<u>USE CASE(S) ON CROSS-BORDER REAL-TIME RETAIL PAYMENT SYSTEM [1]</u>

This is a live document that will be updated by the ASEAN Working Committee on Payment and Settlement Systems (WC-PSS) when the WC-PSS has identified other new and/or relevant use cases that can facilitate cross-border real-time retail payments in the ASEAN region.

The use cases may cover different types of technology, as well as the various potential clearing and settlement arrangements, among other relevant areas.

USE CASE #1: GUIDING PRINCIPLES ON IMPLEMENTING INTEROPERABLE QR CODES FOR PAYMENTS IN THE ASEAN REGION

These principles are intended to guide the ASEAN Member States (AMS) when applying the Implementing Policy Guidelines (IPG) in the adoption of the QR Code technology as a means to facilitate cross-border real-time retail payments within the ASEAN region. These principles are anchored on the fundamental need for a sound payment and settlement systems (PSS) that supports economic agents in their conduct of productive activities. The principles basically promote an open infrastructure to enable interoperability among the PSS in the region. Having interoperable PSS will make the ASEAN a more competitive economic bloc in the global arena since interoperability makes possible the efficient flow of funds across the AMS, ensuring the availability of money being a necessary input to any economic undertaking.

At present, many AMS are looking at the development of interoperable QR Codes for payments. This allows merchants to conveniently accept electronic payments (e-payments) directly into their bank or electronic money (e-money) accounts and avoid the costs associated with handling cash or making use of electronic data capture (EDC) equipment such as the point-of-sale terminals. As both banks and non-bank e-money issuers can be made interoperable with the use of QR Codes, the adoption of the QR Code technology for cross-border payments in the currencies of the payers and the payees will drive e-payment acceptance not only by large but also by small merchants such as retailers, market vendors, and taxi drivers. Consequently, this technology will be instrumental in advancing inclusion of the unserved or underserved population in the financial system. Thus, with interoperable QR-enabled payment and financial services, the citizens of the AMS traveling within the ASEAN region will be able to use their mobile devices to quickly make payments for goods and services. Moreover, the use of QR Codes can be extended to facilitate cross-border trades, inter-AMS remittances, and other financial transactions within the region.

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I. Principles of Interoperable QR Codes for Payments

The interoperable QR Codes can be carried out with the use of a global standard, i.e., the EMVCo[2] standard (QR Code Specification for Payment Systems: QRCPS). Complying with this standard will allow the AMS to enjoy convenient and secure payment services as well as avoid fragmented payment systems which result in high payment fees. Also, setting a standard will support the creation of innovative digital payment solutions that will benefit the region as a whole.

The key principles for developing and implementing interoperable QR Codes for payments include:

- **Availability**: An interoperable QR Code is available for both off-line and on-line merchants.

- **Accessibility**: Both domestic and international users are able to use their mobile devices to scan interoperable QR Codes to make payments. This is made possible since the QR Codes run on an open infrastructure, allowing access to all applications and facilitating acceptance of payments from various sources of funds.

- **Affordability**: Small and Medium Enterprises (SMEs), as well as customers, can enjoy low service fees or they can even make use of the QR Codes to make/receive payments for free.

The adoption of interoperable QR Codes for payments will strengthen the efficiency and stability of payment systems as this initiative is expected to bring about the following advantages.

(1) **Comply with international standards:** International standards help reduce development costs and promote open infrastructure and interoperability, supporting connectivity among various payment service providers (PSPs) – both in the context of domestic and cross-border payments.

(2) **Introduce convenient and cost-saving payment channel**: The merchants, especially the SMEs, are able to receive e-payments at lower costs than other means of payments. When the customers scan the interoperable QR Code presented by merchants, the customers' payments eventually flow into the merchants' bank or e-money accounts. Hence, the use of interoperable QR Codes streamlines cash flow management, and makes the bookkeeping and reconciliation processes much easier than when cash is used for payments. This effectively eases operational burdens and reduces business costs.

(3) **Enhance payment security**: Customers can pay for goods or services by scanning an interoperable QR Code via mobile banking or similar payment applications. The absence of manual encoding of account details ensures that the payment is transferred to the correct account, i.e., of the merchant.

(4) **Facilitate future financial innovations**: Payment data can initially be collected and analyzed in order to further develop payment and financial services that better suit customers' behaviors and needs on a domestic scale. Such services can be expanded to serve customers in other AMS via cross-border linkage.

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[2] EMVCo exists to facilitate worldwide interoperability and acceptance of secure payment transactions. It accomplishes this by managing and evolving the EMV® Specifications and related testing processes. EMVCo's work is overseen by EMVCo's six member organizations, including American Express, Discover, JCB, Mastercard, UnionPay, and Visa. For more information, visit https://www.emvco.com.

II. Policy Guidelines for Interoperable QR Codes for Payments

In driving interoperable QR Codes for payments within the ASEAN, the AMS have to consider the following policy guidelines:

(1) Promotion of Open Infrastructure and Interoperability

- **Collaboration:** PSPs shall adopt a QR Code standard for payments and collaborate among themselves in the setting of **common business rules, agreements, tests, and working processes**, to enable interoperability of payment and financial services within the AMS.

- **Freedom of choices:** PSPs shall **not limit the options for merchants to accept payments via QR Codes.** Various channels covering all business models of QR payments (e.g. customer-scan-business model, business-scan-customer model, or any other models) shall be made available to merchants. Likewise, all PSPs shall, on behalf of their clients, be able to receive payments from various sources of funds (e.g. credit cards, debit cards, bank accounts, or electronic wallets [e-wallets]) in order to promote the development of new services that can serve customers' needs.

- **No restriction of entry:** Existing PSPs shall **not establish business or service agreements that create barriers to entry by new service providers**, either financial institutions or non-financial institutions. Customers including individuals, merchants, and businesses shall be given the freedom of choosing their own PSPs. Moreover, all PSPs participating in the interoperable QR Code payments ecosystem shall use the interoperable QR standard logo to inform the customers of the availability of payment or funds transfer services which are carried out through this ecosystem.

- **Multiple linkage solutions:** There are various possible linkage models for cross-border retail payments among AMS. These models include sponsoring-to-sponsoring bank, switch-to-switch, or other models. The nature of domestic payment systems, payment policies, infrastructures, and readiness of each AMS must be taken into account prior to implementing the linkage. More importantly, the policy on cross-border linkage should be a key consideration in the determination of the proper bilateral linkage between AMS.

(2) Risk Management

- **Scope of risk management:** PSPs shall adopt acceptable risk management processes covering the risks associated with their payment and financial services making use of the interoperable QR Codes. The PSPs should focus on the following main risks:

  - **Operational risk.** The PSPs shall have in place adequate measures to manage the risk arising from the operation of their QR-enabled payment and financial services. In case that PSPs outsource any of their Information Technology (IT) functions or their services to other providers, they need to ensure that the outsourced providers strictly operate in compliance with the standards and requirements provided in their service level agreements. The PSPs shall be responsible for the services rendered by their outsourced providers, keeping mindful of the condition that those services are done as if the PSPs themselves are the ones doing the same.

  - **IT risk.** The PSPs shall establish adequate controls to manage the risks related to the critical areas of their IT operation (e.g., IT system security including cyber security; integrity, reliability, availability of the IT system; robustness of processing systems

and communication networks; resilience of technical infrastructure; and propriety of technology solutions).

- **Legal risk.** The PSPs shall comply with relevant laws, regulations, and guidelines such as those governing anti-money laundering and counter-terrorism/proliferation of weapon of mass destruction financing, requiring the conduct of Know Your Customer (KYC) and Customer Due Diligence (CDD) procedures, among others. Additionally, the PSPs shall comply with each other's laws and regulations on cross-border transactions.

- **Data privacy**. The PSPs shall establish controls for protecting data privacy in compliance not only with their domestic laws but also with those of the other AMS they are interlinked with.

▪ **Business rules and risk management mechanisms:** The PSPs shall establish business rules and risk management mechanisms that apply to interoperable cross-border QR-enabled payment and financial services. The PSPs shall align their internal policies and procedures with such rules. Examples of risk management mechanisms include daily limitations on the amount of payment transactions, and rejection of unauthorized or duplicate transactions. In addition, the PSPs shall consider harmonization of the risk management standards for QR-enabled payment and financial services with those for other types of payment services.

▪ **Compliance with other related standards:** In case there are risk management standards set by local and international card schemes, the credit and debit card PSPs using QR Codes shall also comply with said standards.

▪ **Compliance with regulations of each AMS:** The PSPs that have been licensed by the regulators in their home AMS to make/receive payments through the interoperable cross-border QR Code standard shall comply with the licensing requirements of the other AMS, if this is required by law of the other AMS.

(2) Consumer Protection and Consumer Education
▪ **Necessary consumer protection:** The PSPs shall take into consideration consumer rights and protection in accordance with their home laws and those of the other AMS participating in the interoperable cross-border QR Code payments ecosystem.

▪ **Effective communication:** PSPs shall regularly communicate with their customers including individuals and merchants on the safe usage of interoperable QR Codes for payments and on the prevention of threats associated with these payments. For example, the communication content should cover knowledge of the different payment methods via interoperable QR Codes for payments, threat prevention from counterfeit interoperable QR Codes, and familiarization with the format or appearance (e.g., QR format and logo) of the interoperable QR Codes for payments to allow recognition between QR Codes for payments and QR Codes used for other purposes.

▪ **Transaction verification procedure:** The PSPs shall provide means for their customers to verify the status of their payment transactions, and to access the historical record of each transaction. For example, a customer may be informed of the successful execution of his

or her payment transaction through a push real-time notice in a mobile application, SMS, or any other methods of notification.

▪ **Internal risk management:** The PSPs shall establish internal risk management guidelines on the use of the QR Code technology. These guidelines may cover methods for real-time verification (e.g., verification and display of the beneficiary name by the system, as well as monitoring of threats to address emerging vulnerabilities and ensure customer security) of the accuracy of data and changes of the data contained in the QR to prevent an unusual QR Code from redirecting customers to fraudulent websites or providing them with incorrect information

▪ **Communication channels:** The PSPs shall establish suitable communication channels for customers to request information or report incidents. Furthermore, the PSPs shall set up appropriate and timely conflict resolution processes. For example, there should be well-established procedures to address cases of system errors and erroneous transfer of funds to unintended recipients.

▪ **Public disclosure:** The PSPs shall disclose the necessary information to public. Such information includes the rights and conditions for using the interoperable QR services, the procedures for using these services, and the corresponding service fees. All updates on this information shall be communicated to the customers as soon as possible.

▪ **Customer data privacy:** The PSPs shall observe personal data privacy and protect the customers' data from unauthorized access. Sensitive data should not be embedded in the QR Code. If necessary, this information should be encrypted following the internationally-accepted security standard.

▪ **User experience:** To encourage the use of the interoperable cross-border QR-enabled payment and financial services, the PSPs shall develop these services with due consideration of user experience and customer satisfaction. For example, the PSPs shall ensure that such services come with user-friendly menus and clear service descriptions including basic information and instructions for using the services to prevent customers from committing errors when making payment transactions.

(3) Future Innovation
   ▪ **Strategy and policy framework:** The PSPs shall have a strategy and a policy framework that set out how they can leverage on big data, data analytics, and machine learning as tools to analyze collected data from interoperable QR Codes. This data can be used for the development of new services such as alternative credit scoring or information-based lending which will benefit individuals, SMEs, and other unexplored markets.

   ▪ **Selection of appropriate technology:** The PSPs shall select the appropriate technology as a tool for analyzing the collected data. Moreover, the PSPs shall test the accuracy of such technology and its alignment with relevant risk management frameworks, standards, and rules and regulations on data governance, data protection and data privacy.

   ▪ **Compliance with related business rules:** In the case that the PSPs develop other Application Programming Interface (API) services that are related to payments [e.g., API for payments by using interoperable QR Codes standard], such PSPs shall comply with the related business rules. These rules shall promote further development of API services.

III. Use of Interoperable QR Codes for Cross-Border Payments in the ASEAN Region

As the financial and economic activities across AMS have been rapidly growing, the e-payment services that make use of interoperable QR Codes gain greater importance.

The key benefits of adopting interoperable QR Codes for payments are, as follows:

(1) For a country, the interoperable QR Codes can bring greater efficiencies in the conduct of economic activities. These codes can also be used for the development of overlay services that promote transparency to both the PSPs and the concerned government agencies. In addition, the use of these codes can drive growth in e-payments, reducing paper consumption which causes some environment hazards.

(2) For citizen, the interoperable QR Codes for payments is perfectly fit to this generation where almost every adult has a mobile phone which can facilitate not only communication but also financial transactions including payments. The citizens of Southeast Asia can conveniently use their mobile applications to scan the merchants' interoperable QR Codes wherever they are in the region. With the setting of proper risk management standards by the participating AMS, the payments that make use of said QR Codes are secure and efficient.

(3) For businesses. The merchants are able to receive both domestic and international payments in their local currencies and they can accept various fund sources including bank, credit, debit, and e-wallet accounts. As the cost to operate QR-enabled payment services is lower than the cost to run traditional payment channels and instruments, even SMEs that usually accept only cash from customers can easily participate in the interoperable QR Codes ecosystem.

(4) For cross-border payments. By leveraging on existing national payment systems and current arrangements among banks and non-banks in ASEAN region, the initiative to establish interoperable QR Codes for payments can help the participating AMS to reap the full benefits of the payment infrastructures and international linkages of banks and non-banks in the region.

(5) For technical implementation. Setting a standard that complies with the EMV specification can help facilitate both domestic and international implementation of interoperable QR Codes across the region. Likewise, linkage models can be tailored to meet domestic and cross-border policy requirements.

IV. Conclusion

In conclusion, not only does interoperable QR Codes offer a safe, simple, and efficient way of facilitating domestic payments, but also provide an opportunity for the ASEAN to have an integrated cross-border e-payment system. The adoption of interoperable QR Codes for payments makes the ASEAN more competitive as this move improves the ease of doing business in the region. This initiative also enables the PSPs and the regulators in the AMS to collect e-payment data which can be used to support the development of innovative financial products and services going forward.

More use cases of interoperable QR Codes for payments can be explored to deepen the integration of businesses, trades, and activities across the AMS in support of sustainable economic development in the ASEAN region.