EMVCo®

Annual Report / 2024

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All information in this report is as of 31 December 2024

Message from the Chair

2024 represented a significant milestone for EMVCo, marking 25 years since the organisation was first formed in 1999.

EMVCo's original focus was on addressing the challenge of advancing secure chip card payments to combat fraud, while creating interoperability across different countries.

It did this by developing and managing the EMV® Chip Specifications and making them available royalty-free, as well as building out a supporting testing infrastructure to ensure compliance.

The resulting impact on global commerce has been profoundly beneficial.

EMV Chip has transformed the security of in-store payments by providing a universal tool to fight card-present fraud. Various EMV technologies now build on this foundation of security and interoperability, allowing consumers and businesses to make trusted and reliable card-based payments in-store and online – wherever they are in the world.

While EMVCo and EMV technology have come a long way, our core mission remains the same: To facilitate the worldwide interoperability of secure payment transactions by developing and publishing the EMV Specifications and their related testing processes.

As we reflect on the past year and look ahead to 2025 and beyond, it is clear that this mission continues to be fundamental in enabling payments innovation globally.

Soumya Chakrabarty, Chair of the EMVCo Board of Managers

Message from the Chair

Removing Friction from Electric Vehicle (EV) Charging Payments

One key emerging use case EMVCo is investigating is how EMV technology can help make EV charging payments easier than paying for gas.

Following the launch of the Electric Vehicle Open Payments (EVOP) initiative in late 2023, EMVCo has been exploring how wide adoption of the ISO 15118 Standard – which specifies a digital communication protocol between the EV and the charging station – could enable a simple, secure and seamless card-based open payment experience for EV drivers across charging networks.

By enabling payment and cryptographic data to be exchanged automatically without direct user interaction, an EMV open payments approach would allow cardholders to pay for charging at different merchants without first needing to establish a prior relationship (such as downloading a proprietary application). This means EV drivers can trust they will be able to charge their vehicle anywhere, while merchants can trust they will be paid.

2025 will see continued collaboration with payments and EV industry stakeholders, with advances to the EMV Specifications expected.

Advancing EMVCo Approvals and Evaluations

EMVCo is committed to ensuring the testing infrastructure evolves to support new ways of paying.

In 2024, EMVCo published a dedicated reduced range approval process to promote a better experience when consumer and enterprise devices are used to accept contactless payments – known as TapToMobile. In addition, a terminal type approval process for the new EMV® Contactless Kernel Specification was launched to support the evolution of contactless and mobile payments and simplify global acceptance.

EMVCo also achieved ISO/IEC 17065 accreditation for its security evaluation processes. This new status as an accredited certification body recognises the value and quality of EMVCo security product evaluations in enabling the deployment of safe and secure payment solutions.

EMVCo will continue to build on its proven industry role to enhance the security, performance and interoperability of payment solutions both in-store and online.

Soumya Chakrabarty,
Chair of the EMVCo Board of Managers

Message from the Chair

Enhancing the E-Commerce Checkout Experience

In 2024, EMVCo published an interactive white paper to help optimise the EMV 3-D Secure (3DS) payment authentication experience.

The EMV Secure Remote Commerce (SRC) – Click to Pay Customer Experience (CX) Guidelines were also released to support a consistent checkout experience with Click to Pay solutions based on the EMV SRC Specifications. The consistent approach outlined in the guidelines aims to promote consumer trust by ensuring the payment process is easy and familiar.

As purchasing experiences and technology continue to evolve, EMVCo is focused on supporting new regulatory requirements and the technical trends shaping our industry to ensure frictionless yet robust authentication that is compatible with the existing payment infrastructure.

A Commitment to Collaboration and Engagement

Our focus on supporting innovation across the payments industry is only possible due to our ongoing collaboration with hundreds of industry participants.

In 2024 alone, we saw extensive engagement with EMVCo Associates and Subscribers at 11 EMVCo meetings, with hundreds of stakeholders joining us across the globe – including guest speakers from Allthenticate, Australian Payments Network, Broadcom, Cartes Bancaires, CharIN, Commonwealth Bank, Merchant Advisory Group, Merchant Risk Council, Nexi Group, Netcetera, Pan Nordic Card Association, SIBS and TotalEnergies. EMVCo representatives also connected with stakeholders at 15 industry conferences.

It is important to also recognise the invaluable contributions of all past and present participants in shaping the development of the EMV Specifications over the course of three decades.

Here's to the next 25 years of EMVCo!

Soumya Chakrabarty,
Chair of the EMVCo Board of Managers

25 Years of EMVCo

Why EMV®

Billions of card-based payments are made and accepted daily. Whatever you are buying, wherever you are in the world, you expect your payment card to work.

For in-store, e-commerce or remote transactions, the process needs to be familiar, convenient and secure. EMV technology helps make this possible.

The Evolution of EMVCo

EMVCo Today

25 Years of EMVCo

EMVCo Through the Years

1996
First use of EMV® terminology with the publication of the EMV '96 Integrated Circuit Card Application Specification for Payment Systems.

1999
EMVCo created to manage the EMV Chip Specifications.

2000
EMV Level 1 Test Plan designed.

2007
Contactless and mobile payments added to EMVCo's scope.

2014
EMV Payment Tokenisation Specifications published.

2016
EMV 3-D Secure Specifications published.

2017
EMV QR Code Payment Specifications published.

2018
EMV Level 3 Testing Framework qualification process for Level 3 test tools defined.

2019
EMV Secure Remote Commerce Specifications published.

2022
EMV Contactless Kernel Specification published.

2023
Electric Vehicle Open Payment (EVOP) initiative launched.

2024

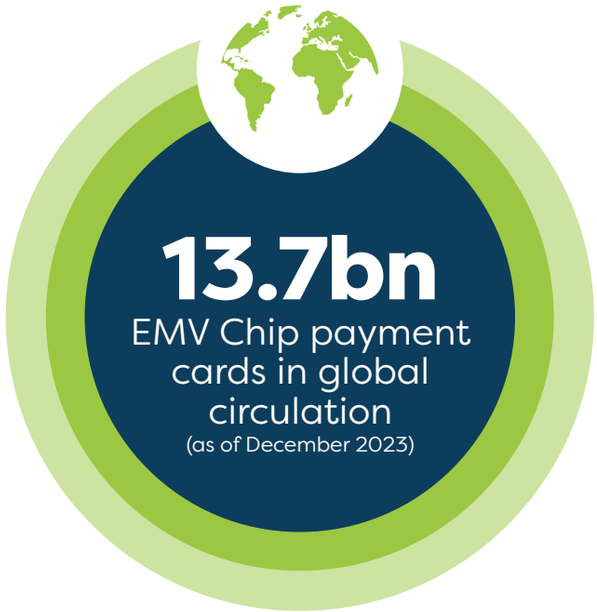
Nearly **14 billion** EMV chip cards are in global circulation.

70% of all issued cards are EMV-enabled.

95% of all global card-present transactions use EMV Chip technology.

2024 in Numbers

Worldwide EMV® Deployment Statistics



of all issued cards globally are EMV

(as of December 2023)

of all card-present transactions globally were EMV Chip

(as of December 2023)

Industry Engagement

81 Associates

339 Subscribers

11 Meetings Held

20 Working Groups and Task Forces

874 Queries Answered by EMVCo in 2024

Resource Spotlight

Worldwide EMV Deployment Statistics

Resource Spotlight

Engaging the Industry

EMVCo Approvals and Evaluations

EMVCo Approvals and Evaluations collectively refer to the various testing processes that confirm products meet the technical baseline for security, performance and compatibility when deployed:

10,791
EMVCo approved and evaluated products globally

1,150
were published in 2024

215
qualified test tools

74
accredited testing laboratories

EMVCo Becomes an Accredited ISO/IEC Certification Body

In 2024, EMVCo received ISO/IEC 17065 accreditation for its security evaluation processes. This accreditation independently acknowledges that EMVCo's security certification scheme meets the stringent requirements outlined by ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission).

> "As we move to an increasingly digitalised world, cross-industry efforts must focus on bolstering cybersecurity and ensuring products and services coming to market are fit for purpose. For almost 20 years, EMVCo's robust security evaluation processes have been integral in promoting trust and enabling more secure payment experiences. We felt it was vital to independently showcase the depth, quality and impartiality of this testing framework, and demonstrate our proven ability to address payment cybersecurity concerns in support of regulatory initiatives across the world."
>
> *Aaron Armstrong, EMVCo Executive Committee Chair*

Resource Spotlight

The **Approved and Evaluated section** of the EMVCo website has been updated to make it easier for industry stakeholders to find key information about processes and products.

EMV® Technology Milestones 2024

Electric Vehicle Open Payments

EMVCo continued to explore the development of an EMV EVOP Specification that would enable a card-based capability within the ISO 15118 'Plug & Charge' experience – with EMV Chip technology serving as the foundation for face-to-face payments. EMVCo is also investigating the inclusion of EV charging as an additional use case to further enhance the EMV SRC Specifications.

> "It is impressive to hear how EMVCo is working with industry participants to facilitate a simplified means for EV drivers to pay for charging [...] and we look forward to further engaging with EMVCo on this, and many other topics at future events."

US PAYMENTS FORUM

Resource Spotlight

Exploring EMVCo's Electric Vehicle Open Payments (EVOP) Initiative

Resource Spotlight

Webcast: EV Open Payments

Resource Spotlight

Driving Innovation for Electric Vehicle Charging Payments

EMV® Technology Milestones 2024

EMV Contact and Contactless Chip

Reduced Range Approval Process For TapToMobile Devices

EMVCo introduced minimum acceptance criteria and a reduced range approval process to enhance the TapToMobile payment experience, enabling EMVCo and industry participants to start measuring the performance of TapToMobile devices and provide feedback on improving read range over time.

EMV Contactless Kernel Approval Process

EMVCo launched a terminal type approval process for the new EMV Contactless Kernel Specification (EMV® Contactless Specifications for Payment Systems: Book C-8 – Kernel 8 Specification), with the first laboratory accreditations, tool qualifications and product approvals now listed on the EMVCo website.

EMV Contact Chip Features Sunsetting

EMVCo worked closely with EMVCo Associates and Subscribers to identify certain EMV Contact Chip Specification features to be sunset with the aim of collectively improving security, optimising the usability of the specifications, simplifying editorial understanding, and removing obsolete or unused features.

Wireless Payment: Considerations for Use of EMV Chip

EMVCo published a dedicated white paper – 'Wireless Payment: Considerations for Use of EMV® Chip' – which explores the data, security and technology considerations for wireless payments across multiple use-cases.

Resource Spotlight

How Wireless Technologies Can Transform In-Store Payments

EMV® Technology Milestones 2024

EMV Contact and Contactless Chip

New POI Information Identifier for Transit Operators

EMVCo updated the EMV Contactless Specifications for Payment Systems, Book B Entry Point Specification, v2.11 to include a new POI (Point Of Interaction) Information Identifier – 'Transit Operator ID'. This identifier allows the terminal to indicate the particular transit operator it belongs to. Following the publication of this update, registrations have already commenced.

EMV® Contactless Specifications for Payment Systems – Book E Cryptography Worked Examples

Book E is a dedicated document that defines the approaches and cryptographic methods – including Elliptic Curve Cryptography (ECC) – to ensure adequate security functionality. EMVCo also provided worked examples of the security mechanisms described in the document.

Contactless Specification for Payment Systems Kernel 8 Guidance Document

EMVCo provided an overview of key specification features and offered guidance on the implementation of contactless transactions using Kernel 8.

EMV® Technology Milestones 2024

EMV 3-D Secure

EMVCo and FIDO Alliance Guidance on Use of FIDO with EMV 3DS

EMVCo published an updated white paper in collaboration with FIDO Alliance: 'Use of FIDO® Data in 3-D Secure Messages to Support Issuer Validation of FIDO® Authentication Data.' The paper explains how the use of FIDO Authentication Data in EMV 3DS messages can reduce fraud and friction in the payment process for consumers. It also defines an enhanced data structure to offer issuers increased insight into the authentication process.

EMV 3DS White Paper: Frictionless Flow, Out-of-Band and Recurring Transaction Use Cases

EMVCo launched an interactive white paper to help banks, solution providers and merchants optimise the EMV 3DS payment authentication experience. The online resource demonstrates how EMV 3DS solutions can better support key use cases – including frictionless authentication, out-of-band authentication, and recurring and instalment transactions.

EMV 3DS Attribute Verification Message Extension

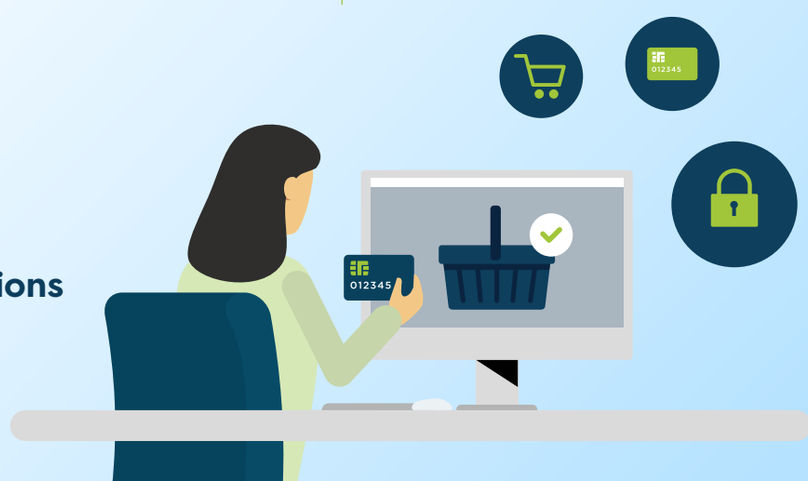
The EMV 3DS Attribute Verification Message Extension was released to explain how existing EMV 3DS v2.2.0 and v2.3.1 components can provide additional data related to cardholder attributes such as age, name, country of residence or address for verification.

EMV 3DS Wrapped-SDK Best Practices

EMVCo released recommendations for integrating an existing EMV 3DS Default-SDK into a 3DS Requestor (Merchant) Application using hybrid or cross-platform development environments.

Resource Spotlight

- **EMV 3-D Secure Interactive White Paper**
- **Supporting the Deployment of EMV 3DS Solutions**



EMV® Technology Milestones 2024

EMV SRC

EMV SRC–
Click to Pay CX Guidelines

The EMV SRC – Click to Pay CX Guidelines are a dynamic, interactive tool for merchants, payment service providers, product owners, developers and CX designers who want to make online checkout easier with Click to Pay solutions based on the EMV SRC Specifications.

Resource Spotlight

- **EMV Secure Remote Commerce – Click to Pay Customer Experience (CX) Guidelines**
- **Simplifying Online Checkout With the EMV® Secure Remote Commerce – Click to Pay CX Guidelines**

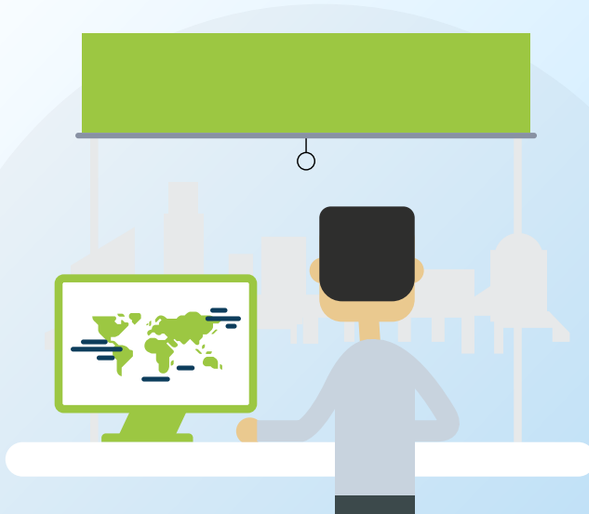
EMV Level 3 Testing

EMV Level 3 (L3) Testing Framework – Participant System Guidelines

EMVCo released guidelines for Participant Systems when creating and handling L3 Test Set files and L3 Test Card images.

Resource Spotlight

EMV® Level 3 Testing Technology Page



EMV® Technology Milestones 2024

EMV Security

Biometric on Card

As part of the ongoing Biometric on Card initiative, EMVCo defined dedicated security requirements for biometric payment cards and incorporated them into the existing chip security guidelines and evaluation process.

Software-Based Mobile Payments (SBMP) Security Evaluation Methodology

The SBMP Security Evaluation Methodology document (Version 1.8) was updated to provide implementation time guidance for new attacks and techniques, as well as tool updates. It now also references the new multi-factor authentication (MFA) component and associated EMVCo MFA Security Requirements document.

SEWG Security Evaluation Guidance

The SEWG Security Evaluation Guidance document (Version 1.6) was updated to provide implementation time guidance for new attacks and techniques.

Resource Spotlight

How EMVCo is Supporting the Development of Biometric Payment Cards

Enhancing Seamless and Secure Payments in 2025

Continued Collaboration on EV Open Payments

EMVCo remains committed to actively encouraging and seeking input from EV industry stakeholders to help ensure the ongoing EVOP initiative addresses relevant use cases and requirements. This includes continued collaboration with industry partners such as CharIN, ISO and the U.S. Payments Forum.

Addressing New Trends in Payment Initiation and Authentication

EMVCo is working to support the regulatory and technical developments that are shaping cardholder initiation and authentication.

One such example is educating on how EMV 3DS can work with the new European Digital Identity (EUDI) Wallet framework to ensure Payment Service Directive (PSD2 and PSD3) Strong Customer Authentication (SCA) requirements are supported.

Another focus is on how the EMV SRC ecosystem can support the use of FIDO passkey data in place of traditional passcodes to remove checkout friction and promote an enhanced consumer experience.

Advancing EMVCo Approvals and Evaluations

Following the achievement of ISO/IEC 17065 accreditation, educating the industry on how EMVCo security evaluations can address payment cybersecurity concerns in support of regulatory initiatives across the world will be a priority.

Elsewhere, new payment technologies and methods demand new testing processes and capabilities to maintain secure and reliable payment experiences. Following the release of minimum acceptance criteria and reduced range approval testing for TapToMobile devices, EMVCo is developing a roadmap for adapting the acceptance criteria to bring the experience delivered by TapToMobile devices closer to that of traditional payment terminals.

EMVCo will also release performance requirements for biometric payment cards and develop a supporting testing process and approval programme. Testing for cards, smartphones and wearables will be improved by the introduction of new Proximity Coupling Device (PCD) Test Equipment, which addresses the industry trend towards smaller PCD antennas.

Enhancing Seamless and Secure Payments in 2025

Simplifying EMV Specifications

The payments industry is not static, so working together with the payments community to ensure that EMV Specifications evolve in line with new requirements and considerations is essential.

Following the identification of the legacy EMV Contact Chip Specification features to be sunset, the removal of these features will be translated into the relevant documentation and testing programmes in two phases beginning early 2025. All updates are expected to be completed by 2028.

Another key priority for 2025 is to simplify the EMV 3DS Specification structure and explore the potential to move towards a modular approach to increase flexibility, achieve backwards compatibility, and accelerate time-to-market.

Evolving Cryptography in EMV Chip Payment Security

EMVCo is working with the Java Card Forum to support the implementation of Blinded Diffie-Hellman (BDH) cryptography as a JavaCard API to improve performance. EMVCo will also continue to monitor the status and impact of quantum computing and post-quantum cryptography.

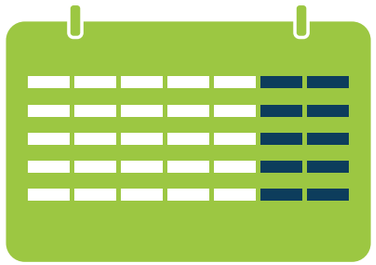
Resource Spotlight

Webinar - The Role of Cryptography in EMV® Chip Payment Security

> “Seamless and secure payments are built on global standards and specifications. EMVCo has been flexible updating specifications in order to meet regulatory and technical changes. We are confident that EMVCo will continue to deliver specifications for any future payments needs.”
>
> **European Payments Council**

EMVCo: Part of a Collaborative and Engaged Industry

EMVCo engages with hundreds of industry stakeholders to develop and evolve the EMV® Specifications.



EMVCo was joined by guest speakers from **Allthenticate, Australian Payment Network, Broadcom, Cartes Bancaires, CharIN, Commonwealth Bank, Merchant Advisory Group, Merchant Risk Council, Nexi Group, Netcetera, Pan Nordic Card Association, SIBS and TotalEnergies.** We encourage all EMVCo Advisors and Associates to submit to present in 2025 and beyond!

EMVCo Events 2024

Board of Advisors Meetings
- Melbourne, March
- Lisbon, October

Technical Meetings
- Phoenix, April
- Lisbon, October

EMV User Meeting
- Copenhagen, June

Special Interest Meetings (SIMs)
- Biometric on Card, June
- Electric Vehicle Open Payments, June
- EMV SRC, December

Targeted Technology Engagements (TTEs)
- EMV 3DS, September
- EMV 3DS, October

View EMVCo's events for 2025

EMVCo: Part of a Collaborative and Engaged Industry

What EMVCo Associates Say

"EMVCo as an organisation has set the standard for effective and global industry collaboration [...] and has made the seamless and secure payment experience we know today possible."

Infineon

"As EMVCo Associates, we saw real benefit in joining EMVCo's Board of Advisors and thereby engaging in the strategic direction of EMVCo and in the approval of EMV® Specifications for official publication. EMVCo aims to enable seamless and secure card-based payments for businesses and consumers worldwide. Given that global focus, the EMVCo Board of Advisors needs input from institutions that are global or can represent specific regions. On behalf of the Australian payments ecosystem, we see this involvement as really important in creating confidence in payments."

Australian Payments Network
Connect Inspire Thrive

"Across EMV contact chip, contactless, mobile and card-not-present payments, EMVCo has consistently defined payment specifications that promote global interoperability."

Verifone®

EMVCo: Part of a Collaborative and Engaged Industry

Current EMVCo Participants*

*Associates joining in 2024 are circled. Participants correct as of 31 December 2024.

EMVCo: Part of a Collaborative and Engaged Industry

Industry Partners and Liaisons

> 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 · CHARIN · enisa · EPSG · European Payments Council · fido ALLIANCE · fira · Global Platform™ · GSMA · IATA

ISO · JAVA CARD Forum · nexo STANDARDS · NFC FORUM · OpenWallet FOUNDATION · PCI Security Standards Council · SECURE TECHNOLOGY ALLIANCE · US PAYMENTS FORUM · W3C®

EMVCo: Part of a Collaborative and Engaged Industry

Connecting at Conferences

EMVCo connected with industry stakeholders worldwide at **15 industry** conferences during 2024.

- CharIN North America Conference
- CharIN Europe Conference
- CharIN Focus Group F2F Meetings
- Clarion's Travel and Transport Payments Week
- Discover® Advanced Payments Summit
- EMVCo & Java Card Forum webinar: The Role of Cryptography in EMV® Chip Payment Security.
- GlobalPlatform Fall Meetings
- Infineon Banking Day
- MAG Payments Conference
- MRC Members-only San Diego
- Netcetera Innovation Summit
- Netcetera Webinar: Next Level Fraud Prevention with 3-D Secure in APAC
- Pan-Nordic Card Association Meeting
- U.S Payments Forum / Secure Technology Alliance Payments Summit
- U.S Payments Forum Summer Virtual Members Meeting

EMVCo was joined by representatives from Associates including **Adyen, Australian Payments Network,** the **Merchant Advisory Group (MAG)** and **Netcetera**, as well as industry partners, **CharIN,** the **FIDO Alliance, nexo standards, Java Card Forum,** and **W3C:**

EMVCo Trademark Centre

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.

Why the EMVCo Marks are Important

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.

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.

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.

Resource Spotlight

Trademark Centre

Thank You

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.

Subscribe to our newsletter to receive notifications on the latest updates

CLICK HERE

Want to get involved in EMVCo's work?

Explore the different ways to participate.

Associate

EMVCo Associates can contribute their knowledge and expertise to shape the development of EMV Specifications.

Subscriber

EMVCo Subscribers can receive advance insights on EMV Specifications and provide direct feedback.

Public

All industry participants can review and provide comments on new EMV Specifications and major updates before final publication.

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x.com/emvco

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