the payments association

The Long and Winding Road to SCA

UK readiness status and key learnings from Europe

THE PAYMENTS ASSOCIATION'S GUIDE TO SCA READINESS

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Welcome

Thank you for your interest in this whitepaper on the topic of Strong Customer Authentication (SCA) created as part of our **Project Financial Crime**. The primary research for this paper draws on the support of key industry stakeholders and subject matter experts including our Project Financial Crime team and the broader membership of The Payments Association. In this paper we share news of the UK market readiness for active enforcement of SCA, identify the remaining challenges and gather the key learnings from continental Europe and the impact SCA is having on fraud levels.

PSD2 introduced the need for SCA, but implementation has been a long journey and several deadline extensions reflect the low levels of market readiness and the disruptions caused by COVID-19. SCA has the potential to reduce eCommerce payment fraud in the same way that Chip & PIN secured face to face card payments. These research findings will help organisations use the remaining time wisely and ensure cardholders are not negatively impacted. Since our earlier **SCA report** which assessed the impact on users, it is encouraging to see the significant progress that has been made over the last two years and that mass disruption to businesses and consumers is no longer anticipated.

The FCA has recently completed a consultation on SCA and the underlying Regulatory Technical Standards and updated its Approach Document on this topic. Our research findings are in line with these latest announcements.

I'd like to give a big "thank you" to Visa for supporting this important research and to Mark McMurtrie, Ambassador, The Payments Association, who conducted the interviews and authored the report. I hope that, like me, you find it to be an interesting read. We welcome your feedback.

Jane Jee

Director, Jee Associates and Leader of Project Financial Crime
The Payments Association

Introduction

Strong Customer Authentication (SCA) ensures the authenticity of a customer by using multi factor authentication (MFA) to confirm that a customer is genuine. Two separate elements are required to check a user's identity, and these must come from possession, knowledge and inherence categories. The PSD2 regulations set out the need for payment system users to be authenticated in accordance with Regulatory Technical Standards (RTS). SCA is being introduced to tackle eCommerce remote purchase card fraud which according to UK.Finance, data has grown by 170% since 2011 to £376 million in 2020.

SCA has had a long and chequered implementation period. The European Banking Authority (EBA) originally planned for SCA to be enforced throughout the European Economic Area (EEA) by 14th September 2019, but due to a general lack of market readiness, clarity on the underlying standards and the impact of COVID-19 the Financial Conduct Authority (FCA) agreed that this could be extended until 14th March 2021, then to 14th September 2021 and finally until 14th March 2022. Continental Europe was also given additional time but only up to the 31st December 2020, unless a national ramp-up plan was agreed.

> "In comparison to Europe, the UK has been granted an additional 15 months before active enforcement is required."
>
> Osborne Clarke

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SCA enforcement timeline UK

14th September 19 → 14th March 21 → 14th September 21 → 14th March 22

- 14th September 19 → 14th March 21: Market readiness extension
- 14th March 21 → 14th September 21: COVID-19 extension
- 14th September 21 → 14th March 22: Market readiness extension

The final deadline for enforcement in major European countries after the completion of ramp-up plans were: 1st March in Spain, 15th March in Germany, 1st April in Italy, 15th May in France and 1st July in Ireland.

Our research identifies the lessons that can be learnt from continental Europe, the best practices that can be followed in order to minimise customer friction and the early impact SCA is having on fraud levels. We also set out to discover the latest UK market readiness status, the remaining challenges and barriers that must be overcome, the technologies and exemptions that offer the greatest potential and the expectations and priorities for the next two years.

The introduction of SCA has required all entities within the payments value chain to make changes on how they process a card payment transaction with authentication now needing to be completed prior to funds authorisation. Therefore, merchants have had to develop appropriate authentication strategies including supporting 3DS; gateways were required to upgrade their service to the new EMV 3DS2 standards; acquirers needed to manage exemptions and fraud rates; networks have had to update rules, directory servers and provide communications to all parties; and issuers needed to authenticate cardholders, apply exemptions and enhance their risk controls.

The SCA-regulated entities are the issuer and acquirer and they are required to demonstrate their compliance to National Competent Authorities (NCA), which in the UK is the FCA. ■

"We established a comprehensive bank-wide SCA programme as compliance impacted multiple departments and required changes to business practices, processes and systems."

LLOYDS BANK

UK market readiness

Strong starting point

When assessing the UK market readiness for SCA compliance, we must recognise the strong starting point that was already in place. The initial version of 3DS authentication technology has been widely deployed in the UK for 15 years and more recently issuers have successfully applied Risk Based Authentication (RBA) to reduce the amount of friction being added to eCommerce checkout journeys. This UK starting position differs somewhat from Continental Europe, where the deployment of such authentication technologies have been less widespread until more recently. Correspondingly, the pre-SCA fraud rates in Continental Europe were higher than those in the UK.

Under the leadership of UK.Finance, a Programme Management Office (PMO) was established to co-ordinate multi-stakeholder activities, track progress and report to the FCA. The programme operated via stakeholder groups looking at business, technical, regulatory issues and through implementation taskforces. Critically, the UK has been granted more time than any other country to get ready for SCA and can learn from rollouts that have already been completed in continental Europe. As most of the UK acquirers also operate in Europe, this helpfully required them to be ready 15 months before the UK deadline. Cardholders are also becoming more familiar with the concept of SCA as they are increasingly being required to use MFA when accessing banking accounts, digital services and IT systems.

> "We have been an active participant in PMO working groups and found them helpful in sharing non-competitive information, developing consistency in approach and resolving industry wide issues to implement the regulation."
>
> NatWest

Today's status

We heard that UK issuers have successfully enrolled credit and debit cards into EMV 3DS ACS systems. This means that they are ready from a compliance perspective for SCA. The additional time granted has allowed most issuers to support the later EMV 3DSv2.2 specifications offering more authentication options and exemptions. Data gathered from issuers shows that eCommerce transactions are either being authenticated through 3DS, or being sent direct to authorisation, or being processed as Merchant Initiated Transactions. However, it has been raised that a significant minority are not being correctly flagged and so may well be declined or soft-declined. Visa data shows that UK issuer adoption of EMV 3DS is complete and in excess of 80% of UK eCommerce payment volume is enabled on EMV 3DS2.2.

> "We are encouraged by the positive trends in eCommerce authentication numbers with 86% of the top 10,000 European eCommerce merchant having used EMV 3DS and 92% a version of 3DS."
>
> VISA

Most issuers have adopted biometric authentication within their mobile banking apps.

Top UK issuers are reporting the percentage of soft declines versus total in scope eCommerce transactions in the range of 0.12% to 1.72% and hard declines between 0.09% and 1.59%.

Merchant acquirers are also ready from a compliance perspective with all live on EMV 3DS2.1 and a few having additionally completed EMV 3DS v2.2 implementations.

Acquirers have been busy managing fraud levels across their merchant portfolio and implementing the six regulatory conditions to allow the Transaction Risk Analysis (TRA) low risk exemption to be offered to selected merchants. Some have done this through the development of exemption engines.

The readiness status of payment gateways is lower than for issuers and acquirers, particularly amongst the smaller sized organisations and those with ownership outside Europe. Thanks to the extensions, larger gateways, who are estimated to process over 85% of transactions, will be ready before the enforcement deadline. Gateways have needed to complete certifications with the international networks and multiple accreditations with acquirers. These have taken many months of effort and we have often seen accreditation backlogs. The FCA has been concerned about gateway readiness but, as they are unregulated entities, could not take any direct action against them.

Merchant readiness remains the biggest area of uncertainty as once again these are unregulated entities and so have not been forced to submit monthly readiness status reports. Our research, however, has revealed that enterprise level merchants will be ready by the March deadline but have delayed early routing of transactions through authentication servers so as not to inconvenience customers, risk them abandoning their basket and avoid paying the incremental transaction and scheme fees associated with SCA. They felt being an early adopter of SCA to be a competitive disadvantage.

As these enterprise merchants process the majority of eCommerce transactions, then mass disruptions through soft and hard declines are not expected. 24 out of 27 large eCommerce merchants do support 3DS today. The readiness status for SME merchants though is not looking so encouraging as many appear to remain unaware or have not yet upgraded their payment processes and transaction flows to be compliant with the SCA regulations. The number is unquantified but thought to be significant. This lack of action from SMEs is despite extensive outreach communication programmes from international networks, acquirers, gateways and trade associations.

Data from the UK PMO shows that the SCA challenge rate averaged at 13% in October a 2% increase since June.

The FCA and PMO have been keen to ensure that vulnerable customer groups will not face financial exclusion. Issuers recognise this concern and have confirmed that they will be offering a range of authentication options to cater for different circumstances and needs.

Despite the UK not needing to be ready until Q1 next year, the Microsoft SCA monthly tracker continually placed the UK at the top of the SCA performance league table, followed by the Netherlands and Greece.

Hardest parts remain

As with many compliance programmes, the hardest parts are often left until the end. This includes complex payment flows and transactions involving multiple parties. End-to-end and testing, and testing under high load conditions, still needs to be completed. All parties should now be focussed on optimisation rather than just on compliance.

Issuers were faced with a significant challenge when the EBA ruled that One Time Passwords (OTP) delivered through an SMS message counted as a single factor and so an additional SCA factor would be required. The recently published updated FCA Approach Document confirms that this also applies to the UK. This has resulted in some looking to implement Behavioural Biometrics (BB) coupled with SMS OTP in order to achieve compliance. We learnt that several are still busy implementing this and, as with any new technology deployment, this brings risk. Some smaller issuers are expected to initially rely on knowledge factors and 3DS data due to lack of BB solution availability.

Merchants are required to enable the required Java scripts within their local codebase to allow the biometric data collection needed to complete checks during a 3DS session. Not all merchants are aware of this requirement and others have security concerns over enabling Java scripts.

The travel and hospitality sector have several specific SCA challenges including the number of intermediaries involved in processing a payment and the reliance on indirect sales channels. These have been recognised and temporary solutions are available to avoid mass disruption.

In-app payments are trickier to manage than browser payments and is one of the areas where continental Europe has experienced issues. We heard how merchants need to work more closely with their payment providers and support the latest version of 3DS to avoid unnecessary declines.

Some merchants, particularly SMEs, have failed to engage, or have simply left it too late, and may well face disruption to their business and customers. But rather than the 'cliff edge' scenario feared in 2019, this is expected to be of a short-term and limited nature.

Following a consultation, the FCA has recently published new guidance that highlighted the need for all regulated and non-regulated entities to work effectively together to deliver SCA compliant solutions and support the UK programme deadline and ramp-up plan.

Ramp-up plan

A key part of many European SCA plans has been a gradual ramp-up period prior to active enforcement to allow everyone to get used to transactions being 'stepped-up' or 'soft declined' and to provide time to iron out any issues found. Ramp-up plans are designed to drive merchant readiness. Ramp-up periods, lasting several months with gradual increases by transaction values, have been implemented in many European countries and found to be effective. Germany set a limit of >€250 in January decreasing to €100 in February. Italy agreed €1000 in January, €500 in February and €100 in March. Ireland used €750 in March, €500 in April €250 in May and €100 in June.

The UK ramp-up plan started in June 2021, but UK PMO data has shown that only 3% of transactions were being 'stepped up', rather than the planned 30%, thanks largely to the reluctance of issuers to soft decline transactions, partly due to fears of disrupting the economic recovery post COVID-19 and partly from a merchant readiness standpoint.

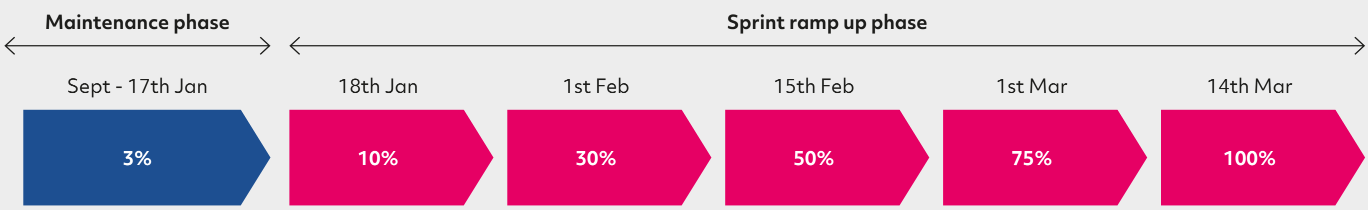
A revised plan was agreed in September having a continuation of the current minimum of 3% 'maintenance' phase followed by a 'sprint ramp-up' phase which will start from the 18th January in order to avoid the peak Christmas trading period.

From this date 10% of transactions will be 'stepped up', increasing to 30% on 1st February, 50% on 15th February and 75% by 1st March until full enforcement on 14th March. Targets have been set using the transaction authorisation flows and can either be calculated by checking non-compliant transactions or by sampling transactions sent to authorisation. This sprint period is very short and is unlikely to allow all non-compliance issues to be fixed by the enforcement deadline. ■

> "The UK market is well prepared for SCA from a compliance perspective thanks to its strong starting point, establishment of a professional PMO and being granted an additional 30 months to get ready."

Elavon

UK SCA ramp up plan



Challenges & barriers

Many of the initially identified big SCA challenges have been resolved thanks to regulatory clarity being provided by the EBA and FCA, and good work by the UK PMO. But, despite two and a half years additional time, there remain several challenges which still need to be overcome in the final few months before active enforcement.

Merchant challenges

Many small merchants have failed to engage either through lack of awareness, understanding of the relevance, or distraction by other business priorities. It must, however, be acknowledged that it has been a very challenging operating environment for retailers as a result of COVID-19, Brexit, staffing shortages and logistical issues. The SCA communication campaigns have not succeeded in reaching all SMEs and we are unlikely to see any changes in behaviour until they start to see transactions being declined.

Large merchants have been busy preparing for SCA and many have taken it as an opportunity to upgrade their systems and consolidate their payment providers. Many were intending to continue use of 3DS1, but thanks to the additional time, are now migrating to EMV 3DS2. These IT projects take many months to complete and have to take into account peak trading period IT freezes, but are expected to be finalised before the deadline. Even when technically ready, few large merchants have permanently turned on SCA, due to fear of basket abandonment and customer declines. They have been running short-term tests with low volumes of transactions and then turning SCA off again.

SCA has highlighted several poor merchant practices that have been in operation for many years. This includes the high number of PAN keyed entered transactions, incorrect flagging and coding of transactions, poor data quality and the lack of compliance with Merchant Initiated Transaction (MIT) frameworks.

> “We have spent considerable time and effort making merchants aware of SCA but disappointingly some have not given it sufficient priority.”
>
> LLOYDS BANK

As SCA authentication decisions are taken by individual issuers, there are many variations in approaches being taken both within the UK and across each of the EEA countries. This brings complexity and confusion to a merchant as they will need to support a wide range of authentication approaches and payment flows.

SCA has highlighted gaps in understanding of each other’s business needs between players in the payments ecosystem. Merchants and issuers rarely talk to each other yet they are the two critical end points of SCA. This has been amplified in the UK by the divestment of acquiring businesses by most of the large bank issuers.

After pressure, a new resilience flag has been introduced by the international networks to allow transactions to be processed in the event of infrastructure failure at the issuer, network or acquirer level, but very few entities are ready to support this option today.

> “The UK has diverged from Europe on a few specific points including the TRA calculation method, rules on dynamic linking, scope of SCA transaction types and the use of exemptions.”
>
> Osborne Clarke

> “Developing direct relationships with issuers and ACS providers is helpful in establishing mutual understanding, enabling comprehensive end to end testing and allowing issues to be resolved quickly.”
>
> JOHN LEWIS PARTNERSHIP

Card payments are mission critical and, if not working, cause mass disruption to cardholders and merchants, which is why support for this new SCA resilience flag is so important and should be prioritised. The international card networks can offer a stand-in authentication service if an issuer is facing a technical failure, but this alone is not sufficient.

Many merchants, including several large ones, remain unable to respond to ‘soft decline’ messages which means these translate automatically into ‘hard declines’. It is unlikely that all these merchants will be able to upgrade their systems before the compliance deadline.

Issuer challenges

Large issuers have faced several issues in order to be SCA-ready. Often these related to constraints from legacy systems operated in-house or by third party processors. The transition to EMV 3DS by ACS providers took longer than anticipated and was hampered by their international ownership and 3DS not being a core product. We repeatedly heard about latency performance issues on ACS systems. It is feared that this will become a bigger issue once authentication volumes increase. Some issuers also still need to complete behavioural biometric implementations and are faced with the complexity of adding new capabilities to aging platforms. Another challenge initially faced by large issuers was the low levels of cardholder mobile phone numbers held on file but, encouragingly, this has improved through targeted communications, planned interventions and the earlier deadline for secure access to bank accounts.

We heard how newer issuers, including Challenger banks and FinTechs, have found SCA compliance much easier thanks to their modern platforms, lack of legacy systems, stronger IT capabilities and higher mobile banking adoption rates. Some mature, but smaller issuers, have found SCA to be challenging and struggled to get the attention of suppliers who appear to have prioritised their bandwidth on larger customers.

Issuer risk systems need time and sufficient transaction data to build up effective user risk profiles and to allow Artificial Intelligence (AI) and Machine Learning (ML) systems to perform optimally. This was one of the big challenges seen in Europe and why, for a period of time, EMV 3DS was performing worse than 3DS1.

Gauging the impact of SCA on the Contact Centre (CC) has been a big challenge for issuers, as customer confusion and soft declines may well result in telephone calls to the CC being made. Predicting when additional resources would be needed has been further complicated by continually shifting deadlines. Some issuers made use of spare capacity by challenging more transactions which resulted in a reduction in fraud and provided an opportunity to capture customer mobile phone numbers.

> “SCA compliance has required significant investment of time, resources and on IT systems.”
>
> AIB Merchant Services

The FCA Approach Document has provided helpful clarification on Dynamic Linking, confirming that variances in amounts, of up to 20%, is acceptable.

Acquirer challenges

The lack of clarity on merchant readiness remains a key challenge for acquirers as many merchants have not been responsive to communications that have been sent out. Tier 1 and 2 merchants typically send transactions to an acquirer via a gateway and some merchants have multiple acquiring relationships which adds further complexity. The short timescale (two months) of the revised UK ramp-up plan provides little time to address any issues that emerge. EMV 3DS2.2 adoption is lower by acquirers than issuers restricting some of the exemptions that can be offered.

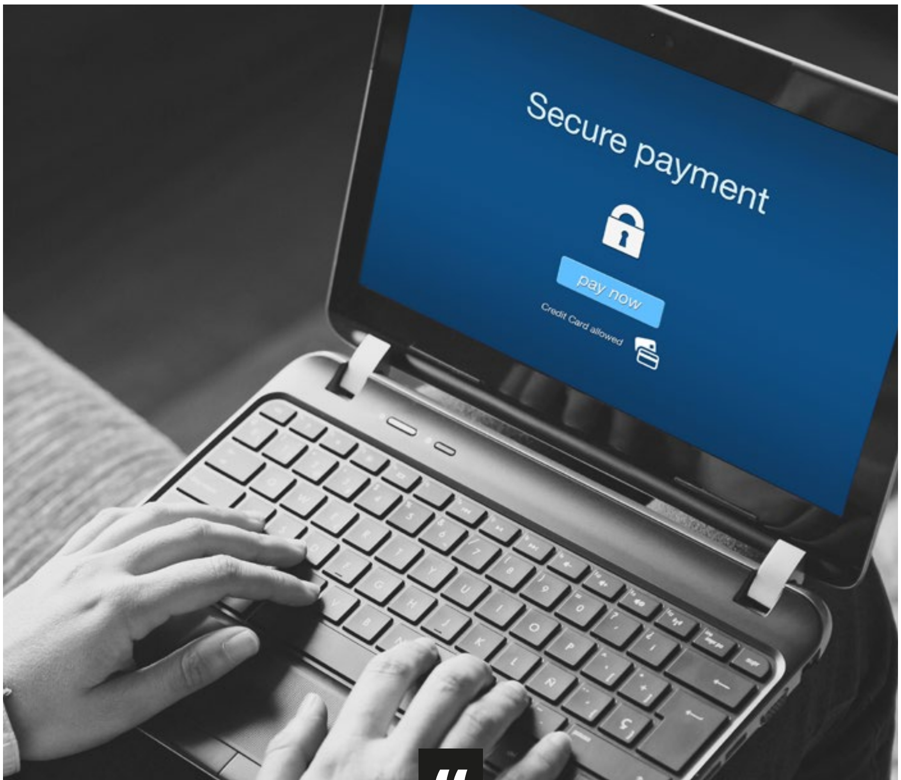
Acquirers understand that it may be appropriate for some transactions to be sent direct to authorisation with an exemption request, but are surprised at this late stage of the programme to learn that there appears to be a difference of opinion amongst issuers on whether an Issuer Transaction Risk Analysis (TRA) exemption can be applied in this instance.

Merchant acquirers are keen to make appropriate use of their TRA exemption and therefore the challenge has been to drive down fraud rates across their portfolios to fall within the agreed fraud bands and to ensure they can satisfy the six regulatory conditions which include real time fraud monitoring and malware identification. They are required to accredit gateways and ensure that end to end testing is satisfactorily completed. This is also needed when a merchant or gateway upgrades from 3DS2.1 to 3DS2.2 or decides to implement Apple Pay or Google Pay. Bandwidth restrictions have resulted in queues for these accreditations, and it is unlikely that all will be completed by the deadline.

The research showed that the number of PAN keyed entered transactions remains high, and acquirers are being asked to help identify these merchants and drive down usage. Equally acquirers are faced with a challenge of monitoring the use of Mail Order Telephone Order (MOTO) flags to ensure these are not being abused and as a way of avoiding SCA compliance. ■

“In order to minimise disruption, we need to see greater adoption of EMV 3DS2.2 by merchants and improvements in the quality of data they are sending.”

NatWest



“Recurring payments are experiencing higher rates of declines thanks to incorrect flagging, lack of initial customer authentication, historical data and incomplete MIT framework support.”

AIB Merchant Services

Technologies & exemptions

There are many important technologies that are being used to achieve regulatory compliance. Additionally, SCA compliance is not required for payment transactions that are either 'out of scope' of the regulation or where an 'exemption' can be applied.

Technologies

The technology that will be most widely adopted to achieve SCA compliance is called 3DS. This international standard is controlled by the six international card networks under the auspices of EMVCo and called EMV 3DS (or 3DS2). It is an updated version of 3DS1 which was introduced in 2000 under the network brand names Verified by Visa, Mastercard SecureCode and American Express SafeKey. 3DS1 is SCA-compliant, but not optimal and therefore usage is no longer recommended. Many UK merchants were intending to initially use v1 but now with the extended deadlines, the higher transaction fees being applied by Mastercard for 3DS1 and announcements of it being made 'end of life' in October 2022 most have moved to EMV 3DS2.1. EMV2.2 introduces additional exemption opportunities and, thanks to card network mandates, is widely available from issuers and is expected to be adopted by acquirers and gateways within the next 12 months. The 3DS standards continue to evolve with the v2.3 specifications recently released to add support for games consoles, Internet of Things (IoT) devices and to smooth complex use case journeys and flows between merchant and banking apps.

Biometrics in the form of face and finger recognition deliver SCA inherence factors, which is why

"

"Biometrics and digital wallet adoption are growing in part because they offer a simplified SCA payments experience."

Verifone

"

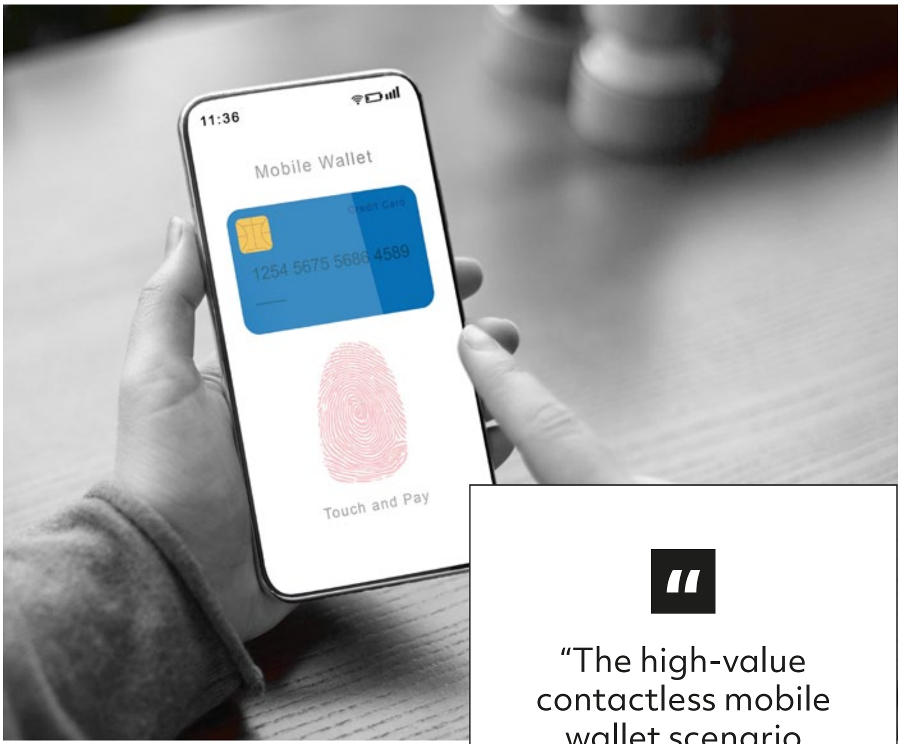
"Digital payment links are helping hotels authenticate their customers at time of booking offering revenue protection."

planet

Apple Pay and Google Pay are being promoted by many for use online and in-store, as they deliver SCA compliance and reduce customer friction. Smart watches can also be used, only requiring an initial authentication when the device is put on the wrist.

BB will be widely used for SCA compliance programmes. This compares customer behaviour by means of factors such as typing patterns, speed of data entry, ways of holding a device or moving a mouse, against a stored user's profile to confirm the authenticity of the customer. The Information Commissioner's Office (ICO) confirmed that user profiles can be considered to be a legitimate business interest if the issuer applies appropriate safeguards.

We learnt that, due to extremely high smartphone and increasing mobile banking adoption, 'Out of Band' authentication services which work through push notifications to mobile banking apps will be popular authentication approaches. These have the advantage of preventing 'man-in-the-middle attacks'.



"TRA is the most valuable SCA exemption for merchants as it helps reduce friction for low-risk transactions."

TRUST PAYMENTS

"The high-value contactless mobile wallet scenario benefits merchants and cardholders by enabling instant authenticated payments without requiring card insertion or PIN entry."

Verifone

Another technology gaining popularity in merchant SCA implementations is digital 'Payment Links', which are delivered by email, text, WhatsApp or Messenger and take the cardholder directly to a 3DS Server where authentication is completed. Card tokenisation technology is also helpful especially for recurring payments used for subscription services, when used as part of an MIT framework. Artificial Intelligence (AI) sits at the heart of most risk decisioning and fraud prevention tools and SCA has increased the usage and strategic importance.

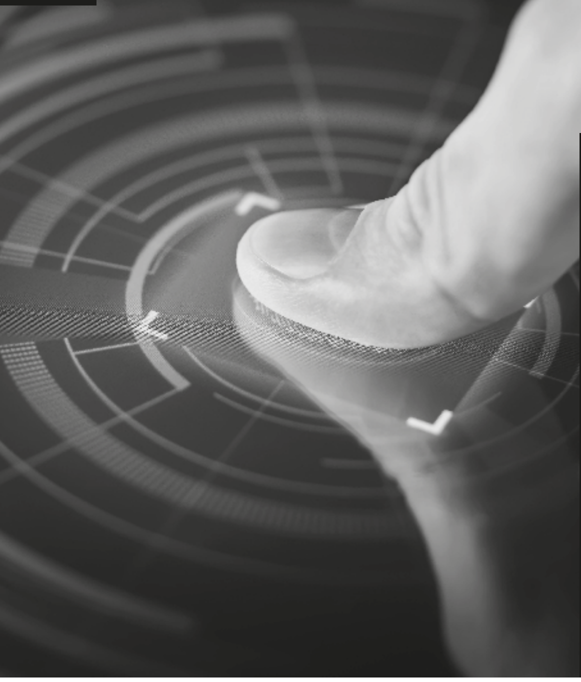
Exemptions

The PSD2 regulations allow some payment transaction types to be considered 'out of scope' for SCA compliance and others to be 'Exempt'. Exemption usage, however, must be controlled to prevent abuse.

Our research revealed that the exemption seen to offer the greatest potential is the TRA, sometimes referred to as the Low Risk (LR) exemption. This will be widely adopted by issuers and selectively by acquirers. The TRA amount offered, which in the UK will be £85, £220 and £440, depends on fraud levels. Both issuers and acquirers recognise the importance of this exemption and so are actively driving down fraud levels in order to be able to protect and maximise usage. The majority of UK acquirers are expected to be in the middle fraud band.

The second most popular exemption is Low Value (LV) which is only available for use by an issuer. It can be used for any transaction below £25 as long as the cumulative spend is below £85. However, merchants told us that they saw less benefit from the LV exemption as they have no way of knowing when a cardholder may have reached their cumulative spend or transaction count limits.

Contactless cards also have an SCA exemption, reflecting the traditional low value and low risk of these transactions, which is being widely used. Once contactless transaction counts or cumulative spend limits are reached, then the exemption can no longer be applied and PIN entry will be needed to authenticate the cardholder. We heard how this is causing some issues at self-service check-out's as the customer has become accustomed to walking off straight after hearing the 'beep' and is unaware that PIN verification is being requested. With the recent increase to £100 contactless limits this is expected to become more significant for merchants.



> “Our customers are keen to whitelist us to reduce friction at the checkout. We hope this exemption will soon be available to them.”

JOHN LEWIS PARTNERSHIP

Our research revealed that there is likely to be lower use of the Secure Corporate Payments (SCP) exemption than initially expected, following the ruling by the FCA that secure corporate purchasing systems must ensure that no personal consumer cards are being used and that only certain types of corporate cards are eligible for this issuer exemption. As merchants find it difficult to distinguish between different card types, the take-up of this exemption is uncertain.

Several acquirers have, or are developing, SCA exemption engines to check if transactions are in or out of scope for SCA and to decide which exemption can be offered. Alternatively, merchants could make use a SCA pre-authentication service.

In the longer-term, interviewees expected the Trusted Beneficiary (TB), often referred to as White Listing (WL), exemption to be requested. This capability will not be available from Visa/Mastercard issuers at the UK enforcement deadline but is expected to be introduced in due course. As a three-party scheme, American Express have been able to launch this capability now and it is proving popular with cardholders, 1.4 million of whom have enrolled, and delivering a frictionless payments experience.

Delegated Authentication (DA) is a further example of how SCA friction can be reduced over time. International card networks are developing frameworks that will need to be followed.

Out of Scope

Some transaction types are deemed to be out of scope from an SCA perspective. These include Mail Order Telephone Order (MOTO) as they are not conducted electronically. Also, MIT transactions only need an initial SCA to be performed at the time of establishing the customer mandate and not for each subsequent transaction. But we learnt that many MIT transactions are not following the network MIT framework rules, being incorrectly flagged and are therefore expected to result in a high number of ‘soft declines’. Also, the option to ‘grandfather’ historic customer agreement to recurring payments was only intended as a temporary measure. SCA regulations currently only require transactions performed at an EEA acquired merchant and with an EEA issued card to complete authentication. ‘One leg-out’ transactions currently only require ‘best efforts’ but may be brought into SCA scope in the future. However, merchants are unable to know which country a card has been issued in before submitting the transaction. ■

> “Only a quarter of eCommerce transactions may need to be authenticated if out of scope indicators are applied correctly and the use of exemptions is maximised.”

cybersource
A Visa Solution

Best practices

Our interviews highlighted ten best practices that can be applied to minimise the amount of friction and to optimise the customer experience.

Maximise use of SCA Exemptions
These benefit you and your customers. The UK is expected to make greater use of exemptions than Europe thanks to RBA experience.

Use latest version of 3DS
Merchants should capture and send more data elements. Later version of 3DS support more options.

Smooth cardholder enrolment
Efficient enrolment is critical to success. Poor 3DS1 practices proved this!

Refine your SCA strategy
To allow SCA optimisation, not just compliance. This should be adapted based on use cases and experience.

Employ advanced fraud and risk management tools
To deliver the right risk decisions. Criminals are using more sophisticated attacks.

Encourage mobile adoption
Biometrics, mobile banking, out of band authentication and Apple Pay/ Google Pay adoption are ways to deliver a great UX.

Flag transactions correctly
Incorrect flagging means out of scope and exemptions are not identified. Full MIT Framework compliance is needed.

Apply appropriate amount of friction
Some friction is seen as a positive by customers. Vary this by customer profile and adjust amount of friction over time.

Implement strong communication programmes
Both internally and externally to ensure everyone is aware of what is happening and when.

Allow plenty of time
To complete rigorous testing for all use cases and customer journeys, especially for app payments, as it better to identify issues early. Expect some teething issues and so allow time to fix these.

"Adding 3DS allowed us to approve more transactions whilst reducing fraud and enabling a great customer experience."

Bank in Southern Europe

"Today's focus should be on SCA optimisation rather than regulatory compliance. The customer payments experience must be balanced against the need to control fraud."

Payments Consultancy Limited

Learnings from Europe

Encouragingly, European markets have not experienced mass disruption following the start of active enforcement of SCA on 30th December 2020. The fear of a dramatic 'cliff edge' with mass consumer abandonment of baskets and payments being declined did not materialise. Visa report that 92% of the top 10,000 eCommerce merchants in Europe have used a version of 3DS and 86% of these used EMV 3DSv2.x.

Merchants have seen some low, but unquantified, levels of disruption, but this is largely from businesses who did not take steps to become compliant. Some merchants may only take action when they start experiencing declines. Helpfully, many countries implemented a gradual ramp-up plan to allow all parties to get used to the changes and this provided time to address any issues that emerged. Overall, it went quite smoothly, with some interviewees suggesting similarities to the Y2K fears at the turn of the millennium.

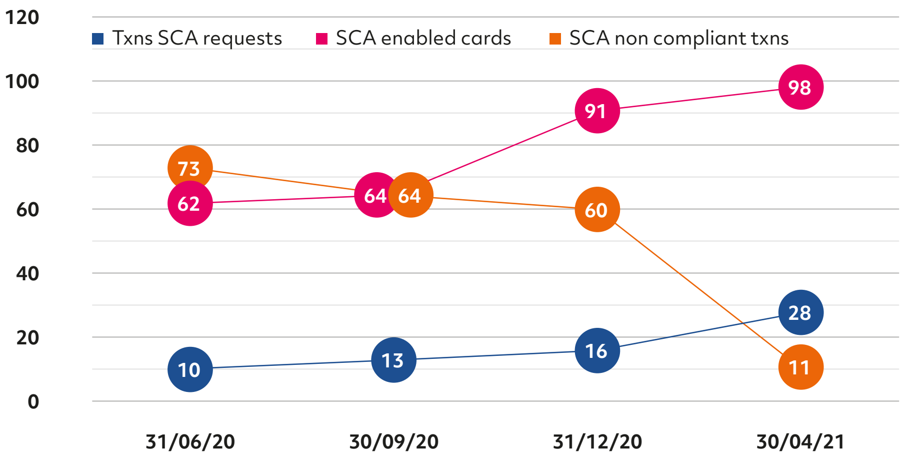
A wide range of authentication methods are being used by European issuers but the most effective appear to be by App, SMS or through an online banking system.

> "Encouragingly we have not seen a high level of soft declines but have identified some variation in issuer approaches and capabilities."
>
> **JP Morgan**

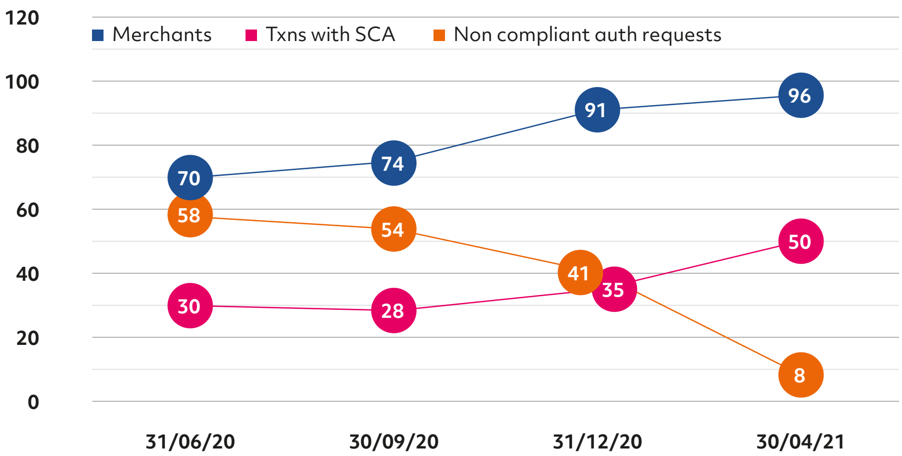
Analysis by the EBA has revealed that at the end of April 2021 94% of all payment cards in the EU were SCA enabled (a 7% increase since the end of 2020) and 99% of EU merchants could support SCA, with a median of 96%. Their data also showed that 87% of initiated eCommerce card transactions and 92% of authentication requests were compliant with SCA requirements. Encouragingly 28% of transactions requested SCA; this is 12% higher than at the end of 2020 and the number of non-compliant transactions dropped from 60% to 11%.

Naturally variations in SCA readiness exist between countries.

European SCA migration compliance
Issuer data median % rates



European SCA migration compliance
Acquirer data median % rates



"The deadline extensions along with COVID requirements resulted in some merchants deprioritising SCA projects."

AIB Merchant Services

"We are seeing 95% approval rates for European eCommerce transactions, which suggests that Europe has successfully implemented SCA in a way that avoids major disruption"

VISA

"Be ready in plenty of time ensuring you have checked every payment flow and built an appropriate exemption strategy."

cybersource
A Visa Solution

In mid 2021, Austria had the lowest level of SCA enabled payment cards (71%), followed by the Czech Republic (79%), Italy and Malta (both 80%). Belgium (68%), Malta (85%) and Italy (88%) have the lowest levels of eMerchant readiness. Belgium (30%), Portugal (38%) and Finland (42%) record the lowest figures for SCA-compliant eCommerce transactions. It should though be noted, however, that figures are improving each month.

Overall, Italy, Austria, Spain and the Czech Republic are performing less well whilst the Netherlands, Ireland, Scandinavian and Baltic states are recording strong levels of readiness. We heard how merchants found it difficult to predict user journeys due to variations in issuer strategies and national timelines. Prior to SCA enforcement many European issuers did not support frictionless transaction flows and had low adoption of risk-based authentication.

Visa data shows that 95% of European issuers are now enabled on EMV 3DS2.x with 98% of Issuer Identification Numbers (IINs) and this represents 99% of European eCommerce transactions. Additionally, 85% of issuer payment values are now enabled on EMV 3DS2.2 equalling 73% of total issuers.

European eCommerce approval rates are tracking 95% (excluding declines due to insufficient funds) according to Visa with 25% of the transactions now being fully authenticated.

Our interviewees highlighted the importance of completing comprehensive end to end testing for each of the challenge flows and to allow plenty of time for this activity. We heard that you can't just turn on SCA and should expect to see some teething issues. Poor data labelling, formatting issues and incorrect transaction flagging have all been reasons for transactions being challenged. MIT transactions have been particularly problematic as many were not being correctly identified as being out-of-scope transactions or without the necessary first SCA authentication. Variations between Visa and Mastercard MIT frameworks has added complexity for merchants and payment gateways.

"Our heightened awareness monitoring and rapid response teams meant that we were able to detect blips before they became severe issues, and collaborate with our industry partners to overcome challenges and avoid disruption"

VISA

The consumer payments experience continues to improve with the proportion of transactions that are being challenged after having been sent through authentication is reducing each month. Results have shown that payments from the mobile apps have performed less positively than those from desktop browsers. The Microsoft October SCA scorecard reveals 19% authentication abandonment from apps, compared to 13% from browsers and challenge success rates of 55% from apps, compared to 69% from browsers. This is an important aspect for the UK, on account of its higher usage of mobile and app payments. The UK market should be learning from the European experience and using the remaining time wisely to improve success rates.

We learnt the importance of having heightened awareness monitoring and action response teams in place to spot and quickly resolve any issues. Daily conference calls were held in the early weeks following enforcement. Visa played a key role in helping the industry identify and fix any 'temporary blips'. The UK market should learn from Europe about the importance of close dialogue between the different stakeholder groups. We heard requests for the UK PMO to put in place similar multi-stakeholder co-ordination, heightened monitoring and issue resolution processes during the sprint ramp-up period and for the first three months following compliance enforcement.

The main approach taken by European issuers appears to be that of satisfying regulatory compliance and so the proportion of transactions being sent through authentication rails was very high. Some are now looking at increasing the number of frictionless flows and making greater use of exemption options. Across Europe we have seen less use of direct to authorisation flows.

Our research identified the importance of having strong communication programmes in place to inform cardholders about how eCommerce payment processes are changing and how this will impact them. Issuers have primary responsibility to provide cardholder communications but are being assisted with messaging guides from the international card networks. Some countries, including Ireland, successfully used 'above the line' communication campaigns and we heard that these had been beneficial in preparing consumers.

"More work needs to be done to improve the authentication success rate for in-app payments."

ema
Electronic Money Association

Initially 3DS2.1 performed below expectations but this was found to be a temporary concern as it was largely down to poor data quality issues and the need for issuer risk systems to build up cardholder data profiles. More recent reports show improvement.

National SCA programmes, such as the one managed by the Dutch Payments Association, proved extremely helpful in co-ordinating activities across the industry, developing messaging, informing the NCA and in resolving industry-wide issues. These have now ceased after SCA compliance was achieved with any remaining issues being addressed through regular bilateral discussions between issuers or acquirers with the regulator. ■

"SCA infrastructure resilience and scalability throughout the ecosystem have become critical now that payment authentication is widely enforceable."

Verifone

Impact on fraud

The major driver behind the introduction of SCA was to reduce fraud levels. So, in our research we looked at what is being done on this front and the early results that are being achieved. We learnt about many positive trends which offer encouragement. Overall fraud rates are showing signs of continual decline in markets that have implemented SCA.

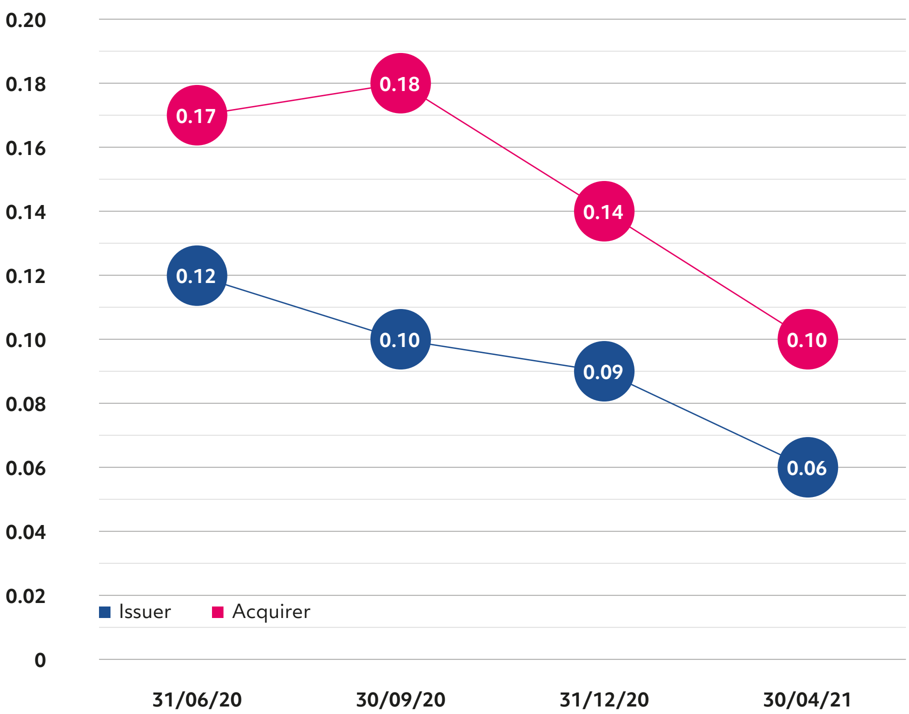
The EBA have confirmed that the average value of fraudulent card transactions across the EU has fallen by 50% for issuers between June 2020 and April 2021, from 0.12% to 0.06% and by 40% for acquirers from 0.17% to 0.10%. Between the European SCA deadline of the end of December 2020 and the end of April 2021, the average value of fraudulent transactions fell by 33% for issuers from 0.09% to 0.06% and by 30% for acquirers from 0.14% to 0.10%. When analysing the average volume of fraudulent transactions this also fell by 50% from 0.12% to 0.06% and by 40% for acquirers from 0.14% to 0.10%.

Data from Visa also shows that fraud levels in Europe are on a downward trajectory. Between January and May 2021, the period corresponding to increasing adoption of 3DS, the levels of reported fraud fell by 20% and the fraud rate on 3DS transactions was less than half that for non 3DS transactions.

> “Encouragingly, fraud levels across our European merchant portfolio have decreased.”
>
> Elavon

SCA has been a catalyst for both issuers and acquirers to strengthen their fraud defences through greater use of realtime systems, stronger fraud rules and investment in greater headcount capacity. During the last 18 months, multiple fraud reduction strategies have been introduced, partly because the TRA exemptions can only be offered if fraud is being tightly controlled. Surprisingly, we were made aware that, perhaps due to the increase in overall eCommerce transaction numbers, some merchants appeared not to have responded to higher levels of soft and hard declines.

Average % rate of fraudulent transactions by value



> “The data showed a significant reduction in the volume and value of fraudulent e-commerce card-based payment transactions, which coincided with, and may have been a result of, the significant increase in payment transactions that are compliant with the SCA requirements.”
>
> **European Banking Authority**

"EMV® 3-D Secure (aka 3DS2.x) provides issuers with more data allowing improved risk decisions to be made."

EPSM

'We have seen levels of eCommerce fraud reduce since the start of 2021'

European Card Issuer

Criminals always look to attack the weak points and so, following the introduction of SCA it is expected that they will shift their lines of attack to other channels or payment types. MOTO and One leg-out transactions are currently out of scope of regulatory compliance but may well become the target for fraudsters. We have seen a greater adoption of realtime fraud prevention systems which are much more effective than previous static fraud rules. Authorised Push Payment fraud attacks have experienced a rapid increase, but it is too early to tell if this is SCA-related. The fluctuating transaction volumes thanks to the COVID-19 pandemic also hinder comparative analysis.

The latest Cybercrime report from LexisNexis, covering the period January to June 2021, shows that their Digital Identity Network has recorded a 623% growth in 3DS transaction volumes year on year and encouragingly, has seen the eCommerce payments attack rate decline by 36% in the last 12 months. This is further evidence of the positive signs that are visible following the implementation of 3DS and SCA compliance programmes.

Risk Management

Risk management is not new but, in our interviews, we learnt how PSD2 and SCA has been raising its level of importance. This is particularly true thanks to the increasing number of criminal attacks. Issuers are making greater use of risk-based decision making, realtime monitoring and behavioural analysis as part of their fraud prevention strategies.

Use of the TRA exemption relies on strong risk management strategies being in place in order to manage fraud levels. Risk-based authentication is used to enable the number of authentication challenges to be minimised and allow more frictionless transactions. No issuer or acquirer wants to risk losing the TRA exemption and so are taking risk management very seriously.

A key benefit of the EMV 3DS2 specifications is the amount of additional data that can be captured and passed to the issuer for them to use in risk-based decisioning. ■

"Across Europe levels of reported fraud have fallen by 20% in the first four months of 2021."

VISA

Expectations & priorities

Regulatory compliance programmes are complex, take time and continue beyond the enforcement deadline. SCA is no different. The initial priority was to deliver baseline compliance with the regulations which will then be followed by an optimisation phase. SCA adds friction to the payments experience for customers, but the priority is to ensure the appropriate amount of friction is applied. Some friction is helpful as it provides reassurance but too much friction causes problems, so establishment of the right balance is key.

The main purpose of the SCA regulations is to reduce the amount of fraud losses but it should be acknowledged that criminals will adjust their strategies to find weak points. Stakeholders will need to continually adapt to ensure their customers are protected.

Next 12 months

We heard from interviewees that for the 12 months following regulatory compliance, their focus would be on maximising the use of exemptions. This will require support for the latest version of EMV 3DS. Issuers, acquirers, gateways and merchants will also need to remove 3DS1, as Visa and Mastercard are withdrawing support for this in October 2022.

EMV 3DS2 supports 10 times as many data fields as version 1, but initially only a few mandatory fields are being captured and sent through to the issuer. We heard requests for more data to be sent as this will allow enhanced risk decisions to be taken, enabling more transactions to be successfully authenticated.

We heard suggestions that we may see greater adoption of digital wallets like Apple Pay and Google Pay to remove friction and simplify authentication.

Organisations are encouraged to introduce support for the new resilience flag that has been defined and mandated by the networks to cater for scenarios when the authentication infrastructure fails. Currently this has very limited adoption. Once supported, in the event of an authentication service outage, transactions can continue to be processed avoiding consumer inconvenience.

> "We encourage merchants to send more data elements and to optimise the payments experience."
>
> cybersource
> A Visa Solution

> "Establishing the optimal amount of friction will be key. If too much then customers and merchants will be inconvenienced; if too little, then fraud rates may rise."
>
> TRU//ST PAYMENTS

The Regulatory Technical Standards (RTS) include a requirement for SCA security audits to be undertaken annually and so European providers will need to complete these tasks from 1st January 2022.

In-app payments are currently performing worse than browser-based transactions. During the next year a greater focus needs to be given to making changes to improve performance. This will include optimising the mobile payment flows and greater adoption of 3DS2.2, partly to help a consumer switch seamlessly between a merchant app and a banking authentication app.

12 -24 months

Looking further ahead, we heard about several other items needing consideration. These reflect the increased consumer familiarisation with authentication and the blurring of Face-to-Face (F2F) and Card Not Present (CNP) use cases.

EMVCo® has recently published 3DS2.3 specifications which:

- Introduce enhancements to increase flexibility for optimising EMV 3DS implementation across multiple channels and devices
- Support different technical environments, split SDK models, gaming consoles and IoT devices
- Add new authentication approaches like Web Authentication and device binding
- Helps issuers identify fraudulent transactions more quickly and accurately
- Offer a streamlined authentication approach to improve the overall payment experience

The TB (WL) exemption is likely to be more widely supported by issuers in this timeframe either by use of a card network service or once issuer processing platforms have been upgraded. Merchant appetite for the TB exemption is high and cardholders who have already experienced this option are very positive.

We heard that in the longer term Delegated Authentication (DA) will be an option for larger enterprise merchants with the technology skills and risk appetite to self-manage the authentication process. These organisations are unlikely to be many, and they will need to comply with card network DA frameworks.

"We expect large digital merchants to evaluate Delegated Authentication options as this technology will allow them to make decisions based on their knowledge of the customer and risk appetite."

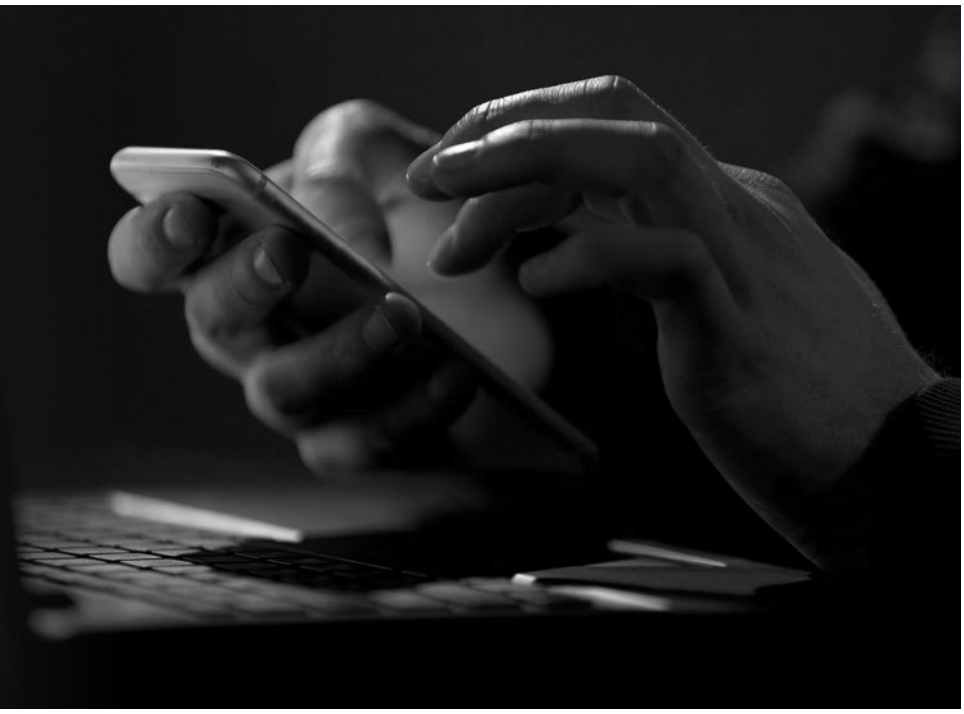
EPSM

"Digital wallets can offer a smoother SCA UX which is one reason why we expect to see increased usage."

ema Electronic Money Association

“PSD2 and the RTS include provisions for review cycles in order to adapt to market experience, maintain relevance and effectiveness.”

Osborne Clarke



Our interviewees expected to see greater use of Behavioural Biometrics in the next three years and for larger data sets to be used within risk systems. This will also spread to adoption by smaller issuers.

The complexity of the travel and hospitality sector has been recognised and interim solutions, including use of MOTO flagging, are available, but these are likely to be phased out or made commercially unattractive. Proof of authentication will need to be passed through all the intermediaries in the value chain and therefore this sector will need to complete system upgrades within this timeframe.

As SCA becomes Business As Usual (BAU) we can expect to see enhanced reporting to cover authentication, authorisation and fraud rates by card type and channel, exemption usage with success, issuer performance, transaction timings and infrastructure availability performance. Tools may need to be developed or enhanced to capture and share this information.

“Travel and hospitality providers need to ensure proof of customer authentication can be passed right through this complex value chain.”

planet

The EBA have committed to reviewing the RTS three years after implementation and this may well result in changes being made. They may decide to transition ‘one leg-out’ transactions from ‘best efforts’ basis to full authentication.

It is too early to predict what impact SCA will have on consumer payment preferences, but our research suggested that if the card payments experience is poor, then it may act as a catalyst to the migration to open banking and instant payment options. ‘Click to Pay’ may also see an increase in adoption.

In our interviews we were reminded that the PSD2 regulations have a built in 3 year review cycle post-implementation - which would be January 2023. Various rumours about a PSD3 are circulating although the commission has made no public announcements on the subject. The RTS specifications require fraud rates to be reviewed annually and to include a review cycle. ■

International potential

During our research we asked interviewees about the potential for SCA to be introduced to other geographical regions and countries. We learnt that many countries are closely watching this European initiative and are keen to see the results on the amount of fraud reduction that can be achieved, how customers react to changes in the payments experience and having additional friction applied.

Europe has taken a strict regulatory approach which requires all issuers and acquirers to achieve compliance according to legal statute or to face sanctions and penalties. Some highly-regulated countries may take a similar approach, with India already having introduced authentication, and others particularly from Asia Pacific (APAC) expected to do so. Singapore and Australia are expected to be early adopters. The high adoption of mobile devices, biometrics and authentication in the APAC region would make SCA compliance easier.

EMV 3DS is a global standard and the most widely used technology to achieve SCA compliance. Many countries will introduce EMV 3DS authentication technology to reduce remote purchase fraud and obtain liability shift protection. Fastest adoption will be in countries with high usage of card payments and eCommerce. International card networks may also encourage adoption through the use of mandates. The US, Canada, Brazil, Australia, New Zealand, UAE, Hong Kong, Malaysia and Singapore already have 3DS initiatives in place or planned.

All countries understand that fraud moves to the weakest point and so if SCA is effective in Europe then criminals will shift their attack focus to other countries as seen when Chip & PIN technology was introduced.

We will have to wait to see which international regulators decide to introduce legislation but even where this happens, it is likely to include divergences from the European SCA standards. We heard the importance of having definitive realistic deadlines and greater clarity on technical standards.

In addition to strengthening security for eCommerce payments, the PSD2 directive also required SCA to be used to secure access to bank accounts. This applies to Open Banking initiatives in the UK and Europe and will therefore be a further catalyst for SCA adoption as Open Banking spreads across the world. ■

> "One of the great benefits of SCA is that it has accelerated the implementation of EMV 3DS. Fraudsters know no boundaries, so even if SCA isn't replicated in other regions, anything that encourages the adoption of EMV 3DS, which is a global standard, will benefit the global payments landscape as a whole"

VISA

Key findings

SCA is needed

To reduce escalating fraud losses from remote electronic purchases. Enhanced security controls need to be introduced to ensure long term consumer confidence in card payments.

European experience

Compliance has been achieved without mass disruption to consumers and low basket abandonment. Variations exist between countries and issuers. The TRA exemption is the most valuable. App payments remain an area of concern.

Impact on fraud

SCA is having a positive impact on fraud levels. Visa note a 20% reduction in reported fraud levels. EBA analysis shows a 33% reduction in fraud by value for issuers and by 50% by volume.

UK is well-prepared

For SCA enforcement thanks to a strong starting point, the good work of the PMO, the need for acquirers to be ready for earlier European deadline, the extra time granted by the FCA and the changes that have already been completed by so many stakeholders. Large eCommerce merchants who account for most eCommerce transactions will be ready. Issuers can offer alternative authentication approaches to vulnerable customers to avoid exclusion.

Manage fraud levels

Proactively monitor and manage fraud levels to reduce losses and maximise use of TRA exemption.

SME merchant readiness

Exact status is unknown, but fears exist that many will see disruption due to lack of engagement and action. SME merchants may only act once transactions start being declined. Additional time would not help.

Remaining UK priorities

All stakeholders to complete comprehensive testing, maximise use of exemptions, support resilience flag; issuers to support behavioural biometrics; all parties to undertake effective communication campaigns internally and externally, and maximise use of the sprint ramp-up period.

Poor data quality

Incorrect or incomplete transaction flagging are causes of many failed transactions especially for MITs.

Optimisation phase

Shift focus from basic compliance to optimisation. Build an exemption strategy knowing your customer, with focus on customer experience and the challenge flows. Follow best practices and learnings from Europe. Improve app-based payments performance.

EMV 3DS

Support the highest version of 3DS available and send more data elements through to the issuer. Utilise new capabilities like 3RI. Prepare for the withdrawal of 3DS1 in Q4 2022.

Appropriate friction

Organisations should apply the optimum amount of friction to balance the needs of customers, merchants, and to control levels of fraud.

Next phases

Expected to include introduction of trusted beneficiary exemption and for large merchants an evaluation of delegated authentication options. Regulatory reviews may adjust some of the current exemptions and bring more transaction in-scope.

Mobile

Mobile adoption should be encouraged as it offers the best opportunity to authenticate customers efficiently and reduce friction. Biometrics, BB, in app and out of band authentication.

Payment preferences

We see higher adoption of digital wallets but it is too early to identify any trends between switches between card and account-to-account payment methods. If UX is poor, then consumers may change how they choose to pay.

International expansion

EMV 3DS will be adopted in more regions and countries where card payment and eCommerce usage is high. This will help drive down remote fraud levels. The number of countries introducing SCA regulations is expected to be low and depend upon the success in Europe.

About the research

Between September and October 2021, The Payments Association conducted extensive primary research through a series of detailed stakeholder interviews. The white paper has been structured according to the questions asked in the research interviews. We heard from over 20 organisations as part of our research including those listed below. Interviewees included subject matter experts from international card networks, card issuers, merchant acquirers, payment gateways, merchants, solution providers and trade associations. These organisations are representative of the entire payments industry. We would like to express our thanks for the extensive support we received. Visa, in particular, provided significant guidance around the implementation of SCA and how best to minimise friction.

We assessed the readiness status of the UK market for SCA compliance and the remaining challenges. A key area of focus was understanding the learnings from early adopters in continental Europe and the impact SCA was having on fraud levels.

VISA	LLOYDS BANK	NatWest	JP Morgan	AIB Merchant Services
planet	TRU//ST PAYMENTS	Verifone	cybersource A Visa Solution	Elavon
JOHN LEWIS PARTNERSHIP	Osborne Clarke	EPSM	ema Electronic Money Association	Payments Consultancy Limited

About Payments Consultancy Ltd

Payments Consultancy Ltd, the commissioned researcher and author of this white paper, is an award-winning payments consultancy that advises banks, card issuers, acquirers, merchants, payment providers and investors. The company provides specialist advisory services related to:

- Strategy development
- Market assessments
- Competitive analysis
- Supplier selection
- Commercial due diligence

Payments Consultancy's primary consultant is Mark McMurtrie who has over 25 years payments experience. Mark is an ambassador for The Payments Association, industry commentator, conference chairman, popular speaker and awards judge.

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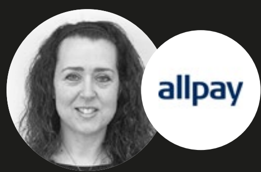

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About The Payments Association

The Payments Association (previously the Emerging Payments Association or EPA) is for payments firms, big & small. We help our members navigate a complex regulatory environment and facilitate profitable business partnerships.

Our purpose is to empower the most influential community in payments, where the connections, collaboration and learning shape an industry that works for all.

We operate as an independent representative for the industry and its interests, and drive collaboration within the payments sector in order to bring about meaningful change and innovation. We work closely with industry stakeholders such as the Bank of England, the FCA, HM Treasury, the Payment Systems Regulator, Pay.UK, UK Finance and Innovate Finance.

Through our comprehensive programme of activities for members and with guidance from an independent Advisory Board of leading payments CEOs, we facilitate the connections and build the bridges that join the ecosystem together and make it stronger.

These activities include a programme of monthly digital and face-to-face events including our annual conference PAY360 and awards dinner, CEO round tables and training activities.

We run five stakeholder working Project groups: Inclusion, Regulator, Financial Crime, International Trade and Open Banking. The volunteers within these groups represent the collective view of The Payments Association members at industry-critical moments and work together to drive innovation in these areas.

We also conduct exclusive industry research which is made available to our members through our Insights knowledge base. These include monthly whitepapers, insightful interviews and tips from the industry's most successful CEOs.

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