TANZANIA QUICK RESPONSE CODE STANDARD (TANQR CODE STANDARD 2022)

Merchant-Presented Mode

1 ABOUT THIS DOCUMENT

1.1 Authors

Authors: Bank of Tanzania (BoT)

1.2 Document Control

Version	Comments	Date
1.0	Initial publication	12 August 2022

2   LEGAL DISCLAIMER

This specification is prepared for the different participants in the TANQR *Standard for Retail Payments in Tanzania*, based on the EMVCo *QR Code Specification for Payment Systems: Merchant-Presented Mode* published by EMVCo. EMVCo does not provide certification or approval for QR code, The EMVCo is available for all industry participants on a royalty-free basis and are designed to promote global interoperability. Any party seeking to implement this specification is solely responsible for determining whether its activities require a license to any such technology, including patents on public key encryption technology. TANQR shall not be liable under any theory for any party's infringement of any intellectual property rights in connection with this specification.

3   DEFINITIONS

Issuer – Financial Institutions which facilitate payments from commercial banks (current, saving or credit cards) and Electronic Money Issuers (EMI) accounts which will be used to carry out QR Code based payments.

Acquirer – Financial Institution or Electronic Money Issuers (EMI) responsible for enrolling merchants, assigning merchant IDs, maintaining merchant records/accounts and settling merchants. Is the one who facilitate generation of merchant presented National QR Code.

Network Facilitator or Payment Scheme – Responsible for routing transactions between the respective institutions when the issuer and acquirer are different.

EMV QRCPS - EMV® Merchant-Presented QR Code Specification for Payment Systems

EMVCo - Founding members facilitating worldwide interoperability and acceptance of secure payment transactions

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4   INTRODUCTION

Quick Response (QR) Code payment solution provides an alternative channel for initiating and accepting payments between customer and merchant. It also enables a customer to make non-cash payments. The Bank of Tanzania Act 2006, and the National Payment System Act, 2015, give the Bank mandate to manage, promote and establish payment systems in the country. In this regard, The Bank of Tanzania is issuing a National QR Code Standard for Local Currency Payments that will be known as Tanzania QR Code (TANQR) Standard. This TANQR Code standard will promote customer convenience, security, and support interoperability amongst different payment service providers.

The Bank of Tanzania adopted a common QR code specification by using the EMV QRCPS published by EMVCo as a basis to offer an effective solution to ensure interoperability. The notational conventions used in this specification are those referenced from the EMV QRCPS.

4.1   Objectives of TANQR Code Standard

The TANQR Code Standard enables The Bank of Tanzania to:

- Boost up the use of e-payments under the Retail Payment ecosystem, hence enabling more Tanzanians to make electronic payments and deepening financial inclusion.

- Bring connection and communication among multiple independent and potentially heterogeneous systems to process QR Payments.

- Contain risks arising from the QR service since Bank of Tanzania (BoT) will be able to regulate and oversee QR Code payments.

- Enhance payment security as institutions involved will ensure security to prevent data breaches and payment fraud.

4.2   Purpose

This document (TANQR Code Standard) provides guidance for implementation of QR Codes based on the international standards adopted from EMV® QR Code Specification for Payment Systems (Merchant Presented QR Code Payment - Version 1.0, July 2017). This standard shall be used by all banks, and Electronic Money Issuers (who fall under E-money regulations 2015), when issuing QR codes to their merchants and/or any other Payment Service Provider who wishes to venture into merchant QR codes payments in the country. The document also guides the Standard for QR Code display as structured and detailed in **Annex 2**

4.3   Reference

EMV® QR Code Specification for Payment Systems (EMV QRCPS) Version 1.0 July 2017. This is a brief description of merchant presented EMV QR Code payment and the entities involved. The link is available at http://www.emvco.com

5   TANQR CODE PAYLOAD DATA OBJECT

5.1   Overview

According to the design of the EMV® QRCPS, the data within a QR Code are organized in a tree-like structure of data objects. A data object may be a primitive data object or a template. A template may include other primitive data objects and templates. Each data object is made up of three individual fields. The first field is an identifier (ID) by which the data object can be referenced. The second field is a length field that explicitly indicates the number of characters included in the third field, i.e., the value field. A data object therefore comprises the following.

i.   ID field: two-digit numeric value, with a value ranging from "00" to "99";
ii.   Length field: two-digit numeric value, with a value ranging from "01" to "99"; and
iii. Value field: Contains minimum length of one character and maximum length of 99 characters.

A common QR code may support multiple payment operators, where individual payment operators may define their own structures of merchant account information and make use of the common data fields, such as transaction currency and amount, contained in the common QR code.

Specifically, the EMV Merchant-Presented QR Code supports EMVCo and non-EMVCo payment operators through the use of IDs "02" to "25" and "26" to "51" respectively.

Data Objects in these specifications will be customized based on the EMV standard (EMV® QRCPS), the following abbreviations, notations and conventions are used.

5.2   Abbreviations

These are the standard short form of words obtained from EMV® QR Code Specification for Payment Systems which will be used in the TANQR standard.

Table 1: Abbreviations

Abbreviation	Description
ANS	Alphanumeric Special
C	Conditional
CRC	Cyclic Redundancy Check
ID	Identifier of the data object
ISO	International Standards Organization
M	Mandatory
N	Numeric
O	Optional
QR Code	Quick Response Code

RFU	Reserved for Future Use
S	String
var.	Variable

5.3 Presence of Data Objects

For the presence of data objects, the following notation is used:
  i.   M: Mandatory - shall always be present
  ii. C: Conditional - shall be present under certain conditions
  iii. O: Optional - may be present

5.4 Format Conventions

The value of a data object encoded in the EMV® Merchant-Presented QR Code has one of the formats as listed in Table 2.

Table 2: Format Convention

Format	Meaning
Numeric (N)	Values can be represented by all digits, from "0" to "9". The numeric includes ten (10) characters in total.
Alphanumeric Special (ANS)	Values can be represented by the Common Character. The Alphanumeric Special alphabet includes ninety-six (96) characters in total and includes the numeric alphabet and punctuation.
String (S)	Values represented by any precomputed character(s) defined in [Unicode] (universal character encoding standard)

According to the EMV QR Code Specification for Payment Systems (EMV QRCPS), the content of the QR Code includes the following groups of data objects: -
  i.   QR Code Conventions
  ii. Merchant Account Information
  iii. Additional Merchant Information
  iv. Transaction Value
  v.   Additional Data Template
  vi. Unreserved Templates

5.5 QR Code Conventions ("00", "01" & "63")

The QR Code Conventions (Table 3) specify conventions used for the QR Code content, such as Payload Format indicator, which defines the version of the QR Code template and hence the conventions on the identifiers, lengths, and values.

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Table 3: QR Code Conventions

ID	Name	Length	Presence	Remarks
"00"	Payload Format Indicator	"02"	M	Defines the version of the QR Code template and hence the conventions on the identifiers, lengths, and values. A fixed value of "01"
"01"	Point of Initiation Method	"02"	M	"11" for static QR Codes; "12" for dynamic QR Codes
"63"	Cyclic Redundancy Check (CRC)	"04"	M	Checksum calculated over all the data objects included in the QR code

Guide for QR Code Convention

- The Payload Format Indicator (ID "00") shall contain a value of "01". All other values are reserved for future use.
- The Point of Initiation Method (ID "01") shall contain a value of "11" or "12". Identifies the communication technology (here QR Code) and whether the data is static or dynamic. The value of "11" should be used for static QR codes and the value of "12" should be used for dynamic QR codes. All other values are RFU.
- The CRC (ID "63") shall be calculated according to [ISO/IEC 13239] using the polynomial '1021' (hex) and initial value 'FFFF' (hex). The data over which the checksum is calculated shall cover all data objects, including their ID, Length and Value, to be included in the QR Code, in their respective order, as well as the ID and Length of the CRC itself (but excluding its Value). Following the calculation of the checksum, the resulting 2-byte hexadecimal value shall be encoded as a 4-character Alphanumeric Special value by converting each nibble to an Alphanumeric Special character. For example, a CRC with a two-byte hexadecimal value of '007B' is included in the QR Code as "6304007B".

5.6 Merchant Account Information ("02" to "51")

This data group specifies the identity of the merchant. The Network facilitator shall further customize the format of the Merchant Account Information IDs details. The table below shows the distribution of Merchant Account Information IDs among various Network facilitators.

Table 4: Merchant Account Information

ID	MEANING
"02"-"03"	Reserved for Visa
"04-"05"	Reserved for Mastercard
"06"-"08"	Reserved for EMVCo
"09"-"10"	Reserved for Discover
"11"-"12"	Reserved for Amex
"13"-"14"	Reserved for JCB
"15"-"16"	Reserved for UnionPay
"17"-"25"	Reserved for EMVCo
"26"	Reserved for TIPS for use in Tanzania
"27"-"30"	RFU for TIPS
"31"-"51"	Reserved for Network Operators use in Tanzania

Guide for Merchant Account Information

The ID "26" to "30" is designated for Tanzania Instant Payment System (TIPS) for use in Tanzania. Issuers creating TIPS QR Codes will complete the Merchant Account Information template for the root ID 26 to ID 30. The specific assignments of these fields are defined in respective TIPS document.

5.6.1 Specific assignments of IDs ('26' to '51')

The Merchant Account Information template shall be used when the payment system corresponding to the Merchant Account Information is explicitly identified in the template.

Table 5: Merchant Account Information for ID ("26" to "51")

ID	Name	Format	Length	Presence	Remarks
"00"	Globally Unique	ans	Var. up to 32	M	An identifier to identify the payment Network Facilitator which uses this template to define the Merchant Account Information

					The value is one of the following • an Application Identifier (AID); • a [UUID] without the hyphen (-) separators; or • a reverse domain name.
"01"- "99"	Payment network specific	S	Var. up to 99	O	Additional data objects to define the Merchant Account Information specific to the payment Facilitator such as URL/deeplink, Acquirer ID, Merchant ID, Proxy and/or others defined parameters

Guide for Globally Unique Identifier

The value of the Globally Unique Identifier field shall contain one of the following:

- An Application Identifier (AID) consisting of a RID registered with ISO and, optionally, a PIX, as defined by [ISO 7816-4]. For example, "D840000000".
- A [UUID] without the hyphen (-) separators. For example, "581b314e257f41bfbbdc6384daa31d16".
- A reverse domain name. For example, "com.merchant.name".

5.7 Additional Merchant Information ("52", "58" to "61" & "64")

The Additional Merchant Information (Table 6) specifies the information about a merchant such as merchant name and business location. IDs 52, 58 and 59 are mandatory (M) in the EMV Co standard and have been provided with default values in the Payment Switch implementation of the QR Code Standard.

Table 6: Additional Merchant Information

ID	Name	Format	Length	Presence	Remarks
"52"	Merchant Category Code	N	4	M	As defined in ISO 18245 Retail Financial Services – Merchant Category Codes; and assigned by the Acquirer. May be displayed to the customer.
"58"	Country Code	Ans	2	M	Country of the merchant acceptance device as defined by ISO 3166-1

"59"	Merchant Name	Ans	Var up to 25	M	The name that the Merchant is known by. Should be displayed to the customer.
"60"	Merchant City	Ans	Var up to 15	M	City of operation of the merchant. May be displayed to the customer.
"61"	Postal Code	N	5	M	Tanzania Post code as defined by TCRA. May be displayed to the customer.
"64"	Merchant information – Language Template	S	Var up to 99	O	A template with other primitive data objects (**See EMV QRCPS document for more details**)

Guide for Additional Merchant Information

- The Merchant Category Code (MCC) (ID "52") shall contain an MCC as defined by ISO 18245. The MCC should indicate the Merchant Category Code of the merchant. Where this is not available to the merchant, a default code of "0000" in the MCC field may be used.
- The Country Code (ID "58") shall contain a value as defined by ISO 3166-1 alpha 2. The Country Code should indicate the country in which the merchant transacts. For Payment Switch in Tanzania this will always be "TZ".
- The Merchant Name (ID "59") shall be present. The Merchant Name should indicate the "trading" name for the merchant. This name may be displayed to the consumer by the mobile application when processing the transaction.
- The Merchant City shall be present (ID "60"). The Merchant City should indicate the city of the merchant's physical location. The name may be displayed to the consumer by the mobile application when processing the transaction.
- The Postal Code shall be present (ID "61"). This Postcode identify the physical location of the Merchant. The list of all postcode in Tanzania were published by Tanzania Communications Regulatory Authority (TCRA) under Electronic and Postal Communications Act.
- The Merchant Information – Language Template (ID "64") is a template, which contains other fields, which may be used by a mobile application to present the merchant information in an alternate language. Merchant Name and potentially other merchant related information in an alternate language, typically the local language.

5.8 Transaction Value ("53" to "57")

The Transaction Value data objects (Table 7) specify the currency and amount of a transaction. They also include a tip, which allows merchants or customers to specify the tip in fixed value or percentage.

Table 7: Transaction Value

ID	Name	Format	Length	Presence	Comments
"53"	Transaction Currency	N	03	M	A numeric code based on [ISO 4217], e.g., put "834" for TZS.
"54"	Transaction Amount	Ans	Var. up 13	O	Can be included by merchants or mobile app may prompt the customer to input the amount to be paid
"55"	Tip or Convenience Indicator	N	02	O	If present, shall contain a value of "01" for prompt the consumer to enter a tip to be paid to the merchant. Value "02" shall be used to indicate in ID "56" and Value "03" shall be used to indicate in ID "57". All other values are RFU.
"56"	Value of Convenience Fee Fixed	Ans	Var. up 13	C	Presence of these data objects depends on the presence and value of the field ID "55", otherwise this data object shall be absent. If present, the Value shall only include (numeric) digits "0" to "9" and may contain a single "." character as the decimal mark.

"57"	Value of Convenience Fee Percentage	Ans	Var. up 5	C	Presence of these data objects depends on the presence and value of the field ID "55", otherwise this data object shall be absent. If present, the Value shall only include (numeric) digits "0" to "9" and may contain a single "." character as the decimal mark. And only values between "00.01" and "99.99" shall be used.

Guide for Transaction Value

- The Transaction Currency (ID "53") shall conform to ISO 4217 and shall contain the 3- digit numeric representation of the currency. Tanzanian Shillings (TZS) is represented by the value "834".
- The value should indicate the transaction currency in which the merchant transacts. The Transaction Amount (ID "54"), if present, shall be different from zero, shall only include (numeric) digits "0" to "9" and may contain a single "." character as the decimal mark. When the amount includes decimals, the "." character shall be used to separate the decimals from the integer value and the "." character may be present even if there are no decimals. The Transaction Amount shall not be included if the mobile application prompts the consumer to enter the amount to be paid to the Merchant or is presented to the consumer.
- Tip or Convenience Indicator (ID "55"), if present, indicates whether the consumer will be prompted to enter a tip or whether the merchant has determined that a flat, or percentage convenience fee is charged.
- Value of Convenience Fee Fixed (ID "56"), The fixed amount convenience fee when 'Tip or Convenience Indicator' indicates a flat convenience fee. For example, "9.85", indicating that this fixed amount (in the transaction currency) will be charged on top of the transaction amount.
- Value of Convenience Fee Percentage (ID "57"), The percentage convenience fee when 'Tip or Convenience Indicator' indicates a percentage convenience fee. For example, "3.00" indicating that a convenience fee of 3% of the transaction amount will be charged, on top of the transaction amount.

5.9 Additional Data Field Template (IDs "62")

The ID "62" is a template which includes common additional data objects such as Bill Number, Reference, Store and Terminal labels. It also allows payment network facilitators to define their own additional data objects. Values for these Data Objects can be provided by the merchant, or the mobile app may prompt the customer for these values. It is also where specific information is defined for Payment Switch transactions.

The payment operators should follow the rules and format to process the Data Objects for Additional Data Field Template of the QR Code. As the maximum data size of this Additional Data Field Template (ID "62") is only 99 characters, it is highly recommended that the operators make use of the pre-defined additional data objects (Sub-IDs "01" – "99") and avoid defining their own additional data objects in this template so as to prevent data overflow when QR codes of several payment system operators are combined into one common QR Code.

Table 8: Additional Data Field Template for ID "62"

Name	ID	Format	Length	Presence	Description
Bill Number	"01"	ANS	Var. up to 25	O	Invoice number or bill number
Mobile Number	"02"	ANS	Var. up to 25	O	To be used for mobile number
Store Label	"03"	ANS	Var. up to 25	O	A distinctive number associated to a store
Loyalty Number	"04"	ANS	Var. up to 25	O	To be used to identify a loyalty card number by merchant, if known, or could be provided by consumer.
Reference Label	"05"	ANS	Var. up to 25	O	Any value as defined by merchant or Acquirer to identify the transaction
Consumer Label	"06"	ANS	Var. up to 25	O	To be used to identify a specific consumer
Terminal Label	"07"	ANS	Var. up to 25	O	To be used to identify a specific terminal
Purpose of Transaction	"08"	ANS	Var. up to 25	O	Consumer to input a value describing the purpose of the transaction

Additional Consumer Data Request	"09"	ANS	Var. up to 03	O	If present, shall contain any combination of the characters: Address (A), Mobile (M) number of the consumer, Email (E) of the consumer and there shall only be a single instance of each of these characters. Each unique character can appear only once. Possible values: (A,M,E,AM,AE,ME,AME)
RFU for EMVCo	"10"- "49"				
Payment System specific templates	"50"- "99"	ANS		O	Any other additional data objects to be define by Merchant or Acquirer in order to identify the transaction such as Tax ID, Cashier ID, Channel ID, Merchant/Acquirer deeplink or/and any others defined parameters

5.10 Unreserved Templates (IDs "80 - 99")

For Unreserved Templates with IDs "80" to "99", the primitive data object 'Globally Unique Identifier' with ID "00" shall be included in the template and the maximum data size of each template is 99 characters.

Template with tag IDs ""80" will be date and time details as per Acquirer definition. This is optional tags for various use cases and purposes of acquirer. If presence the data shall be used for validating and QR when scanning or on reconciliation purpose.

Table 9: Date and Time Object Templates (IDs "80")

ID	Name	Format	Length	Presence	Remarks
"00"	Globally Unique	ANS	Var. up to 32	M	An identifier to identify the payment Network Facilitator/Acquirer which uses this template to define the Addition Information The value is one of the following • an Application Identifier (AID); • a [UUID] without the hyphen (-) separators; or • a reverse domain name.
"01"	Generation Date and Time	S	Var. up to 35	O	To be used to identify a date and time generated or created the QR and not the time that the financial message is sent.
"02"	Expiration time Date and Time	S	Var. up to 35	O	To be used to identify a date and time of QR Code expiration.
"03" – "10"	Unreserved for Payment System specific date templates	S	Var. up to 35	O	Any other additional date to be define by Merchant or Acquirer to identify specific date and Time information

The Templates from tag ID "81" to "99" can be allocated and used by any acquirer to define addition merchant details or add value service provided, for their own products.
If present, an Unreserved Template shall contain a primitive Globally Unique
Identifier data object with a data object ID "00", as defined in Table 10.

Table 10: Data Object ID Allocation in Unreserved Templates (IDs "81" to "99")

ID	Name	Format	Length	Presence	Remarks
"00"	Globally Unique	ANS	Var. up to 32	M	An identifier to identify the payment Network Facilitator/Acquirer which uses this template to define the Addition Information The value is one of the following • an Application Identifier (AID); • a [UUID] without the hyphen (-) separators; or • a reverse domain name.
"01"- "99"	Context Specific Data	S	Var. up to 32	O	Association of data objects to IDs and type of data object is specific to the Globally Unique Identifier.

5.11 TANQR Code Data Objects Format

Table 11: TANQR Data Object Summary

Name	ID	Format	Length (Decimal)	Presence	Description	Data Object Group
Payload Format Indicator	"00"	N	"02"	M	Defines the version of the QR Code template. Version "01"	QR code conventions
Point of initiation method	"01"	N	"02"	M	11 – QR Static Code or 12 – QR Dynamic Code	QR code conventions
Merchant Account Information	"02" to "51"	S	Var. up to 99	M	Refer respective Payment Network Facilitator documents	Merchant Account Information
Merchant Category Code (MCC)	"52"	N	"04"	M	As defined in ISO18245*	Additional Merchant information
Transaction Currency Code	"53"	N	"03"	M	As defined in ISO4217 Use 834 for TZS	Transaction Value
Transaction Amount	"54"	ANS, limited to numeric and the "." symbol	Var. up to 13	M	This amount is expressed as how the value appears: Amount "2000.00" is defined as "2000.00", "500.50" is	Transaction Value

					defined as "500.50"	
Tip or Convenience Indicator	"55"	N	02	O	Presence of these data objects depends on the presence and value of the Tip or Convenience Indicator.	Transaction Value
Value of Convenience Fee Fixed	"56"	Ans	Var. up 13	C		Transaction Value
Value of Convenience Fee Percentage	"57"	Ans	Var. up 5	C		Transaction Value
Country Code	"58"	ANS	"02"	M	As defined by ISO3166* Use "TZ" for Tanzania	Transaction value
Merchant Name	"59"	ANS	Var. up to 25	M	The "doing business as" name for the merchant, recognizable to the consumer.	Additional Merchant information
Merchant City	"60"	ANS	Var. up to 15	M	City of operations for the merchant.	Additional Merchant information
Postal Code	"61"	ANS	05	M	Must be 5 numeric values Eg. 11000 for Dar es Salaam	Additional Merchant information
Additional Data Field Template	"62"	S	Var. up to 99	O	Additional Data Field Template includes information that may be	Additional Data Templates

					provided by the Merchant or may be populated by the mobile application to enable or facilitate certain use cases. For the list of Data Objects that can be included in the template, refer to Table 8	
Merchant Information - Language Template	"64"	S	Var. up to 99	O	Present the merchant information in an alternate language.	Language Additional Merchant Information
Data Objects - RFU for EMVCo	"65" - "79"				Data objects in this range are reserved for future use for EMVCo	RFU for EMVCo
Data object for QR Date and Time Template	"80"	S	Var. up 35	O	Template to define Date and Time of QR Code.	Unreserved Templates
Data Object ID Allocation in Unreserved Templates	"81" – "99"	S	Var. up 99	O	Template to define the Addition Information	Unreserved Templates

Cyclic Redundancy Check (CRC)	"63"	ANS	"04"	M	checksum	QR Code conventions

6   REVIEW

This QR standard is issued by the Bank of Tanzania, any comment regarding the document should be directed to the Director of National Payment Systems. The Bank shall review the standard from time to time after consultation with stakeholders.

7 ANNEXES

Annex 1: TANQR use case

A Merchant-presented QR Code enables a merchant (payee) to present encoded payment details to a customer (payer), who can then verify the decoded payment details and make the payment if satisfied that the payment information is correct.

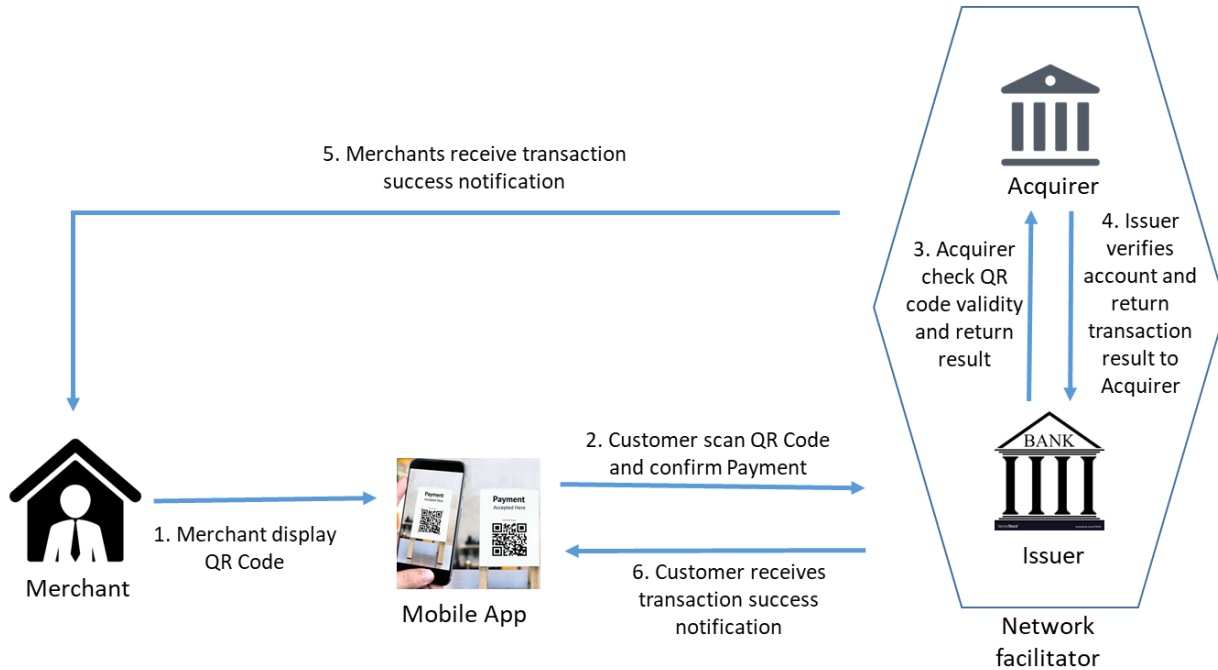QR Code architecture that covered in this specification is:

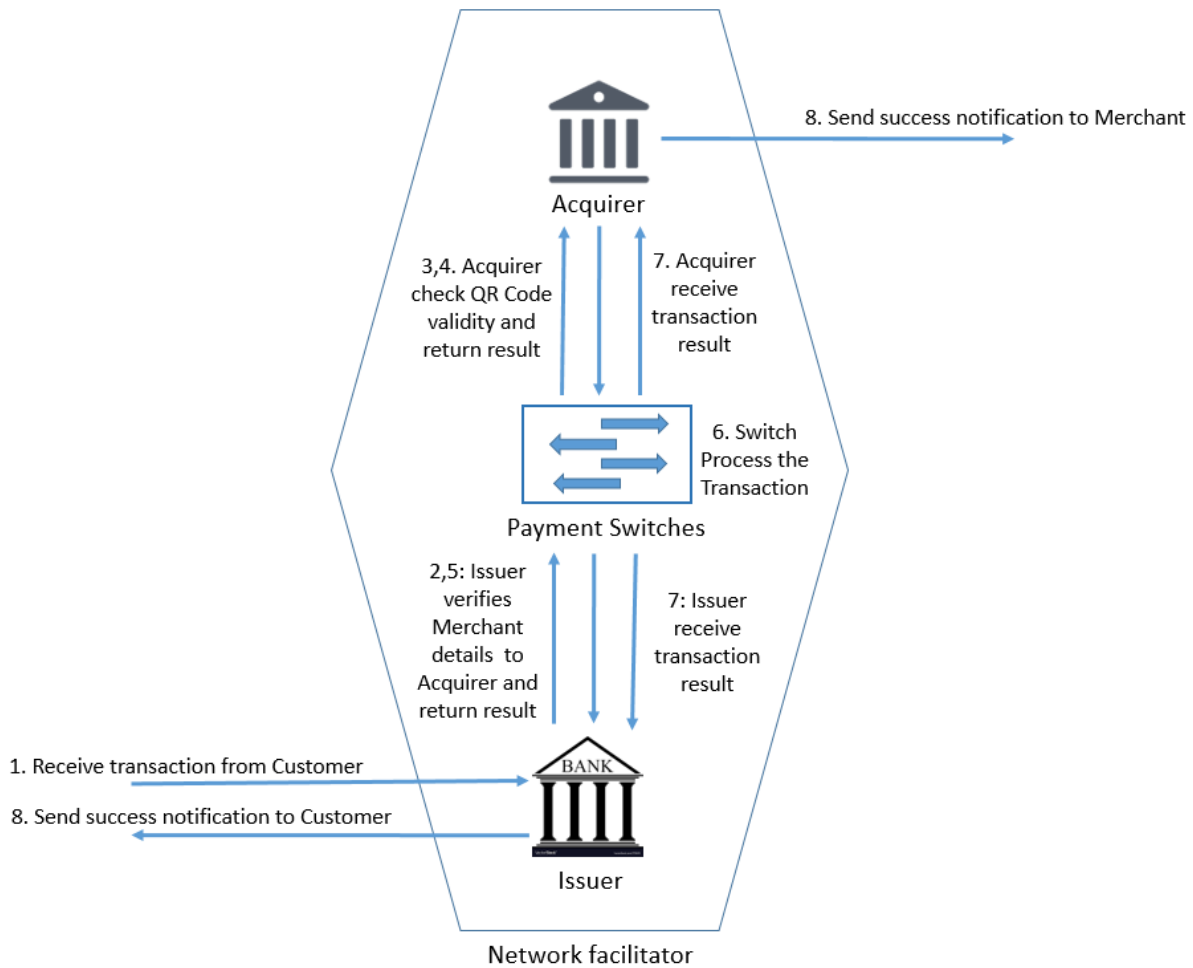Figure1 QR Code Payment Architecture – Merchant Presented Mode

Figure 2 Network Facilitator Architecture – Merchant Presented Mode

QR Codes can support various payment types, including bill payments, online payments and point-of-sale payments and are classified as static or dynamic QR Codes depending on the use case.

1. Static QR Code:

A static QR Code is where the QR code always contains the same information, and can be used for multiple transactions. Consumers scans the QR code using a mobile application to initiate the payment. The merchant's   information, such as shop name, is displayed on the mobile device for verification.   The consumer will be prompted to enter a payment amount.

1.1 Static QR Process
i. Merchant displays QR Code with merchant details.
ii. Consumer scans QR Code using a mobile application and inputs the amount to initiate the transaction.
iii. Mobile application/banking channel resolves MerchantID (if applicable).
iv. Customer is asked to verify the payment details.
v. Mobile application/channel sends a payment to the merchant's Financial Institution or payment initiation to the customer's Financial Institution.
vi. The receiving Financial Institution processes the payment or payment initiation
vii. Mobile application/channel provides notification of the transaction details to the customer.
viii. Merchant receives notification of successful transaction from their Financial Institution.

2. Dynamic QR Code:

A dynamic QR code is where a different code is generated for each transaction. These are commonly used for online payments, bill payments and self-service kiosks. The QR apart from containing the merchant information, it also contains transaction amount which reduces the risks of the customer inputting the wrong information.

2.1 Dynamic QR process
i. Merchant generates and displays a QR Code with merchant and transaction information.
ii. Consumer scans QR Code using a mobile application to initiate the transaction.
iii. Mobile application sends the transaction initiation request to the payment service operator.
iv. The payment service operator processes the transaction and informs the Merchant and the Consumer of the transaction outcome.

Annex 2: TANQR Standard for QR Code display (Merchant payments)

1. QR Code layout Specification

This covers the basic structure of a QR display. It provides specifications of the QR display layout. Acquirers shall observe the position and location of each part.
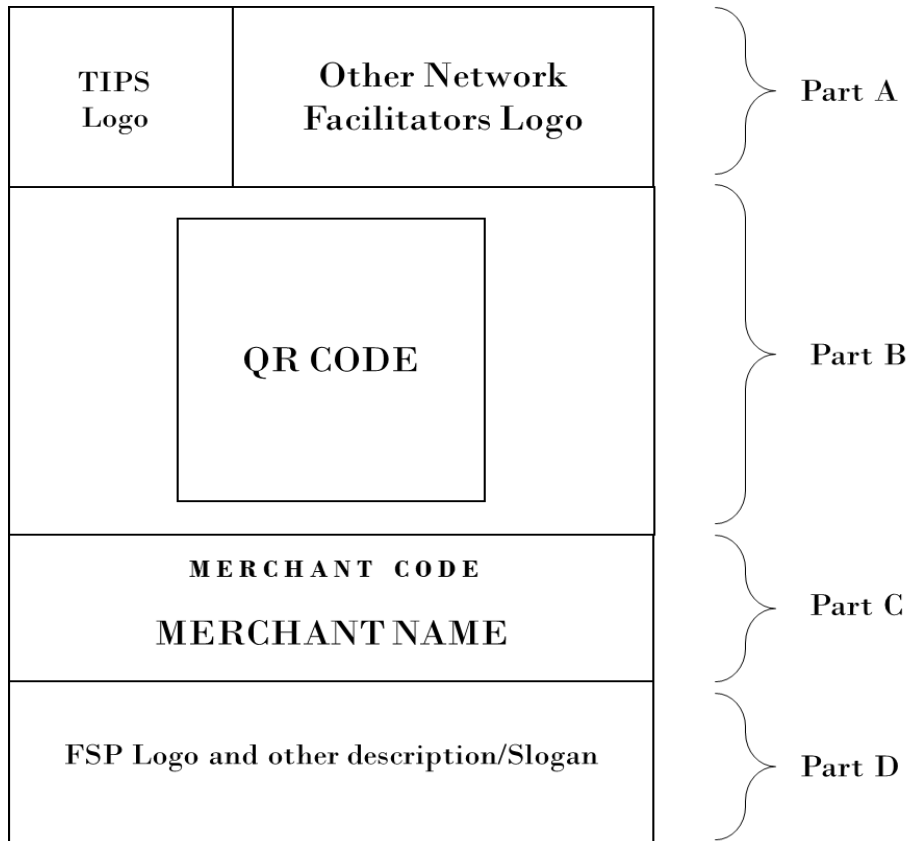

Figure 1: Merchant QR Code layout Specification

1.1 All Network Facilitators Logo (Part A)

Describe the part of all network facilitators logo which will be used on the displayed QR Code in Part B. If the QR Code is supporting TIPS local Payment scheme and other network facilitators, logo of TIPS should be placed on left side then other network facilitators logo. The Provider/Acquirer logo can also be display here on the right side.
There is no limit or fixed size/length on this part, ensure the logo(s) is/are visible and have look and feel for customers to understand.

1.2 QR Code Image (Part B)

This is the area of QR code image for customer to scan. **Table 1: Paper size** shows the ISO paper standard size of A, B and C series and their ratio of the QR Code. The recommended minimum size is A8 and ratio of QR image area size is 11% for easy and clear scanning. It is recommended that, as the paper expands the ratio may be reduced to keep a good view of the QR image. Other paper size may be used depending on the nature of uses, but the layout structure should look the same.

Table 1: Paper size

Paper Size	Width (cm)	Height (cm)	Paper Area (cm2)	Min. QR% Ration	QR Area(cm2)	QR-Width (cm)	QR-Height (cm)
A8	5.2	7.4	38.48	11.00%	4.233	2.0574	2.0574
C8	5.7	8.1	46.17	11.00%	5.079	2.2536	2.2536
B8	6.2	8.8	54.56	11.00%	6.002	2.4498	2.4498
A7	7.4	10.5	77.7	11.00%	8.547	2.9235	2.9235
C7	8.1	11.4	92.34	11.00%	10.157	3.1871	3.1871
B7	8.8	12.5	110	11.00%	12.100	3.4785	3.4785
A6	10.5	14.8	155.4	11.00%	17.094	4.1345	4.1345
C6	11.4	16.2	184.68	11.00%	20.315	4.5072	4.5072
B6	12.5	17.6	220	11.00%	24.200	4.9193	4.9193
A5	14.8	21	310.8	11.00%	34.188	5.8471	5.8471
C5	16.2	22.9	370.98	11.00%	40.808	6.3881	6.3881
B5	17.6	25	440	11.00%	48.400	6.9570	6.9570
A4	21	29.7	623.7	11.00%	68.607	8.2829	8.2829
C4	22.9	32.4	741.96	11.00%	81.616	9.0341	9.0341
B4	25	35.3	882.5	11.00%	97.075	9.8527	9.8527
A3	29.7	42	1247.4	11.00%	137.214	11.7138	11.7138

1.3 Merchant Details (Part C)

The part to print clear Marchant Name as known by customer and Alias Merchant ID used on USSD technology (feature phones users). Just ensure the name and Merchant ID are visible and have good fonts and colours for easy customers to understand.

1.4 FSP Details/Description (Part D)

The area to describe the Service Acquirer logo, slogan, descriptions and/or other some advertisement. Other Acquirers player can be displayed and describe here.

Annex 3: TIPS Specific Customization of TANQR

1. Merchant Account Information

The Merchant Account Information template shall be used when the payment system corresponding to the Merchant Account Information is explicitly identified in the template.

Table 1: Merchant Account Information for ID "26"

Name	ID	Format	Length	Presence	Description
Domain Name	"00"	ANS	"14"	M	TIPS reversed domain name: tz.go.bot.tips
Acquirer ID	"01"	N	"05"	M	Acquirer Identification Code assigned by TIPS to all participants
Merchant ID	"02"	N	Var. up to 15	M	Merchant Account or ID Number assigned by Acquirer to facilitate lookup

Guide for Merchant Account Information Value
   i. TIPS has adopted the domain name as a Globally Unique Identifier on the sub-ID "00". The value for this field is "*tz.go.bot.tips*".
   ii. The Acquirer ID (ID "01") shall be provided by TIPS to all participants. The value has length of "5". The first two digits will be category; i.e 01 for Banks and 02 for non-banks, etc; And the three digits will be the existing participant Code for those who already have participant code and for new FSPs will be provided with new participant codes upon request;
        Eg. Participant Code like, 016 for Bank A, 501 for EMI A,
        Eg. Acquirer ID like, 01016 for Bank A, 02501 for EMI A.
    This Acquirer ID will be provided during the registration of application.
   iii. The Merchant ID (ID "02") shall contain a value of Merchant Account or Code as defined by Acquirer and shall not contain more than 15-digit numeric.

2. Alias Merchant Ids for feature phones

In order to standardize merchant payment information for users with feature phones (non smartphone), the following scheme would be employed to expose the 8 digits' merchant ID/Account as per sub-ID "02" of ID "26".

The format of Alias Merchant ID should be the three digits of the Acquirer Code, four merchant Code digits and one checksum digit. The format for this alias will follow the format of **AAA-CCCC-S** without the hyphen (-) separators, where **A** is for Acquirer Code (Banks, MNOs, etc.), **C** is for Merchant Code and **S** is for Checksum which shall follow Damm algorithm.

Additional Acquirer codes can be provided to requesting institutions apart from the default acquirer code. Upon completing the existing block of Acquirer codes issuer will be allowed to increase one extra digit in the Merchant code field.

The Alias Merchant ID may be placed on Additional Data Field Template, tag "62" under Store Label (sub-tag "03"), Terminal Label (sub-tag "07") or any other tag related to merchant label, will be used for identifying terminals of merchant for acquirer usage.

Examples:
 Merchant Account Information of ID "26"

Name	ID	Length	Value	Description
Domain Name	"00"	"14"	tz.go.bot.tips	TIPS reversed domain name: tz.go.bot.tips
Acquirer ID	"01"	"05"	01001	Acquirer ID where first two digit is Category, and three digits are Acquirer Code.
Merchant ID	"02"	"08"	12345678	Merchant Account or ID Number assigned by Acquirer.

Therefore, the Merchant Account Information of ID "26" for Bank A shall be like:
26390014tz.go.bot.tips0105010010208012345678

The merchant Id to be displayed on the QR (for enabling input of the merchant Id by feature phones) will be:
- Acquirer Code: 001
- Merchant Code: 1234 (mapped from Merchant Account 12345678)
- Checksum: 9 (generated from the Damm Algorithm)

The Merchant ID will be 00112349.

Example TIPS QR Code for Payment in Tanzania.

(a) Data Object

ID	Sample Value	Description
00	000201	Format Indicator (Version 01)
01	010211	QR Static Code (All Consumers)
26	26390014tz.go.bot.tips010501001020812345678	00 - Domain Name (tz.go.bot.tips) 01 - Acquirer ID (01001 for Bank A) 02 - Merchant ID (12345678)
52	52045814	M.C.C for restaurants service (5814)
53	5303834	Currency is Tanzania Shillings – TZS(834)
58	5802TZ	Country Code (TZ for Tanzania)
59	5914YN RESTAURANTS	Merchant Name: YN Restaurants
60	6006DODOMA	Dodoma City
61	610541000	Postcode for Dodoma City (41000)
62	6221030800112349070511002	Store Label – 00112349 Terminal Label - 11002
63	63047D47	Cyclic Redundancy Check - Checksum

(b) Representation Data String
00020101021126390014tz.go.bot.tips0105010010208123456785204581453038345802
TZ5914YN
RESTAURANTS6006DODOMA610541000622103080011234907051100263047D47

(c) Merchant QR-Code Display

00112349

YN RESTAURANTS