CONCEPT NOTE FOR IMPLEMENTATION OF RuPay qSPARC BASED NATIONAL COMMON MOBILITY CARD
v 2.1

Abstract

This document talks about the National Common Mobility Card (NCMC) Program and RuPay based on this NCMC Program. This also covers the Standard Operating Procedure for its implementation by Transit Operators (e.g. Bus, Metro), Para-Transit (Toll, Parking etc.), and Smart Cities. Proliferation strategy for Transit, Retail, Smart City, and Para-transit segments has also been discussed in this document.

National Payments Corporation of India (NPCI)

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Contents

1 Executive Summary

The digital penetration in retail segments is increasing gradually on card as well as mobile platforms with the holistic effort of financial institutions, customers, solution providers and government. However, the digital adoption is limited across low value payments in segments including retail, transit, toll, parking and smart cities.

Key Requirements of the ecosystem are

- Need for **offline transactions** in low value payments - **faster speed with near zero declines**
- Need of payment solution which is **independent of network connectivity**
- **Challenges in terms of existing banking infrastructure** to support huge surge in digital transaction on account of low value payments digitization

National Common Mobility Card (NCMC) program, as envisaged by MoHUA (Ministry of Housing & Urban Affairs), offers the above proposition and is proposed to be rolled out on RuPay Contactless Product (qSPARC).

This card may be used for all payment applications (low value – offline/high value – online) including transit, retail, toll, parking and smart cities. The stored value of the card offers the offline transaction proposition across all low value segments. The additional feature of service area on the card may be used for any merchant specific application e.g. season tickets etc. Further, it is also feasible to provide targeted government incentives e.g. medicines, books etc. through NCMC. The card may be issued as Debit/ Prepaid/Credit Card.

RuPay qSPARC based NCMC implementation is aimed at providing a vendor and bank agnostic digital payment platform wherein customers may use RuPay NCMC cards issued by any bank for digital payments across various segments. The implementation should ensure multi-bank cards are accepted wherein the customers should be able to use RuPay cards issued by any bank including local or small banks.

Important factors in proliferation of RuPay qSPARC based NCMC requires default issuance by key banks in the country and deployment by operators with open loop compatible AFC and devices. Role of key stakeholders is as below:

Segments	Merchant/Operator	Banks	NPCI/CDAC	Government
Transit and Smart Cities	NCMC implementation for all greenfield projects. Phase-wise upgradation for Brownfield projects	Issuance of RuPay qSPARC based NCMCs as default Debit/Prepaid/Credit Cards to avoid any project specific issuance. Develop RuPay qSPARC based NCMC acceptance ecosystem across various merchants	Specification support to involved stakeholders including operators, bank and vendors to develop the ecosystem	Financial support for AFC/ETIMs and Transaction charges Mandates through respective Ministries for implementation of open loop RuPay qSPARC based NCMC and Interface Specification of NCMC compliant AFC System"
Retail	Acceptance of RuPay qSPARC based NCMCs			Mandates for RuPay qSPARC based NCMC acceptance.
Para-Transit	Acceptance of RuPay qSPARC based NCMCs for Toll & Parking			

NCMC was inaugurated by Honorable Prime Minister as One Nation One Card in Ahmedabad on March 4th, 2019.

2 Purpose of the Document

This document provides an overview of the National Common Mobility Card (NCMC) program, key features of NCMC specification, benefits to involved stakeholders and the use cases covering transit, toll, parking, smart cities and retail payments. This also covers various aspects related to NCMC implementation including sample implementation model, standard operating procedure (SOP) and roles & responsibilities of involved stakeholders. NCMC proliferation strategy has also been covered in this document to achieve higher adoption and penetration of the NCMC cards across all use cases. With the aim of digitizing the payments across each segments (low value as well as high value), a huge surge is expected in number of digital transactions which may have a challenge in view of existing banking infrastructure. This requires the offloading of low value transactions from real time processing by the bank. This will help to digitize the low value payments with near zero failures**.**

RUPAY qSPARC based NCMC offers the additional feature of offline transactions for low value payments at a faster speed with near zero declines. This card may be used for all payment applications (low value as well as high value) including transit, retail, toll, parking and smart cities.

3 Background

3.1 Existing Payments Mechanisms

The banking industry has evolved gradually during the last 3-4 decades with various payment solutions to digitize the retail payments. These solutions are mainly based on two platforms namely Card & Mobile. Card has been the preferred mode of payment in the physical space in view of the customer convenience, familiarity and consumer behaviour while the mobile platform has taken a significant leap during the last few years in the ecommerce channel.

Apart from retail, there are various other segments involving low value payment e.g. transit (bus, metro, suburban railways), toll, parking etc. which are highly dominated by cash based tickets. The customer takes paper ticket by paying cash either at ticket counters or during journey. Various operators of these segments have implemented closed loop/semi-close loop cards based digital payment collection system. The lifecycle of such cards is being managed by respective operators. Few operators have also adopted the mobile based solution for digital fare collection.

However, the digital adoption is very limited across these low value segments due to interoperability challenges of closed loop/semi-closed loop cards.

3.2 Challenges and Limitations

The existing cash based payments practice for low value payments across various segments has multiple challenges e.g. cash handling, revenue leakages, pilferages etc. The adopted digital payments practice suffers from the key challenge in terms of interoperability and other challenges as mentioned below:-

- Closed loop/Semi-closed loop cards have usability limited to specific merchant/operators and hence customers need to carry multiple cards for multiple use cases.
- Popularity of these cards among citizens is limited due to restricted usage of the card and hence lower digital penetration. Moreover operators/merchants need to bear extra cost for life cycle management of the cards.
- In context of Indian scenario, where network connectivity is a challenge, any mobile based payment collection system will have limited digital penetration.
- Low value payments pose a huge challenge of volume, where transit alone generates close to 10 crore transactions a day. Online authentication of such volumes can lead greater number of declines.In view of the above challenges and the need to drive the digital payments adoption across all segments with high as well as low value payments, there is a requirement of a common card payment system wherein a single card may be used for all payment applications including transit, toll, parking, smart cities and retail.

4 National Common Mobility Card Program

4.1 Introduction

With vision of One Card for all Payment systems, Ministry of Housing & Urban Affairs (MoHUA) has come out with a National Common Mobility Card (NCMC) model to enable seamless payment for low value as well as high value payments across all use cases including travel by different metros and other transport systems across the country, retail shopping and purchases. A committee was formed with representatives of National Informatics Centre (NIC), Centre for Development of Advance Computing (C-DAC), Bureau of Indian Standards (BIS), National Payment Corporation of India (NPCI) and the Ministry of Finance.

After extensive study of various models being followed across the world, the Committee recommended the EMV Open Loop Card with stored value based model and the same was approved. This card meets travel needs based on stored value of money and can be used for all low value payments including travel by any means of transport, smart cities, toll, parking etc. and also enables account based retail applications. Accordingly, this card does away with the need of carrying separate cards for banking and transit requirements.

NPCI, CDAC and BEL has been working with MoHUA, Government of India for implementation of National Common Mobility Card Program (NCMC). This specification is dual interface (contact & contactless) EMV card based specification and is interoperable based on open standards. This is aimed at low value payments for various segments e.g. Transit, Smart cities, Toll, Parking and other low value merchant payments in addition to the normal day to day retail payments. These specifications are capable of supporting not only payment products but also transit applications like monthly passes, season tickets & government applications such as social security, driving license, Id/access card etc. This results in increased customer's convenience as it allows customers to use the same card for variety of needs.

4.2 NCMC Proposition: EMV Open Loop Card with Stored Value

The NCMC committee, as mentioned in above clause, identified the key requirements of this NCMC Card as Interoperability, Open Loop, EMV Chip, Offline transactions and minimum transaction time. Based on their requirements and study of international markets, the committee studied three models of proposition:

- Model 1 - Closed Loop based Solution
- Model 2 – EMV Open Loop Account based Solution
- Model 3 – EMV Open Loop Card with Stored Value

The comparative analysis of these three model are as mentioned below:-

Particulars	Model 1 – Closed Loop	Model 2 – EMV Open Loop Account based	Model 3 – EMV Open Loop with Stored Value
Proposition	• Issuance of closed loop cards by respective Operators to digitize the payments • Usage for services provided by the respective Operator	• Usage of bank issued EMV cards which are linked to account • **Fare calculation as well as debit from account to be done at the backend** post processing of offline transactions by terminal	• Usage of **bank issued EMV cards with stored value** on the card • **Supports offline transaction without financial risk** to Operator or Financial Institutions • Provision of season tickets on the card
Limitations	• Lacks the key feature of interoperability • Restricted usability for services provided by the respective operator only • Extra cost to operators in maintaining the payments mechanism and card lifecycle management	• **Risk of insufficient balance** on the card as the transactions are based on deferred authorization • Challenge in storing the season tickets on the card • **Increased capex and opex** due to manage the backend • **Challenge for Bank infrastructure** to manage the large volume of low value transactions on real time basis	-

Considering the Indian Transit scenario, available infrastructure for bank & operators, market dynamics, feedback from financial institutions and the customer behavior; Model 3 – EMV Open Loop Card with Stored Value was finalized as the ideal model for NCMC Card.

The Report of the committee for standards and specifications of National Common Mobility Card is available at link - http://mohua.gov.in/upload/uploadfiles/files/CommitteeReportofNCMC03.pdf.

The NCMC specification may be adopted by all Payment Scheme Networks operating in the country as communicated by RBI.

4.3 Brand Name for NCMC Cards

The NCMC program has been envisaged with a vision of 'One Card for all Payments'. In view of the same, the name of this card should portrait its usability across all segments for all types of payment applications including retail, transit, toll, parking and smart cities. This will help in wider awareness and acceptance of NCMC cards across the country.

Please refer to RuPay branding guidelines for qSPARC based NCMC design compliance.

4.4 Advantages of NCMC Open Loop Smart Card over Closed Loop Variant

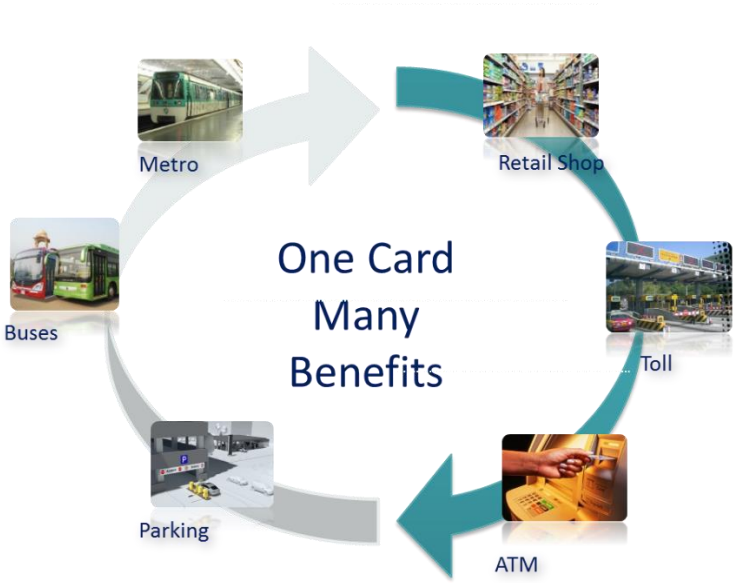
NCMC open loop smart card offers various advantages over the closed loop smart card in terms of various parameters including **customer experience, interoperability, infrastructure requirements, ease of implementation and vendor agnostic solutions**. The details are as enumerated in below mentioned table:

S. No.	Concern	Open Loop Smart Card	Closed Loop Smart Card
1	**Customer Friendly**	Customer may use the same card for Metro and Bus travel in all the City and States within the country.	Customer need to buy different cards for different public transport Systems.
2.	**Convenience**	Customers may use their bank issued NCMC card for fare payment rather than waiting in a queue for card/token/ticket issuance.	Customer may require to stand in queue for card issuance, Top up etc.
3.	**Loyalty Points**	Consumer may benefit from loyalty/reward points from partner banks, as provided in case of Debit and Credit cards.	No such provision. Any such loyalty and discount is a cost to the Public Transport Operators.
4.	**Minimum Infrastructure**	Public Transport Operators can minimize their cost involved in maintenance of infrastructure and manpower for card issuance, Top up, card replacement and refunds, as open loop cards can be issued by multiple partner banks.	Each Public Transport Operators need to bear the significant expense for maintenance of infrastructure and manpower for card issuance, Top up, card replacement and refunds.
5.	**Negotiating Power**	As open loop acceptance devices are based on open interoperable standards, there are multiple vendors available for payment acceptance devices, which provide an opportunity for cost and service negotiation.	Closed loop cards may be of proprietary standards, leading to vendor lock in for subsequent purchase and renewals of acceptance devices.
6.	**No vendor lock in**	Open standards based payment acceptance devices provides the freedom for subsequent purchase and renewals of devices.	Proprietary standards may lead to vendor lock in for subsequent purchase and renewals of acceptance devices.

7.	**Ease of Implementation**	Well standardized payment acceptance devices and availability of multiple vendors provides ease of implementation. Payments related scope of work to be taken care by partner bank and hence PTOs may focus on their key activities.	PTOs need to evaluate multiple proprietary specifications leading to difficulty in implementation.
8.	**Fast Deployment**	Due to similar implementation process, best practices and reference implementation guidelines, there will be standardized procurement practices, and RFPs. This considerably expedites the deployment of digital payments in Public Transport Operators.	Each deployment will have specific requirements and considerable expertise is required by each Public Transport Operators for selection of appropriate solution.
9.	**Retail acceptance**	NCMC open loop card offers acceptance at all the existing retail PoS devices.	Closed loop cards can only be accepted within their operating environments.

5 RuPay qSPARC based NCMC

RuPay qSPARC based NCMC offers the proposition of One Card for all Payment Systems wherein a single card may be used for all payment applications including transit, toll, parking, smart cities and retail.



i. **Multi-Modal Transit**: RuPay qSPARC based NCMCs may be used across all transit modes including Metros, buses, ferries, suburban railways etc. A citizen would not be required to be dependent on cash or operator specific various closed loop cards. He can use one card for fare payment across any mode of public transport.

ii. **Toll**: There are significant number of customers using cash lane at the toll plaza and making payment in cash. With the help of RuPay qSPARC based NCMC, a citizen may pay the toll charges at toll booths by simply tap & pay. This will help to achieve higher digital penetration in toll segment for customers using cash lane.

iii. **Parking**: A citizen may use the RuPay qSPARC based NCMCs at parking zones for making payments of parking charges. This will help to reduce the transaction time and increase the digital payments penetration.

iv. **Smart Cities**: Digital payments play a vital role in smart cities projects. A common card payment system is the key proposition of smart cities to enable usage of one card for all sorts of payments including transit, civic as well as non-civic payments in the cities. RuPay qSPARC based NCMCs offer the unique proposition for Common Card Payment System of smart cities.

v. **Retail:** RuPay qSPARC based NCMCs may be used in contact as well as contactless mode for retail payments. The customer may use this card for low value payments as well as high value payments. As per RBI existing norms, 2nd factor authorization is not required for transaction below INR 2000. For such payments, the customer may make the payment by simply tap & pay. The offline transaction feature may also be leveraged to reduce the transaction time and

eliminate the dependency of network connectivity for extreme low value payments under INR 200.

MoHUA issued an advisory, vide Advisory No. 9, dated June 8th, 2017, advising all smart cities to follow the NCMC standards for implementation of common card payment system. This card is envisaged to be accepted in all kinds of public transport, para transit and non-transit services and other merchant payments like utility bills, taxes, shopping etc. The copy of advisory note is enclosed here as **Annexure – A**.

Ministry of Electronics and Information Technology (MeitY) has issued following advisories recommending all Public Transport Operators to adopt open loop NCMC cards for digital fare collection,

a) An advisory, vide No. 12(39)/2017-DPD, dated April 4, 2018enclosed here as **Annexure –B**.
b) An advisory, vide No. 12(57)/2017-DPD, dated March 14th, 2019 enclosed here as **Annexure –C**
c) An advisory, vide No. 12(57)/2017-DPD, dated August 2nd, 2019 enclosed here as **Annexure –D**

5.1 Key Features of RuPay qSPARC based NCMC

Key Functionalities/Particulars	NCMC Proposition
Payment Model	• Card based payment model
Transaction Type	• Supports online (contact & contactless) & off-line (contactless) transactions
Stored Value	• Provision to store balance on card for offline payments
Provision for multiple service areas	• Multiple service areas (optional to use with mutual concurrence) to support acquirer/operator specific programs e.g. Passes / Season Tickets / Smart City Specific application / Loyalty points etc.
Card usage	• Same card to be used at ATMs, Merchant establishments & online (e-commerce) payments in addition to other areas of contactless payments viz., transit, toll, parking & other small value merchant payments
Card issuance	• Can be issued by any member authorized by RBI; On the platform of ○ **Debit Cards** ○ **Prepaid Cards** ○ **Credit Cards** In future these cards may also be made available in various other form factors including wearables, stickers etc.

Topping up the stored value	• Provision of Topping up the stored value through any mode of payment viz. cash, account and online channels
Offline Transaction Risk	• Since the offline transaction is permitted against stored value on card, there is minimal risk of any loss to the bank or merchant
Security	• Underlying technology i.e. EMV is best available globally
Cost of providing contactless card to the customer	• RBI has mandated that effective Feb 01, 2016, all cards issued by banks in India would be EMV. Therefore, cost of providing contactless card to the customer will be only marginal as against steep increase in territories where mag-stripe ecosystem exists
Synergy with existing technology	• NCMC specifications can co-exist with the existing technology being used by acquirer/operator and migration to common standards may be achieved gradually to suit the convenience.

5.2 Value Proposition of RuPay qSPARC based NCMC to Key Stakeholders

Stakeholders	Value Proposition
Commuter/Consumer	• One card for all low & high value payments across various categories; No need to carry multiple cards for different usage • Super quick with contactless transactions enabled on the card • Digital trail for all transactions • No need to stand in a queue • Auto Top-up facility; need not to worry for recharge • Secured with EMV Technology; Gold standard of card payments
In vehicle Crew/ Counter Operators	• Low cash handling due to NCMC cards based fare collections • Efficient fare collection process with the minimal transaction time • Efficient crowd management • Increased productivity

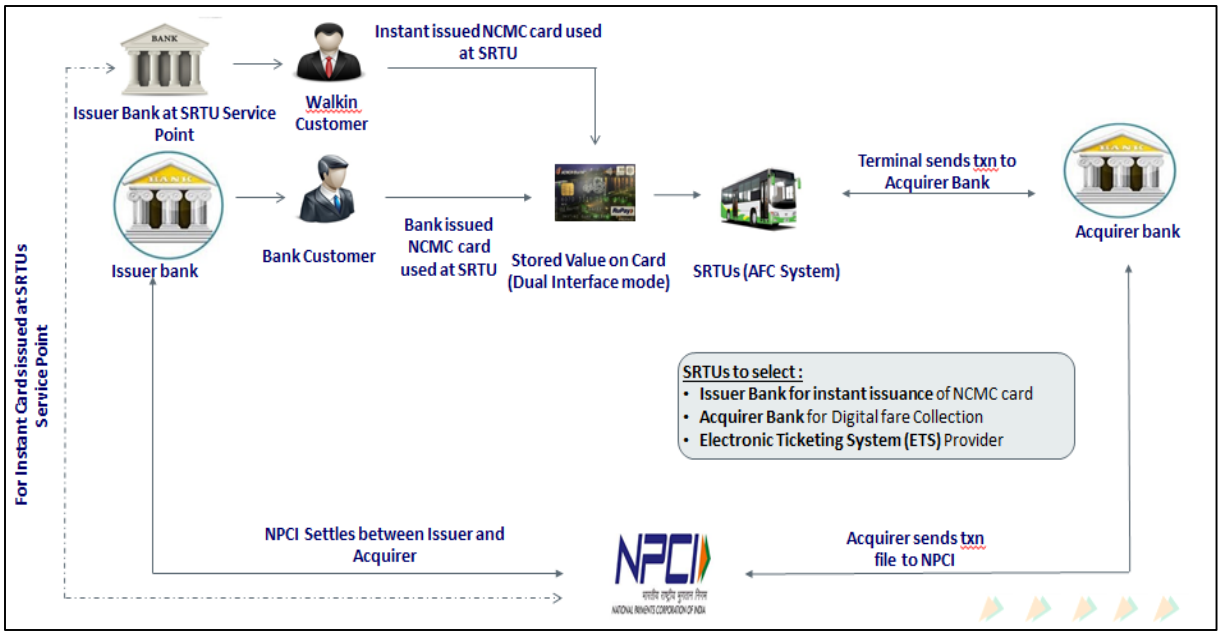
PTOs/Merchants	• Unified cards to support offline and online transaction modes; contactless ability • Common standards for standardized operating cost • Fast deployment of digital payments due to standardized implementation process • Savings on card lifecycle management cost • Reduced operating cost on account of lower cash handling, infrastructure & manpower cost • Business intelligence with rich data insights aimed at business optimization and ROI based communication • May run proprietary loyalty and VAS schemes with high convenience and customer satisfaction • No vendor lock in due to open loop standard platform.
Banks	• Customer loyalty & stickiness • Additional revenue opportunities with large customer base • Savings on cost of servicing customers and cash handling • Increased usability of bank issued cards due to transit related use case • Improved brand image to offer value added products/services • Rich data insights with valuable customer data for data analytics and customized offers for customers
Retail Ecosystem	• Usability of one card for all payments would encourage customer for digital payment in retail • Cost on account of running loyalty cards may be reduced by leveraging the NCMC cards • Tap & pay to enable efficient payment during peak hours for low value purchases • Lifestyle experience to customers
Government	• NCMC would help in digitizing the low value payments, a key segment highly dominated by cash payments in India • Higher digital penetration to achieve the digital payments target • Reduced leakages across the value chain of the system • Reduced cash circulation in the economy • May be leveraged to provide targeted government incentives e.g. medicines, books, travel passes etc. through NCMC

6 RuPay qSPARC based NCMC Implementation Model

6.1 Sample NCMC Implementation Model (Bus Transport)

The NCMC implementation is aimed at providing a Vendor and Bank agnostic digital fare collection platform wherein the customers may use RuPay qSPARC based NCMCs (Debit/Prepaid/Credit Card) issued by any Bank for digital fare payments. This will help the customers to get associated with any bank as per their choice rather than being restricted to a single bank. The acceptance of RuPay qSPARC based NCMCs issued by multiple banks will further help to get the higher digital penetration for fare collection.

A sample implementation model for State Road Transport Undertakings (SRTUs) – Bus Operators has been shown below for the reference purpose. The same concept will get extended across other segments including Metro, Toll, Parking and Smart Cities with modification as per their existing fare collection system.



6.2 Key Consideration Points for Implementation Model

With the Multiple Issuance Open Loop model, there will be following key benefits to the operators:-

Tangible Benefits	Intangible Benefits

• Significant reduction in OPEX associated with cash handling and leakages
  ○ Even with a large adoption of closed loop smart card benefits are passed on as discounts for operator issued cards and thus negate the above savings
• Reduction in OPEX related with card life cycle management
• CAPEX savings on the infrastructure since it invalidates the need of large scale card issuance and top infrastructure
• Higher adoption of digital payments
	• Consumers benefits the most as they need not block their balances for each operator
	  ○ A single prepaid account can work across all low value offline payments like bus, parking, retail
	  ○ The cards can be easily topped up with their existing accounts through BHIM and used without any dedicated need of balance check counters
	• Industry as a whole benefit due to availability of standard solutions and vendors

The implementation model should ensure following key points to achieve the vision of interoperable, vendor/bank agnostic NCMC solution.

- Segregation of Ticketing engagement from Payment RFP
- Operators should approach AFC vendors for deployment of ticketing solution and application
  - Banks to be approached only for payment acquiring and settlement
  - Avoid CAPEX investment through an acquiring bank
  - The cost of the AFC/e ticketing System including gate validators/ETIMs may either be picked up by the operator or the banks may provide a rental model to the operator
- As a short term option the acquiring bank may provide instant issuance of Rupay NCMC prepaid cards on a limited basis only
  - Till such time every customer starts carrying an EMV open loop stored value card, acquiring bank may provide limited issuance
- Some of the operators may need support to their existing business operation challenges
  - Particularly in bus environment, it may be prudent to develop a regional AFC hub for 4-5 operators combine

6.3 Required Activities for NCMC Implementation

S.No.	Activity	Description

1	**AFC Deployment/Upgrade**	• Upgrade of existing gate validators/ ETIMs with EMV devices certified as per NCMC specification
		  ○ Level 1 (Hardware) to be certified as per EMVCo
		  ○ Level 2 Kernel (Software) to be certified as per NCMC specs
		  ○ Level 3 (Payment Application) to be certified as per NCMC specs
		• Upgrade of AFC System including ETIMs/Gate as per Interface Specification of NCMC Ecosystem (Part IV – VII)
		• Complete back-office deployment to support Automatic fare Collection System

2	**Selection of Issuer Bank for instant Issuance of RuPay qSPARC based NCMCs at Service Delivery Points *(if required)***	• Responsible for issuance of NCMC Cards as per defined NCMC specification • Multi-Banks Acceptance Model wherein customers may use NCMC cards issued by any certified bank • The customers may get the NCMC cards from the bank of their own choice by visiting the respective branches or offices • To facilitate the card issuance at Operator/Authority service points e.g. bus stops, depots etc., PTO need to select an Issuer Bank for instant issuance of NCMC cards
3	**Selection of Acquirer Bank for acquiring of digital transactions done using RuPay qSPARC based NCMCs**	• Responsible for acquiring of digital fare collection transactions done using NCMC cards issued by any certified Bank • Acquirer Bank may be single or multiple as decided by Operator
4	**Commercial Aspects**	• Commercial Model to ensure the vendor/bank agnostic solution and Multi-Banks acceptance scenario wherein the customers should be able to use NCMC cards issued by any Bank including the local or small banks. • As far as possible, the transaction charges should not be passed on to customer so that there is no resistance to digital adoption.

6.4 Roles & Responsibilities of Key Stakeholders

1. The roles & responsibilities of key stakeholders will be inclusive of but not limited to the following. It may vary as per the scope of work finalized by the Authority.

Stakeholders	Roles and Responsibilities
Issuer Bank	***Issuer Bank issuing the RuPay qSPARC based NCMC enabled Debit/Prepaid/Credit Cards from their Branch networks*** • Issuance and end to end lifecycle management of NCMC cards as a part of day to day normal banking activities for the Issuer Bank • Shall provide various payment channels for the Card Top-up as per customer convenience • Undertake transaction settlement and reconciliation with Acquirer Bank & Payment Schemes
	Instant Issuer Bank issuing the NCMC Cards from PTO Service Delivery Points (if required) • Applicable only for cases wherein the Operators want to provide the NCMC cards instant issuance facility at Operator Service Delivery Points • Procurement, personalization, instant issuance of Contactless cards based on NCMC specification as per RBI guidelines • Shall provide various payment channels for the Card Top-up as per customer convenience • Provide necessary EMV PCI-DSS compliant hardware for instant issuance related applications as per requirements • Certifications & Compliances as per NCMC specification • Provide helpdesk to customers for addressing any grievance or providing support in card usage • Maintain entire life cycle management of NCMC cards issued by FI, card applications, payment scheme, card account management and card transactions • Marketing, Loyalty, Fraud and Risk Management • Admin console for Authority to access MIS reports etc. • Provide an e-payment gateway and portal, Mobile Applications and SMS facilities for self-service and card top-up • Undertake transaction settlement and reconciliation with Acquirer Bank & Payment Schemes • Field training, hardware maintenance and consumables

Acquirer Bank	• Acquiring the digital fare collection transactions done using NCMC cards issued by any certified Bank • Shall provide various payment channels for the Card Top-up on the web/mobile interface provided by the Authority/its vendor • Provide EMV as well as PCI-DSS compliant hardware for acquiring related applications as per NCMC specifications • Certifications & Compliances as per NCMC specification and Interface Specification of NCMC Ecosystem – Part VI • Provide risk, fraud and dispute/chargeback capabilities • Provide NCMC Card dedicated support to Issuer Bank with reference to transaction dispute, refunds, chargeback and merchant account management as per RBI requirements • Provide Admin Console for Operators • Manage email/SMS for citizens and merchants • Undertake transaction settlement and reconciliation with Operators
Operators/Merchants	• Provide manpower to all its Service Points • Provide domain services and respective IT applications like ITMS, AFCS/ETIMs in collaboration with AFC vendor • Ensure necessary infrastructure development and reliable network connectivity to connect with FI ecosystem • Provide sufficient space at each depot and central control center for setting up the required infrastructure
AFC/ITMS Provider	• Supply and deployment of Electronic Ticketing System (ETS) to roll-out the NCMC solution • Provide ETIMs/validators on bus terminals, city bus, BRTS, etc. • Provide technical maintenance and support of the ETIM application software and hardware system over the contract period • Maintain the sufficient spare parts (of Handheld and other hardware parts) at depot (or any other location specified by the Authority) for maintenance of ETM and meeting the SLA • Certifications & Compliances as per NCMC specification and Interface Specification of NCMC Ecosystem (Part IV – VII) • Provision of all the consumable items like SIM, Monthly Charges of connectivity, paper roll (for paper tickets) • Backend hardware and hosting infrastructure for hosting the ETM backend

	• Web-Portal for various MIS and settlement report
NPCI/RuPay	• Certification of Issuer and Acquirer Banks in line with NCMC Specification • Certification of cards & terminal vendors as per NCMC specification • Assistance to operators in conceptualization, roll-out and implementation of NCMC solution • Settlement of inter-bank transactions • Pricing for inter-bank transactions

Note: RuPay qSPARC standard and specifications are maintained and certified by NPCI, while AFC specifications under NCMC may be governed by BIS/STQCI/CDAC under the guidance of MoHUA. NCMC Card and Terminal Specifications are developed and owned by NPCI, hence any stakeholder who wants to use the specifications to participate in NCMC program will have to get duly certified by NPCI/RuPay.

6.5 Adoption of NCMC by Other Card Schemes

Card and Terminal specifications which are developed by RuPay/ NPCI under NCMC are based on RuPay's qSPARC and thus sharing with other cards schemes requires commercial royalty considerations with NPCI/RuPay, subject to various terms and conditions.

7 Standard Operating Procedure for NCMC Implementation

NCMC implementation processes have been enumerated here for the reference purpose. This may be followed by any operator in transit/para-transit and smart cities for implementation purpose.

S. No.	Steps	Description	Reference
1.	Familiarization with NCMC	• Understand the key aspects of NCMC implementation including:- ○ Product overview ○ Key features of the product ○ Pre-requisites for NCMC implementation	• Reference document – 'Concept Document for Implementation of One Nation One Card'
2.	Gap Analysis	• Operators need to evaluate their existing fare collection/ payments system for the gap analysis purpose. This will help them:- ○ To understand the readiness of the existing system for implementation of NCMC based fare collection system ○ To identify upgrade areas and related activities	• Analysis of their existing AFCS/ITMS, backend, ETIM devices etc.
3.	NCMC Implementation model	• Finalize the NCMC implementation model based on business requirements covering following key points:- ○ Provision of instant issuance, if required ○ Multi-banks acceptance wherein customers may use the NCMC card issued by any certified Bank ○ Single/Multiple Acquirer Bank based on the requirement. To start with, Operator may go ahead with a single Acquirer Bank and may extend it further based on transaction volume or requirements	• Reference document – 'Concept Document for Implementation of One Nation One Card'
4.	Define Roles & Responsibilities	• Define the roles and responsibilities of key stakeholders based on finalized NCMC implementation model:- ○ System Integrator/AFC System Provider ○ Acquirer Bank ○ Issuer Bank for instant issuance purpose, if any	• Reference document – 'Concept Document for Implementation of One Nation One Card'

		In case operator has challenges in dealing with two separate partner banks as mentioned above, the acquirer bank may be given the additional responsibility of instant issuance at operator service points. However, the system should ensure the acceptance of cards issued by any bank through their branch networks	
5.	Finalization of Business Model	• Finalize the business model for NCMC implementation (Capex & Opex) covering following key points:- o No vendor lock-in because of business model o Acceptance of NCMC Cards issued by any Bank There should not be any exclusive business arrangement with any partner bank to ensure the truly interoperable and vendor agnostic solution.	• Reference document – 'Concept Document for Implementation of One Nation One Card'
6.	Engagement and Selection of Vendors for AFC System/ ITMS/ ETIMs devices etc.	• Engagement with existing System Integrator/AFC/Terminal vendor for NCMC based implementation • Selection of System Integrator/AFC/Terminal vendor in case the existing vendor is not willing for NCMC implementation	• Sample RFPs for 'Selection of Electronic Ticketing System (ETS) provider' • The list of terminal kernels certified as per NCMC specification is available at website of NPCI. Link - https://www.npci.org.in/tap-go-circulars
7.	Engagement and Selection of Financial Institutions for Instant Issuer Bank & Acquirer Bank	• Multi-banks acceptance as the key requirement wherein customers may use NCMC cards issued by any Bank through their branch/business correspondent networks • Selection of Acquirer Bank for acquiring of digital transactions done using NCMC cards • Selection of Instant Issuer Bank for instant issuance of NCMC cards at operator service points, if required • To start with, instant Issuance activities may be assigned to the Partner Acquirer Bank, as decided by Operator/Authority	• Sample RFPs for 'Selection of Partner Bank working as Acquirer and Instant Issuer' • The list of Banks certified on NCMC platform is available at website of NPCI. Link - https://www.npci.org.in/live-members-2

8 Certifications & Compliances

The table below provides an overview of the certifications required for an Acquirer and Issuer Bank. These certifications will be done as per the latest specifications prevalent during the implementation.

8.1 Issuer Bank Certification Requirements

S. No.	Product/ System	Role in payment eco-system	Certification Type	Followed Guidelines
1	Card	Issuance	Physical Card	EMVCo
2			RuPay qSPARC based NCMC Application	RuPay
3			White Plastic Certification	RuPay
4	Issuer Host	Transaction processing by Issuer Bank	Issuer Host Certification	RuPay
5	Central Clearing House Certification (CCH)	Clearing and settlement	CCH Certification	RuPay

8.2 Acquirer Bank Certification Requirements

S.No	Product/ System	Role in payment eco-system	Certification Type	Followed Guidelines
1	Acquirer Host	Transaction processing by acquirer	Acquirer Host Certification AFC/Terminal Interface	RuPay Interface Specification of NCMC Ecosystem – Part VI
2	Central Clearing House Certification (CCH)	Clearing and settlement	CCH Certification	RuPay

8.3 ETIM/Terminal Certification Requirements

S. No.	Product/ System	Role in payment eco-system	Certification Type	Followed Guidelines
1	Terminal	Acceptance	Hardware Level requirement (L1)	EMVCo
			Terminal Kernel-(Contact L2)	EMVCo
			Terminal Kernel-(Contactless L2)	RuPay
			Terminal Application (L3)	RuPay

8.4 AFC Certification requirements (CDAC)

S.No	Product/ System	Role in payment eco-system	Followed Guidelines
1	Terminal	Transit Service Management	Interface Specification of NCMC Ecosystem – Part IV
2	Terminal -- AFC	Terminal - AFC Backend Communication	Interface Specification of NCMC Ecosystem – Part V
3	Terminal/AFC - Banking Interface	Terminal / AFC - Acquirer Communication	Interface Specification of NCMC Ecosystem – Part VI
4	Terminal - Gate	Terminal – Gate Communication	Interface Specification of NCMC Ecosystem – Part VII
S.No	**Product/ System**	**Role in payment eco-system**	**Followed Guidelines**
1	Terminal	Transit Service Management	Interface Specification of NCMC Ecosystem – Part IV
2	Terminal -- AFC	Terminal - AFC Backend Communication	Interface Specification of NCMC Ecosystem – Part V
3	Terminal/AFC - Banking Interface	Terminal / AFC - Acquirer Communication	Interface Specification of NCMC Ecosystem – Part VI
4	Terminal - Gate	Terminal – Gate Communication	Interface Specification of NCMC Ecosystem – Part VII

9 Commercial Pricing

The commercial pricing structure for RuPay qSPARC based NCMC will remain similar to any bank issued payment card. There are two types of transactions namely ON-US transaction and OFF-US transaction as described below:-

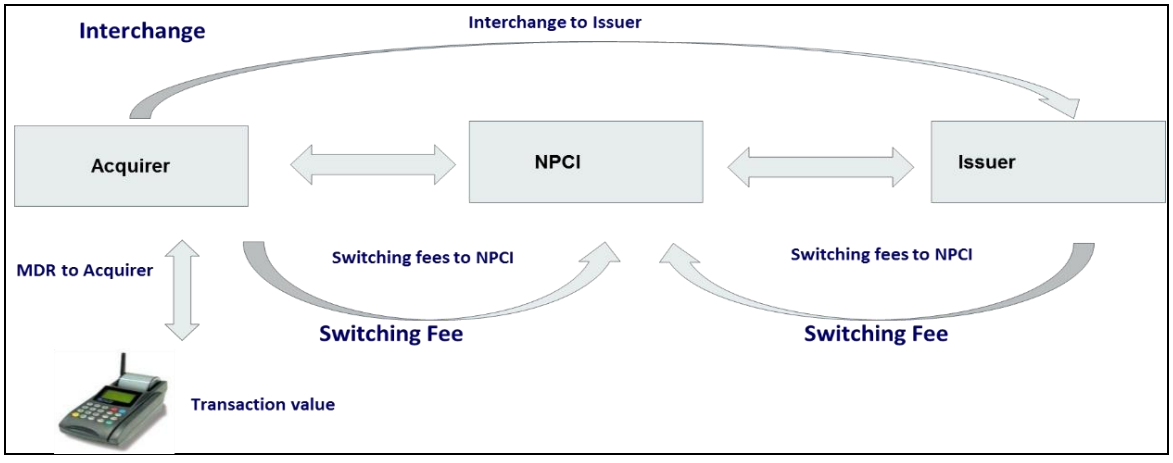
- **ON-US Transaction** are transactions where Issuer and Acquirer Bank are same. Hence, these transactions are not routed via Payment Scheme switch.
- **OFF-US Transaction** are transactions where Issuer and Acquirer Bank are different. These transactions are routed via Payment Scheme switch.

In case of OFF-US transaction, the commercial pricing structure will consist of following components:-

- **Merchant Discount Rate (MDR)/Transaction Fee** payable by Merchant to Acquirer Bank is a fee charged by the Acquirer Bank to the Merchant for accepting payments from customers through credit/debit/prepaid card.
- *It is to be noted that in case of debit card, RBI has defined the guidelines with upper limit on MDR. In case of credit and prepaid card, it is as per the individual negotiation between the Acquirer Bank and merchant.* **Interchange Fee** payable by Acquirer Bank to Issuer Bank is the fee paid by the Acquirer Bank to card Issuer Bank for each card transaction. This fee will be as per the prevalent circular floated by card scheme from time to time.

Switching Fee payable by Issuer and Acquirer to Payment Scheme is the fee charged by card scheme to facilitate the inter-bank transactions. This fee will be as per the prevalent circular floated by card scheme from time to time.

For domestic offline POS transactions (NCMC wallet based transactions), MDR is maximum up to 0.90% and interchange is maximum up to 0.58%.



10 NCMC Ecosystem Pilot at Delhi Metro Rail Corporation (DMRC)

In order to showcase the entire NCMC ecosystem for digital fare collection along with indigenized Gates, AFC and Validators, the pilot has been done at Delhi Metro across few stations. The pilot at DMRC was initiated by MoHUA on Jan 31st, 2019. This has been done in collaboration with CDAC, BEL, NPCI and SBI (as an Acquirer Bank). Under this pilot, NCMC based Gates, Validators and AFC has been deployed across few stations of DMRC and RuPay Contactless Debit Cards with NCMC has been issued to a closed user group for testing. The settlement between Acquirer and Issuer Banks is being done by NPCI.

10.1 Roles & Responsibilities of Involved Stakeholders

The pilot implementation ecosystem consists of following stakeholders:-

Stakeholders	Roles and Responsibilities
DMRC	• DMRC is a public transport authority for implementing NCMC solution at identified metro stations in Delhi.
CDAC	• CDAC has provided the indigenous AFC system based on NCMC standards.
BEL	• BEL has provided the EMV compliant NCMC based validators and gates to support offline purchase transactions at metro station entry/exit gates.
Acquiring Bank	• SBI is the acquiring bank and responsible for presenting all online as well as offline transactions to NPCI for settlement.
Issuing Bank	• Issuing Banks are responsible for issuing cards through branches as per regular process.
NPCI	• NPCI is responsible for settlement of all the inter-bank transactions received from acquirer.

10.2 Key Highlights

a) Banks certified on RuPay Debit NCMC have issued cards to closed group users from CDAC, BEL, DMRC, NPCI and Issuer Banks' own employees.

b) Following transactions are being done at DMRC Metro stations under this pilot using NCMC cards issued by any certified banks:-

- Online Money Add transactions to top-up the Stored Value/Offline Wallet
- Online Service Creation transactions
- Offline purchase transactions using Stored Value at Metro station
- Offline balance enquiry to know the balance in Stored Value

10.3 Launch of One Nation One Card

Marking the beginning of a new era of payment segment, Hon'ble Prime Minister Narendra Modi launched **'One Nation One Card'** as a part of NCMC Eco-system in Ahmedabad on 4th March, 2019.

This card is based on RuPay NCMC specification and aimed at providing seamless digital payments across various use cases including metro, bus, suburban railways, toll, parking, smart city, retail and other use cases.

11 RuPay qSPARC based NCMC Proliferation Strategy

The first NCMC project went live in Jun 2017. Post that, many operators from Transit and Smart Cities segments have been on-boarded for NCMC based fare collection system or common card payment system. However, the penetration of NCMC card has not picked up significantly due to various challenges associated with involved stakeholders. In this regards, a holistic approach is required across target segments to enable the faster and higher penetrations of NCMC cards across India. With the key proposition of One Card for all Payments; the higher penetration of NCMC cards will help to drive the digital adoption in payment space across the country.

This section talks about the proliferation strategy in Transit, para-transit and retail segments to drive the adoption of RuPay qSPARC based NCMCs at a faster pace in an effective manner. This requires the cohesive support from all involved stakeholders including Operators/Merchants, Financial Institutions, Payment Scheme Network and Government.

11.1 Transit Segments

This segment covers various public transport systems including metro, buses and suburban railways. As described in Section 6 of this document, NCMC implementation across these public transport systems include following key aspects:-

- **AFC system including backend and Terminals/validators/ETIM devices as per NCMC specification** – Currently, Operators are managing the fare collection system either in-house or through AFC system provided by System Integrator. For operators managing the AFC system through System Integrator, the NCMC implementation requires up-gradation as per NCMC specification and Interface specification on NCMC Ecosystem (Part IV-VII). Whereas, for operators managing the AFC system in-house, the AFC system need to be developed accordingly and should support the transactions done using RuPay qSPARC based NCMCs.
- **NCMC certified partner banks** as an Acquirer Bank and Instant Issuer Bank (if required)

The roles & responsibilities of involved stakeholders for NCMC proliferation across Transit segments are as covered in this section.

11.1.1 Role of Operators

The approach of operators will be driven by the project type – Greenfield or Brownfield projects, as described below.

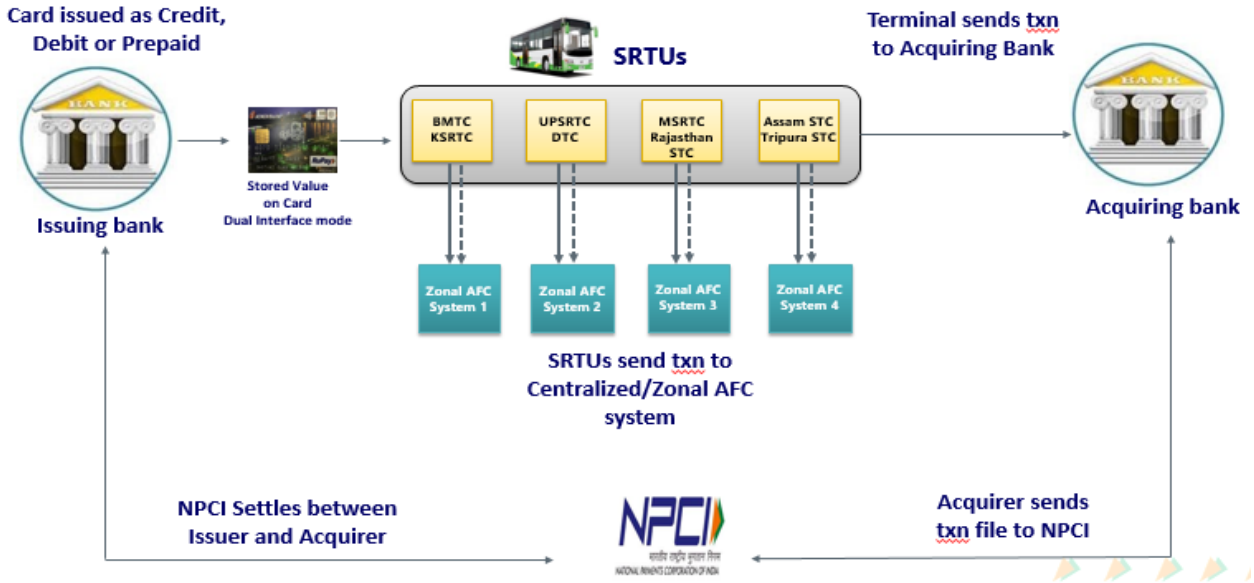
- **Greenfield Projects** – These are new projects built from scratch and it does not have the constraints in terms of legacy infrastructure. These projects require fresh procurement of devices, software and fresh installation of set up. The upcoming BRTS/Urban mobility Projects are covered under such projects. **For all such projects, the operator should directly go ahead with the implementation of digital fare collection in line with NCMC specification and Interface specification of NCMC Ecosystem (Part IV-VII)**. This would enable the NCMC

acceptance from day 1 and also avoid any financial implication to the operator on account of existing system up-gradation to NCMC based system at a later stage.

- For Greenfield projects, the operator should procure the devices including terminal/validator/ETIM devices as per NCMC specification and Interface specification of NCMC Ecosystem (Part IV-VII). .
- For acquiring and card issuing purpose, the operator should follow the multi-banks acceptance scenario (as described in Section 6) wherein the customers should be able to use RuPay qSPARC based NCMCs issued by any bank.

- **Brownfield Projects –** Such projects are operational & carry the legacy of closed loop ecosystem. The NCMC implementation in such projects require the replacement/up-gradation of existing terminal/validator/ETIMs as per NCMC specification. This may involve certain investment on account of infrastructure up-gradation. Government support for such projects will help to expedite the NCMC proliferation in this segment.
  - **For all such projects, the future extensions should be done in line with NCMC specification.**
  - Operators should discuss with existing vendors for up-gradation of existing devices to enable NCMC acceptance. PTO may also consider the replacement of existing devices with NCMC compliant devices in phase wise manner with buyback of existing devices.
  - For acquiring and card issuing purpose, the operator should follow the multi-banks acceptance scenario (as described in Section 5) wherein the customers should be able to use RuPay qSPARC based NCMCs issued by any bank.
- **Concept of Centralized/Zonal AFC –** At present, the operators have deployed the AFC infrastructure at the individual level. The AFC infrastructure deployment may not be possible for small scale operator on account of the cost involved. The provision for Centralized/Zonal AFC will help to enable the acceptance of RuPay qSPARC based NCMCs across all public transport operators (small as well as large scale).

  The model architecture for Centralized/Zonal AFC in case of SRTUs has been shown below.



In case of Centralized AFC System, there will be a single AFC System across all SRTUs. This will act as a plug n play system for all SRTUs. In case of Zonal AFC System, the AFC System will be at the regional or zonal level. This will act as a plug n play system for all SRTUs under that region. This Zonal AFC System may be managed by a representative SRTU of the respective region.

Centralized/Zonal AFC model offers the savings on account of AFC system deployment cost by individual operators. This will also offer the matured system with best practices across various operators. This will further help in faster implementation of digital fare collection.

11.1.2 Role of Banks

All Banks need to support the vision of NCMC implementation from issuance and acquiring related aspects based on multi-banks acceptance scenario as detailed out in Section 5 of this document.

- **Banks certified on NCMC platform should issue NCMC Debit/Credit cards as default debit/credit cards to the customers**. To start with, Bank should go ahead with RuPay debit/credit card issuance in cities where NCMC based transit projects are operational or under implementation. This needs to be further extended across all potential cities of India. This will help to eliminate the extra effort by PTO or partner bank on account of transit project specific card issuance.
- The transaction charges payable by PTO to the Acquirer Banks should be nominal and in line with Industry practice. Customer should not be burdened with extra cost for issuance of cards.

11.1.3 Role of Card Scheme

The role of card Scheme will involve following key activities:-

- Certification of payment related components like Card, terminal and banking infrastructure
- Settlement of inter-bank transactions done using RuPay qSPARC based NCMCs.

- Provide hand-holding support to all operators for NCMC implementation.
- Interaction with involved stakeholders in the transit ecosystem and onboard them for NCMC specification.

11.1.4 Role of Government

The government has a key role in enabling the NCMC proliferation across the country by providing implementation mandates and financial support to all transit project operators.

- **Mandates to Transit Operators** – As Government already **communicated to all transit operators for NCMC adoption**, implementation should be the focus. The approach can be: below:-
    - For Greenfield projects, the operator should deploy all the required infrastructure as per NCMC specification and Interface specification of NCMC Ecosystem (Part IV-VII) and ensure the digital fare collection based on NCMC based open loop cards. The model should be based on multi-banks acceptance scenario wherein the customer may use RuPay qSPARC based NCMCs issued by any Bank.
    - For Brownfield projects, the operator should ensure the future extensions in line with NCMC specification. Also the up-gradation of existing system should be planned in a time-bound phase-wise manner.
- **Financial Support to Transit Operators** – In view of the financial conditions of operators across the country, the **government should consider provision of the financial support to concerned operators to ensure the NCMC proliferation across the country**. The financial support may be provided on following items:-

Particulars	Greenfield Projects	Brownfield Projects
AFC Deployment	-	• Required for operators managing the fare collection in-house and not having AFC system • Centralized/Zonal AFC system may be a potential solution for operators across the country
Terminal/Validator/ Device Up-gradation	-	• Cost involved in up-gradation/replacement of existing devices with NCMC compliant devices
Subsidy on MDR/ Transaction Charges	• Subsidy on transaction charges payable by Operator to Acquirer Bank	• Subsidy on transaction charges payable by Operator to Acquirer Bank for

payable by Operator to Acquirer Bank	for transactions done using RuPay qSPARC based NCMCs for a defined period	transactions done using RuPay qSPARC based NCMCs for a defined period

- **RBI KYC norms for Transit Segments** – Basis the customer profile using the transit segments, there are significant number of customer who do not fulfill the criteria of Full KYC/Minimum KYC norms as per RBI regulation. Hence, the NCMC adoption is not getting proliferated across these customer segments. In view of the same, there is a need to relax the KYC norms for such customer segments. This segment may have a reduced upper limit on total transaction value as compared to that of minimal/full KYC customers. These customers may further get upgraded to minimum/full KYC based on applicable RBI KYC norms.

11.2 Retail Segments

With the proposition of 'National Common Mobility Card', RuPay NCMC has a huge potential for retail segment. As per RBI existing KYC norms, these cards may be used in contactless mode without 2nd factor authorization for transaction value up to INR 2000. The contactless offline feature further enable the customers to make the payment in offline environment within less than a second. This has the unique proposition for modern retail stores getting huge footfalls as well as small retail stores looking for minimal transaction time without dependency on network connectivity.

The penetration of RuPay NCMCs in this segment will help to drive the NCMC proliferation in the entire ecosystem. Further, the card penetration in this segment will help in adoption of RuPay qSPARC based NCMCs in transit segments as well without any transit project specific issuance.

This requires the support from all involved stakeholders as mentioned below:-

11.2.1 Role of Merchant

- Merchants should enable the acceptance of RuPay NCMCs at their stores through their partner acquirer banks.
- The Service Area feature of RuPay NCMCs may be leveraged by merchants to drive the special loyalty programs, membership programs for customers. This would enable usage of RuPay NCMCs in retail at large scale.

11.2.2 Role of Banks

- Banks should get their Issuing host and Acquiring host system certified as per NCMC specifications.
- **Banks should issue Rupay Debit/Credit cards as default Contactless Debit/Credit cards.** This would enable the customers to use their existing Rupay Debit/Credit cards for all low value payments in retail stores as well as other use cases. This will eliminate the need of specific issuance of NCMC cards for any identified use case.

- Banks should promote the acceptance of RuPay NCMCs across their partner modern retail outlets. They should also promote the acceptance of RuPay NCMCs across their large/medium/small merchants.

11.2.3 Role of Card Scheme

- Certification of payment related components like Card, terminal and banking infrastructure
- Settlement of inter-bank transactions done using RuPay NCMCs.
- Handholding support to involved stakeholders including Banks and merchants for creating the ecosystem for NCMC.

11.2.4 Role of Government

- **Financial support in the form of promotional offers to customers as well as merchants** in order to drive the usage and activation of RuPay qSPARC based NCMCs.
- Further, RuPay NCMC may be leveraged for issuance of Smart Cards/Payments Cards against various government provided services e.g. Jan Dhan Yojna, Driving License, PDS/Ration Card etc.
- The Service Area feature of NCMC may also be leveraged to provide targeted Government Incentives e.g. medicines, books, travel passes etc.

11.3 Smart City Segments, Toll and Parking

As of now, there are more than 100 cities which have been selected for smart cities projects. Digital payment ecosystem is a key part of these smart cities projects. In this regard, smart cities are implementing common card payment system which would provide citizens single card for making all sort of payments across all use cases in the city including civic as well as non-civic payments. MoHUA has already issued an advisory to Smart Cities for adopting NCMC based common card payment system. However, it needs to be pushed further for the implementation purpose to drive the proliferation in this segment.

Toll and Parking segments which are highly driven by cash and have huge potential for digital payments. These are mostly unorganized and at a very nascent stage from the aspects of digital payments. NCMC proliferation in these segments will be driven gradually by its acceptance across all other segments as highlighted above. This will further get the **synergy from involvement of Municipal Corporation/Smart City bodies for NCMC based implementation for Smart Parking projects.**

11.3.1 Role of Smart City and Toll Operators

- **Smart City and Toll operators should implement NCMC based common card payment system** for multiple use cases (civic, retail, transit, para-transit etc.) in the cities. This will help to provide an interoperable and vendor agnostic digital payment solutions leading to higher digital adoption.

- The operator should procure the devices including terminal/validator/ETIM devices as per NCMC specification and Interface specification of NCMC Ecosystem (Part IV-VII).
- For acquiring and card issuing purpose, the operator should follow the multi-banks acceptance scenario (as described in Section 5) wherein the customers should be able to use RuPay qSPARC based NCMCs issued by any bank.

11.3.2 Role of Banks

All Banks need to support the vision of NCMC implementation from issuance and acquiring related aspects based on multi-banks acceptance scenario as detailed out in Section 5 of this document.

- Banks certified on NCMC platform should issue Rupay Debit/Credit cards as default debit/credit cards to the customers. To start with, Bank should go ahead with Rupay debit/credit card issuance in smart cities which are operational or under implementation. This needs to be further extended across all potential cities of India. This will help to eliminate the extra effort by Smart City or partner bank on account of project specific card issuance.
- The transaction charges payable by Authority to Acquirer Banks should be nominal and in line with Industry practice. Customer should not be burdened with extra cost for issuance of cards.

11.3.3 Role of Card Scheme

- Certification of payment related components like Card, terminal and banking infrastructure
- Settlement of inter-bank transactions done using RuPay qSPARC based NCMCs.
- Handholding support to involved stakeholders including Banks, Smart City operators and ecosystem vendors for NCMC proliferation.
- Banks should leverage their existing NETC association with the Toll Operators and handhold them to enable the acceptance of RuPay qSPARC based NCMCs at the toll plaza.

11.3.4 Role of Government

- In order to promote the NCMC across Smart City segments at a faster pace, **Government should issue mandates to all Smart Cities operators for implementation of Common Card Payment System based on NCMC specification and Interface specification of NCMC Ecosystem (Part IV-VII).**
- **At state level, a common payment standard based on NCMC should be adopted by all smart cities of that state.** This would reduce the repetitive effort and implementation timeline to a great extent. In this regard, state urban development authority may play a vital role as most of the smart cities at state level are funded by these authorities.

12 Further Information and Clarification

Please contact Mr. Nalin Bansal, Head-RuPay, NCMC & NFS, NPCI (Contact number – 9810603372, email – rupay@npci.org.in, nalin.bansal@npci.org.in) for further clarifications and NCMC implementation.

You may also visit https://www.npci.org.in for more information.

13 Annexures

Please find below all the annexures:

Ministry of Urban Development Smart Cities Mission

Advisory No. 9 **8th June, 2017**

Sub: Standards and Specifications of National Common Mobility Card

The National Urban Transport Policy under the Ministry of Urban Development envisages a single fare media over all systems of public transport for Interoperable Fare Management System (IFMS). This single fare media will bring a seamless travel connectivity across different modes of transport and different operations across different cities in India. The main features of the proposed system are:

- Interoperable Common Mobility Card across modes of transport and cities
- Convenience and seamless experience for commuter
- Economics of scale to bring down costs compared to solo efforts of Public Transport Organizations.

2. The IFMS supports for fare payment on Buses, Metro, Monorail, and Ferry etc. for various public transport organizations across the country. The IFMS shall be designed to be accepted in

- All kinds of Public Transport like railways, light rail, taxi, auto etc.
- Para-transit and non-transit services (Parking, Toll, Taxis, Autorickshaws, etc)
- Other merchant payment like utility bills, taxes, etc.

3. To facilitate roll out of IFMS, Ministry of Urban Development constituted a committee to develop standards and specifications for National Common Mobility Card (NCMC). The report of the committee recommending standards and specifications of the NCMC is available on the link given below.

http://moud.gov.in/upload/uploadfiles/files/CommitteeReportofNCMC03.pdf

4. All the Smart Cities are advised to follow the standards and specifications recommended by the committee in the above report for implementation of proposals for roll out of Smart Mobility Cards in the respective cities.

Annexure B

भारत सरकार
Government of India
इलेक्ट्रॉनिकी और सूचना प्रौद्योगिकी मंत्रालय
Ministry of Electronics & Information Technology
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Gopalakrishnan S., IAS
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दूरभाष / Tele:
अ॰ स॰ पत्र स॰
D.O.No. No. 12(39)/2017-DPD

दिनांक / Dated 04.04.2018

Sub.: Enabling Open Loop Digital Payment Systems in Public Transport

Sir/Madam,

Government of India is making efforts for promoting a less cash economy and to provide the facility of seamless digital payment to all citizens of India in a convenient manner.

2. Public transport including State Road Transport Undertakings (SRTUs) and Metros has a huge potential to upscale the digital payments due to their massive consumer base. Successful adoption of digital payment in this sector is crucial for overall adoption of digital payment throughout the country. Hence, it is necessary to provide a simple, convenient, fast and easily accessible payment solution to the customer.

3. Open loop contactless card based on Near Field Communication (NFC) is an ideal solution to expedite adoption of digital payment in Public Transport. This provides a significant opportunity to all the Public Transport Operators (PTOs) to enable digital payment acceptance infrastructure in an economic manner.

4. The advantages of open loop smart card are as follows:

i. As open loop acceptance devices are based on open interoperable standards, there are multiple vendors available for payment acceptance devices, which provide an opportunity for cost and service negotiation.

ii. Public Transport Operators can minimize their cost involved in maintenance of infrastructure and manpower for card issuance, Top up, card replacement and refunds, as open loop cards can be issued by multiple partner banks.

iii. These cards can also be issued in form of prepaid cards, which will provide confidence to the customers for wider adoption of digital payments, due to inherent capping of risk in prepaid cards.

iv. It can be interoperable across modes of transport and Cities. It is convenient and provides seamless experience for commuters.

v. Open loop cards provide the opportunity for customers to get reward points from partner banks, as provided in case of Debit and Credit cards.

5. Digital payment in public transport has clear economic advantages due to minimization of operational cost and elimination of the cash handling charges. This will further ensure accurate and timely reconciliation and will enable operational efficiencies, due to analytics made possible by data unlocked by digital payment.

6. It may be noted that National Payment Corporation of India (NPCI) has already conducted successful launch of open loop National Common Mobility Card (NCMC) card (Concept Note attached as Annexure B). Please contact Mr. Nalin Bansal, Vice President and Head - RuPay Contactless, NPCI (Ph: 9810603372 email: rupay.contactless@npci.org.in, nalin.bansal@npci.org.in) for any further clarifications.

7. In view of above, all the Public Transport Operators are requested to adopt open loop NCMC cards. Advantages of open loop smart card (Annexure A) and Concept Note on NCMC implementation (Annexure B) has been enclosed for reference.

With regards,

Yours faithfully,

(Gopalakrishnan S.)

Encl.: As above

To:

1. Administrative head of SRTUs of all States/UTs
2. Administrative head of all Metro Rail Systems
3. The Secretary, Ministry of Road Transport and Highways
4. Chief Secretaries of all States/UTs

Copy To:

1. The Secretary, Ministry of Housing and Urban Affairs
2. The Chairman, Railway Board
3. CEO, NPCI
4. Mr. Nalin Bansal, Vice President and Head - RuPay Contactless, NPCI

Annexure C

भारत सरकार
Government of India
इलेक्ट्रॉनिकी और सूचना प्रौद्योगिकी मंत्रालय
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दूरभाष / Tele:

अ० स० पत्र स०
D.O.No. No. 12/(57)/2017-DPD (Pt.1)

दिनांक / Dated 14.03.2019

Sub.: Proliferation of National Common Mobility Card (NCMC) for enabling Digital Payments

Sir/Madam,

Hon'ble Prime Minister has recently launched National Common Mobility Card (NCMC) to provide an easy, convenient, fast and fail-proof method of digital payment to the citizens for all routine low value transactions including public transport and retail. The idea is to enable a single interoperable digital payment mode in all the Metros, Railways and Bus services along with retail to fulfill the vision of 'One Nation One Card'.

2. NCMC has the potential to transform the digital payment landscape in the country by universalization of digital payments due to its inherent features. NCMC has unique stored value feature which makes it an ideal solution for Metro/Bus ticketing, Toll Plazas, Parking and Retail in rural/sub-urban areas, as it can operate in areas with limited network connectivity. Further, it is also feasible to provide targeted Government incentives such as medicines, books, travel passes etc. through NCMC.

3. The following steps may be considered by all concerned stakeholders to expedite the adoption of NCMC:

i. All Metro Rail Systems, SRTUs and Urban Bus services may adopt open loop NCMC cards instead of close loop implementation, at the earliest
ii. All monthly passes/season tickets may be issued on NCMC
iii. All organized retails including **Oil Marketing Companies (OMCs),** Kendriya Bhandar, Khadi and Village Industries Commission (KVIC) outlets etc. may adopt open loop NCMC for payments and loyalty benefits
iv. Discount may be provided for bus/metro travel through NCMC
v. Deployment of NCMC enabled PoS devices for accepting digital payments in Toll Plazas on cash lanes, may be considered
vi. All Banks may plan to upgrade existing NFC PoS devices in retail to enable acceptance of NCMC in offline contactless mode
vii. All new PoS devices to be commissioned by Banks to be capable of accepting payment from NCMC in offline contactless mode
viii. Banks may strictly comply with DFS circular No. 6/21/2012-FI(C-54424) dated 21.08.2018 (enclosed) whereby all Banks have been requested to ensure that all **new credit/debit cards (recarding included)** may be equipped with NCMC functionality (offline wallet)

ix. Banks may co-ordinate with all organized sectors including **Government Organizations/ Public Sector Undertakings** and Schools/Colleges for bulk issuance of NCMC

x. Banks may develop easy process for citizens to obtain NCMC card

xi. Banks, SRTUs, Urban Bus services, Metros and Toll Plazas may actively publicize NCMC promotional content on their websites /Apps /Buses /Metros /Toll Plazas etc.

4. All entities are requested not to design or opt for closed loop systems that may be restrictive from consumer's point of view, and to support open implementation of NCMC, which is crucial for wider adoption of digital payments. This will enable NCMC card issued by any bank to be accepted in any NCMC enabled Public Transport and retail PoS devices.

5. Concept Note on NCMC implementation has been attached herewith for reference. Action taken in this regard may be informed to MeitY.

6. Kindly feel free to contact following officials for any further clarifications:

- Shri Nalin Bansal, Head RuPay, NCMC & New Business, NPCI (email: nalin.bansal@npci.org.in, phone: +91-9810603372)
- Shri Ajay Chandrakar, Scientist C, MeitY (email: chandrakar.ajay@meity.gov.in, phone: +91-8860173395)

With regards,

Yours faithfully,

(Gopalakrishnan S.)

Encl.: As above

To:

- Administrative Heads of all Banks
- Urban Secretaries of all States/UTs
- Transport Secretaries of all States/UTs
- Administrative Head of SRTUs in all States/UTs
- Administrative Head of Urban Bus Services in all Cities
- Administrative Head of all Metro Rail Systems
- Administrative Head of all Organized Retail Organizations
- Administrative Head of all Oil Marketing Companies

Copy To:

- Secretaries of all Ministries/Departments, Government of India
- The Chairman, Railway Board
- Chief Secretaries of all States/UTs
- IT Secretaries of all States/UTs
- Shri Dilip Asbe, MD & CEO, NPCI

Annexure D

भारत सरकार
Government of India
इलेक्ट्रॉनिकी और सूचना प्रौद्योगिकी मंत्रालय
Ministry of Electronics & Information Technology
इलेक्ट्रॉनिक्स निकेतन / Electronics Niketan
6, सी जी ओ कॉम्प्लेक्स / 6, C G O Complex
नई दिल्ली-110003 / New Delhi-110003
Website: www.meity.gov.in

Gopalakrishnan S., IAS
Joint Secretary
दूरभाष / Tele: Tel.: 24363075
Email: js.gopal@meity.gov.in

अ॰ स॰ पत्र स॰
D.O.No. No. 12(57)2017-DPD(Pt. 1)

दिनांक / Dated 02.08.2019

Sub.: Enabling digital payment in Metro Rail services

Sir/Madam,

Promotion of Digital Payments is a top priority of the Government of India. Ministry of Electronics & IT (MeitY) has been entrusted with the responsibility of promotion of digital payments and is coordinating with all the stakeholders for promotion of Digital Payments.

2. Metro Rails in India have become a significant mode of public transport and have seen considerable increase in the transactions for purchasing tickets and recharging smart cards. Enabling Digital Payments on the Metro Rail Website/ Mobile App and Ticket counters is essential for wider adoption of Digital Payments.

3. All the Metro Rail organisations in the Country are hereby requested to consider the following steps for promotion of Digital Payments:

a) Enabling BHIM UPI QR code (static/ dynamic) in ticket/card recharge counters for receiving payments by 'scan and pay'
b) Provisioning of open loop National Common Mobility Card(NCMC) for enabling digital payment in metros
c) Enabling metro rail website/mobile app to receive payments from BHIM/UPI, credit/debit card (including Rupay), dynamic UPI QR code and Internet banking
d) Promotion of BHIM QR and NCMC in metro stations through creatives and other appropriate modes
e) Integration with banks/payment service provider (PSP) apps for easy ticket purchase and smart card recharges through BHIM/UPI

4. We look forward to your co-operation for enabling digital payment in Metro Rail services.

With regards,

Yours sincerely,

(Gopalakrishnan S.)

To:

- Administrative Head of all Metro Rail Systems in India

Copy To:

- The Secretary, Ministry of Housing and Urban Affairs

Digital India
Power To Empower

स्वच्छ भारत
एक कदम स्वच्छता की ओर

ELECTRONICS INDIA
Billion Needs Million Chips