EMVCo Publishes EMV® Contactless Kernel Specification
New specification to support the evolution of contactless and mobile payments and simplify global acceptance.

05 October 2022 – Global technical body [EMVCo](#) has published a new specification to support the evolution of contactless and mobile payments and simplify global acceptance for merchants, solution providers and payment systems. Version 1 of the EMV® Contactless Kernel Specification* has been developed in collaboration with EMVCo Associates and approved for release by the EMVCo Board of Advisors.

As contactless and mobile transactions rapidly increase around the world, the specification addresses industry demand for an EMV contactless kernel that can be used by all stakeholders globally for seamless and secure contactless acceptance. A kernel is software that enables payment acceptance devices (such as point-of-sale terminals and ATMs) to process transactions. The EMV Contactless Kernel Specification supports the development of an EMV contactless kernel that uses existing terminal architecture, co-exists with legacy kernels for transition, and is licensable under the same royalty-free conditions as the EMV Contact Chip Specification.

"The EMV Contactless Kernel Specification is the latest example of the payments industry collaborating to deliver a specification that supports marketplace needs, and advances seamless and secure payments globally," said Alisa Ellis, EMVCo Executive Committee Chair. "EMVCo stakeholders identified an opportunity to standardise and simplify the contactless environment with an EMV specification that over time can help reduce the number of contactless kernels that stakeholders need to support and maintain, creating opportunities for merchants, solution providers and payment systems to reduce costs, and improve roll-out speed and time to market."

EMVCo has engaged extensively with EMVCo stakeholders and the wider payments industry to understand marketplace needs, and determine the best approach for an EMV Contactless Kernel Specification. This included a feasibility study, conducted by two independent consulting research firms, Special Interest Meetings with EMVCo Associates, and review and comment periods with EMVCo Associates, Subscribers and the public.

The published specification reflects this input with requirements and features designed to support the evolution of contactless and mobile payments, including advanced security technologies to protect against future threats. Key features include:

- Secure Channel for privacy, eavesdropping prevention, and protection of sensitive data against 'man-in-the-middle' and mitigation of relay attacks.
- Elliptic Curve Cryptography (ECC) for card authentication.
- Support for biometric and mobile card verification methods.
- Optimised for cloud operation.
- Optional on-card data storage with privacy and integrity protection.

Kirsi Klepp, representing the European Payments Council, said: "As an EMVCo Advisor, the European Payment Council welcomed the publication of the EMV Contactless Specification. Its creation addresses a key need for a common contactless kernel and will be of great benefit to payments in Europe."

Michel Léger, Executive Vice President, Global Solution Development, Ingenico said: "As an EMVCo Advisor, Ingenico welcomed the opportunity to support the evolution of the EMV contactless ecosystem. This evolution will keep fostering contactless payment adoption, providing better user experience and future-proof security to consumers".

EMVCo will also introduce approval testing for the EMV Contactless Kernel Specification through EMVCo accredited and audited laboratories and publish a list of all approved EMV contactless kernels on the EMVCo website.

The EMV Contactless Kernel Specification is available on the EMVCo website. Read the EMV Contactless Kernel FAQ to learn more about this initiative.

* Note – full title: EMV Contactless Specifications for Payment Systems, Book C-8, Kernel 8 Specification

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Notes to Editors:
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About EMVCo:
EMVCo creates and manages EMV Specifications and programmes that enable seamless and secure card-based payments for businesses and consumers worldwide.

EMV Specifications support technologies including EMV Chip Contact, EMV Chip Contactless, Mobile, QR Code, Secure Remote Commerce (SRC), 3-D Secure (3DS) and Payment Tokenisation and are widely used by the payments industry to develop products and services that deliver trusted and convenient in-store, online and remote card-based payments.

As a global technical body, EMVCo is collectively owned by American Express, Discover, JCB, Mastercard, UnionPay and Visa. Hundreds of payments stakeholders, including merchants, banks and technology providers, participate as EMVCo Associates and Subscribers to develop, evolve and enhance flexible EMV Specifications that support innovation and address marketplace needs. All EMV Specifications are available royalty free on the EMVCo website.

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