Philippine P2M QR Code Merchant Account Information Standard

Revision 1.5

CONFIDENTIAL

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1.	EMVCo QR Code Specification for Payment Systems – Merchant-Presented Mode version 1.0 *www.emvco.com/emv-technologies/qrcodes/*

Revision History

Date of Working Group Meeting	Activity	Output Version
March 14, 2019	ACH Direction Setting for QR Code P2M version	Draft Version 0.1
May 30, 2019	Tech WG Internal Review of Specifications	Draft Version 0.2
August 2, 2019	Tech WG Review with Scheme Partners	Draft Version 0.3
August 19, 2019	Internal Review comments from Scheme for decision of the Tech WG	Draft Version 0.3 – 2nd release
August 20, 2019	Tech WG Review and Finalization	Definitive Version 1.0
December 3, 2019	Tech WG updated definition for Globally Unique IDs to differentiate merchant from micro and from biller. Reverse URL shall also start with "ph". Elaborated on the use of Template ID 88 for RFI required Bill subscriber information in the QR Code.	Definitive Version 1.1

Date of Working Group Meeting	Activity	Output Version
April 24, 2020	Apply the BSP comments accepted as indicated in the Yellow Table	Initial Draft version 1.2
April 30, 2020	PPMI and ACH Meeting to review the BSP Comments and the initial responses. As agreed, all the accepted suggestions of BSP shall be applied.	Draft version 1.3
May 12, 2020	Updated definition of Merchant and added Micro Merchant	
December 2, 2020	Added the list of Special Characters for datatype defined as ANS that can be used for QR template id with special character format	Draft version 1.4
December 28, 2020	Tech WG Review and Finalization	Definitive Version 1.5

1. Introduction

1.1. Scope

This document details the Merchant Account Information specific to the Philippine Person-to-Merchant or P2M QR Code Merchant presented implementation. It defines the proposed fields for agreement and adoption by the QR Code Technical Working Group of the Philippine Payment Management, Inc. or PPMI.

Merchant/Receiver QR Codes may include more than one (1) Merchant Account Information Template but at least one (1) such template must always be present. For the Philippine setting, the P2M Merchant Account Information's conditional, mandatory and optional fields for the P2M services shall be defined separately from the P2P QR Code information.

For purposes of this document, only the QR Merchant Account Information shall be discussed. If needed in the discussion below, QR Code standard references shall be referred to the Philippine QR Code Standard for P2M document.

1.2. Audience

The document is intended for the use by all participants of the Clearing Switch Operators (CSOs) of the Automated Clearing Houses (ACH) under the Philippine National Retail Payment System (NRPS). It aims to guide them on the implementation tasks and activities needed to support and integrate the P2M service in their respective systems.

1.3. Definitions, Acronyms, and Abbreviations

Below are terms and definitions that will aid in the understanding of this document:

Term	Description
ACH	Automated Clearing House (ACH) is a multi-lateral legally binding agreement that lays down the clearing and participation rules for a particular payment stream to facilitate electronic fund transfers among its participants[1]
Acquirer	Corresponds to the Receiving Financial Institution or RFI when used in the context of Person-to-Merchant (P2M) services
BIC	Bank Identifier Code
BSFI	BSP-Supervised Financial Institution
CSO	Clearing Switch Operator
Issuer	The Financial Institution that holds the customer account to be debited in order to initiate the credit

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[1] *This definition is lifted from BSP web site – www.bsp.gov.ph/payments/nrps_framework.asp*

Term	Description
	payment transaction. It also refers to the Originating Financial Institution (OFI).
NRPS	National Retail Payment System (NRPS) is a policy or regulatory framework that aims to provide direction in carrying out retail payment activities through BSP supervised financial institutions (BSFIs) by defining high level policies, principles, and standards, which when adopted, would lead to the establishment of a safe, efficient and reliable retail payment system. [2]
QRC / QR Code	Quick Response Code is the trademark for a type of matrix bar code containing more data. A standard QR Code format shall be defined for all participating BSFIs to support QR related transactions.
QR Pay	Refers to the Payment Transfer Transaction that used the QR Code as a form factor
P2M	Transaction between Person to Merchant. The Merchant referred to in this term corresponds to any registered and established institution with an acquiring relationship with its bank of account that provides goods and/or services to customers in exchange for a specific payment amount.
P2micro	Refers to the transaction between person and a micro merchant
Payment Network or Payment System Network	Refers to the grouping of Issuers, Switch and Acquirers and their respective systems that enable the processing of payment transactions based on specific rules of the network scheme, i.e. Mastercard, Visa, UPI or the Philippine Proprietary scheme
PPMI	Philippine Payment Management, Inc.
Sender / Payor	Customers of BSFIs (Issuer) who will initiate the fund transfer to the Receiver's account from the same or different bank.
Receiver / Payee	Customer of BSFIs (Acquirer) who will receive a fund transfer from the Sending BSFI's paying customer.
Merchant/Receiver	A merchant/receiver is a registered establishment involved in the delivery of products and services.

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[2] *Definition is lifted from the BSP official site –www.bsp.gov.ph/payments/nrps_overview.asp*

Term	Description
Micro Merchant	An entity or individual involved in the delivery of products and services with the following distinguishable characteristics: • Business does not require a Business Registration to operate • Operates as a small-scale or home-based business *[As a guide to P2M service implementation, a micro merchant is identified as having a maximum gross QR P2micro sales of Php 100K per month]* • Usually self-employed providers of goods and services Common Examples: • Sari-sari stores • Bazaar stalls • Household Repairs • Service Contractors
Users, Consumers, Clients	Customer of BSFIs. Can either be a Sender, Receiver, or Merchant when discussing a specific role.
N	Numeric value, consist of 1,2,3,4,5,6,7,8,9,0
A	Alphabet value, consist of a-z and A-Z
AN	Combination of Alphabet and Numeric value
ANS	Combination of Alphabet, Numeric, and Special Characters. See Section 3.7 for the List of Supported Special Characters
OFI	Originating Financial Institution
RFI	Receiving Financial Institution
S	String value
M	Mandatory, a variable required to be present
O	Optional, a variable not required to be present
C	Conditional, a variable that may be required when conditions are met

2. QR Code Processing Overview

As discussed in the Philippine QR Code Standard for P2M document, the QR Code shall contain all the merchant/receiver information needed by the Payor Institution to debit its account holder and initiate the payment request to the receiver account.

The document assumes that the single message process flow shall be adopted for the Philippine setting.

It is the decision of the PPMI QR Code Technical Working Group to define a separate Merchant Account Information Template, ID "28", for use in the P2M services of all the Payment ACHs under PPMI.

2.1. P2M QR Code General Guidelines

The P2M QR Code design shall be defined for compliance by all Participants availing of the QR Code service in the QR Standard Look Guidelines for the Philippine QR Code.

The standard look guidelines shall also indicate the proper placement of the logo to identify the QR code as being generated under the Debit PH QR service.

It has been recommended that the Philippine Debit PH QR Code size shall be at least 4 cm x 4 cm. Note, however, that the optimal size of the QR may vary based on the density of the data in the QR code and the error correction quality adopted by generating institution.

3. Philippine P2M QR Code Merchant Information Standard

Following the EMVCo Standard, the Merchant Account Information template shall be defined under Root ID '28', as confirmed by PPMI.

Merchant/Receivers are not precluded from defining more than one (1) Merchant Account Information Template within its QR Code. It is the responsibility of the Merchant/ Receivers to comply with the required data objects for the other templates they will support. Only the Philippine P2M QR Code Merchant Information standard will be discussed in the succeeding sections.

Note that multiple Merchant Account Information (MAI) templates are allowed to be defined within a QR Code but only one instance of a Template ID must exist as a unique entry in the generated QR Code. Though, several MAI templates may be used, the P2M template ID "28" must never be used together with the P2P ID "27" in one QR code.

Root ID 28 closely resembles the P2P Root ID 27 but with the following changes:
- globally unique ID value has been changed
- the Mobile Number removed in P2M
- added the Proxy-Notify Flag to indicate the type of information used in the Merchant Credit Account number – clear account or alias/proxy and the notification requirements of the merchant.

The Acquirer-required information and other settlement and authentication details may be defined under the Unreserved Template ID "88"

3.1.   Philippine Merchant Account Information – ID "28" Template

Name	ID	Format	Length	Fixed Length	Presence	Description
Payment System Unique ID (Globally Unique ID)	00	ANS	1..19	N	M	Payment System Network-specified unique ID indicating the P2M nature of the QR Code. Recommended values: "ph.ppmi.p2m" for P2M "ph.ppmi.p2micro" for micro or informal merchants "ph.ppmi.p2b" for billers
Acquirer ID	01	ANS	11...11	Y	M	Corresponds to the Acquirer BSFI's identifier as defined by the ACH CSOs. Recommendation is to use the Bank Identifier Code or BIC The Acquirer is the entity that maintains the merchant information and that generated the QR Code for the Merchant.
Merchant ID	03	ANS	1..25	N	C	Receiver-assigned, if applicable, to identify the Merchant partner and authenticate the QR transaction. This field must be present if the Merchant Credit Account field is not used. If this field is not present, the Merchant Credit Account field must be defined in the QR Code. Note, however, that this field may co-exist with the Merchant Credit Account, if the Acquirer requires it.
Merchant Credit Account	04	ANS	1..25	N	C	Creditor Account Identifier. If this is not present, the Merchant ID must be defined to represent the Account information. The Proxy-Notify flag, position 1,

Name	ID	Format	Length	Fixed Length	Presence	Description
						shall be set to 3. Note, however, that this field may co-exist with the Merchant ID, if required by the Acquirer. This must be present if the Merchant ID is not defined by the Acquirer to identify the merchant details. *Note: This may be any Receiver-provided information that would enable it to identify the merchant account where payment shall be credited. Receiver may use actual account detail, a token, an alias or a masked/encrypted information to represent the actual account number. Proxy Flag must be set appropriately to indicate what type of information was used*
Proxy-Notify Flags	05	ANS	3..3	Y	M	Identifies the type of alias or reference code used for the Acquirer to be able to identify the Merchant Credit Account. Valid values are as follows: **Position 1: Proxy Type** 0 – Actual Account Number 1 – Mobile Number 2 – Token ID 3 – Alias Name/Nickname of Tag 28-04 or use Merchant ID, instead (Tag 28-03) 4 – Masked Account Data 5 – National ID Z – Others **Position 2: Notify Flag** 0 – Do not notify Merchant 1 – Notify Merchant **Position 3: Amount Update Capability Flag** 0 – No edit of Amount; No Amount in QR

Name	ID	Format	Length	Fixed Length	Presence	Description
						1 – Amount Editable, any amount 2 – Amount Editable but not more than X, where X is the upper limit as defined by PPMI

Note: *The total length of the Merchant Information ID 28 should be 99 only, including the size of the object ID and the object Length. If the total size of the template is more than 99 chars, it is recommended that the variable length text fields like the Merchant ID and Merchant Credit Account be shortened to address this limitation.*

3.2.   Philippine P2M Settlement and Auth Details – ID "88" Template

Name	ID	Format	Length	Fixed Length	Presence	Description
Payment System Unique ID (Globally Unique ID)	00	ANS	1..19	N	M	Payment System Network-specified unique ID indicating the P2M nature of the QR Code. Required value is: "ph.ppmi.qrph"
Acquirer-Required Information	01	S	Var up to 99	N	M	Template that the Acquirer can use freely to hold a string of additional information that it requires, i.e. Settlement FI ID, Merchant Mobile Number, RFI-required Subscriber Account Number, RFI-required Subscriber Account Name, etc. Information format is dependent on the RFI. Must be passed by the Issuer/OFI as was read from the QR.

This optional template may be used by the Acquirer to hold certain information that it requires to complete the QR Code transaction authentication and authorization process. Similar to Tag 28, the total size of the template, including the tag ID and length fields, shall not exceed 99 chars. Example, the acquirer may indicate here important information such as the mobile number that shall be used for merchant/terminal notification, the Settlement FI ID of the Merchant, etc.

3.3. Philippine Merchant Account Information Data Objects

3.3.1. Payment System Unique ID (ID "28-00")

This field shall define a single unique identifier to represent the CSO that will process the P2M Payment transactions triggered by the QR Code. It shall do the necessary to ensure that the adopted identifier is globally unique.

Because the entire Root or Template length should not exceed 99, it is recommended that the length of this field be adjusted to take up only a maximum of 15 characters.

3.3.2. Acquirer ID (ID "28-01")

Refers to the common identifier among the CSOs to indicate the Financial Institution with which the Merchant/Receiver account belongs. This ID should be available not only to banks but also to non-bank institutions.

Referred also as the Receiver Financial Institution (RFI) ID, the field shall contain the Bank Identifier Code or BIC of the Payee's BSFI.

3.3.3. Merchant ID (ID "28-03")

This is a conditional field for P2M transactions that is used to indicate the identity of the merchant to the Acquirer/Payee. This may be used to facilitate validation and authentication of the merchant and to determine the credit account number that the payment should be applied to. While the Acquirer has the option to include or exclude this field in the QR code, it is worth noting, that this field is **required to be present if the Merchant Credit Account Number field is not used** (Tag 28-04).

For Bills Payment, this is also a required field and it will hold the 8-character Biller Identifier Code. For the P2M Merchants, the Merchant ID is the identifier assigned to them by the Acquirer.

3.3.4. Merchant Credit Account Number (ID "28-04")

This is the identifier that will indicate to the Acquirer/Payee institution the account number to which the payment credit shall be applied, if the Acquirer so requires it. While the Acquirer has the option to include or exclude this field from the QR Code, the information is required to be present if the Merchant ID is not used by the Acquirer.

The field may contain the actual merchant account number, the mobile number, a token, a reference id or number, an alias, etc. It is the responsibility of the Acquirer/Payee institution to define this.

This may also be used for Payee authentication and validation. This is also referred to as the Creditor Account Number.

3.3.5. Proxy-Notify Flag (ID "28-05")

A flag that provides three (3) kinds of Information to the Acquirer and/or Payee Institution:

- Position 1 indicates the type of information that was used in populating the Merchant Credit Account in ID "28-04" or if the Merchant ID shall be used instead (ID 28-03)
- Position 2 indicates whether the merchant requires to be notified or not
- Position 3 indicates whether the Amount in the QR Code, if present, can still be edited or not, i.e. Credit Card payments can be more than actual billed amount

The valid values that may be used are as follows:

Position 1	0 – Clear account value 1 – Mobile Number as Proxy 2 – Token ID 3 – Alias Name/Nickname in Merchant Credit Account or the Merchant ID 4 – Masked Account Detail 5 – National ID Z – Others
Position 2	0 – No notification needed 1 – Notification required
Position 3	0 – Amount not editable; Amount not present in QR 1 – Amount editable, any amount 2 – Amount editable, amount not more than xxx limit

Only the indicated valid values above must be used. Use of other values not supported will result in a failed authentication of the QR Code.

3.3.6. Payment System Unique ID (ID "88-00")

This field defines a unique identifier for the additional acquirer-related information that may be required for QR Code transaction authentication and authorization. It shall do the necessary to ensure that the adopted identifier is globally unique. Format for this identifier is a reverse URI. The value "ph.ppmi.qrph" shall be used.

Because the entire Root or Template length should not exceed 99, it is recommended that this field should not be too long. A 13 to 15 char identifier should be enough.

3.3.7. Acquirer-Required Information (ID "88-01")

This field may contain any additional string of information that the Acquirer requires to complete the QR Code transaction process, from authentication to authorization and merchant notification of an approved transaction. Sample information that may be indicated are the mobile number of the merchant/terminal for notification purposes, the depository or creditor institution of the Merchant, and even other remarks or merchant authentication detail.

This field may also be used for specific bills payment subscriber information required by the RFI such as the full bill subscriber reference number, full subscriber account name, if the Template ID 62 field lengths are not adequate.

This field is present when the Acquirer activates Root ID '88' with a P2M QR Code. If this additional information is not needed, Template ID 88 should not be activated.

3.4.   Sample Merchant Account Information String

Template ID 28 for P2M

Name	ID	Input Character	Meaning
Merchant Account Information	28	"2879"	ID "28" P2P, Length "79"
Payment System Unique ID	28 – 00	"0011ph.ppmi.p2m"	ID "28-00", Length "11", value "ph.ppmi.p2m"
Acquirer ID	28 – 01	"0111BOPIPHPHXXX"	ID "28-01", Length "11", Value "BOPIPHPHXXX"
Merchant ID	28 – 03	"0315998001234567890"	ID "28-03", Length "15", Value "998001234567890"
Merchant Credit Account	28 – 04	"0419530045698713524632 1"	ID "28-04", Length "19", Value "5300456987135246321" - Account Map/Index
Proxy-Notify Flag	28 – 05	"0503010"	ID "28-05", Length "03" Value "010" Clear Account value with Merchant Notification

Raw Merchant Account Information String for P2M – ID "28":

"28800011ph.ppmi.p2m0111BOPIPHPHXXX0315998001234567890041953004569871352463210503
010"

Color Legend for all Raw Strings:

IDs are in color Green.

Lengths are in color Orange.

Values are in color Blue.

3.5.   Sample Merchant Settlement and Auth Details String

Template ID 88 for P2M

Name	ID	Input Character	Meaning
Merchant Settlement & Auth Details	88	"8849"	ID "88" P2P, Length "49"
Payment System Unique ID	88 – 00	"0012ph.ppmi.qrph"	ID "88-00", Length "12", value "ph.ppmi.qrph"
Acquirer-Required Information	88 – 01	"0129006391812345670211BSCIPHPHXXX"	ID "88-01", Length "29", Value "006391812345670211BSCIPHPHXXX"

Raw Merchant Settlement & Auth Details String for P2M – ID "88":

"88500012ph.ppmi.qrph0129006391812345670211BSCIPHPHXXX"

Color Legend for all Raw Strings:

IDs are in color Green.

Lengths are in color Orange.

Values are in color Blue.

3.6.   Sample P2M QR Code

Root Data Objects and Templates

Name	ID	Input Character	Meaning
Payload Format Indicator	00	"000201"	ID "00", Length "02", Value "01" - Version
Point of Initiation Method	01	"010211"	ID "01", Length "02", Value "11" - Static QR Code
Merchant Account information	28	"28790011ph.ppmi.p2m0111 BOPIPHPHXXX0315998001234	ID "28", Length "79", Value "0011ph.ppmi.p2m0111BOPIP

		5678900041953004569871352463210503010"	HPHXXX031599800123456789 0041953004569871352463210503010"
Merchant Category Code	52	"52046016"	ID "52", Length "04", Value "6016"
Transaction Currency Code	53	"5303608"	ID "53", Length "03", Value "608"
Country Code	58	"5802PH"	ID "58", Length "02", value "PH"
Merchant Name	59	"5912CORPGENMERCH"	ID "59", Length "12", Value "CORPGENMERCH"
Merchant City	60	"6011Mandaluyong"	ID "60", Length "11", Value "MANDALUYONG"
Additional Data Field	62	"6217"	ID "62", Length "17", Value – all below under 62.
Reference Label	62 – 05	"0506211000"	ID "62-05", Length "06", Value "211000" - QR Code
Purpose transaction	62 – 08	"0803***"	ID "62-08", Length "03", Value "***" - Mobile to get entry from Consumer
Merchant Auth & Settlement Details	88	"88490012ph.ppmi.qrph0129 006391812345670211BSCIPH PHXXX"	ID "88", Length "49", Value "0012ph.ppmi.qrph012900639 1812345670211BSCIPHPHXXX X"
Cyclic Redundancy Check	63	"6304"	ID "63", Length "04", Value to be computed and added below

Raw String:

000201010211287900011ph.ppmi.p2m0111BOPIPHPHXXX0315998001234567890041953004569871 3524632105030105204601653036085802PH5912JUANDELACRUZ6011Mandaluyong6217050621 10000803***88490012ph.ppmi.qrph0129006391812345670211BSCIPHPHXXX6304

Color Legend for all Raw Strings:

IDs are in color Green.

Lengths are in color Orange.

Values are in color Blue

CRC Value of Raw String: 3D3C

Complete P2M QR Code String:

000201010211287900011ph.ppmi.p2m0111BOPIPHPHXXX0315998001234567890041953004569871 3524632105030105204601653036085802PH5912JUANDELACRUZ6011Mandaluyong6217050621 10000803***88490012ph.ppmi.qrph0129006391812345670211BSCIPHPHXXX63043D3C

QR Code Value:

3.7. List of Supported Special Characters

~	`	!	@
#	$	%	^
&	*	(	)
_	-	+	=
{	}	[	]
|	\	:	;
"	'	<	>
,	.	?	/
space	Ñ	ñ	

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