

NPCI/UPI/OC No. 18 / 2016-17

To,

All Member Banks, Unified Payments Interface (UPI)

Dear Sir / Madam,

**Subject: Bank Compliances to enable UPI Merchant ecosystem**

- 1) Unified Payment Interface was launched to reform the Merchant payment ecosystem. Banks are formulating multi-prong strategies to enable merchants on UPI platform and have been instrumental in popularizing this product by offering innovative solutions across industries.
- 2) NPCI had issued guidelines to member Banks for merchant on-boarding. Whilst the guidelines have been adhered by the Banks however it has been observed that there are challenges with respect to customer experience and Merchant adoption.
- 3) It is identified that there is lack of uniformity across PSPs with respect to product design and functions, thus limiting widespread product adoption.
- 4) This Circular briefs about following product functions and essentials for Merchant payments. The details are given here as an Annexure.
  - a) Functional uniformity in QR based merchant solutions
  - b) Uniformity in Android Intent function in UPI payments
  - c) Implementation of Manage & List VAE (Virtual address entries) APIs
  - d) Other Specific requirements to ensuring seamless Merchant payments
  - e) Merchant on-boarding related standardisations
- 5) Member Banks are requested to comply to the requisites mentioned above and **confirm on or before 21st Apr 2017** to NPCI at - [Sarika.sorte@npci.org.in](mailto:Sarika.sorte@npci.org.in), [Amaya.pande@npci.org.in](mailto:Amaya.pande@npci.org.in)

For queries related to the above circular please contact the following;

- a) Maria Francis – 9819366126
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Yours truly,



Dilip Asbe  
Chief Operating Officer

## Annexure

### A. QR Related

**Objective:** Functional Uniformity in QR based merchant solutions:

#### 1.) Challenges with the current implementations (Based on observations & live scenarios):

- Bank PSPs scanning QR codes, fail to pass parameters populated by initiating PSPs or Merchant apps/web.
- The Bank PSP apps have built in business logics to read QR codes by defining MCCs. This may lead to transactions being declined in case of MCC = '0000'(P2P).
- There is an imminent need to populate few critical business parameters like MCC, Transaction reference number (tr) and Amount (am) while generating Dynamic QR.
- In case of Static QR wherein the Transaction reference number (tr) is not generated, the Bank PSPs scanning such QR are not able to populate and pass the parameters.

2.) Impact: Lack of uniformity in the PSP app functionality may lead to poor customer experience across eco system, resist wide merchant adoption and may lead to reconciliation challenges and payment confirmation.

#### 3.) Responsibility of the member Banks in the UPI ecosystem:

- The Acquiring PSP should ensure that the following critical business parameters for Dynamic or Static QR code.

**<TABLE 1> - QR (Key Deep Linking parameters)**

Critical Parameters	Description	As per 'Deep linking specs'	Revisions		Remarks/ Rationale
			Dynamic QR	Static QR	
Pa	Payee virtual payment address	M	M	M	For address resolution
Pn	Payee Name	M	M	M	To identify verified Entity/ Merchant name
Tr	Transaction Ref No. (upto 35 digits)	C	M		Merchant reference number for Reconciliation
Am	Amount	O	M		Value of financial transaction (Non-editable)
Mam	Minimum amount	O	C		Minimum amount to be paid, different from transaction amount (Editable)

PN: Mentioned above are only the critical parameters for Merchant transactions. There are other additional parameters which are optional and can be referred to, from the Deep Linking Specs provided to member banks.

- It is a prudent norm that elements present in QR are scanned and passed back to the issuing app. PSPs should not apply any preferred criteria in this regard.





- c) The bank PSPs should read and process all QR codes generated irrespective of whether it is a merchant QR code (P2M with specific MCC) or individual QR code (P2P with MCC '0000').
- d) The mandatory parameters passed in the message string for dynamic QR should be **non-editable**. However, in case of static QR code the amount may be input by the customer.
- e) If the **Minimum amount (mam)** parameter is present, then the amount field should be **editable**. However, the amount field will be non-editable if the 'mam' parameter is absent.
- f) It is mandatory for Acquiring PSP to populate Transaction Reference No. (tr - upto 35 digits). However, in case of static QR code (tr is not populated) the PSP app scanning the QR code must populate the Transaction Ref. No. and pass the parameter.

## B. Intent Related

**Objective:** Uniformity in Android Intent function in UPI payments:

1. Present broad challenges with respect to intent in Merchant Ecosystem:
  - a) In some instances, Bank PSP apps & UPI compliant merchant apps are not responding to intent call initiated by Merchant apps.
  - b) IN other instances, Merchant apps initiating Intent are unable to receive confirmation of payment or status of the transaction.
  - c) PSP apps responding to intent;
    - With App passcode, are unable to handle or progress with transaction (Apps may crash),
    - Post transaction completion the PSP app fails to pass back the control to initiating merchant app.
2. Impact: Lack of uniformity across ecosystem on Response to Intent function can lead to poor customer experience, poses fundamental business challenges w.r.t transaction failure, reconciliation and payment realization, impacts merchant confidence and adoption.
3. Intent protocols & recommendations for PSP Banks & Merchant Apps:
  - a. Merchant initiated intent call should mandatorily include the details as per <TABLE 1> above as part of the key Deep linking parameters. Following may be additionally noted:
  - b. If the Minimum amount (mam) parameter is present, then the amount field should be editable. However, the amount field will be non-editable if the 'mam' parameter is absent.
  - c. PSP apps/ SDK integrated UPI compliant apps should respond to the intent call initiated by a Merchant app and confirm the transaction status with the following mandatory parameters;



Mandatory Parameters	Description	As per 'Deep linking specs'	Revisions	Remarks/ Rationale
txnId	Transaction ID (35 digit)	O	M	Unique transaction identifier on UPI switch
TrtxnRef	Transaction Ref No. (upto 35 digit)	O	M	Customer reference number for Reconciliation & Disputes
Status	Success/ Failed	O	M	To confirm the transaction status
responseCode	'00' for success or any other appropriate response code for decline	O	M	To verify the reason for decline

*PN: Mentioned above are only the critical parameters for Merchant transactions. There are other additional parameters which are optional and can be referred to, from the Deep Linking Specs provided to member banks.*

- In response to the intent raised by merchant app, PSP apps/ SDK integrated UPI compliant apps should read the string and display the parameters of the string in a non-editable view.
- Upon customer confirmation the app should re-direct the customer to NPCI CL page for UPI PIN input.
- Post transaction completion, the PSP apps/ SDK integrated UPI compliant apps should provide the intent response to Merchant app and pass on the control to merchant app along with mandatory response parameters.

#### C. Merchant Whitelisting related

**Objective:** Implementation of Manage & List VAE (Virtual address entries) APIs - UPI product facilitates 2 APIs to whitelist and publish UPI verified merchants.

- Banks acquiring merchants for UPI payment mode must whitelist merchants using manage VAE API, to publish their list of verified merchants. Thus, promote and encourage merchants to adapt UPI payment option.
- All UPI PSP apps must use List VAE API to download and store UPI verified merchants. Thus, build confidence in customers to use UPI as a preferred mode of payment at these merchants.

#### D. Other Specific requirements

**Objective:** Ensuring Seamless Merchant payments:

- In case of Collect request initiated from any PSP or merchant website, the details passed by the PSP in the 'transaction note' tag should be non-editable and passed on by the receiving PSP. It should also be displayed to the customer on the payment app.





2. The merchant name fetched by the Acquiring PSP during vpa resolution **should always be the verified name from the issuer CBS.**
3. For push transactions initiated to a merchant VPA, wherein 'MCC' & 'Type' is absent or incorrectly populated in Payee tag, it is observed that the Acquiring PSP fails to identify this anomaly and thus fails to resolve the vpa with correct merchant credentials. This will lead to reconciliation issues, since the transaction will be treated as P2P and issues in interchange computation.
  - i. Thus, the Acquiring Bank while resolving the VPA for its merchant must check for 'MCC' & 'Type' parameters
  - ii. They should also verify these parameters with the actuals (MCC & Type) captured at the time of merchant on-boarding.
  - iii. In case of absence or discrepancy in these parameters the Acquiring bank must replace these parameters or populate the correct parameters accordingly.
4. It is observed that Banks are responding with default or dummy IFSC (only 4 digit) in Payer tag. IFSC is imperative for businesses like Insurance & Capital markets for address resolution purpose and refunds, hence the **banks must populate complete 11 digit IFSC.**
5. Collect request raised by merchants on-boarded through Aggregators, should display the Merchant name in the collect notification to customer.
6. Some Banks partnering with Aggregators are populating static MCC, for all merchant transactions. Banks are expected to populate merchant specific MCCs.
7. Banks to note the following for QR generation & Intent:
  - While generating an intent/QR string, 'space' has to be represented by '%' and while reading an intent, '%' has to be replaced with 'space' by the UPI app.
  - For example, remarks entered by user "test transaction" shall generate intent message as "tn=test%transaction" and when read by UPI app, % should be replaced with 'space'.

#### E. Merchant On-boarding related

**Objective:** Standardization

1.) Merchant Onboarding Report: Banks Acquiring merchants on UPI should provide below details fortnightly by 15<sup>th</sup> & 30<sup>th</sup> of every month for the next 4 months only;

Bank name	Aggregator name/ Merchant Name	Sub-merchant name (in case of Aggregators)	MCC populated	Integration Type (Web Collect/ SDK/ intent )	Type of Services offered (P2P/ P2M or Both)

- 2.) Banks must provide the following for all Merchants on-boarded through SDK route;
  - i. Network Architecture for merchant integration.
  - ii. UPI App checklist stamped and signed by the Bank.
  - iii. External security audit report and compliances for SDK Third Party Audit report and merchant/ PSP provider application (As mentioned in Circular 15A)
  - iv. Bank Assurance letter with the following;
    - ✓ Accuracy and completeness of scope coverage and compliances to findings of security audit report. (As mentioned in Circular 15A)
    - ✓ Merchant details: Merchant name, App ID, Payee vpa, MCC

