EMVCo Annual Report
2021

Contents

CLICK THIS ICON

and our resources throughout, to access further materials.

All information in this report is as of 31 December 2021.

Evolving payment specifications to meet changing behaviours

Once again, the past year has presented new challenges and opportunities in payments as the industry has adapted to support profound shifts in consumer behaviour.

With consumers and businesses of all sizes shifting away from cash and towards card-based and digital payments, EMV® technologies continue to be integral to global commerce.

Demand for options that enable simple, touchless payments has accelerated the adoption of technologies such as contactless and QR Codes™. We have also seen unprecedented growth in the number of e-commerce transactions. Beyond these individual trends, the scale and pace of change has been significant. Behavioural shifts that have previously taken years, even decades, have now taken place in a matter of months.

Amid this change, the EMV Specifications have provided a common and reliable foundation for the rapid development and deployment of advanced products and services that deliver trusted and convenient payments around the world. Active participation from EMVCo Associates and Subscribers has made this possible. Engagement with other international technical bodies enables collaborative innovation, and continues to help avoid conflicting requirements or gaps that would limit implementation.

The EMVCo community should be proud of the contributions we have made together to support consumers, businesses and economies during a period of unprecedented challenges. I would also like to personally thank our stakeholders for continuing to embrace the virtual engagement model. This has allowed us to successfully collaborate throughout the pandemic to enhance and evolve EMV Specifications, supporting innovation and meeting industry needs, while delivering a number of technical milestones and additional resources.

Key initiatives in 2021 included: our work to enhance the EMV 3-D Secure Specifications to support more secure and convenient e-commerce authentication; advancements to the EMV Chip Contact Specifications to support Elliptic Curve Cryptography and ensure robust security can be maintained in new payment innovations; and ongoing efforts to explore how EMV Specifications can work together to enable seamless and secure payments in new scenarios and use cases.

The future of payments is about choice and convenience, and emerging payments technologies are supporting new ways in which consumers engage and pay for goods and services. Looking ahead, EMV Specifications have an important role to play in providing a common and flexible foundation for the delivery of new payment methods and options that make it easy for consumers to pay how they want – whether in-store or online.

As we consider technical initiatives and plans for 2022 – such as support for wireless payments and using EMV QR Codes to trigger the use of EMV Secure Remote Commerce – key to our efforts is the ongoing collaboration with the EMVCo community and continued engagement with technical bodies and industry associations around the world.

We hope to recommence face-to-face meetings with our Associates and the payments industry at large in 2022. This will be complemented by continued online engagement and education opportunities throughout the year.

Thank you again to everyone who contributed in 2021, and we look forward to continued collaboration in 2022 to support innovation and the delivery of consistent, convenient and secure payment experiences.

EMV®
QR Codes™

EMV® Secure
Remote Commerce

Jianhua Ni,
Chair of the EMVCo Board of Managers

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

Industry Engagement & Collaboration

Engage & collaborate with the payments industry

Testing and Certification
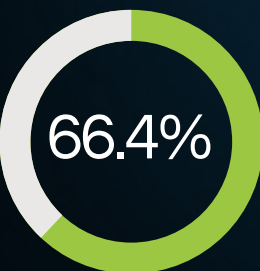
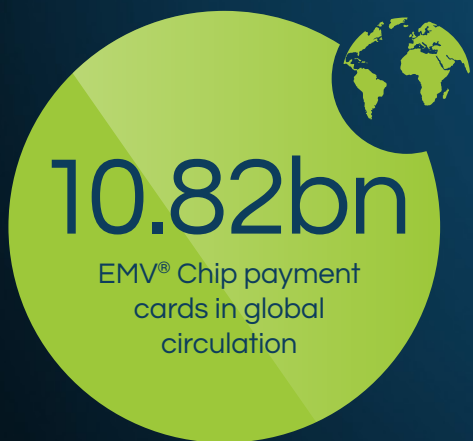Provide testing processes and certification of products

EMVCo Marks

Manage marks that denote implementation of EMV Specifications

EMVCo At-a-Glance 2021:
Enabling Seamless and Secure Payments Worldwide

Growth of card payments worldwide

10.82bn
EMV® Chip payment cards in global circulation

66.4%
of cards issued are EMV Chip

88.5%
of all card-present transactions conducted globally used EMV Chip technology

Participation

22
Interactive Meetings

416 Subscribers

89 Associates

19 Working Groups and Task Forces

1,101 Queries answered by EMVCo in 2021

Testing and Certification

8,817
EMVCo certified products globally

103
Qualified Test Tool Providers

78
Approved Testing Laboratories

🔍 Resource Spotlight

10 billion and counting: What the latest EMV® Chip data means for global payments

EMV® Technologies – 2021 Milestones

EMV® Chip Specifications Updated to Support Elliptic Curve Cryptography

To support devices with limited storage and processing power and increased potential for faster transactions, the EMV® Contact Chip Specifications now support Elliptic Curve Cryptography (ECC). Use of this cryptography standard by the payment community supports advanced security without impacting technical performance of a payment device or slowing transaction processing time. The inclusion of ECC is required to support new, future payment scenarios.

Communication Capabilities Between EMV Contactless Payment Terminals and Devices Enhanced
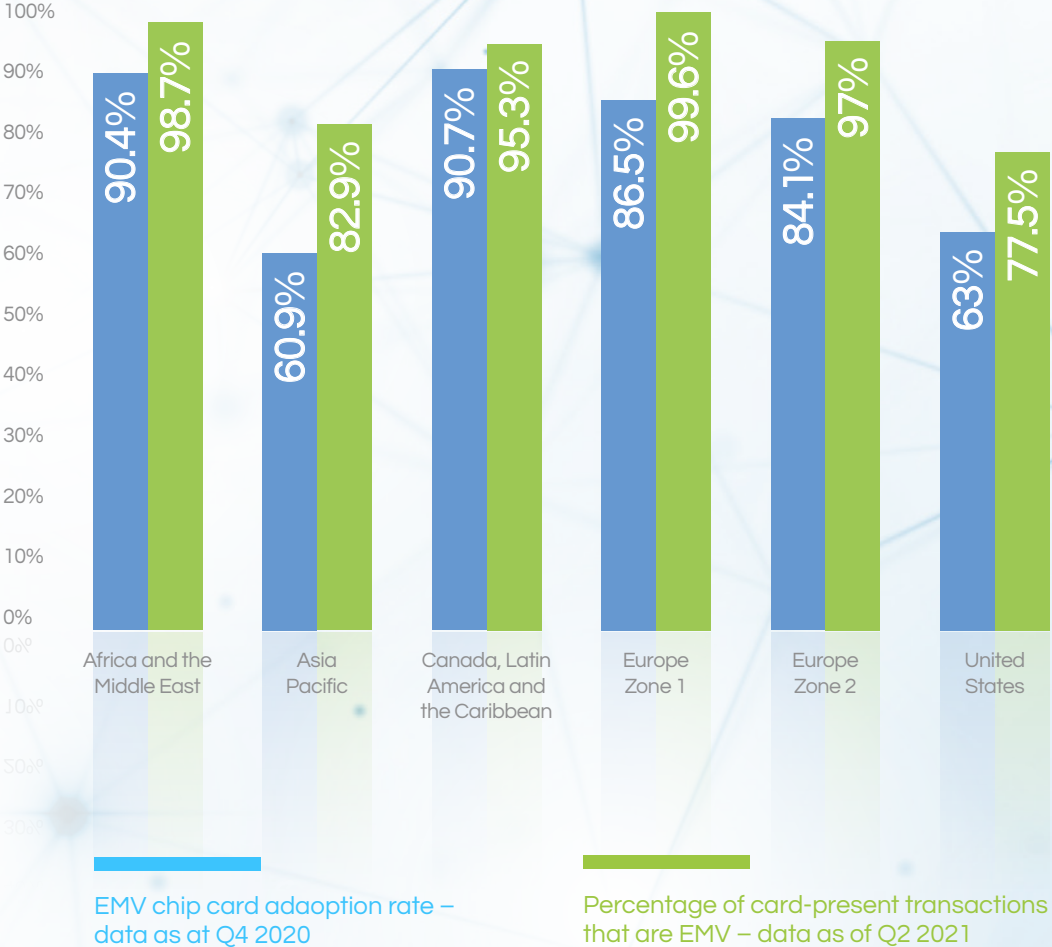
EMVCo updated contactless payment terminal requirements to enable a more efficient experience by supporting IQ demodulation. The change reflects an increase in consumers using a range of self-powered payment devices such as smartphones and wearables to complete transactions, which require an active interaction with the payment acceptance terminal.

EMV Card Personalisation Specification (CPS) Updated to Support Card Data Encryption Advancements

To facilitate and improve card security, the updated EMV Card Personalisation Specification (CPS) now defines how the Advanced Encryption Standard (AES) can be used. The AES is a more efficient encryption standard which offers various key lengths and improved security compared to previous data encryption standards.

TapToMobile Early Adopter Programme Extended to NFC Chipset Providers

The commercial off-the-shelf (COTS) Mobile Early Adopter Programme for functional evaluation of consumer mobile devices was renamed the TapToMobile Early Adopter Programme. Based on feedback from payments stakeholders, EMVCo has extended the Early Adopter Programme to NFC chipset providers, who design new products and manage NFC integration for many device makers.

Region	EMV chip card adoption rate – data as at Q4 2020	Percentage of card-present transactions that are EMV – data as of Q2 2021
Africa and the Middle East	90.4%	98.7%
Asia Pacific	60.9%	82.9%
Canada, Latin America and the Caribbean	90.7%	95.3%
Europe Zone 1	86.5%	99.6%
Europe Zone 2	84.1%	97%
United States	63%	77.5%

EMV chip card adaoption rate – data as at Q4 2020

Percentage of card-present transactions that are EMV – data as of Q2 2021

EMV® Technologies – 2021 Milestones

EMV® Payment Tokenisation Updates

EMVCo published EMV® Payment Tokenisation Specification – A Guide to Use Cases v2.1, an informational supplement to the EMV Payment Tokenisation Specification – Technical Framework. This resource describes relationship models and use case examples common to the Technical Framework for face-to-face and online payments.

Also, the Technical Framework v2.3 was published in October. This defines a basis for Payment Tokenisation by providing a level of commonality across the payment ecosystem to support adoption, while enabling levels of differentiation that promotes innovation.

EMV QR Code™ Specification Update

As payment options for consumers continue to grow, EMVCo's educational efforts emphasised the flexibility of the EMV QR Code specifications. EMVCo updated its QR Code™ Specification for merchant-presented modes (MPM), supporting an additional data field template for the ATM environment. EMVCo will continue to evolve the QR Code Specifications to address marketplace needs across geographies.

" Existing QR code-based solutions should consider migrating to the EMVCo specifications to enhance the interoperability of their solutions. "

European Payments Council (EPC)

European Payments Council

" Using global leading practices, we worked together over nine weeks to build a Canadian market consensus position aligned with global QR payments standards from EMVCo. That work could now form the foundations of a standard that will harmonize these kinds of payments across market participants from coast to coast. "

EY

Resource Spotlight

Click each to access

EMV® Technologies – 2021 Milestones

E-Commerce payments

EMV® 3DS Version 2.3 Supports More Secure and Convenient E-Commerce Authentication

EMVCo has enhanced the EMV 3DS Specifications to improve the consumer experience and fraud fighting capabilities for issuers, acquirers and merchants across e-commerce channels and devices. Published in October, EMV 3DS 2.3 introduces enhancements to increase flexibility for optimising EMV 3DS implementation across multiple channels and devices, help issuers identify fraudulent transactions more quickly and accurately, and streamline the authentication process for consumers to improve the overall payment experience.

Guidance for EMV 3DS Transactions to Utilise EMV Payment Token Data

EMVCo published new resources to help card issuers and merchants to optimise the EMV 3DS authentication experience for online shoppers when EMV Payment Tokens are in use, enhancing the fraud-prevention benefits that EMV 3DS provides.

EMV 3DS UI/UX Guidelines

EMVCo published EMV 3DS UI/UX Design Guidelines to help card issuers, banks, merchants and solution providers optimise the EMV 3DS payment authentication experience for e-commerce consumers. The guidelines have been designed to ensure a consistent, familiar and efficient approach to EMV 3DS UI/UX design that instils consumer trust in the authentication process and optimises the checkout experience. The guidelines are publicly available on the EMVCo website in an easy-to-use interactive format.

Resource Spotlight

Click each to access
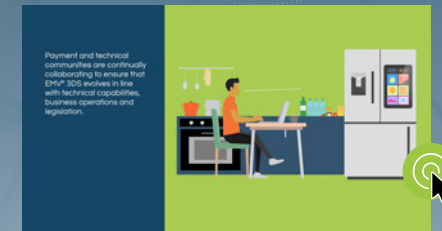
EMV® Technologies – 2021 Milestones

E-Commerce payments

EMV 3DS Travel Industry Message Extension Version 2.0

EMVCo published an update to the EMV 3DS Travel Industry Message Extension to include support for hotel and car rental e-commerce payment transactions. EMV 3-D Secure Travel Industry Message Extension v2.0 can be used by parties to develop and implement EMV 3DS-compliant products and services that support the travel industry in its efforts to improve e-commerce payment authentication.

EMV SRC Specification Roadmap

EMVCo confirmed a three-phase approach to updating the EMV SRC Specifications. Phase one, delivered in 2021, focused on simplifying and enhancing the structure of the core EMV SRC Specification. Phase two, planned for Q3 2022, focuses on alignment of EMV SRC Specifications and development of EMV SRC Specifications v1.3; and phase three (planned for H1 2023) focuses on stabilisation and alignment of EMV SRC Specifications v1.3 to support industry adoption.

EMVCo, FIDO Alliance and W3C Charter Renewed

In 2019, to enhance the security and interoperability of web payments, EMVCo, FIDO Alliance and W3C collaborated to create the Web Payments Security Interest Group (WPSIG). The three technical bodies renewed their commitment to the charter to continue this work until 2023. This collaboration has enabled significant progress, such as establishing Secure Payment Confirmation (SPC) to streamline strong customer authentication for web payments. It combines FIDO authentication with browser capabilities related to payments, starting with EMV 3-D Secure, and is a great example of how high-bandwidth communications are enabling us to accelerate the impact of technology improvements to secure web payments.

What the industry is saying

" 3-D Secure has the potential to be a key tool in issuers and merchants' fight against CNP fraud. "

Aite Novarica

" …communication protocols such as EMV 3DS provide a means for merchants to support the use of SCA. The EBA notes that versions 2.0 and newer support a variety of SCA methods, while trying to ensure customer convenience, limiting fraud through data sharing and transaction risk analysis, and enable the use of exemptions set out in the Regulatory Technical Standards (RTS). For those reasons, the EBA encourages the use of such communication protocols and expedient onboarding. "

EBA | EUROPEAN BANKING AUTHORITY

9

Payment enablement in the year ahead

Jianhua Ni,
Chair of the EMVCo
Board of Managers

"

There are many parts to the work of EMVCo. Fundamental to everything, is listening to the needs of the payments industry and understanding how the ecosystem is advancing to address long-term technical requirements. Working with our Associates and Subscribers, other industry partners and the wider EMV® community, we continue to evolve EMV Specifications to enable seamless and secure payments for businesses and consumers worldwide.

As consumers increasingly expect convenient payment types and methods they can trust to make purchases anywhere and any way they want, a key priority for EMVCo is to support merchants to make it as easy as possible for their customers to pay, in any situation and using any channel.

This requires us to evaluate if a new area of work needs to be defined, anticipating trends and future needs, or if existing specifications can be adapted, combined or converged to support innovation and the delivery of secure, frictionless multichannel payment experiences.

In 2022, EMVCo will work to detail how specific EMV technologies are complementary, can collaborate to mutually support each other or converge to achieve a desired outcome.

"

EMV Chip Advancements

At a time of new, exciting ways to pay, it is easy to forget the significance of this specification in enabling millions of payments to work seamlessly and securely worldwide every day. There have been many updates and new functionalities defined over the last decade, which are available in an appendices format, in Specification Bulletins (SB). These include the ability to verify a payment using a cardholder biometric entered on a terminal, as well as the recent announcement in 2021 to support Elliptic Curve Cryptography (ECC).

In 2022, EMVCo intends to publish version 4.4 of the EMV Contact Chip Specification. This important editorial update combines and streamlines all updates into one document. This effort aims to simplify how to implement chip products optimising the latest advancements.

Testing to ensure alignment with the EMV Contact Chip Specification is also set to advance in 2022, with the evolution of terminal testing to confirm that a product enables ECC for contact. Use of this cryptographic standard by the payment community enables enhanced security without impacting technical performance of a payment device or slowing transaction processing time. This is vital to support new and future payment scenarios.

We also plan to bring our key learnings from ECC in a contact chip payment to the contactless world. This work is combined with a wider review of updating EMVCo's contactless payment offering to support the ever-growing demand for contactless and touchless payment solutions which are being implemented in a range of payment scenarios.

Securing Remote Payments

EMVCo's ongoing commitment to reduce remote payment fraud drives constant advancements in its specification activity and testing programmes.

The publication of EMV Secure Remote Commerce (SRC) Specification v1.3 is scheduled for 2022. The work aligns all elements of the EMV SRC Specifications to simplify the usability of the technical documents, as well as ease and facilitate product development updates for specification users in the future. In line with EMVCo's standard process for specification development, there will be opportunities throughout this phased approach for EMVCo Associates, Subscribers and the wider public to comment on the updates before the document is finalised and published.

Work to release an EMV SRC testing programme is also well underway. This will evaluate the components of an SRC solution to confirm it performs to the standards / functions detailed within the specification and to support the expected level of interoperability.

As detailed in our 2021 Milestones section, version 2.3 of EMVCo's payment authentication specification, EMV 3-D Secure (EMV 3DS), launched in late 2021. EMVCo's efforts have now turned to supporting the testing framework to approve products that align to the latest specifications. This necessary work gives confidence and clear industry guidance that products and solutions perform in a certain manner, giving clarity and trust to the wider payments community.

Payment enablement in the year ahead

→ New Ways to Pay

Alongside maintaining and advancing existing specifications, the payments community is also critiquing existing and established technologies to create new ways to pay. EMVCo's evaluation of the role wireless technologies could play in flexible and convenient payment experiences is an example of this.

This initiative purely focuses on wireless technology not currently covered by EMV Specifications, such as Wi-Fi, Ultra Wideband (UWB), Bluetooth Low Energy (BLE) and mobile data. As wireless technology enables payments to be made without the payment device being in immediate proximity to the payment terminal, initial work to define uses cases shows that it could create a more flexible and convenient payment experience for both the merchant and consumer, creating a wealth of new payment opportunities. In 2022, EMVCo plans to define the scope EMVCo could play in the wireless payments space.

Looking beyond wireless, our work throughout 2021 to evaluate the best way to interact with merchants and consumers when using smartphones as acceptance devices will see the release of an official TapToMobile Testing Programme.

This ensures that mobile devices with built in contactless capability to accept contactless payments offer a consistent and seamless tap-to-pay experience for all consumers.

→ Partnerships

Our industry collaborations continue to drive delivery and ensure we optimise the outstanding expertise within the technology and payment communities. From global technical bodies to regionally focused groups, we are eager to enrich these partnerships.

Of particular note is our ongoing work with FIDO Alliance and W3C to enhance the security and convenience of web payments. Together we have created the Web Payment Security Interest Group which renewed its charter last year to enable the collaboration to continue until 2023.

A key priority in the coming 12 months is to look at how we could improve the Strong Customer Authentication (SCA) experience in Europe, using EMVCo technologies. One element of this is the Secure Payment Confirmation (SPC) to streamline SCA through combining technologies.

EMVCo is also excited to explore its new role as an official liaison with the International Organization of Standardization (ISO) as a recognised contributor to 'cards and security devices for personal identification' with a specific focus on contactless payments. This position presents an important opportunity to support the evolution of this payment method, which continues to go from strength to strength.

This is just a small snapshot of our technical body collaboration. To learn more, watch our webcast **'Aligning with global technical bodies'** and follow EMVCo Insights for future developments.

Resource Spotlight

EMV® 3DS Use Case Examples

Industry Engagement and Participation

"EMVCo casts a wide net of technology providers and payments organizations that it communicates with when developing specs. It's a list that includes virtually every key payments company, technology provider, security firm or financial services organization."

David Heun, Associate Editor, American Banker

"We saw clear opportunities to contribute to the development of global specifications that promote seamless and secure payments worldwide."

Vijay Dwarakanath, Principal Program Manager Lead

Microsoft

Brian Bryne,
Director of Engagement and Operations

"Active engagement and collaboration with the payments industry is key to EMVCo's proven model for creating, evolving and promoting globally-adopted specifications that support innovation and address marketplace needs across geographies.

We're pleased that stakeholders from across the world continue to participate as EMVCo Associates, proposing new initiatives, inputting into the development of EMV® Specifications, and voting on whether a final draft of a new specification or major update is ready for official publication, through participation on the Board of Advisors.

Over the last year we have delivered over 20 virtual meetings for EMVCo Associates, including Board of Advisor meetings, Technical Meetings and over a dozen Special Interest Meetings (SIMs) on topics such as EMV® Payment Tokenisation and EMV 3-D Secure.

During 2021, we hosted a series of educational webinars including sessions on QR Codes and EMV 3DS v2.3, which drew wide audiences from stakeholders outside of the EMVCo community.

We also produced a video series of webcasts on QR Code payments and online commerce, among others, as well as an animated guide to EMV 3DS.

While the value of these virtual meetings is extremely significant, it's also been a pleasure to participate with the payment stakeholder community in-person where possible, such as at the Merchant Risk Council's annual Las Vegas conference, the U.S. Payments Forum's Fall Meeting in Houston and Banking 4.0 in Bucharest, Europe. Virtual speaking roles at events such as the FIDO Alliance Virtual Plenary and the Mobile Payments Conference also enabled us to continue our close collaboration with other industry bodies.

We are hopeful of being able to return to face-to-face engagement with EMVCo Associates at the earliest opportunity, but when safe, in 2022. Whichever way we connect, we look forward to another year of engagement and participation with payment industry stakeholders."

19	**22**	**1,101**	**416**	**89**
Working Groups and Task Forces	Interactive Meetings	Queries answered by EMVCo	Subscribers	Associates

Resource Spotlight

Click to access

EMV® QR Code™ Specifications – Merchant-Presented

What is the Click to Pay Icon?

Worldwide Engagement

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 on whether a final draft of a new specification or major update is ready for official publication.

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

- ▶ Review and comment periods for draft EMV Specifications.

🔍 Resource Spotlight ⬇

How EMVCo Collaborates with the Payment Community to Develop EMV® Specifications

> The [U.S. payments] industry is undoubtedly in a much better position today to mitigate CNP [card-not-present] fraud than it was in the early days of EMV adoption in other countries.
>
> **Federal Reserve Bank of Atlanta**

> 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 (EPC)**

> Our collaboration with EMVCo has significantly assisted with PASA's stakeholder engagement efforts. It was collectively designed to stimulate the industry conversation on QR Code standards and prospective value it has for South Africa – a key step in the standardisation journey.
>
> **Payments Association of South Africa (PASA)**

> 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 Code and digital payments.
>
> **APSCA**

Technical Collaboration

EMVCo collaborates with multiple associations worldwide, including:

APSCA ECSG enisa European Payments Council fido ALLIANCE GLOBALPLATFORM® GSMA

IATA ISO NFC FORUM nexo STANDARDS PCi Security Standards Council SECURE TECHNOLOGY ALLIANCE US PAYMENTS FORUM W3C®

> " 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. "
>
> **ECSG**

> " We worked together to examine specific travel use cases to understand the data transmitted at specific touchpoints. Right now, it is even more important our industry combats fraud and keeps payment friction to a minimum. This new EMV® 3DS Travel Industry Message Extension from EMVCo will help achieve that objective. "
>
> **aMaDEUS**

Event engagement

In the last year, EMVCo has spoken at multiple virtual events, and some face-to-face, on topics including EMV 3DS, EMV SRC and EMV Payment Tokenisation:

- ▶ Banking 4.0
- ▶ EESTEL
- ▶ FIDO Alliance Virtual Plenaries
- ▶ MAC Level-Up
- ▶ Mobile Payments Conference
- ▶ MRC Vegas
- ▶ MRC Virtual
- ▶ Payments International
- ▶ U.S. Payments Forum Meetings

Resource Spotlight ⬇

Aligning with global technical bodies

Testing and Certification

EMVCo brings confidence to the global payments ecosystem through the testing and certification of payment products that are compatible and secure in accordance with EMV® Specifications.

8,817
EMVCo certified products globally

103
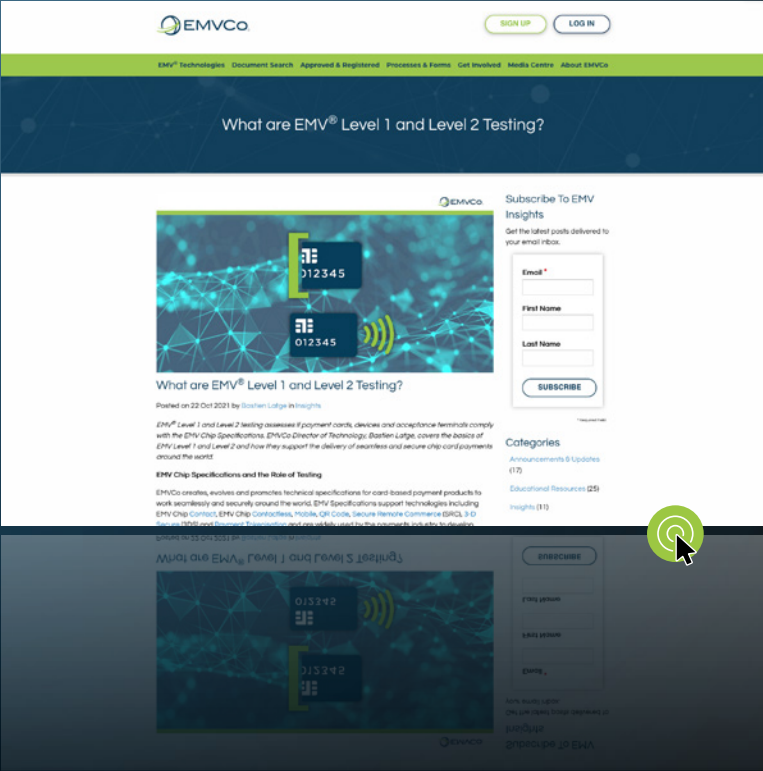Qualified test tool providers

78
Approved testing laboratories

Resource Spotlight

Level 1 & 2 Testing on EMV® Insights

EMVCo Marks

EMVCo manages a number of trusted, easy-to-recognise visual symbols that promote consumer familiarity and confidence when making payments.

EMV® Chip Terminal icon	Contactless Indicator	Contactless Symbol	Click to Pay Icon	QR Scan Icon	QR Payment Mark

Why?

Easy-to-recognise visual symbols for point of payments provide consistency and familiarity to the payment experience in store and online, inspiring consumer confidence and trust in the payment process.

Who?

Payments industry stakeholders use EMVCo marks to demonstrate to their customers that their products have implemented EMV® Specifications for compatibility and security.

How?

EMVCo marks provide assurance to users of payment products that they meet EMV Specifications and will function accordingly.

EMVCo also licenses Certification Marks for use by product providers, laboratories and test tool vendors in advertising, promotional materials, documentation and websites.

EMVCo APPROVED   **EMVCo ACCREDITED**

EMVCo QUALIFIED   **EMVCo EVALUATED**

EMVCo Partners or Associates can also access marks for use as expressly permitted for these entities.

EMVCo ASSOCIATE   **EMVCo PARTNER**

Resource Spotlight

Click each to access

Trademark Centre

The EMVCo logo

EMV® Word Mark

Use Cases

05 Documents
06 Presentations
07 Websites
08 External media materials
09 Social media corporate accounts
10 External business publications
11 Images
12 Videos

Get involved...

Support Seamless and Secure Payments Worldwide

Payments technology continues to advance, and innovation in card-based payments is critical. To support seamless and secure payments, specifications need to evolve accordingly. This requires payments industry stakeholders to provide feedback throughout the specification development process.

Over a hundred organisations – including merchants, issuers, acquirers, payment networks, financial institutions, manufacturers, technology providers and testing laboratories – contribute their knowledge and expertise to the development of EMV® Specifications.

All payments industry stakeholders are actively encouraged to contribute to the development of EMV Specifications and provide input to EMVCo.

Find out more

Visit **www.emvco.com** to access our Quick Resource Guides and more

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