactions, it may also have to check against applicable sanctions lists, including, but not limited to UN, EU, OFAC/SDN. and report as per the applicable regulations.
11. Reverse the transactions that are confirmed by the Acquirer as failed.
12. Ensure timely settlement and reconciliation of the transactions.
13. Check the switch logs and other supporting documents and confirm about the status of the transaction, when requested/ required and during dispute process including adherence to the timelines for such dispute resolution.
14. Maintain necessary support and grievance mechanism to its merchants and customers.
15. Issuer shall not be able to raise chargeback (dispute) for the transactions if there are no records of such transaction at its end and only on the basis of a complaint from its customer.
16. Advise NCHL, immediately of any event, which might affect its operations as an Issuing Member, including any contingent event, known or planned disconnection, or any significant changes in its system or network or alternate channels that will or may restrict authentication and authorization of the customer.

NRB and/or NCHL may add any other roles and responsibilities as may be required, which shall be duly informed to the Issuing Members.

7.6. Acquirer Responsibilities

Acquirer of NEPALPAY shall have the following roles and responsibilities, which are in addition to the designated responsibilities as a member:

1. Install, operate and manage acquiring terminals (ATM, POS) uniquely identified with terminal location, corresponding to which it shall obtain L3 certification prior to its rollout.
2. Accept card payment transactions on its ATM, POS, Ecommerce and any other certified acquiring terminals or channels.
3. Implement Unique Key Per Terminal (UKPT) for acquiring terminals (ATM, POS).

4. Acquire valid transactions and ensure that all card schemes are treated as equal, accepted and visible on a non-discriminatory basis.
5. Maintain clean notes in the cash dispenser, to the extent possible, and ensure that partial dispense shall not be allowed in its ATMs.
6. Ensure that card transactions are processed for the allowed MCC only and negative MCC lists, as specified, are restricted.
7. Conduct necessary due-diligence of its merchants as part of KYM, ensure PAN details are linked and proper MCC are included as acquiring information. Conduct risk assessment of its merchants as per the requirement of AML/CFT and take necessary decisions based on such risk.
8. Enter into agreement or an arrangement with merchants for rendering the services.
9. Provide its merchants and/or customers with sufficient information to understand payment processes, obligations, timelines, return/ reversals, fees & charges and other terms. Merchant discount rate (MDR) shall be part of such terms.
10. Mandatorily screen its Merchants and its transactions to comply with the local and international regulations related to KYC and AML/ CFT. For international transactions, it may also have to check against applicable sanctions lists, including, but not limited to UN, EU, OFAC/SDN. and report as per the applicable regulations.
11. Provide merchant and/or customer with sufficient information to understand payment process, obligations, timelines, return/reversals, fees & charges.
12. Check transaction limits and other controls during acquiring of a card transaction and also ensure that no card data are stored in transit and at rest at Acquirers end.
13. Ensure timely settlement and reconciliation of the transactions.
14. Ensure merchant account is credited after the settlement or as per the arrangement with such merchant. Necessary reporting and reconciliation details of such settlements shall be provided to the merchants by the Acquirer.
15. Check the switch logs and other supporting documents and confirm about the status of the transaction, when requested/ required, and during dispute process including adherence to the timelines for such dispute resolution.
16. Maintain necessary support and grievance mechanism to its merchants and customers.
17. Adhere with brand guideline of NCS, NEPALPAY and that of its international network partner to ensure acceptance of NEPALPAY's marks or logo in the terminals and adverts of the Acquirer.
18. Advise NCHL, immediately of any event, which might affect its operations as an Acquiring Member, including any contingent event, known or planned disconnection, or any significant changes in its system or network or alternate channels that will or may restrict acquiring of a transaction.

NRB and/or NCHL may add any other roles and responsibilities as may be required, which shall be duly informed to the Acquiring Members.

7.7. NRB Responsibilities

Nepal Rastra Bank shall have the following roles and responsibilities to:

1. Oversight of NPS-NCS and NEPALPAY and issuance of necessary directives to operationalize NCS and for acceptance of NEPALPAY to meet its primary objectives.
2. Settle the transactions processed in NCS through RTGS, which shall be final and irrevocable. Any exception or disputes shall be processed separately through dispute management process.
3. Extend or re-schedule settlement sessions.
4. Terminate, suspend, resume or withdraw member.
5. Amend provisions of this Operating Rules upon recommendation of NCHL.
6. NRB shall not be held liable under any circumstances for fraudulent cases involving transactions.

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

7.8. Member's Obligation for Regulatory Compliance

Members of NPS-NCS and NEPALPAY shall have the following obligations for regulatory compliance:

1. Members shall adhere to the obligations outlined in this Operating Rule, including prevailing regulatory directives. Member shall permit, NRB or NCHL or it's designated, an authority to audit or assess their performance with regards to the compliance while carrying out its operations.
2. Members shall not engage in any form of business or association with any entity involved in money laundering or terrorist financing. They shall have AML & CFT Policy and Anti-Bribery & Anti-Corruption Policy to abide by the AML/CFT law/ regulations, Anti-Bribery & Anti-Corruptions law/ regulations and/or any other similar regulations as specified by NRB or law enforcing bodies.
3. Members shall be responsible for screening its customers against lists like UN, EU, OFAC/SDN, including prohibition in dealing with specific entities or individuals listed as "Specially Designated Nationals".
4. Members shall undergo due diligence and assessment/ self-assessment by NCHL to ensure compliance with this Operating Rule including security, business processes, operations and fraud. Self-Assessment questionnaire shall be shared with the members to respond at least on annual basis.
5. NRB and/or NCHL may instruct the members to inform or improve any non-compliance and may suspend or terminate the membership should such failure to comply with the Operating Rules or Law or Regulation that will negatively impact the ecosystem or other's obligation.

8. Dispute Management

Dispute resolution mechanism shall define the process to be followed for handling disputes between cardholders and merchants related to card transactions. Transactions related disputes shall be initiated by the cardholders, once the cardholder becomes aware of discrepancies with the transaction. Such discrepancies generally arise due to the reason that transactions are not reconciled and/or unauthorized either by cardholder or member. All the participating members shall collectively fulfil one's responsibility for the amicable dispute resolution in adherence to dispute settlement timeline as elucidated in NPS-NCS Standard Operating Procedure. Any kind of intentional delays or non-cooperation by the counterpart member shall attract punitive action.

In case of domestic transactions, the Issuer shall raise dispute through NPS-BO Dispute Management Portal (DMP) following which the NPS-BO system shall process the dispute and forward the dispute details to the Acquirer through DMP. The Acquirer shall respond to the dispute through DMP. The system shall send settlement files and reports to the Issuer and Acquirer. For international transactions, the disputes shall be managed through international network partner's dispute portal by NCHL on behalf of the NPS Members.

NCHL shall not have any duty to determine the legality, validity or enforceability of any transaction; or to determine whether any such transaction is contractually void or voidable. NCHL shall be entitled to regard all transaction(s) executed under the system as legal, valid and enforceable. The participants shall refer to NPS-NCS Standard Operating Process for details regarding dispute handling process, timeline, SLA, applicable fine and penalties.

8.1. Dispute Resolution Stages

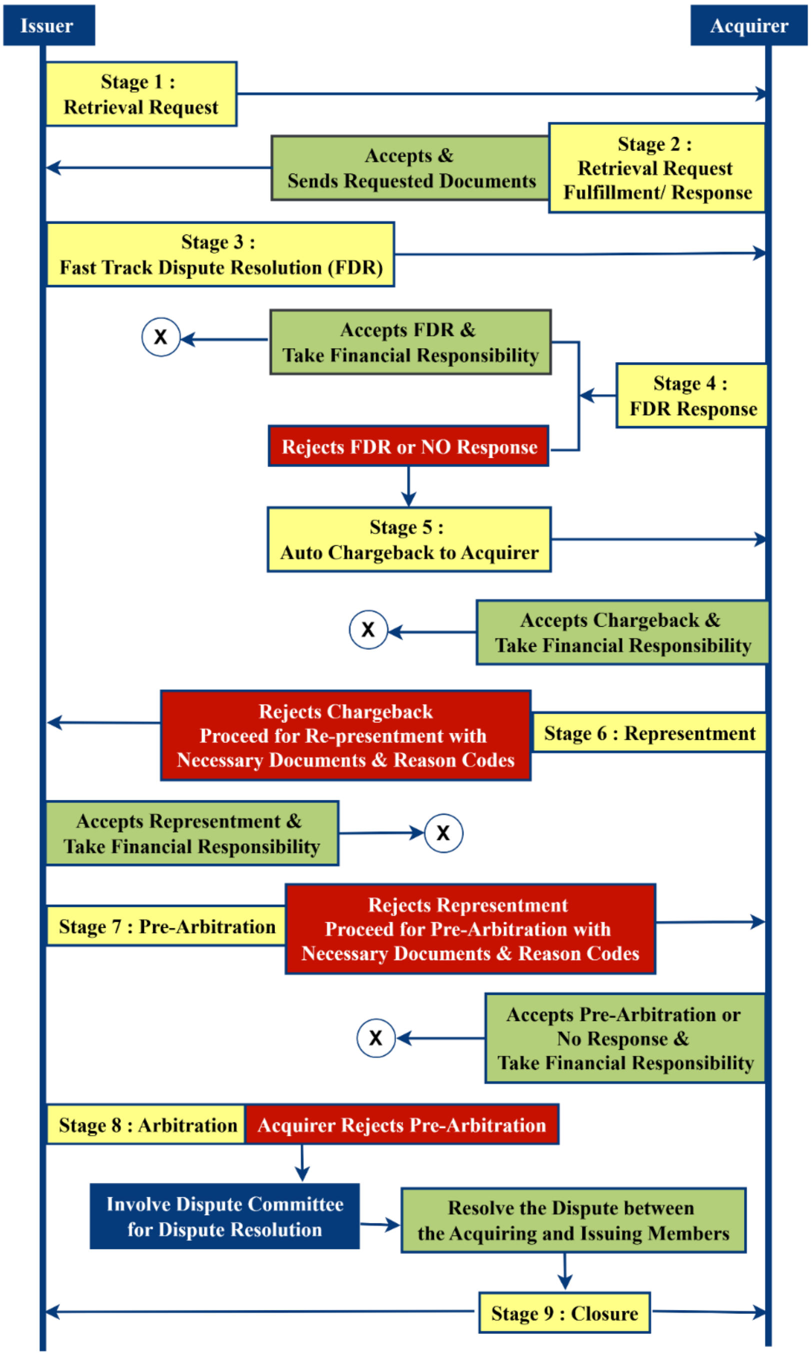
Following are the dispute resolution stages for domestic transactions.

6. **Stage 1 - Retrieval Request and Fulfillment/Response:** Retrieval Request shall be raised from Issuer to Acquirer whenever cardholder is not able to recognize the transaction and contact the card Issuer or, whenever any transaction related documents are required by Cardholder/Issuer. Retrieval requests may also be initiated before raising chargebacks.
7. **Stage 2 - Retrieval Request Fulfillment/Response:** In response to retrieval request from Issuer, Acquirer can submit requested documents or reject the retrieval request or do not respond, which refers to retrieval request fulfillment/ response.
8. **Stage 3 - Fast-Track Dispute Resolution (FDR) Request:** Issuer shall raise FDR to acquirers, wherever dispute needs to be resolved in fast track basis.
9. **Stage 4 - Fast-Track Dispute Resolution (FDR) Response:** In response to Fast-Track Dispute Resolution request from Issuer, Acquirer can accept FDR, reject FDR or send no response to FDR, which is known as FDR response.
10. **Stage 5 - Chargeback:** The chargeback process begins when a cardholder contacts their bank for a disputed transaction and the cardholder's bank agrees to file a chargeback after reviewing the case. Once the Acquirer/ Merchant receives chargeback, they can either accept the chargeback and take the financial responsibility at their side or reject the chargeback and proceed for re-presentment.
11. **Stage 6 - Re-presentment:** In re-presentment stage, the Acquirer/ Merchant gathers evidence that demonstrates that whatever reason the cardholder gave for the chargeback is untrue. The Acquirer/ Merchant submits the evidence to the issuing bank, which decides to either uphold or reverse the chargeback.
12. **Stage 7 - Pre-arbitration:** If the Cardholder disputes the transaction a second time based on new evidence, the issuing bank can pursue that as a second chargeback. At this point, the process enters pre-arbitration, as a second round of disputes. When pre-arbitration is initiated, Acquirer and/or Merchant have two options. First, they can accept liability for the chargeback, and the

Customer gets refund of its disputed amount. If they are not willing to accept liability, they can request arbitration.

13. **Stage 8 - Arbitration:** If the Merchant does not accept liability during pre-arbitration, the chargeback moves into arbitration. The purpose of arbitration is to place the dispute decision in the hands of an impartial third party of Dispute Resolution Panel from NCHL.

Following is the flow of various stages of dispute management and it corresponding resolution. The process, reason code and other matters for dispute management shall be as per the details specified in NPS-NCS Standard Operating Procedure.



9. Helpdesk

The Issuer and Acquirer shall make necessary arrangement for 24/7 helpdesk or support service for the first level of support to its customers and/or merchants. The member's helpdesk or support service shall facilitate overall customer and merchant related issues including but not limited to services availability, information of card type and features, process for card request, renewal or cancellation, transaction threshold, charges, dispute handling process and similar.

A dedicated support desk shall be available at NCHL to support the participating members for smooth operation of NPS-NCS; troubleshoot and provide suitable diagnosis if any member faces problem in the system. The participating member shall assign a person to contact the helpdesk and report problems through a proper communication channels that shall be shared with NCHL. However, it shall be the responsibility of the respective members to support its customer and/or merchant and NCHL shall not entertain their customers directly as part of the NCS and NEPALPAY support.

The helpdesk shall have clear prioritization criteria to the requests from participating members, such that the reported problem or query shall be categorized according to their urgencies and priority levels to provide a proper handling to each priority level.

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

10. Reports

The reports in NPS-NCS related with card-based transactions, associated settlement and dispute shall be available to the participating member. The participating member shall be provided reporting access through NCS BO system, wherein the participating member shall be capable to access/fetch the Issuer and Acquirer reports.

11. Fees, Charges and Penalties

Members of NPS-NCS and NEPALPAY shall pay fees and charges for their participation and usage as specified. 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. All such fees and charges shall be part of the settlement file, when they fall due, and shall be included in the settlement process. Fee and charges schedule shall be published separately to the participating members through appropriate channel.

11.1. Subscription & Annual Fee

Each member shall be liable to pay Subscription Fee to NCHL for membership enrollment into NCS, followed by Annual Fee to maintain such membership. The Subscription Fee and Annual Fee shall be different for Principal, Associate, TPP and Special members.

11.2. BIN Registration Fee

Each Issuer member shall be liable for BIN Registration Fee for each NEPALPAY BIN. Similarly, NEPALPAY card issuance fee shall be based on the number of such cards issued in the network.

11.3. Integration, Testing & Certification Fee

Each member shall be liable to pay applicable certification fee to NCHL, when they have to certify their Host or Terminal or Card to verify production readiness. Such certification fees shall be for Host-to-host certification, Terminal Level 3 (L3) certification, Card Personalization Validation (CPV) certification, and 3DS Certification for ACS & MPI. Access to NEPALPAY Simulator shall be provided for certification.

11.4. Network Connectivity Fee

Each member shall establish separate secured network connectivity for NCS and shall be liable to pay applicable network and management fees.

11.5. Transaction Fee

Designated members shall pay applicable transaction fees on each transaction based on specific use case or instrument or transaction type, corresponding to which the fees liability could be on Issuer or Acquirer or both. Following are the components of transaction fee

1. Merchant Discount Rate (MDR): It shall be the total fee applied by Acquirer member to its merchant in case of POS and ECOM.
2. Surcharge Fee: It shall be the total fee applied by Issuer member to its card holder in case of ATM or other specific transaction types.
3. Interchange Fee: It shall be applied to Acquirer and shared in full to Issuer for POS and ECom transactions. Similarly, it shall be applied to Issuer and shared in full to Acquirer for ATM transaction or other specific transaction types.
4. Processing Fee: It shall be applied to Acquirer and Issuer by NCHL in lieu of switching of each transaction.
5. Volume Fee: It shall be applied to Acquirer and Issuer by NCHL based on total number of transactions including On-Us and Off-us and applied on monthly basis.
6. Interoperability Fee for Other ICS: It shall be applied for routing/ switching and/or settlement of domestic transaction of other card schemes in Nepal.
7. Gateway Authorization Fee: It shall be applied for ECom transaction in case NCS manages the ecommerce payment gateway.
8. International Fee: For the international cards acquired in Nepal or NEPALPAY card used in international network, the corresponding MDR, Surcharge, Interchange and related fees shall be

as per the arrangement with such international network partner. Processing Fee shall be recovered in such international transactions from Issuer and Acquirer as switching fee of NCS.

11.6. Fraud and Risk Management Fees

The transactions routed through NCS shall be consumed by NPS Fraud & Risk Management system to check fraud score of the transaction based on various parameters. Members shall be liable for Fraud & Risk Check fee for specific transaction types if such check is process through FRM system of NCS. It shall be optional to Issuer to use NCS's FRM system and may use its own fraud management system.

11.7. Dispute Handling Fess

If a transaction processed through NCS requires dispute and chargeback resolution, it shall be raised and directed to the NPS Dispute Management Portal. Member shall be responsible for any applicable dispute handling fees and chargebacks. In case of a dispute is resolved through Arbitration, then the losing party shall be liable for the cost of Arbitration.

11.8. Directory Server Fees

NCHL shall provide the directory server for processing e-commerce transactions with NEPALPAY cards. Members utilizing the Directory Services shall be liable for associated DS Fees.

11.9. Other Charges and Penalties

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

- Complaints on delayed customer account credit.
- Complaints such as Incorrect Rejection Reason.
- Complaints on delayed merchant settlement.
- Card acceptance rate below specified rate.

  Penalties for violation of this Operating Rule and/or related procedures, specifications, guidelines, etc.

12. Continuity of Business

This section provides the continuity of business information for the related parties of NCS 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 NCS. All the members shall also adopt and implement a business continuity plan to ensure its resilience and preparedness for any such unplanned disruptions. All the members shall ensure recovery time objective (RTO) of maximum 2 hours in case of disruptions other than caused by major natural calamity or cyber incident.

The participating member shall contact the first line support team (Helpdesk) or alternate channels made available by NCHL in case of any disruptions.

12.1. Communication Failure at Member's Site

The participating 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 network connectivity issue or the issue which can be resolved within a short period of time without having impact on the business continuity) and in coordination with the participating member, take suitable contingency measure based on the level of the failure or inform NRB and all participants about the disruption (if it cannot be resolved within such period).

12.2. Failure at NCHL Main Site

NPS-NCS shall have redundancy at multiple sites to handle system or site failures with system established at Main Data Center (DC) site, Near Disaster Recovery (Near DR) site and Remote Disaster Recovery (Remote DR) site. NCHL shall immediately inform NRB and all members of the failure and then activate the Disaster Recovery site to continue or re-start the system accordingly. The members shall be connected to the DR site.

12.3. 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 update and test its disaster recovery plan to meet the best practices/ standards and to address:

1. The replication and restoration of NCS 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.

13. 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 shall be the responsibility of each participating members to have an insurance coverage or any other arrangement against any such incidents.

14. Obligations

14.1. Indemnity

1. Members 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 willful misconduct or breach of fiduciary duty in connection with NCHL performance or services. Member hereby represents and warrants that in the event of any suits, claims, disputes or such differences are brought directly against NCHL with respect to NPS-NCS and NEPALPAY, as a consequence of breach of the terms and conditions of this Operating Rules, members 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, members shall be liable to indemnify NCHL for any such injury, loss or damage arising out of such misrepresentation. For clarity, members shall only be liable for actions that originated from members or any third party acting on its behalf and members 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, the member shall be liable to indemnify NCHL for any such injury, loss or damage arising out of such misrepresentation.
3. The Issuing customers and Acquiring merchants agree, at its own expense, to indemnify, defend and hold harmless NCHL, the participating members, its directors and employees, representatives, agents, and its service providers against any claim, suit, action or other proceeding brought against NCHL, the Members, its affiliates, directors and employees, representatives or agents by a third party, to the extent that such claim, suit, action of other proceeding brought against NCHL, Member, its service provider, directors and employees, representatives or agents is based on or arises in connection with the use of NPS-NCS.

14.2. Confidentiality

Members shall use all reasonable endeavors to ensure that information relating to NPS-NCS, 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 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 normal functioning of business activities. All information provided by member in NPS-NCS and related to NEPALPAY shall not be used to secure a commercial advantage over the other.

14.3. Data Protection and Security

Member shall fully adhere to the obligations outlined in this Operating Rules with regard to data protection, including adherence to international standards such as PCI-DSS and PCI-PIN and other applicable standards while generating, processing, transmitting and storing the cardholder data. Any statutory data protection legislation shall also be mandatory for adherence by the members.

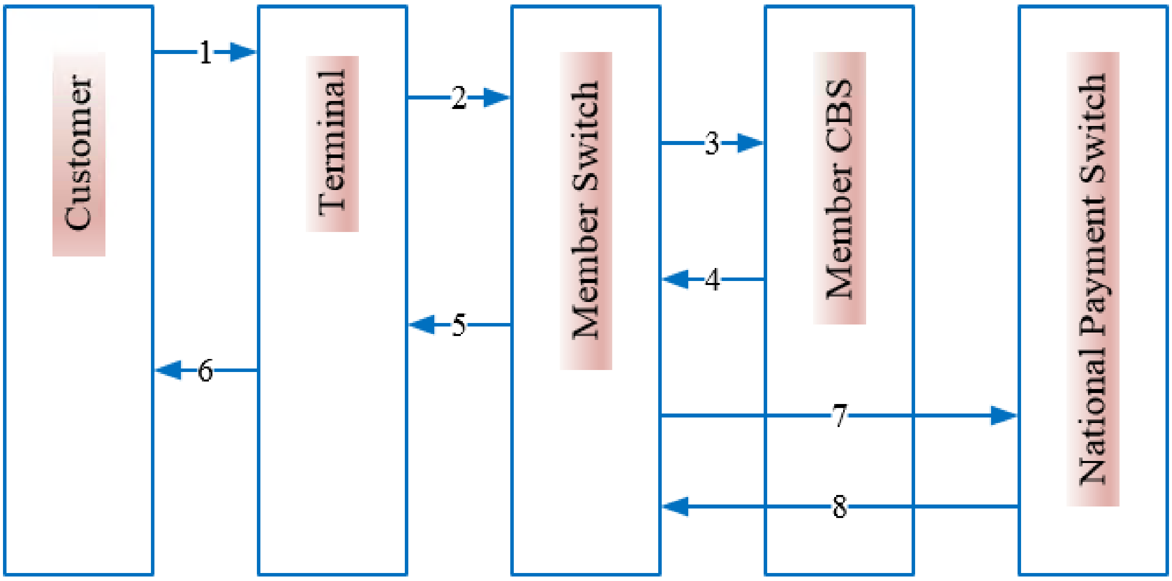
14.4. Force Majeure

NCHL shall promptly notify NRB and members in writing or through an appropriate channel of any situation or of occurrence of any event beyond the control of NCHL, which makes it impossible for NCHL to continue operation of NCS and NEPALPAY card. NCHL shall not be liable for any delay in meeting or for failure to provide its services under this Operating Rules due to any cause beyond its reasonable control.

15. Annexure: Transaction Scenarios in NPS-NCS

15.1 Member Bank Onus Transaction

This use case is applicable when Issuer's card is attempted at its own terminal. i.e. Issuer and Acquirer bank are same. The transaction flow for this scenario shall be as following.

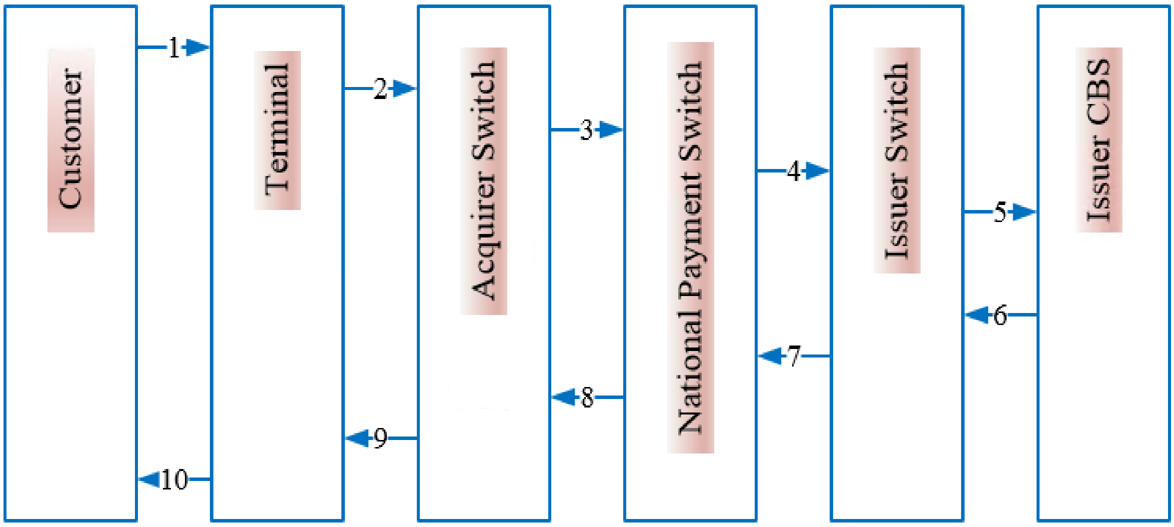


Member Bank Onus Transaction Flow

S.No.	Description
1	Card Holder inserts / uses the card into Terminal (such as ATM, POS, e-commerce, Mobile, etc.) for a transaction.
2	Once the transaction details are received by terminal, the transaction is sent to Member Bank Switch.
3	Member Bank Switch will send the transaction request to its respective Core Banking System (CBS).
4	Upon authorizing the transaction, the response will be sent by Member Bank CBS to Member Bank Switch.
5	Member Bank Switch will then send the response to the terminal (ATM/ POS/ Internet/ Mobile, etc.).
6	Terminal shall process the transaction based on the response received and acknowledges respectively to the cardholder.
7	Member Bank associated Switch will send notification message of successful transactions to National Payment Switch (NPS) using bulk csv file as per NCHL specification for centralized reporting purpose. Alternately, Members may upload the transaction report (bulk csv or XML file) on schedule basis to NCHL for centralized reporting purpose.
8	National Payment Switch (NPS) will acknowledge the notification file/ report received from Member.

15.2 Member Bank Off-Us Transaction

This use case is applicable when Issuer bank's card is attempted at different Acquirer bank's terminal. The participating member may have its own switch or using TPP, in all cases the transaction between the members shall be routed through NCS. The transaction flow for this scenario shall be as following.

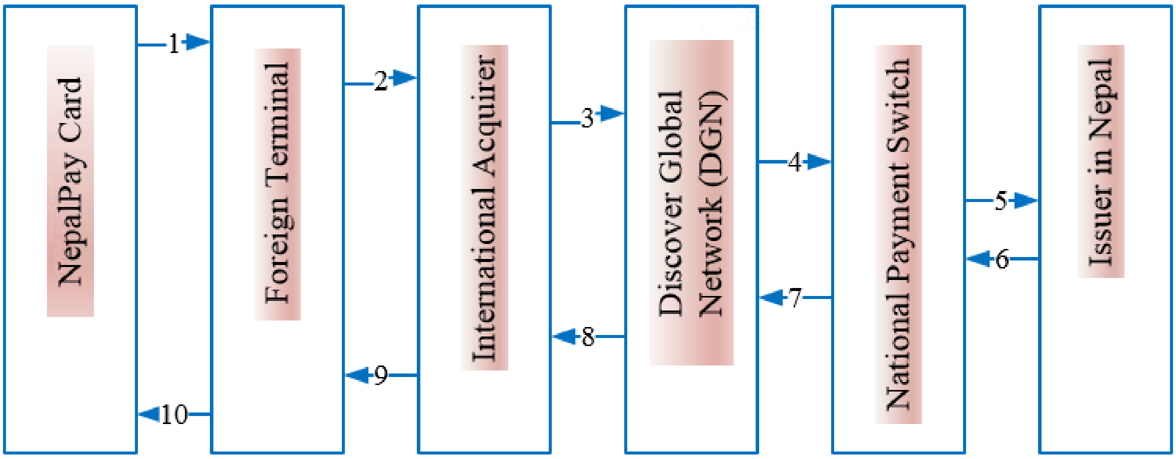


Member Bank Off-Us Transaction Flow

S.No.	Description
1	Card Holder inserts the card at the Terminal (such as ATM, POS, eCommerce, Mobile, etc.) Transactions.
2	Once the transaction details are received by terminal, the transaction is sent to Acquirer Switch operated by Member Bank / Third-Party Payment Processor (TPP).
3	Acquirer Switch will send the transaction request to National Payment Switch (NPS).
4	National Payment Switch (NPS) will route the transaction request to Issuer Switch based on BIN (Bank Identification Number) or IIN (Institution Identification Number).
5	Issuer Switch will send the transaction request to its respective member's Core Banking System (CBS).
6	Upon authorizing the transaction, the response will be sent by Issuer Bank CBS to its Issuer Switch.
7	Issuer Switch will send the response to National Payment Switch (NPS).
8	National payment Switch (NPS) then sends the response to Acquirer Switch and prepares for settlement through RTGS for successful transactions.
9	Acquirer Switch will then send the response to the terminal (ATM/ POS/ Internet/ Mobile, etc.).
10	Terminal shall process the transaction based on the response received and acknowledges respectively to the cardholder.

15.3 International Acceptance of NEPALPAY Card

This use case is applicable when NEPALPAY card is attempted outside Nepal in a terminal of international network partner (DGN). The transaction flow for this scenario shall be as following.

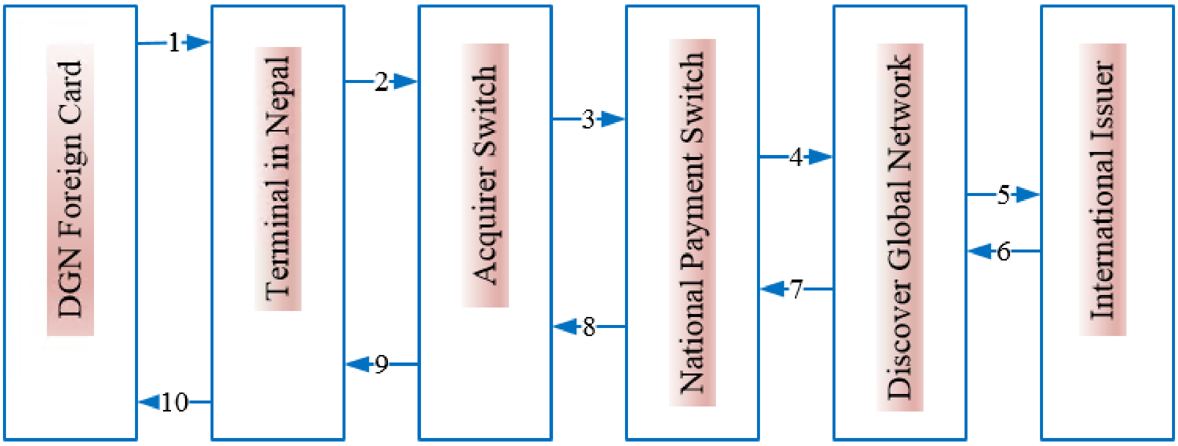


NEPALPAY Card Transaction Acquired Outside Nepal

S.No.	Description
1	NEPALPAY Card Holder inserts the card at the International Terminal (such as ATM, POS).
2	Once the transaction details are received by terminal, the transaction is sent to Acquirer Switch.
3	Acquirer Switch will send the transaction request to Discover Global Network (DGN).
4	DGN will send the transaction request to NPS National Card Switch (NPS-NCS).
5	NPS-NCS will send transaction to NEPALPAY Issuer.
6	Upon authorizing the transaction, the response will be sent by Issuer to NPS-NCS.
7	NPS-NCS will send the transaction response to DGN.
8	DGN will send the transaction response to Acquirer.
9	Acquirer will then send the response to the terminal (ATM/ POS/ Internet/ Mobile, etc.).
10	Terminal shall process the transaction based on the response received and acknowledges respectively to the cardholder.

15.4 International DGN Cards Acquired in Nepal

This use case is applicable when foreign bank's Discover Global Network (DGN) card is attempted in Nepal. The transaction flow for this scenario shall be as following.

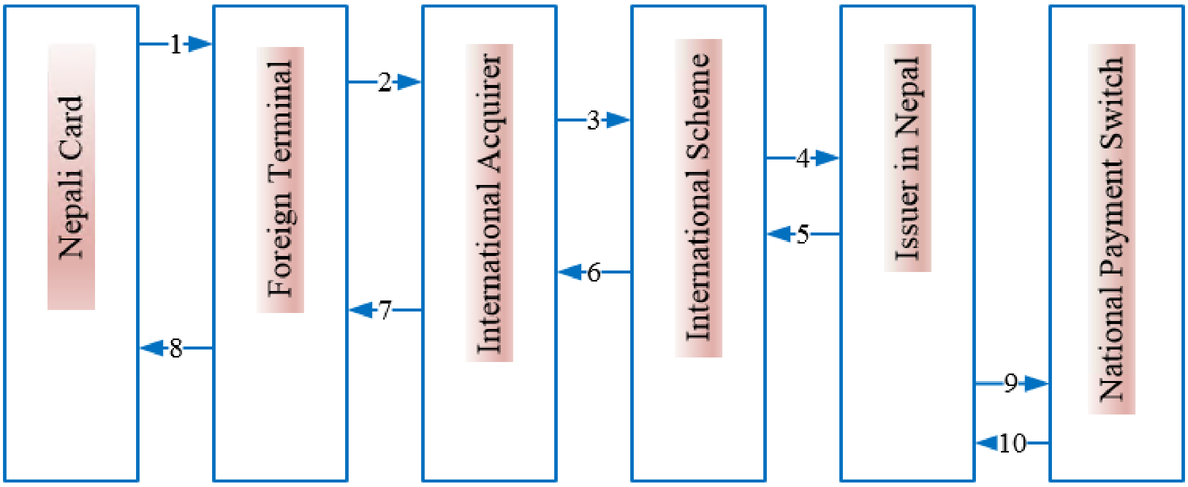


International DGN Card Transactions acquired in Nepal

S.No.	Description
1	Card Holder inserts the card at the Terminal (such as ATM, POS, e-commerce, Mobile, etc.) Transactions.
2	Once the transaction details are received by terminal, the transaction is sent to Acquirer Switch operated by Member Bank / Third-Party Payment Processor (TPP).
3	Acquirer Switch will send the transaction request to National Payment Switch.
4	National Payment Switch will send the transaction request to Discover Global Network (DGN).
5	DGN will send the transaction request to international Issuer.
6	International issuer will send the response to Discover Global Network.
7	DGN will then send the response to the National Payment Switch.
8	National Payment Switch then sends the response to Acquirer member's associated Switch.
9	Acquirer Switch will then send the response to the terminal (ATM/ POS Internet/ Mobile, etc.).
10	Terminal shall process the transaction based on the response received and acknowledges respectively to the cardholder.

15.5 International Acceptance of Non-NEPALPAY Cards

This use case is applicable when other card scheme issued in Nepal (non-NEPALPAY) is attempted outside Nepal. The transaction flow for this scenario shall be as following.

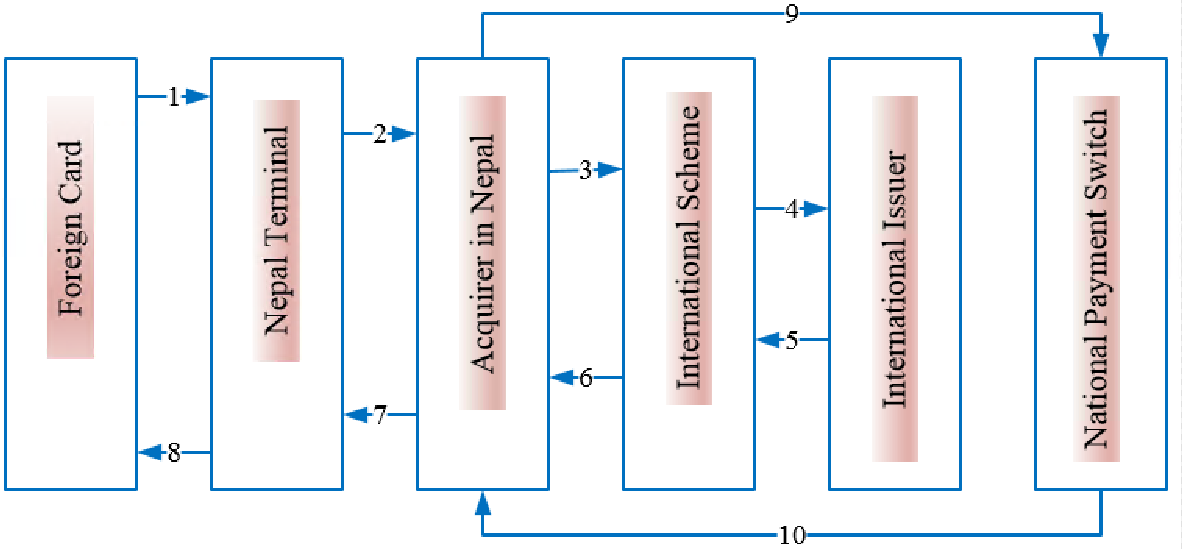


Other Nepal Card (Non-NEPALPAY) acquired outside Nepal

S.No.	Description
1	Nepali Cardholder inserts the card in foreign terminal (such as ATM, POS, e-commerce, Mobile, etc.).
2	Once the transaction details are received by terminal, the transaction is sent to International Acquirer Switch.
3	International Acquirer Switch will send the transaction request to associated International Scheme (Such as VISA, MasterCard, UnionPay, etc.).
4	International Scheme will send the transaction request to its respective Issuer in Nepal.
5	Upon authorizing the transaction, the response will be sent by Issuer to International Scheme.
6	International Scheme will send the response received from Issuer towards International Acquirer.
7	International Acquirer will then send the response to the terminal (ATM/ POS/ Internet/ Mobile, etc.).
8	Terminal shall process the transaction based on the response received and acknowledges respectively to the cardholder.
9	Issuer Member in Nepal shall send/upload the notification message of the transactions using bulk csv file or XML file on schedule basis to National Payment Switch (NPS) as per NCHL specification for centralized reporting purpose.
10	National Payment Switch (NPS) will respond the notification file/report received from Member.

15.6 International Acquiring of Non-DGN Cards in Nepal

This use case is applicable when non-Discover Network foreign card is attempted into Nepal terminal. The flow for this use case is explained as following.



International Card (Non-DGN) Transactions Acquired in Nepal

S.No	Description
1	Foreign non-DGN Card Holder inserts the card in Nepal Terminal (such as ATM, POS).
2	Once transaction details are received by terminal, the transaction is sent to Acquirer Switch in Nepal.
3	Acquirer Switch will send the transaction request to its associated International Scheme (Such as VISA, MasterCard, UnionPay, etc.).
4	International Scheme will send the transaction request to its respective international Issuer.
5	Upon authorizing the transaction, a response will be sent by international Issuer to International Scheme.
6	International Scheme will send the response received from Issuer towards Acquirer in Nepal.
7	Acquirer Switch will then send the response to the terminal (ATM/ POS/ Internet/ Mobile, etc.).
8	Terminal shall process the transaction based on the response received and acknowledges respectively to the cardholder.
9	Acquirer Switch will send notification message of successful transactions to National Payment Switch (NPS) using bulk csv file as per NCHL specification for settlement and reporting purpose. Alternately, Members may upload the transaction report (bulk csv or XML file) on schedule basis to NCHL for centralized reporting purpose.
10	National Payment Switch (NPS) will acknowledge the notification file received from Member.