Payments Update for the Berlin Group

30 October 2023

Secure Payment Confirmation (SPC) Features

- Browser-native UX for payment confirmation

- Dynamic linking

  - Web Authentication gives you "possession" signal

  - SPC adds "consent" signal on top

- Cross-origin registration and authentication

  - Note: Cross-origin auth added to WebAuthn Level 2; registration added to Level 3

First Stripe Experiment with SPC (2021)

- Hypothesis: SPC superior to OTP as an EMV® 3DS step-up during card payment

- Tested experimental version of SPC from Nov 2020 to Jan 2021

  - Experiment limited to Chrome with TouchID on MacOs.

  - Merchants were global, mostly small and medium-sized

- Reported results mid-March 2021

Stripe Results (2021)

- Conversions **increased 8%** with SPC

- Authentication was over **3x faster** with SPC

- Negligible fraud (true for both SPC and OTP)

New! Second Stripe Experiment with SPC (2023)

- Chrome implementation of SPC had evolved during two years (including a new "opt-out" feature for GDPR)

- Tested experimental version of SPC in Q1 2023

- <u>Reported results</u> in September during W3C's TPAC 2023

Stripe Results (2023)

- Conversions **increased 7%** with SPC

- Authentication was over **3x faster** with SPC

- > 95% returning user success

- Fraud lower relative to traditional 3DS rails

However, Stripe indicated some findings require more investigation:

- Only ~50% returning users chose biometrics

- Authorization rates slightly lower

- Vanilla Web Authentication success slightly higher than SPC
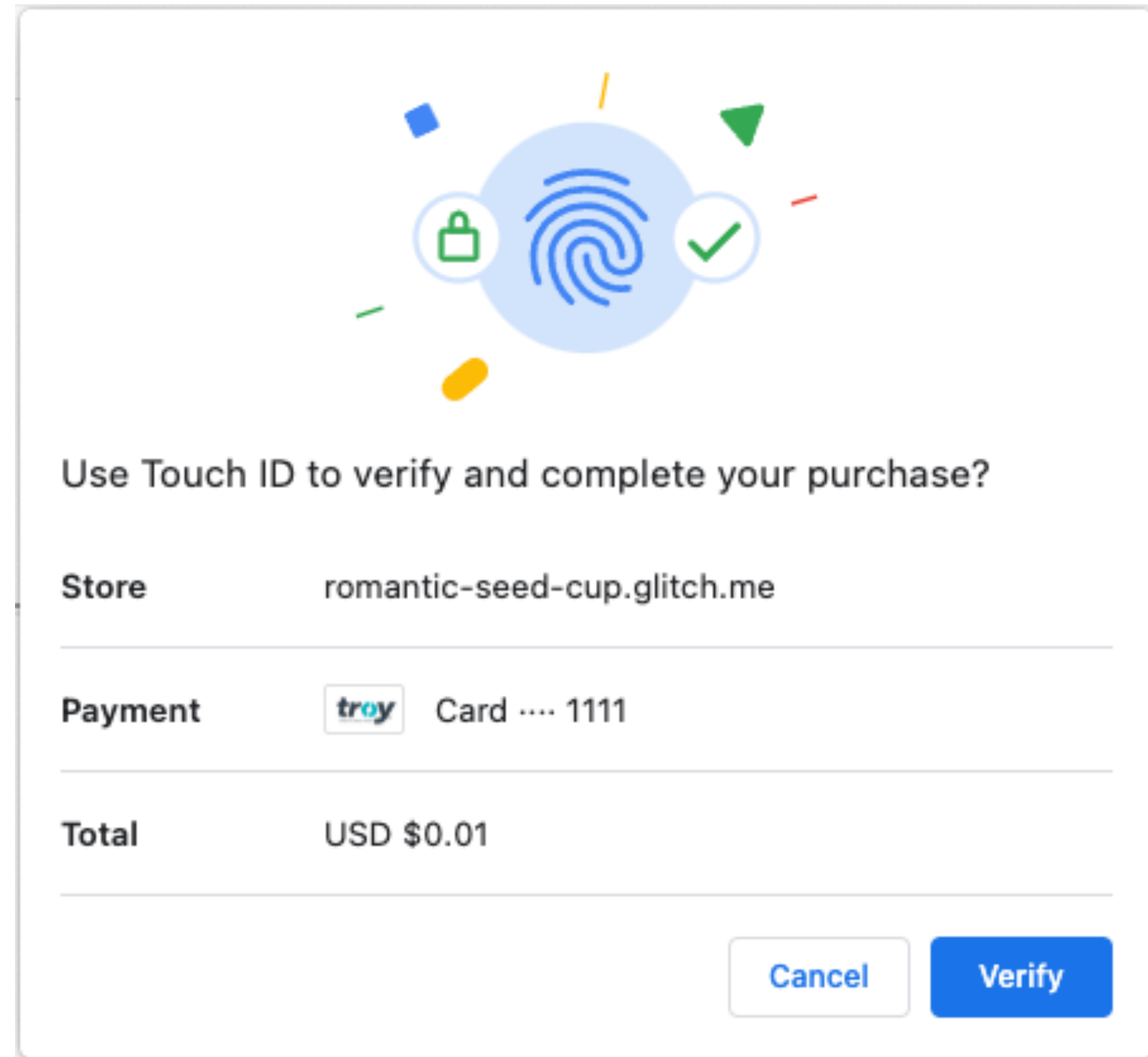
Other Pilots Underway

- Adyen with Airbnb

- Visa using 3DS 2.3 (with Netcetera)
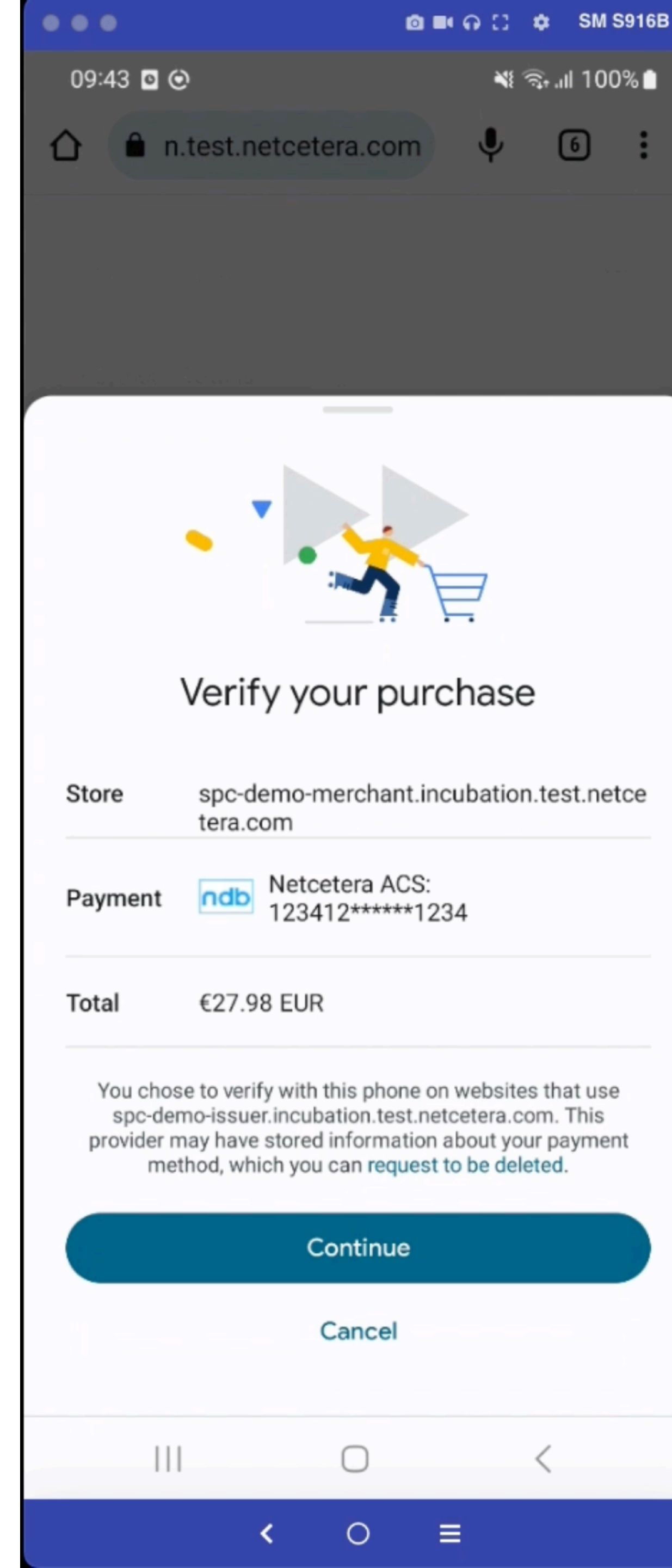
- Visa using 3DS 2.2 (via Modirum extension)
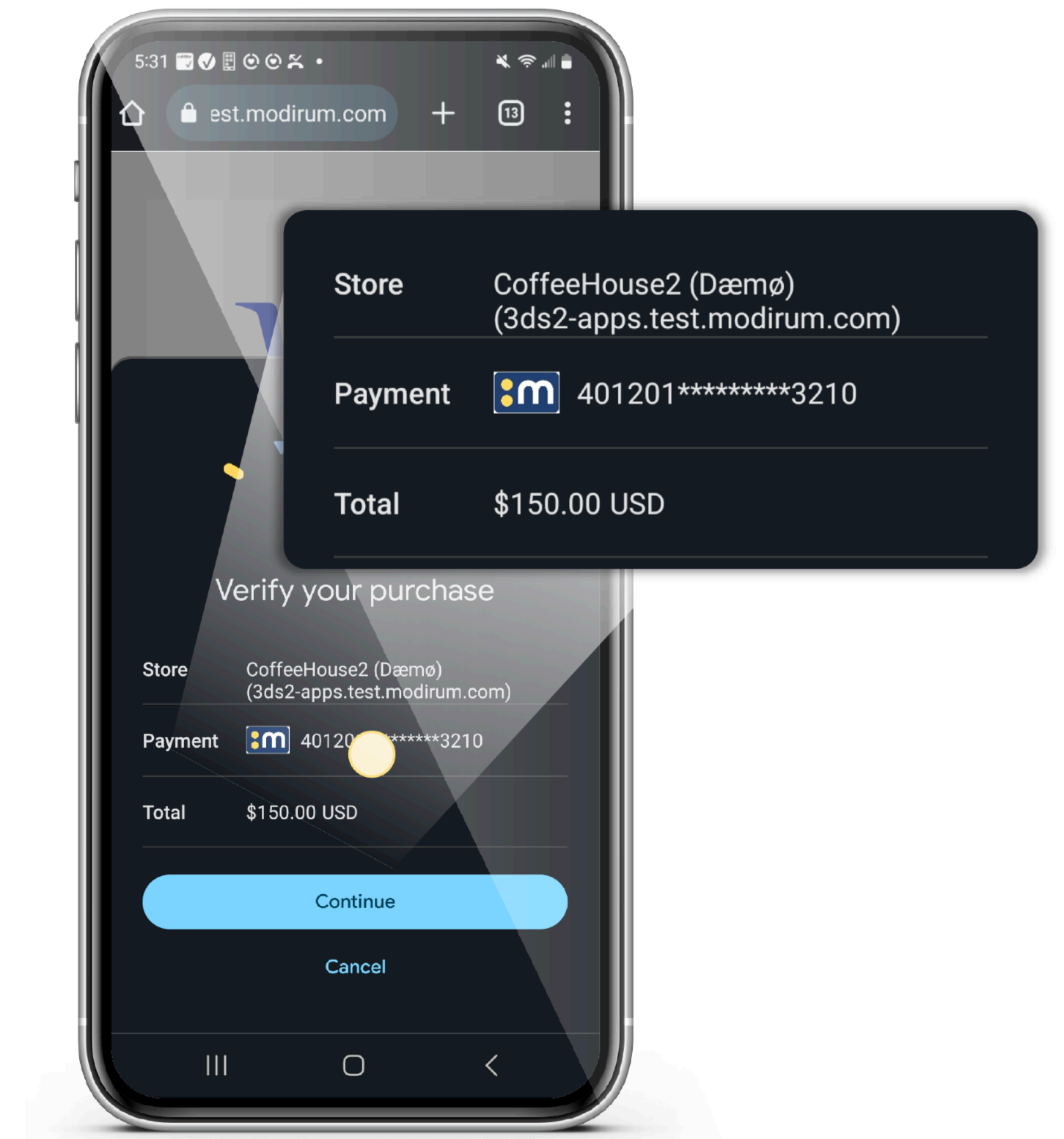
Demos

- Netcetera
  - Registration
  - Merchant-initiated SPC (with 3DS 2.3)
  - Bank-initiated SPC (with 3DS 2.2)
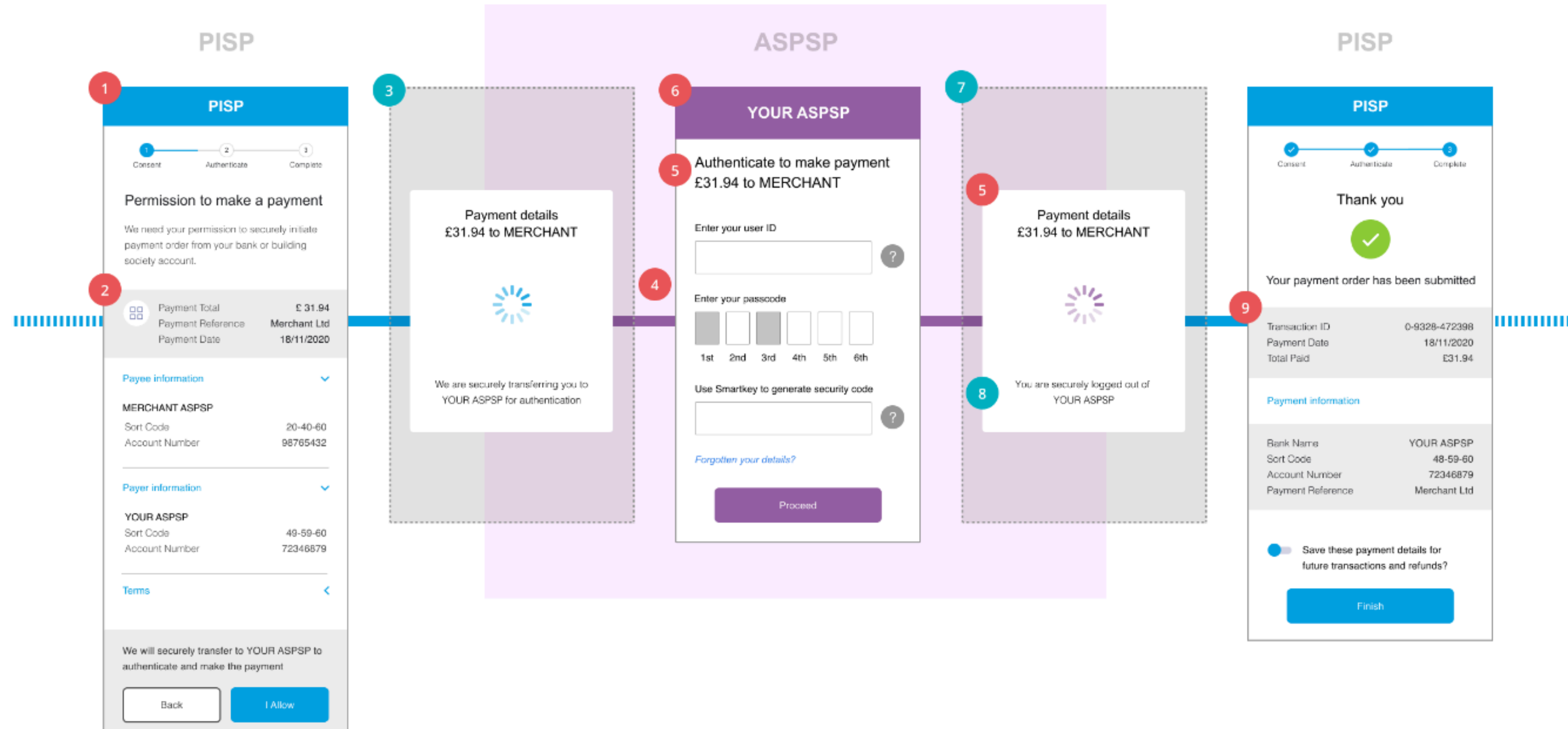
- Google
  - Widget shop

Videos

- Adyen (registration, authentication)

- Netcetera

- Modirum

# Open Banking UK Authentication/Authorisation Wireframe

Source: Open Banking Customer Experience Guidelines

Sources of UX friction

- Type username (on small screen)

- Find phone / smart key

- Change context away from merchant site

- Wait for notification on phone

- Open messaging app for OTP

- Memorize required digits

- Return to payment app

- Enter select digits

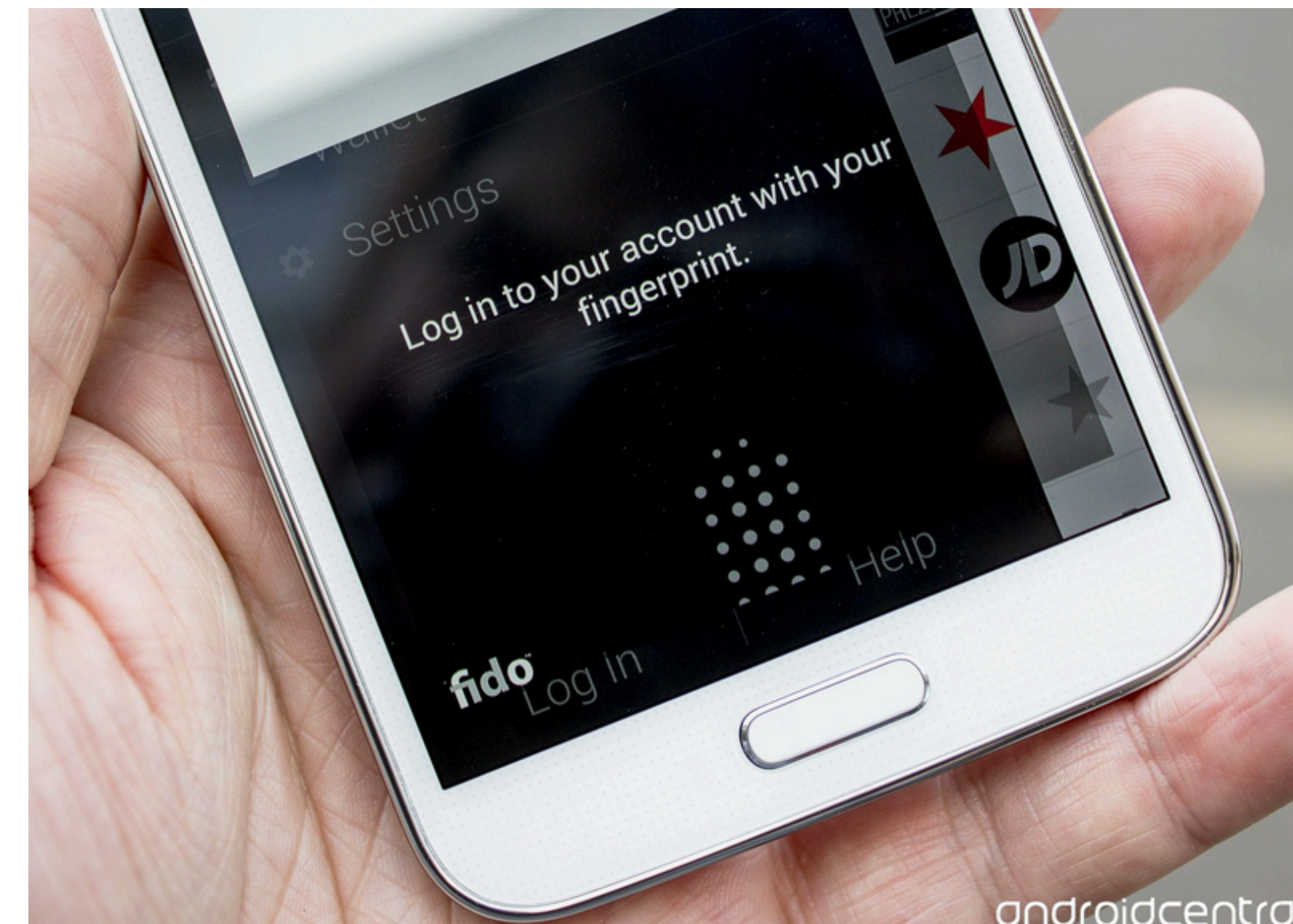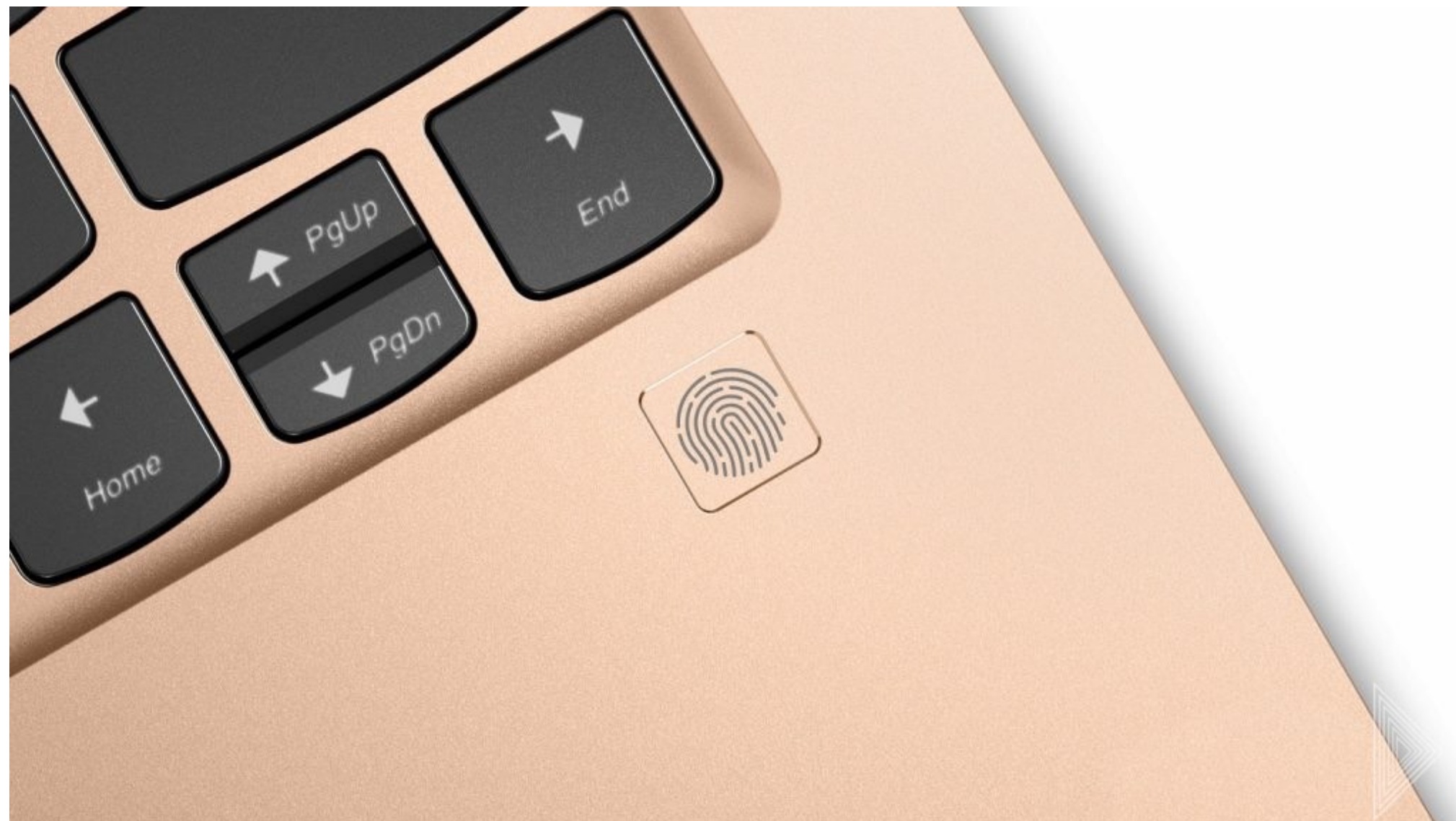# SPC for biometric authentication without login
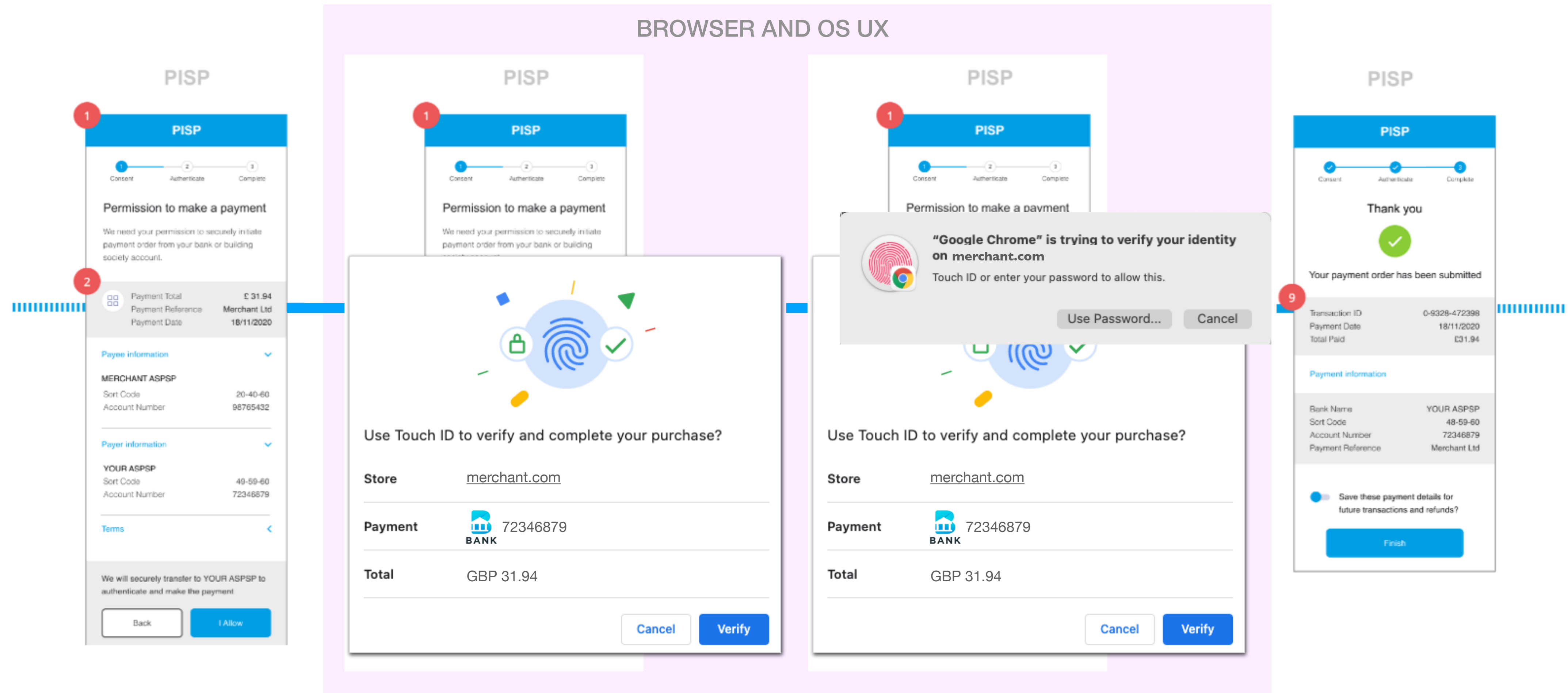
Sources of UX friction

- Click "Verify" button

- Use device authenticator (e.g., fingerprint, face recognition)

Status: Web Authentication / FIDO is ubiquitous

- Hardware-based authentication available to Web and apps

- Supported on <u>all major browsers</u>, desktop and mobile

- <u>Billions of authenticators</u> in user devices

Web Authentication adoption accelerating

- Apple, Google, Microsoft support

- PayPal adoption

- Amazon adoption

- WhatsApp adoption

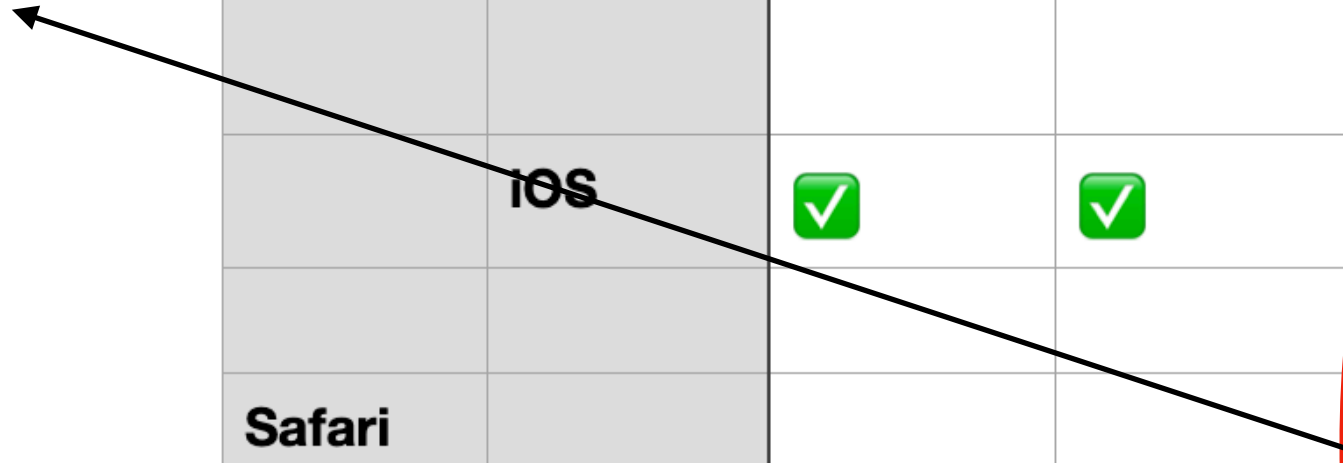- LinkedIn, X, Yahoo! Japan, SK Telecom, …

Status: SPC

- SPC specification a Candidate Recommendation; we need another browser to advance

- Shipping in Chromium (MacOS, Windows, Android)

  - Chrome, Edge

  - Ongoing work on support in other browsers

- Support in protocols

  - EMV® 3-D Secure (v 2.3) includes support for SPC in two ways: merchant-initiated and ACS-initiated

  - EMV® Secure Remote Commerce (SRC) also includes support for SPC authentication

- SPC support in native apps

  - FIDO available to native iOS and Android apps, so it is conceivable SPC could be

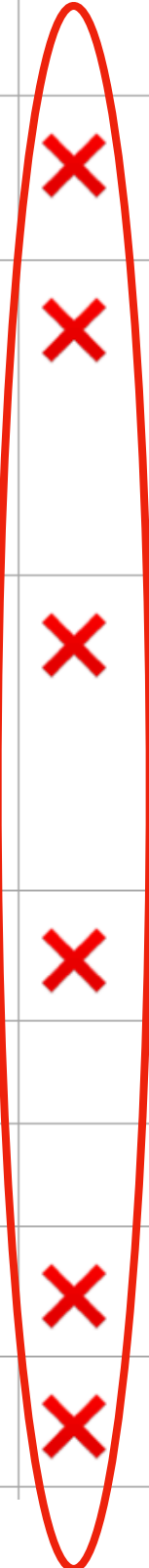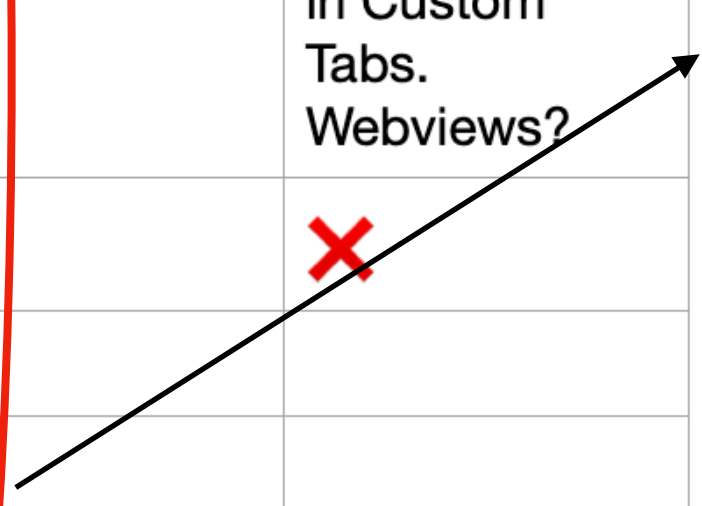 - SPC can be used in Chrome custom tabs on Android; see Netcetera slides

SPC Interoperability Deep Dive*

		Payment Request	WebAuthn Level 2	SPC	Conditional UI (which may signal availability of credential listing API) for platform authenticators	(Underlying) Credential listing API in OS for platform authenticators	Discoverable credentials for platform authenticators	CTAP bit ‡ supported by platform authenticators	Relying-party usage of WebAuthn credentials without payment extension supported	Roaming authenticator / hybrid support in SPC	Native App support
Chrome, Edge											
	MacOS	✅	✅	✅	✅	✅	✅	❌	Implementable; no plans yet	❌	N/A
	Windows	✅	✅	✅	✅	✅ (as of Windows 11 with early 2023 updates)	✅	❌	Implementable; no plans yet	❌	N/A
	Android	✅	✅	✅	✅	✅	✅	✅	✅	❌	✅ SPC works in Custom Tabs. Webviews?
	iOS	✅	✅	❌	✅	❌	✅	❌	❌	❌	❌
Safari											
	MacOS	✅	✅	❌	✅	✅	✅	❌	❌	❌	N/A
	iOS	✅	✅	❌	✅	TBD	✅	❌	❌	❌	❌

Need Safari

Need roaming authenticators

* Other browsers not shown here

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Next Steps (What we heard at TPAC 2023)

- Continuing strong interest in both SPC and Web Authentication for payments

- Feedback on UX based on pilots will affect implementations

- Need more browser support for SPC

- Design choices related to "passkeys for login" have an impact on "passkeys for payment"; FIDO Alliance and platform providers continue to work on proposals for payments use cases

- Plans for additional pilots (not yet public)

- Need for greater education and outreach to issuers on SPC value proposition

Other (non-SPC) topics

- In light of browser changes:

  - Returning user recognition

  - Fraud mitigation

- Payment link types in HTML

Incubation: Payment link type in HTML

Explainer: [P]ayment links [...] can be embedded in checkout pages to give an 'alternate' representation of the payment method(s) that the merchant is presenting (in addition to e.g., showing the user a visual QR code, or a login button for an eWallet).
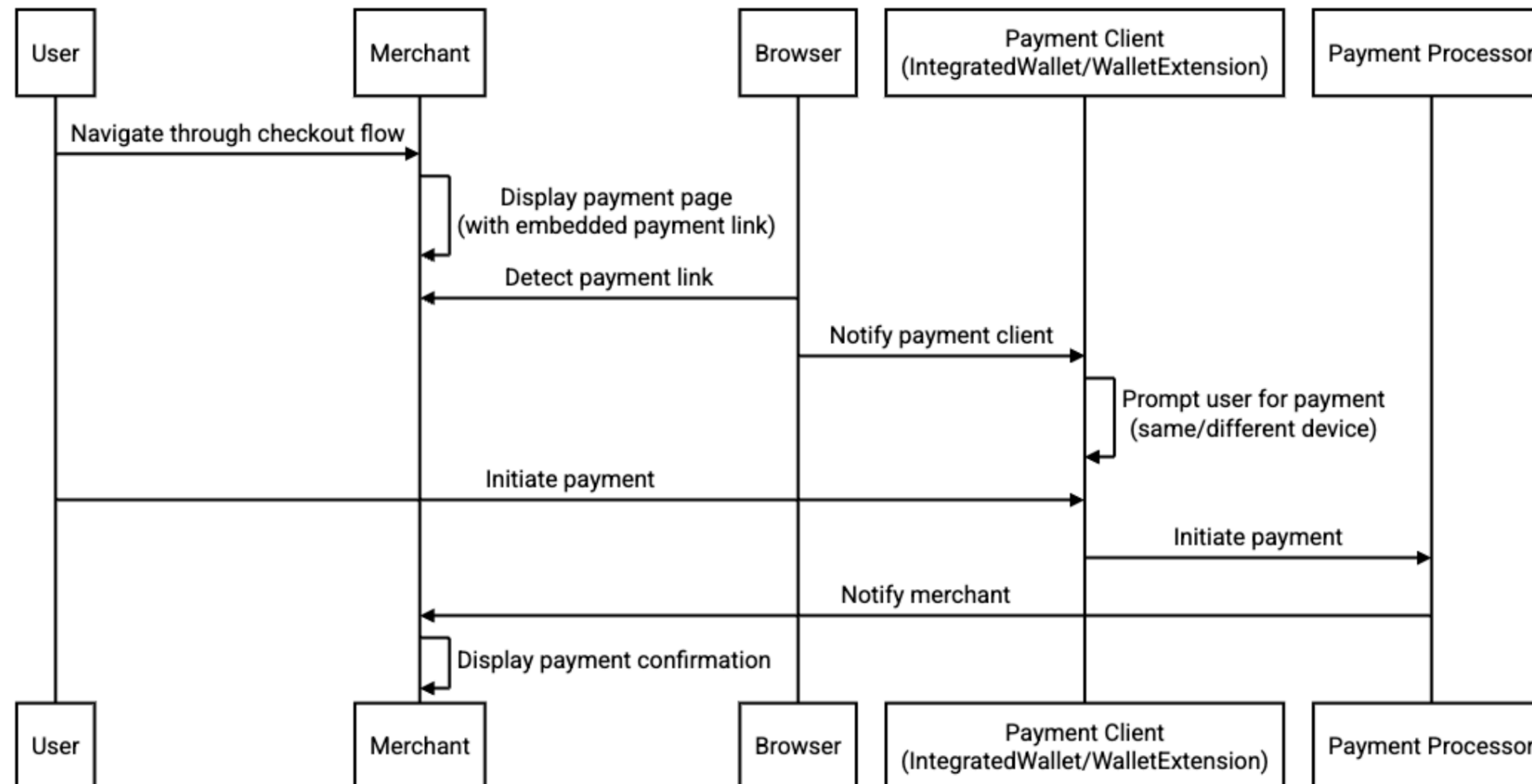
Discussion

- Is there a path for SPC integration into Berlin Group APIs? Passkeys?

- How best to organize early review of Berlin Group proposal?

- What activities are happening around PSD3?

- What activities are happening around <u>EUDI</u>?