Update on Passkeys and SPC

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Objectives with passkey authentication in remote commerce transactions

Reduce fraud & false declines

Secure authentication, combined with tokenization, supports increased approval rates and reduced fraud.

Reduce friction at checkout

Authentication performed in merchant environment, with mechanisms that consumers know and use every day to unlock their devices

Improve conversion rates

Build consumer trust when leveraging user-friendly and secure authentication mechanisms in a consistent way, thereby reducing abandonments during authentication process

Examples of passkey use cases for card payments

Issuers implement and use passkeys to authenticate cardholders during an EMV 3DS request where the Issuer believes that the transaction is risky or needs to be authenticated to comply with regulation

Issuer is the Relying Party

Merchants or Digital wallets implement and use passkeys to authenticate cardholders transacting with a card stored on file with the merchant or wallet. Authentication results are shared with Issuers using a mechanism defined by payment networks (e.g., Mastercard Token Authentication Framework)

Merchant, PSP or Digital wallet is the Relying Party

Payment networks e.g., Mastercard facilitate the use of FIDO to authenticate cardholders in a consistent way. Cardholders authenticate when paying with their Mastercard at participating merchants. Authentication results are processed by Mastercard and shared with Issuers.

Mastercard or Issuer is the Relying Party

SPC provides more security and better UX

Avoid authentication failures

Only prompt for passkey authentication when there is a FIDO credential available on the consumer device. This avoids the need for the consumer to cancel the authentication request when asked to select a credential that they don't have (e.g., security key).

Cross-origin authentication

Relying Party (e.g., Issuer or Mastercard) may allow Merchants or their payment service provider to initiate passkey authentication, without the need to iframe or redirect to the Relying Party's page.

Dynamic linking

Transaction amount and merchant identifier are used as input to the generation of the FIDO assertion. This enhances the compliance with PSD2 requirement.

Consistency and Secure display

The information displayed to the consumer when authenticating is displayed in a consistent way and is secured to ensure that "what you see is what you sign".

Example of Mastercard facilitating FIDO – registration during checkout*

Ali selects a card for payment. After issuer authentication (ID&V), Ali is prompted to create a passkey for Mastercard

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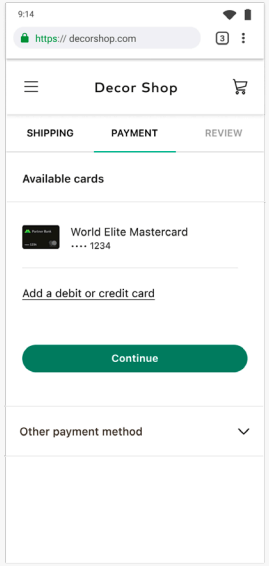

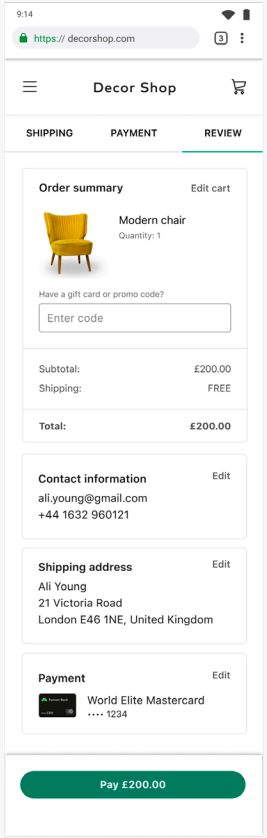

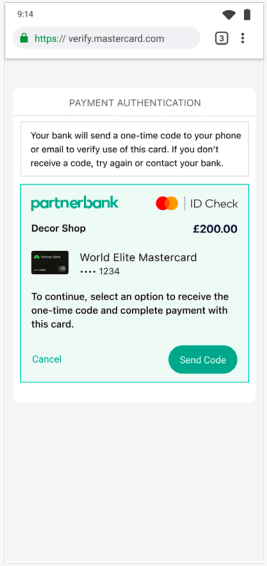

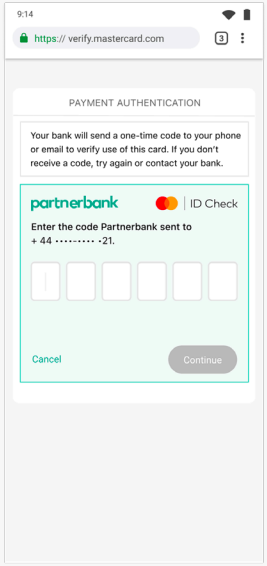

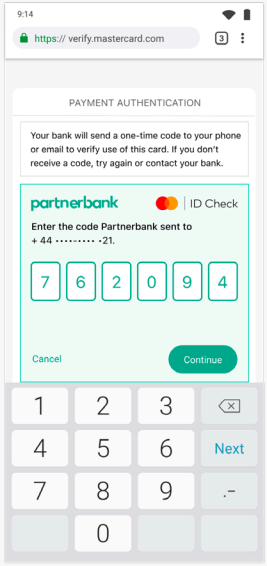

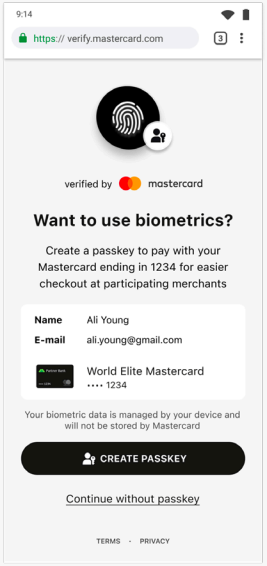

EMV 3DS with Issuer authentication

Ali agrees to create a passkey

*registration can be facilitated also during card add or within an issuer application

Example of Mastercard facilitating FIDO – registration during checkout

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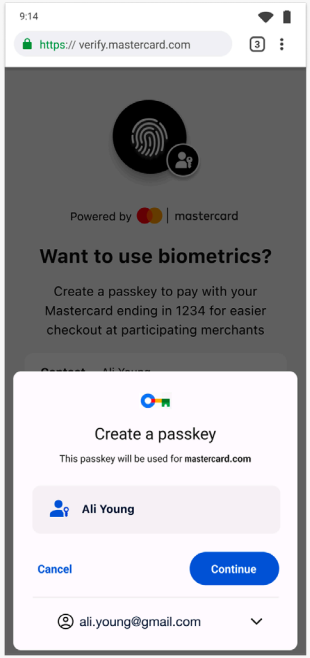

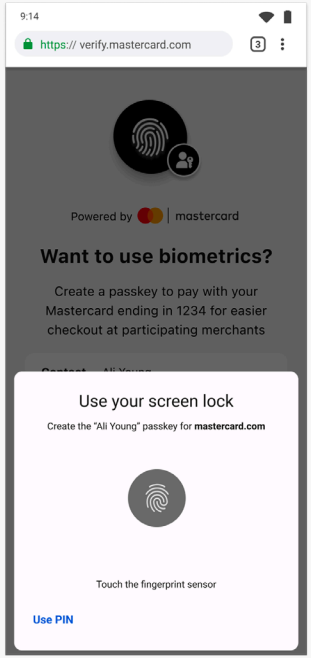

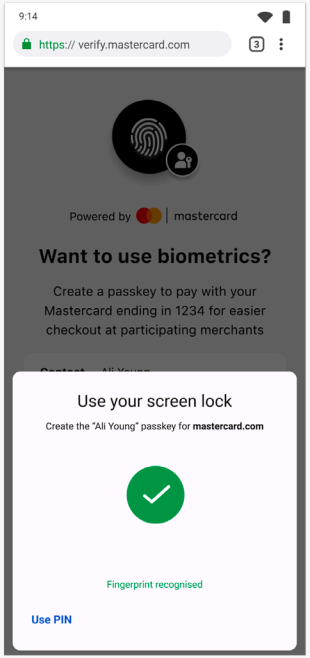

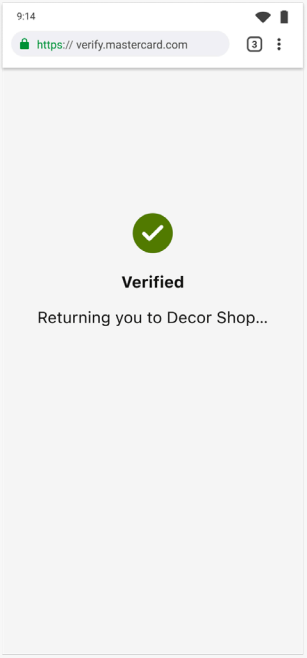

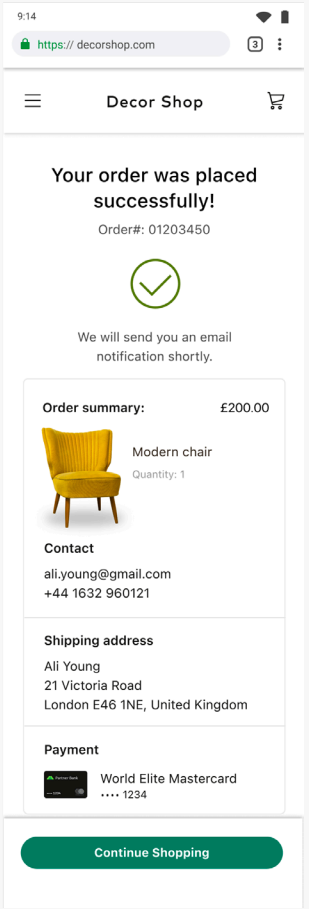

UX driven by device operating system

Example of Mastercard facilitating FIDO – authentication during checkout

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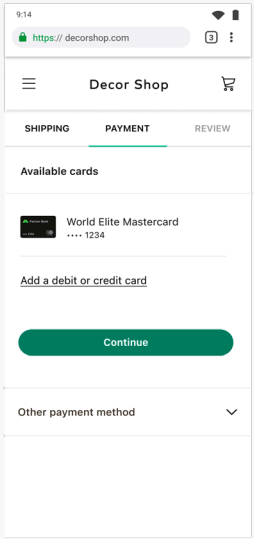

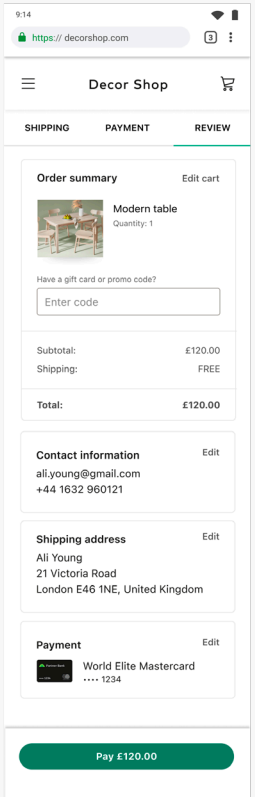

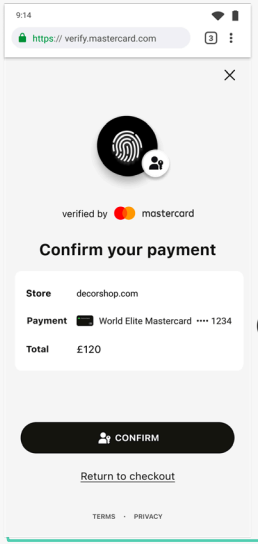

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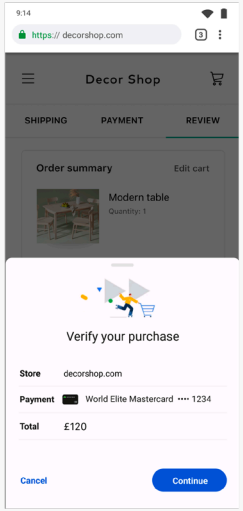
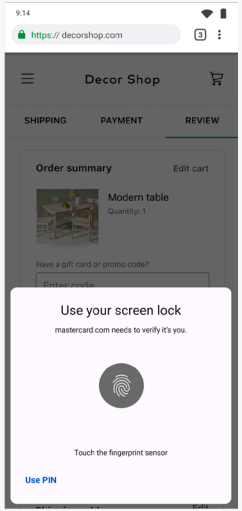
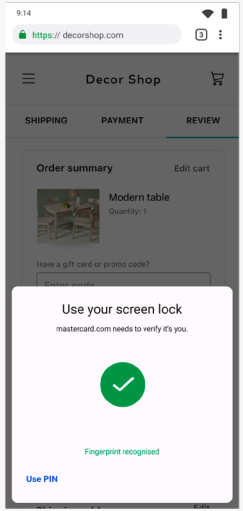
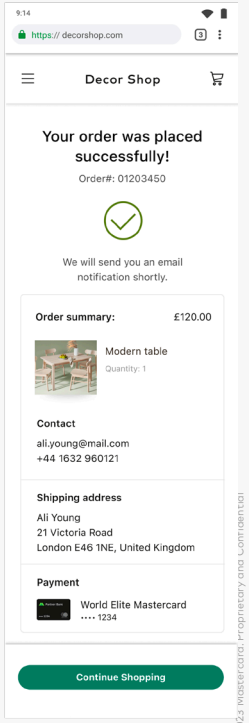


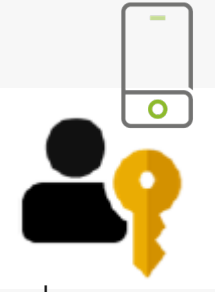




WebauthN OR SPC



The introduction of passkeys comes with new challenges



Challenges

Currently, passkeys do not come with attestation. Relying Parties are not able to identify the source, to validate that the passkey comes from a certified passkey provider

Currently, some passkeys are synchronized across devices without the possibility for Relying Parties to recognize on which device it is used or identify the Operating System's KYC used to recognize the consumer across devices. Hence RPs are unable to validate the identity of the cardholder using those passkeys.

Risks

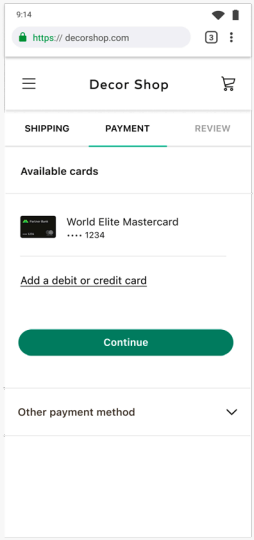
Non-compliance with regulations e.g., PSD2

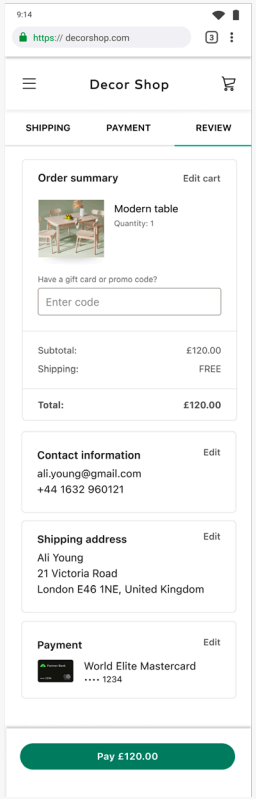
Lack of consumer confidence to use passkeys for payments

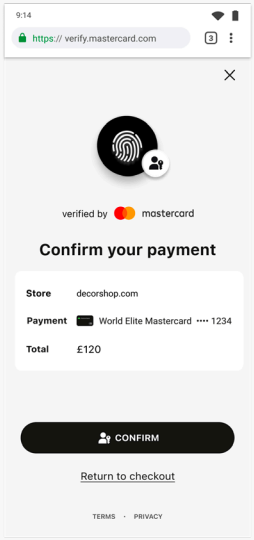
Financial losses for Issuers in case of fraud

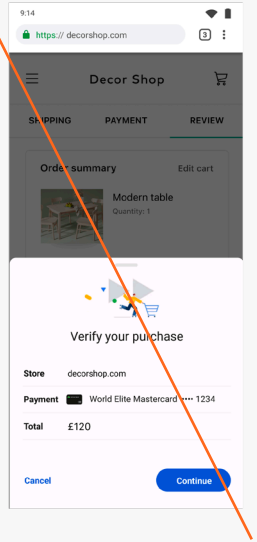
Degraded user experience

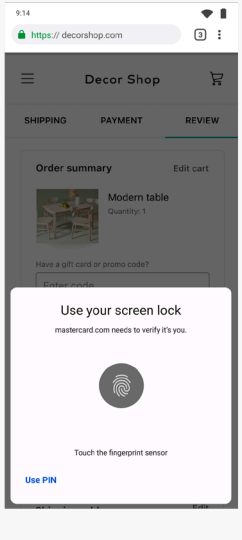
Example of risk with passkey synchronization (degraded UX)

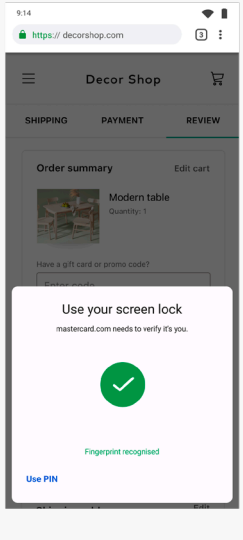


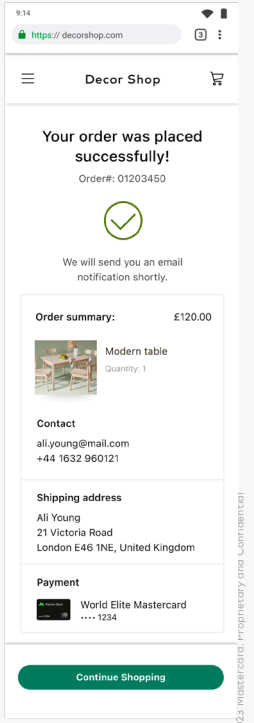






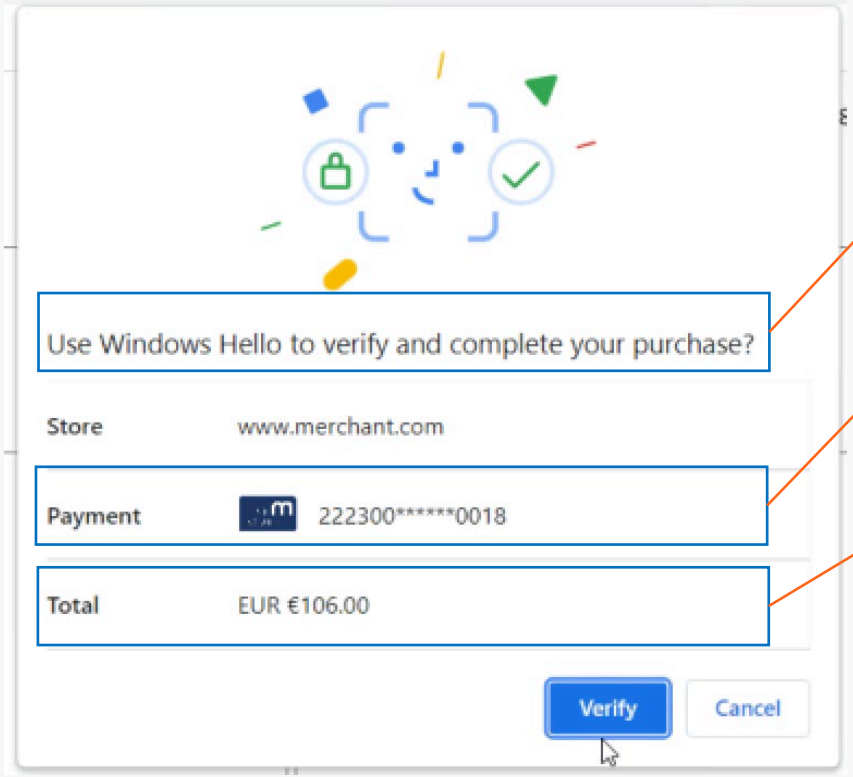






A redirect to the Relying Party (here: Mastercard) may be required to detect the consumer device e.g., when regular cookies are used – making SPC a redundant step

Possible enhancements to SPC to support consumer access to their account (i.e., outside of transaction authentication)



Examples of enhancements

Use Windows Hello to access your account

Account: e.g., Click to Pay (req.), email (opt.)

(remove)