EMVCo

Annual Report
2022

Contents

Resource Spotlight

Click this icon throughout the report to access EMVCo resources and content.

All information in this report is as of 31 December 2022.

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Message from the Chair

Advancing EMV® as the foundation for seamless and secure payments

In 2022, the EMVCo community continued to advance EMV as the foundation for seamless and secure payments worldwide.

*Jonathan Main,
Chair of the EMVCo
Board of Managers*

The total number of EMV® Chip cards in circulation neared 12 billion this year, with over 91% of all card-present transactions using EMV Chip technology. These figures highlight the continued importance of robust transaction security and consistent payments to global commerce, and the foundational role of the EMV infrastructure.

With EMV Chip as the bedrock technology, EMVCo continued to advance EMV Specifications to support seamless and secure transactions across in-person, e-commerce and remote channels.

Key initiatives included:

- Publication of the first EMV Contactless Kernel Specification to simplify global acceptance for merchants, solution providers and payment systems;

- Achieving the 100th Software-Based Mobile Payment (SBMP) security evaluation;

- Our work to enhance the EMV 3-D Secure Specifications (EMV 3DS) to help issuers and merchants combat growing card-not-present (CNP) fraud risks;

- Advancements to EMV Secure Remote Commerce (EMV SRC) to support more flexibility, choice and control for merchants and consumers making and accepting online payments;

- Active industry collaboration with the World Wide Web Consortium (W3C) and the FIDO Alliance through the Web Payment Security Interest Group (WPSIG) initiative to promote consumer privacy while ensuring convenient and seamless e-commerce checkout experiences.

Supporting these technical advancements, EMVCo also upgraded its website to improve useability and search functionality and communicate the value of EMV. The site will continually evolve to support the needs of the EMVCo community and external stakeholders to become the hub of all EMVCo communications.
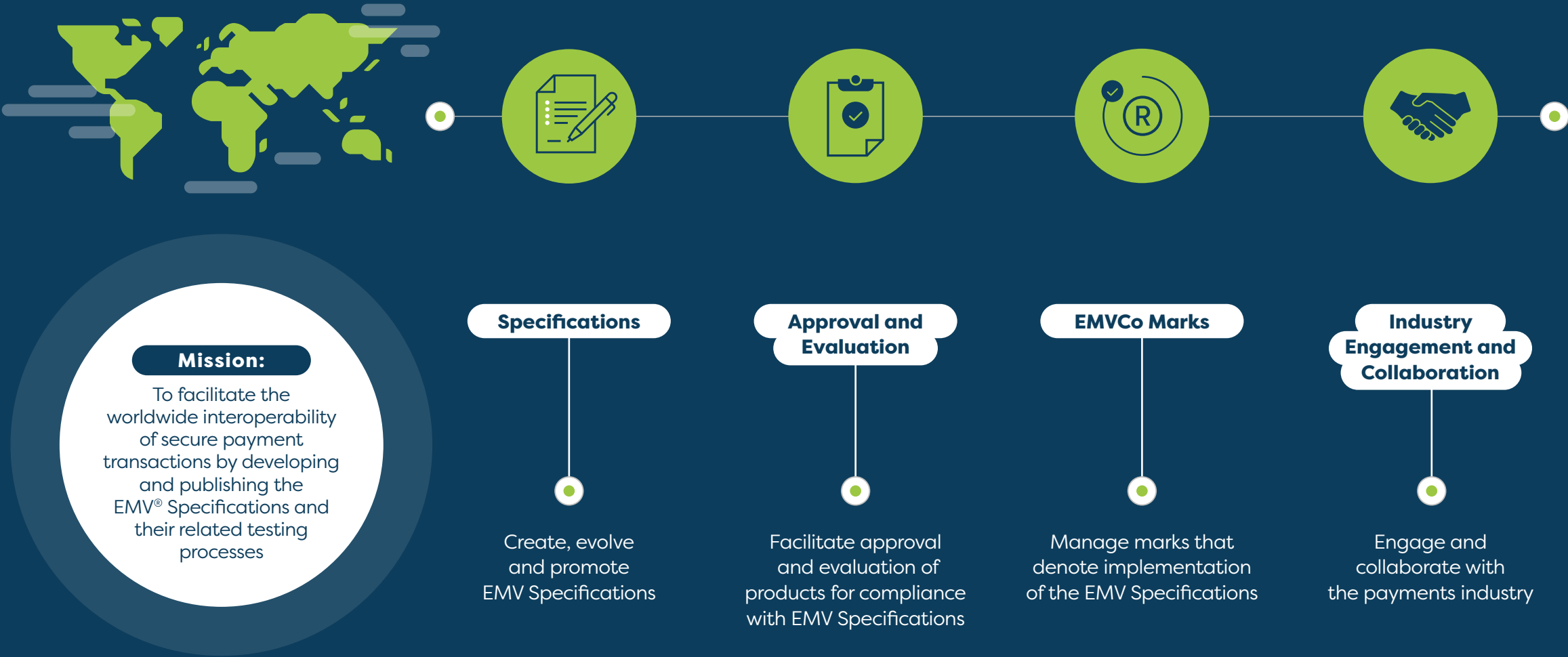
Once again, we experienced the immense value of industry engagement in helping to advance these efforts and evolve EMV Specifications to support the future of payments. This was underscored by the return to in-person meetings for the first time since 2019, with Associate attendance totalling 284 at meetings across the globe in 2022, while virtual Associate attendance totalled 765 during the year.

As we look to 2023, we are excited to have Arman Aygen on board as EMVCo's new Director of Technology, who joined in the latter half of 2022, and to welcome Oliver Manahan as the new Director of Engagement and Operations. We wish Bastien Latge and Brian Byrne the best in their next endeavours and thank them for their efforts and dedication to EMVCo's work over the past several years.

Thank you to everyone who contributed in 2022 to EMVCo's work to advance seamless and secure payments. We look forward to continued collaboration in 2023.
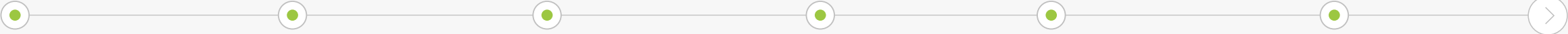

**over
91%**

of all card-present transactions use EMV Chip technology.

EMVCo enables card-based payments to work seamlessly and securely worldwide.

Mission:
To facilitate the worldwide interoperability of secure payment transactions by developing and publishing the EMV® Specifications and their related testing processes

Specifications

Create, evolve and promote EMV Specifications

Approval and Evaluation

Facilitate approval and evaluation of products for compliance with EMV Specifications

EMVCo Marks

Manage marks that denote implementation of the EMV Specifications

Industry Engagement and Collaboration

Engage and collaborate with the payments industry

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Our History

1990s

Card businesses in different countries globally looked to combat rising card payment fraud by using microchips, which are difficult to counterfeit. The technology was designed to meet domestic payment requirements which created cross-border interoperability challenges for businesses and consumers.

EMV® '96 Integrated Circuit Card Application Specification for Payment Systems was published to offer a global approach to reducing fraud at retail store locations.

1999

EMVCo was created by Mastercard[1] and Visa to administer the new specification, enhance payment security and support seamless payments.

The global technical body also included a Board of Advisors, comprised of issuers and acquiring banks, to provide strategic input on EMVCo's activities and specifications.

2000

EMV Level 1 Test Plan was designed. This represented the start of a comprehensive evaluation and approval programme enabling EMVCo to confirm products and solutions will perform in accordance with the EMV Specifications when deployed.

Today this includes accrediting laboratories globally, qualifying test tools, and listing approved and evaluated EMV products and solutions on the EMVCo website for use worldwide.

2004

JCB joined as a member. Its status as a global payment organisation, coupled with its presence in the Japanese and Asian markets deploying EMV-compliant infrastructure, aligned with EMVCo's goal to deliver worldwide interoperability through the EMV Specifications.

2007

EMVCo announced it would evolve its focus to include **contactless payments.** The aim was to ensure that two devices could communicate effectively and efficiently.

EMVCo's work in the area later expanded to include the licensing of the globally recognised EMV contactless symbol and indicator.

The increased deployment of contactless payment infrastructure, combined with a growing interest in adding contactless capability to mobile devices, led EMVCo to include **mobile payments** in its scope.

2009

American Express joined EMVCo as a member, broadening industry involvement within EMVCo and providing further experience and technical expertise that could be leveraged in support of EMVCo activities.

[1]*Europay, now part of Mastercard, was also an original EMVCo member. The term EMV originally came from Europay, Mastercard and Visa, the three companies that collaborated to develop the original specifications and form EMVCo. Today EMV is a registered wordmark.*

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Our History

2010

EMVCo launched its Associates Programme. The participation framework allowed *all* interested payment industry stakeholders to play an active role in guiding EMVCo's strategic and technical direction.

The framework continues to advance to align with market requirements and create unique opportunities for all interested and relevant organisations to comment and provide input directly on EMV® Specifications.

2013

UnionPay and Discover became members of EMVCo. The addition of these new members represented further global industry involvement and added vital expertise at a time when payment technology innovations were rapidly evolving.

2014

With EMV cards and terminals enhancing payment security in-store, EMVCo recognised that fraudulent card activity was moving towards card-not-present environments.

EMVCo expanded its scope to lead payment tokenisation activity. The work improved payment security by removing the most valuable data to a fraudster within a transaction, *the primary account number (PAN),* and replacing it with a unique alternative value, *the EMV Payment Token.*

Today an extensive Use Case Guide and Registration Programme further support the core token activity.

2016

EMVCo published the EMV® 3-D Secure Specification to enable consumer authentication for e-commerce and remote purchases, without adding unnecessary friction to the checkout process.

The work is supported by an extensive testing programme.

2017

EMVCo published the EMV® QR Code Payment Specifications to provide clarity on using QR Codes to facilitate mobile payments at point-of-sale.

The work enabled merchants to accept QR Code based payments in a standardised manner and consumers to benefit from a more uniform experience.

Today EMVCo also delivers a self-testing framework for EMV QR Codes and manages licensing of the EMVCo QR Marks.

2019

To provide a common baseline for the development of payment solutions that simplify the e-commerce checkout process to make it consistent, convenient and secure, **EMVCo published the EMV® Secure Remote Commerce Specification.** Consumer-facing solutions and programmes based on this specification are known as Click to Pay.

This was supported by the launch of the Click to Pay Icon to ensure consumer familiarity, which EMVCo licenses for industry use.
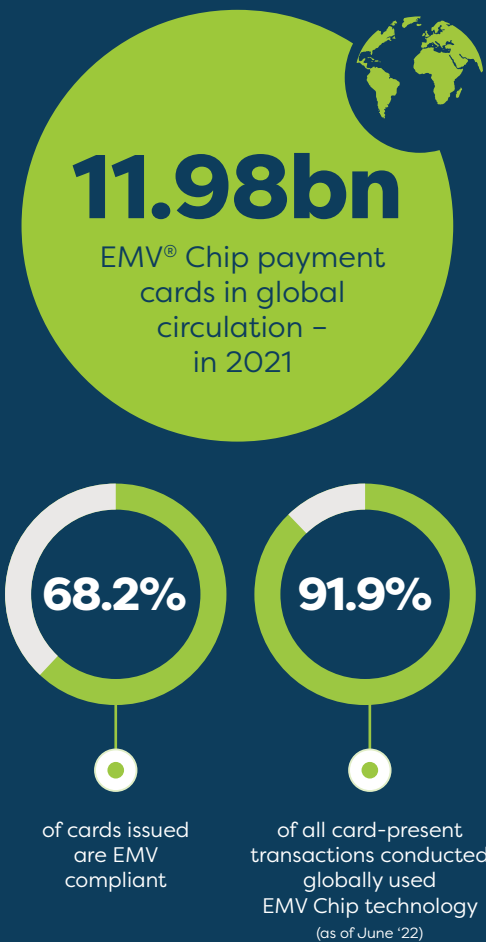
2022

EMVCo published the EMV® Contactless Kernel Specification to address industry demand for a single EMV contactless kernel that can be used by all stakeholders globally for seamless and secure contactless acceptance.

This means that EMVCo's contactless offering is now as comprehensive as the EMV Contact Chip Specification.

2022 in Numbers

Adoption

11.98bn
EMV® Chip payment cards in global circulation – in 2021

68.2%
of cards issued are EMV compliant

91.9%
of all card-present transactions conducted globally used EMV Chip technology
(as of June '22)

Participation

11
Interactive meetings held in 2022

601
Associates and Subscribers

20
Working Groups and Task Forces

751 Queries answered by EMVCo in 2022

Approvals and Evaluations

9480
EMVCo approved and evaluated products globally

184
qualified test tools

81
accredited testing laboratories

🔍 **Resource Spotlight**

EMV Insights: EMV® Chip Growth Continues Globally

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EMV® Technologies – 2022 Milestones

EMV® Contactless Chip

EMV® Contactless Kernel Specification to Simplify and Advance Global Contactless Payment Acceptance

EMVCo published the first EMV® Contactless Kernel Specification to support the evolution of contactless and mobile payments and simplify global acceptance for merchants, solution providers and payment systems. The specification addresses industry demand for an EMV Contactless Kernel that can be used by all stakeholders globally for seamless and secure contactless acceptance.

Resource Spotlight

Talking Payments with EMVCo: A Closer Look at the EMV® Contactless Kernel Specification

EMV® Contact Chip

EMV Contact Chip Specification v4.4

EMVCo published a new version of the EMV Contact Chip Specification. The new version (v4.4) includes all existing specification bulletins in the current version 4.3 of EMV book 1/2/3/4.

Resource Spotlight

eBook: EMV® Chip At-a-Glance eBook

Resource Spotlight

Talking Payments with EMVCo: EMV® Chip Evolution, Security & Approvals

EMV® 3-D Secure

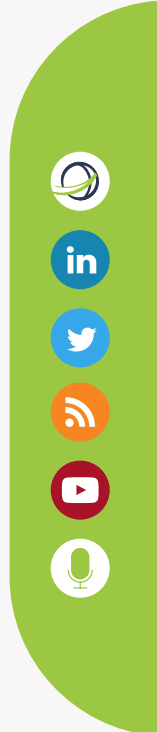### EMV 3DS v2.3.1 Helps Combat Card-Not-Present Fraud

EMVCo published an update to the EMV 3-D Secure (3DS) Specifications to help issuers and merchants combat growing card-not-present (CNP) fraud risks. EMV 3DS v2.3.1 builds on earlier versions of the specifications with new data elements and flows that streamline consumer authentication.

EMV 3DS Bridging Messaging Extension

EMVCo published an EMV 3DS Bridging Message Extension with new data elements from 3DS v2.3.1 that enable existing 3DS v2.1 and v2.2 products to support the latest 3DS payment use cases.

Resource Spotlight

EMV Insights: How is the User Experience Enhanced in EMV® 3-D Secure v2.3?

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EMV® Technologies – 2022 Milestones

EMV® Secure Remote Commerce

EMV SRC v1.3 Supports More Flexible Online Checkout

EMVCo published an update to the EMV® Secure Remote Commerce (SRC) Specifications to bring increased flexibility, choice and control to online checkout experiences for both consumers and merchants.

New EMV SRC Use Cases

EMVCo published EMV Secure Remote Commerce (SRC) Use Cases v1.0 to provide insights on ways merchants can use EMV SRC Specifications to provide secure and convenient checkout options. The document covers a number of payment scenarios, including Merchant Orchestrated Checkout, Merchant Digital Card on File Checkout, and Merchant Presented QR Code Checkout.

🔍 Resource Spotlight

EMV Insights: Exploring the EMV® Secure Remote Commerce Use Cases

EMV® Payment Tokenisation

New EMV Payment Tokenisation Use Cases

EMVCo published EMV Payment Tokenisation – A Guide to Use Cases v2.2 to describe use case examples that demonstrate the extent and flexibility of the EMV Payment Tokenisation Technical Framework. Version 2.2 adds use cases that show the combination of EMV Payment Tokenisation with EMV SRC and EMV 3DS technologies.

🔍 Resource Spotlight

Video: The What, Why and How of EMV® Payment Tokenisation

EMV® Mobile

EMVCo Issues Milestone 100th Security Evaluation Certificate for Software-Based Mobile Payment Solutions

EMVCo issued its 100th Security Evaluation Certificate for Software-Based Mobile Payments (SBMP) solutions. This milestone reflects significant industry uptake from leading device manufacturers and product vendors to demonstrate the security of their solutions through a globally recognised programme, promoting trust and confidence across the payments ecosystem and simplifying the deployment of safe and secure mobile wallet solutions.

Advancing EMV® in 2023

Evolving EMV® Chip

The EMV® Chip Specifications provide a blueprint for chip technology to work consistently anywhere in the world to deliver the same result – secure, seamless and reliable in-store payments.

Following the publication of the EMV Contactless Kernel Specification in 2022, work is now progressing on a supporting testing programme. While timing is still to be finalised, it is anticipated that test tools will be available for development and debugging in the first half of 2023, with the full testing suite to follow in 2024.

EMVCo also remains committed to evolving the EMV Chip Specifications to incorporate advanced security and technology features to help protect against future threats and support the next generation of payments.

For example, the introduction of Elliptic Curve Cryptography (ECC) in Version 4.4 of the EMV Contact Chip Specification and the EMV

Contactless Kernel Specification was a strategic decision to enable EMV Chip to keep pace with classical attacks without impacting performance. The publication of updated EMV Chip Security Guidelines in 2023 will address the use of ECC across the specifications. In addition, EMV Contactless Specifications for Payments Systems: Book E – Security and Key Management is anticipated to be published for Associate review in Q1 2023. This document defines the approaches and cryptographic methods (including ECC) to ensure adequate security functionality.

Looking further ahead, each passing year brings the payments industry closer to a truly post-quantum world. While the impact of quantum computing on current cryptography is constantly evolving, EMVCo continues to explore and evaluate potential risks. This includes collaboration with PCI SSC to examine key issues relating to security and cryptography.

Advancing EMV® in 2023
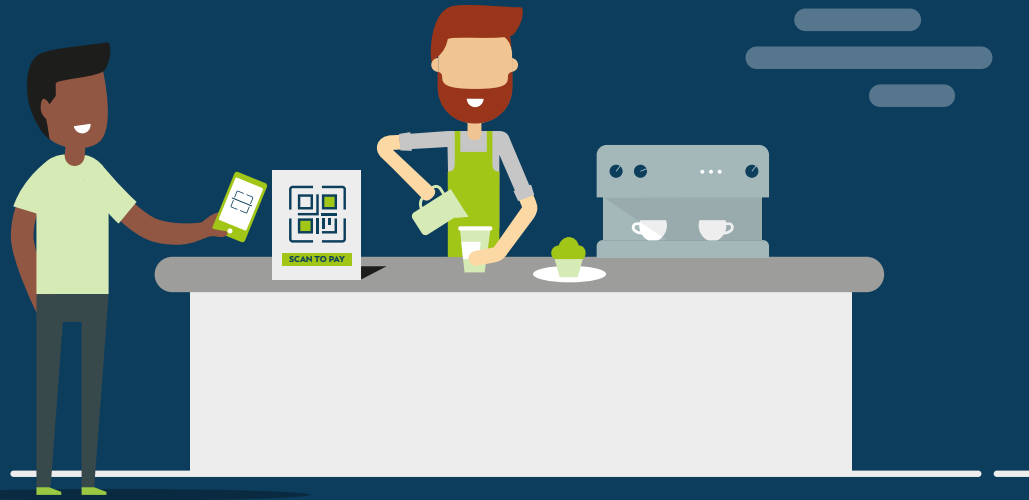
Supporting Changing Payments Preferences

An ongoing priority for EMVCo is supporting the delivery of secure, quick and convenient checkout experiences, no matter how consumers choose to pay.

The industry has already seen the widespread digitalisation of payment cards to enable consumers to pay with their smartphones, wearables and other mobile devices, and EMVCo is continuing to evolve its Level 1 testing requirements to support the use of different form factors at the point-of-sale. This includes ongoing liaisons with ISO and NFC Forum.

The same trend for digitalisation is now apparent for payment acceptance technology, with smartphones and tablets increasingly used in place of traditional point-of-sale terminals. Following the conclusion of the TapToMobile Early Adopter Programme in 2022, EMVCo is now assessing the data gathered and exploring the definition of 'Acceptance Criteria' to ensure a good user experience.

EMVCo's ongoing evaluation of the role wireless technologies, such as Wi-Fi, Ultra Wideband (UWB), Bluetooth Low Energy (BLE) and mobile data, can play in supporting in-store payment experiences also continues to progress with the planned publication of a white paper exploring the data and security considerations across multiple use-cases.

More broadly, EMVCo recognises the need to respond to the challenge of supporting secure, seamless and unified payment experiences across multiple channels. As the importance of 'omnichannel' grows, EMVCo will continue to investigate opportunities to enhance the EMV® Specifications in line with evolving expectations and industry feedback from our Advisors.

Advancing EMV® in 2023

Promoting Seamless and Secure E-Commerce Payments

EMV® Specifications support a growing number of evolving technologies that are shaping the future of digital payments and e-commerce.

Following the publication of EMV 3DS v2.3.1 in September 2022, the supporting testing framework is expected to be available from January 2023. EMVCo is actively consulting and seeking input on key features to be included in version 2.4 of the specification.

In addition, EMVCo plans to publish a white paper that provides payments stakeholders with examples and use-cases to illustrate key 3DS features and support implementation. The first release of the white paper is scheduled for Q2 2023, with a follow-up paper anticipated in Q4.

Similarly, EMVCo is focused on evolving use cases for EMV SRC and EMV Payment Tokenisation to demonstrate how these specifications are promoting payments innovation.

It is also important to recognise how changing browser privacy requirements are impacting the use of consumer data throughout the transaction process. EMVCo's continued work with the FIDO Alliance and W3C through the Web Payments Security Interest Group is ensuring that the organisations' respective technologies can continue to provide a seamless and secure online payment process, while promoting consumer privacy.
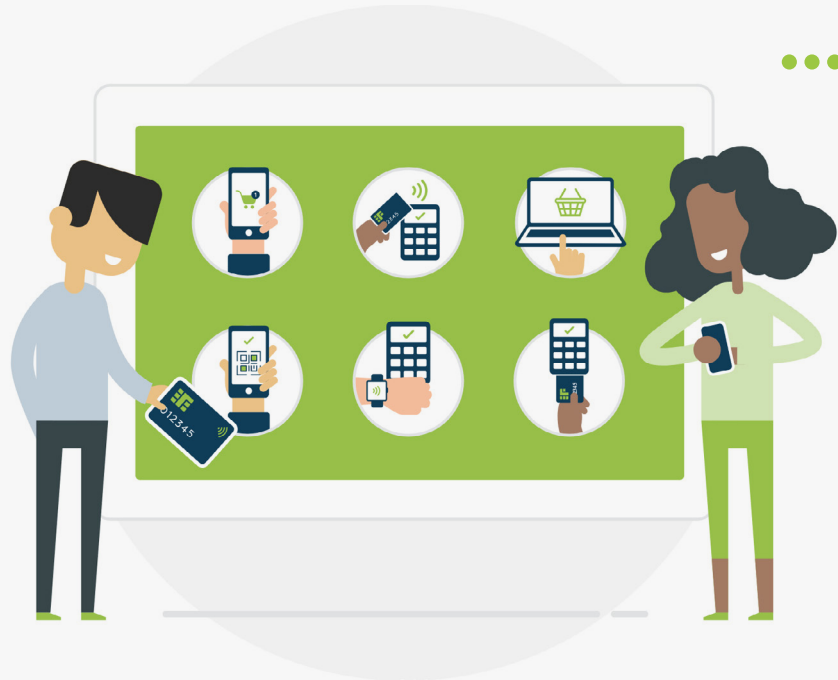
Industry Engagement and Collaboration
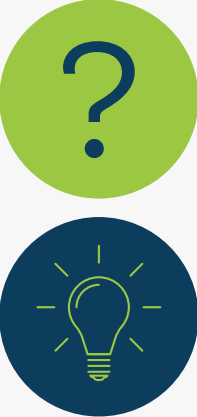
Did You Know?

Payments industry stakeholders can contribute to EMVCo's work through participation in:

▶ EMVCo's Board of Advisors to propose new initiatives and vote to approve publication of a final draft of a specification.

▶ Regular EMVCo advisory and technical meetings to develop, enhance and evolve EMV Specifications.

▶ Review and comment periods for draft EMV® Specifications.

"
As EMVCo Associates, we immediately saw the benefit of extending EMV 3DS authentication request messages with airline information.
"

Amadeus

aMaDEUS

"
As a multi-stakeholder organisation supporting and promoting standardisation requirements for a market-driven implementation, ECSG is glad to benefit from longstanding and active participation of EMVCo in its work, enabling a consistent customer experience when making or accepting card payments in Europe.
"

European Cards Stakeholders Group

ECSG
european cards stakeholders group

"
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.
"

European Payments Council

European Payments Council

"
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.
"

Ingenico

ingenico

"
Our primary motivation for joining the EMVCo Board of Advisors is that we believe it's hugely important for the MRC to bring the collective merchant voice to the table. To discuss, review, and implement standards that help consumers and merchants enjoy safe and secure card payment transactions. We're looking forward to collaborating with the other Advisors and to working closely with our partners at EMVCo to achieve this important goal.
"

Merchant Risk Council

MRC

"
As an EMVCo Associate, we saw clear opportunities to contribute to the development of global specifications that promote seamless and secure payments worldwide. We look forward to continued and productive collaboration with EMVCo.
"

Microsoft

Microsoft®

"
Our collaboration with EMVCo has significantly assisted with PASA's stakeholder engagement efforts.
"

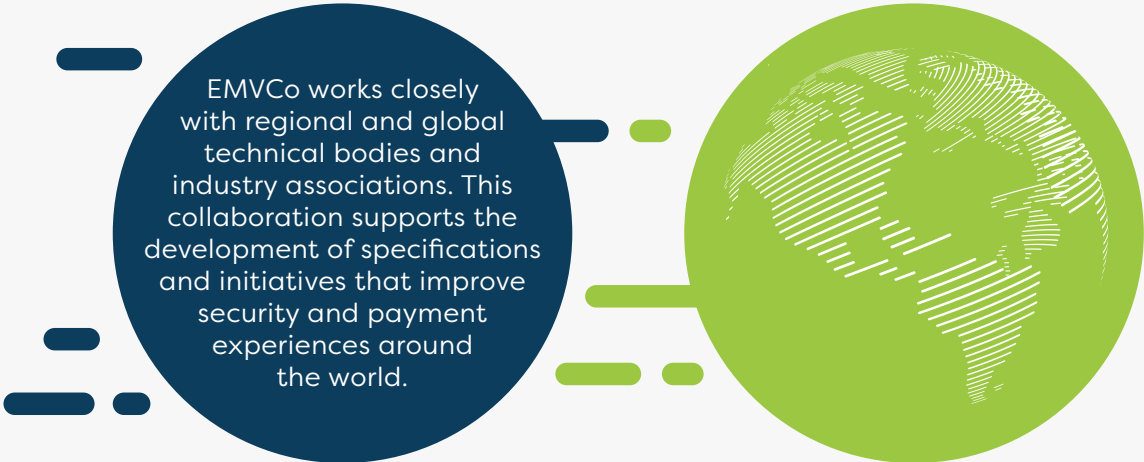Payments Association of South Africa (PASA)

PASA

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Current EMVCo Participants*

Industry Partners and Liaisons

EMVCo works closely with regional and global technical bodies and industry associations. This collaboration supports the development of specifications and initiatives that improve security and payment experiences around the world.

APSCA · ECSG european cards stakeholders group · enisa · European Payments Council · fido ALLIANCE

Global Platform™ · GSMA · IATA · ISO · NFC FORUM

nexo STANDARDS · PCi Security Standards Council · SECURE TECHNOLOGY ALLIANCE · US PAYMENTS FORUM · W3C®

"For more than 20 years APSCA has collaborated with EMVCo to educate stakeholders across Asia-Pacific on the benefits of using EMV® Specifications as a foundation for seamless and secure payments. These efforts have been key to driving EMV Chip migration in the region, and supporting the continued growth of contactless, mobile NFC, QR Codes and digital payments."

APSCA

APSCA

"This [Use of FIDO Data in 3DS Messages] paper, as well as FIDO Alliance's complementary technical note, provides essential information on how FIDO can be used alongside EMV 3DS to provide higher levels of security, enhanced user experiences, and better overall approval rates for e-commerce merchants. These papers are part of our longstanding relationship with EMVCo and our shared focus on providing answers to the questions we often receive on how our FIDO Alliance standards and EMVCo specifications can work together."

FIDO Alliance

fido ALLIANCE
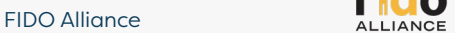
"The U.S. Payments Forum has worked closely with EMVCo over the years in our efforts to support the introduction and implementation of EMV Chip and other new and emerging technologies that protect the security of, and enhance opportunities for, payment transactions within the U.S."

U.S. Payments Forum

US PAYMENTS FORUM

"When W3C began to focus on streamlining e-commerce checkout, EMVCo and W3C recognised the value of developing an industry partnership. With the FIDO Alliance we then established a dedicated Web Payment Security Interest Group. All three organisations now work more closely to improve online payment security and to enhance interoperability among our respective technologies. Through this collaboration we anticipate that merchants, payment service providers, and other industry stakeholders will benefit from more secure and streamlined online payments."
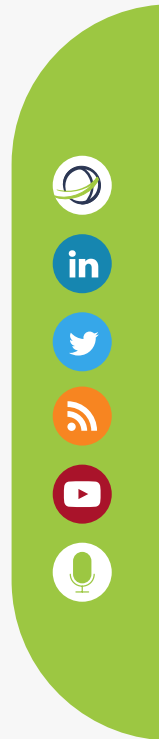
W3C

W3C®

🔍 **Resource Spotlight**

EMVCo, FIDO & W3C Roundtable: How do EMV® 3-D Secure and Secure Payment Confirmation Work Together?

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Event Engagement

EMVCo connected with the global payments community by speaking at **12 leading payments industry conferences in 2022,** educating on topics including contactless payments, secure online commerce and industry collaboration.

Contactless World Congress

CONTACTLESS WORLD CONGRESS

ETA Transact

TRANSACT POWERED BY ETA

FIDO Authenticate

authenticate 2022

MEXT Smart Payment Day

Mext

MPE Berlin

mpe MERCHANT PAYMENTS ECOSYSTEM

MRC Vegas

Vegas 22

MULTOS Consortium Member Meeting

MULTOS

STA/USPF Payments Summit

PAYMENTS SUMMIT

PCI SSC Europe Community Meeting

PCI Security Standards Council

PCI SSC North America Community Meeting

PCI Security Standards Council

USPF Summer Meeting

US PAYMENTS FORUM

Wolfe Fintech Forum

WOLFE RESEARCH FINTECH FORUM

Approvals and Evaluations

EMVCo brings confidence to the global payments ecosystem through the approval and evaluation of payment products that meet EMV® Specifications for performance, compatibility and security.

9480

EMVCo Approved and Evaluated Products Globally
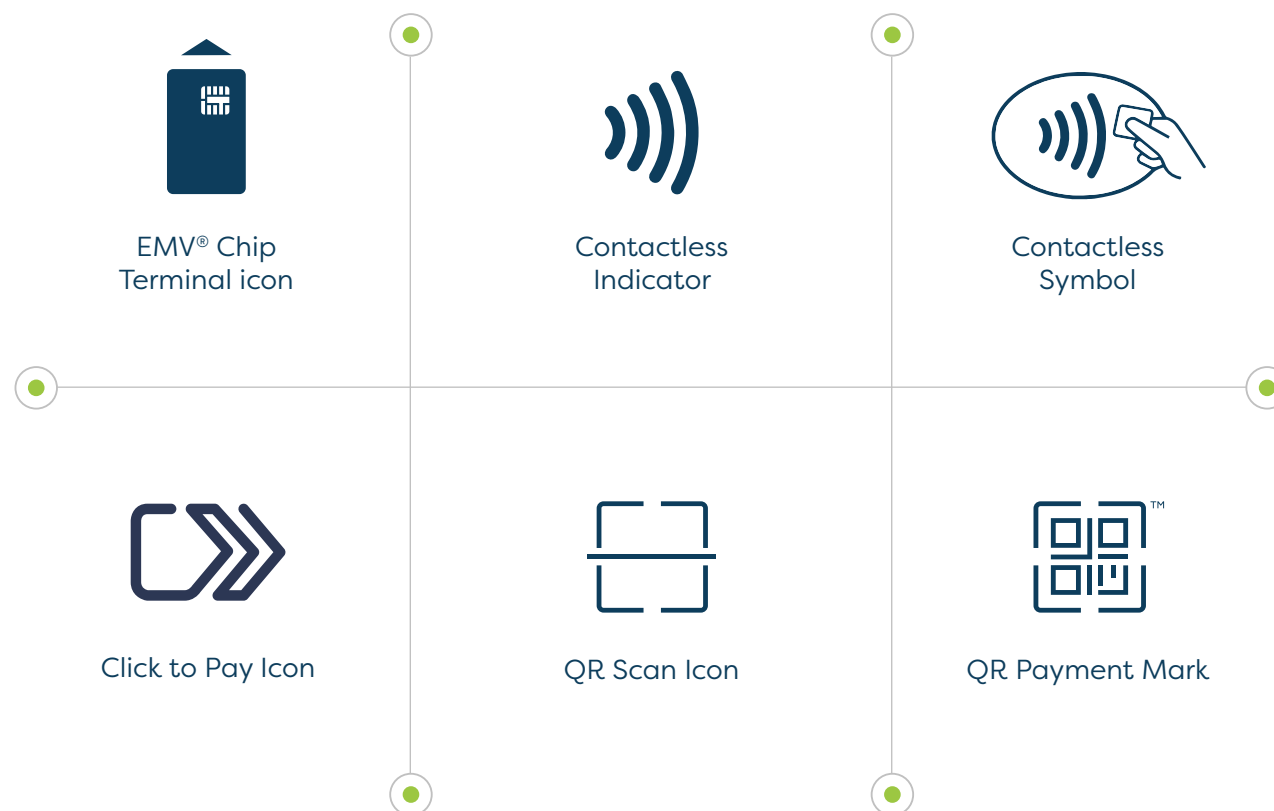
184

Qualified Test Tools

81

Accredited Testing Laboratories

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EMVCo Marks

EMVCo manages and licenses trademarks (EMVCo Marks) that indicate payment technology which uses and is aligned to the EMV Specifications. This promotes confidence and trust in payment technology both in-store and for e-commerce transactions.

EMV® Chip Terminal icon

Contactless Indicator

Contactless Symbol

Click to Pay Icon

QR Scan Icon

QR Payment Mark

EMVCo Marks at a Glance

Marks promote payment trust, familiarity and consistency.

- EMVCo Marks encourage a payment landscape that can be trusted by all parties and promotes confidence across the payment industry.

EMVCo Marks demonstrate implementation of the EMV Specifications.

- Businesses use EMVCo Marks on their products and solutions to show that they have met EMVCo expectations for functional performance, compatibility and security.

Recognisable visual marks inspire consumer confidence.

- Easy-to-recognise symbols at point-of-payment provide consistency and familiarity to the payment experience and inspire consumer confidence during the checkout process.

Visit the Trademark Center

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EMVCo Knowledge Hub

Visit the
EMVCo Knowledge Hub
for access to all EMVCo
educational resources on
EMV® topics, including
EMV Insights and the
Talking Payments with EMVCo
podcast.

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notifications on
the latest
updates.
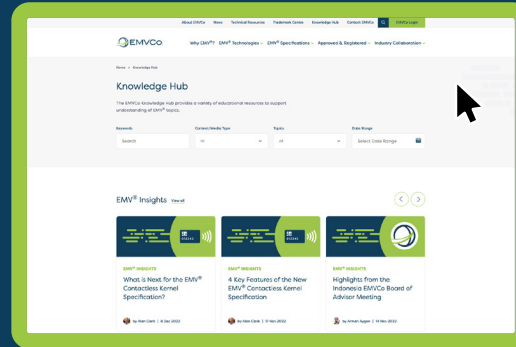
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Thank you

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twitter.com/emvco

Watch more on YouTube:
Search EMVCo