CONSULTATION

NFC ACCESS CONDUCT REQUIREMENT

Apple's Mobile Platform

20 October 2026



© Crown copyright 2026

You may reuse this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence.

To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/ or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Website: www.gov.uk/cma

CONTENTS

CONSULTATION **1**

1. INTRODUCTION 4
2. AIM OF OUR PROPOSED NFC ACCESS CR 12
3. OUR PROPOSED NFC ACCESS CR AND INTERPRETATIVE NOTES 19
4. PROVISIONAL EFFECTIVENESS ASSESSMENT OF OUR PROPOSED NFC ACCESS CR 37
5. PROVISIONAL PROPORTIONALITY ASSESSMENT OF OUR PROPOSED NFC ACCESS CR 110
6. QUESTIONS FOR CONSULTATION 142
7. APPENDIX A: FRAMEWORK FOR THE ASSESSMENT OF CONDUCT REQUIREMENTS 145

1. INTRODUCTION

1.1 This consultation sets out our proposals for a conduct requirement (**CR**) on Apple to open access to Near-Field-Communication (**NFC**) technology on iOS devices (**NFC Access CR**).

1.2 As set out more fully in Chapter 2, we are seeking to ensure effective interoperable access to NFC on fair, reasonable, transparent and non-discriminatory terms. This would enable developers to improve their existing offerings, or develop new innovative uses of NFC technology, ultimately improving consumer choice of apps and supporting economic growth in the UK. This includes by:

(a) Unlocking immediate competition and innovation in payments to drive economic growth in UK fintech, supporting the government's National Payments Vision[1] of a trusted world leading and resilient payments ecosystem, delivered on next-generation technology, where consumers and businesses have a choice of payment methods to meet their needs.

(b) Creating a supportive environment and conditions in the UK for the development of new and innovative contactless uses of NFC across the wider digital economy.

(c) Protecting Apple's incentive to invest in and innovate its NFC platform.

The importance of NFC for the UK

1.3 The way people pay has changed at remarkable speed. What was once a journey from cash, to cards, to contactless has now become a daily habit built around mobile devices. For many consumers, a phone can now open the gate at a station, pay for the weekly shop, collect loyalty rewards, hold boarding passes for flights and tickets for sporting events. NFC is the technology that enables many of these everyday contactless interactions, and digital wallets are increasingly the place where consumers expect payment and other trusted services to come together.

[1] The government's vision for bolstering the UK's payments sector to deliver economic growth. See HM Treasury, 'National Payments Vision', updated 2 July 2026, accessed by the CMA on 14 October 2026.

1.4 For consumers, that shift should bring more choice, better services and stronger incentives for providers to compete. Where NFC access is constrained, consumers may have fewer alternatives to the default wallet on their device, meaning fewer ways to choose how they pay, and slower improvement in the features, convenience and value offered through mobile payments. Opening access can help ensure that the next phase of contactless payments is shaped by competition and consumer choice, rather than by a single route to market.

1.5 For businesses, and particularly the UK's fintech sector, NFC access matters because payments are a gateway to wider customer relationships and new digital services. For example, providers' ability to provide payment functionality directly within their own apps can help firms build more regular engagement with customers and integrate payments with a wider range of services, such as account management, loyalty and rewards, and other personalised financial products. This can support stronger customer relationships, help firms differentiate their offerings and create new opportunities for innovation and growth.

1.6 The UK is Europe's leading destination for fintech investment and accounts for approximately 11% of the global fintech sector.[2] Mobile payments are also becoming mainstream: in 2025, 58% of UK adults used mobile payments regularly, while 87% of 16-24 year olds and 89% of 25-34 year olds were registered to use mobile payments.[3] If developers are to compete and scale in this market to realise the benefits from these digitised services that UK consumers increasingly use in everyday life, they need effective access to the technologies that underpin them.

1.7 The strategy under the National Payments Vision for retail payments infrastructure has an outcome where payments operate seamlessly as part of a diverse multi-money ecosystem, with interoperability between new and existing forms of digital money. As account-to-account payment (**A2A**) methods, including Open Banking and, in the future, stablecoins and tokenised deposits,[4]

---

[2] Business.gov.uk, 'Fintech', accessed by the CMA on 14 October 2026.
[3] UK Finance, 'UK Payments Markets 2026', page 13, accessed by the CMA on 14 October 2026.
[4] A2A payments move money directly from a payer's bank account to a payee's bank account without the need for intermediaries, such as debit cards. In the future this could look like in-store retail payments made using Open Banking and NFC. Stablecoins are a type of digital asset that are backed by a specified asset, often a country's currency, and can be used for payments. Tokenised deposits are a digital form of bank deposits that sit on a distributed ledger.

are adopted by consumers for retail use cases, NFC access will continue to become increasingly important.

1.8 Right now, payments are the prominent use case of NFC technologies. However, the opportunity reaches far beyond this. NFC can support emerging and future use cases including digital identity services,[5] digital car keys, and a multitude of innovative new services that are yet to be developed. The focus of the CMA's work is therefore not only to address the immediate payments opportunity, but to help create the conditions in which innovators can build the next generation of secure, convenient and high-quality contactless services for UK consumers.

Barriers to growth and how we unlock them

1.9 There are two principal and interconnected barriers to effective NFC access. First, developers need access to appropriate technological solutions that allow them to develop, launch and improve NFC-enabled products and services. Second, access must be provided on pricing terms that allow developers to establish viable business models and compete effectively. Left unaddressed, either of these barriers would block the benefits described above by preventing or deterring entry, expansion and innovation.

1.10 Apple controls access to the software and hardware needed to enable NFC on its iPhones through its mobile platform and has historically restricted third parties from accessing NFC on its smartphones, reserving this access to Apple Pay and Apple Wallet.[6] For developers seeking to offer NFC transactions directly within their own apps, the ability to reach iPhone users depends on the terms, technical route and commercial conditions on which access is made available. Where those conditions are not workable, businesses may be unable or unwilling to invest in new products, and consumers may not see the benefits of investment, innovation, and competition that could otherwise emerge.

1.11 There are two established technological approaches for providing NFC access:

---

[5] A digital identity is a digital representation of identity information like name, date of birth, residency status etc which can also include biometric identification (photo, face scan) that can be used instead of physical documents to prove who you are or certain aspects of your identity (eg to verify age to a third party).

[6] Apple Wallet allows users to store and use credentials on their iPhone and Apple Watch devices. Apple Pay is a solution which lets users make payments in shops, within apps and on the web using cards from their banks. For the purposes of this consultation document, we use Apple Wallet to mean using Apple Wallet to make an in-person contactless transaction over NFC for non-payment use cases and say Apple Pay to mean the technical platform on iPhone that allows users to store payment credentials on Apple devices and make mobile in-store payments.

(a) Host-based Card Emulation (**HCE**) stores sensitive information securely off-device and sends a limited number of one-time-use tokens to the device for transactions.

(b) A Secure Element (**SE**), a dedicated high-security chip embedded in the device, which stores sensitive data and manages communication over NFC.

1.12 Both HCE and SE are established technologies, not developed by Apple and used across mobile ecosystems to enable a range of contactless services, including payments. The technologies provide different methods for securely storing and transmitting information, but neither is specific to a particular platform or technology provider.

1.13 In October 2024 Apple made its 'NFC & SE Platform' available in the UK and other jurisdictions.[7] Apple has stated that there is significant and growing interest in the NFC & SE Platform in the UK,[8,9] and recently, Mastercard[10] and Visa[11] announced services intended to support developers using this platform. However, two years after the platform became available there is still no evidence of NFC apps launching in the UK using the platform.[12] Stakeholders have raised concerns that current access may not be commercially viable, that fees[13] and non-pricing terms may be onerous,[14] that divergent technical

---

[7] Apple Developer Page, 'NFC & SE Platform for secure contactless transactions', accessed by the CMA on 14 October 2026.
[8] Apple's response to Proposed SMS Decision, paragraph 151.
[9] Apple told us that as of September 2026, [✂] UK-based firms and [✂] non-UK firms had been authorised at the time to use NFC in the UK. Apple's submission to the CMA dated [✂]. Note of meeting with Apple on [✂]. Apple's submission to the CMA dated [✂].
[10] July 2026; Apple's response to section 69 notice dated [✂]. Mastercard has developed its Mastercard Wallet Services based on the NFC & SE Platform to 'help banks, fintechs, merchants and digital platforms take advantage of this more open mobile payments ecosystem'. Mastercard has said that it is already working with partner banks that are developing digital wallet features with this service and expects that consumers will start new capabilities by the end of the year. See Mastercard, 'Ushering in a new era of digital wallet innovation', 15 July 2026, accessed by the CMA on 14 October 2026.
[11] September 2026; Visa, 'Visa Token Service now supports iOS SE use cases', accessed by the CMA on 14 October 2026.
[12] By September 2026, [✂] UK developers and [✂] non-UK developers had applied to access Apple's NFC & SE Platform. Apple's submission to the CMA dated [✂]. Apple's response to call for evidence dated 30 June 2026, [✂].
[13] 5 responses to questionnaires dated [✂] from: [✂]. [✂] response to section 69 notice dated [✂]. Anonymous response to Proposed SMS Decision, [✂]. 2 responses to section 69 notices dated [✂] from: [✂]. [✂] response to section 69 notice dated [✂]. Note of meeting with [✂]. Concerns have also been expressed around the pricing structure: specifically, the fixed fee element, and the fact charges increase after a certain threshold of users is reached. See [✂] response to questionnaire dated [✂].
[14] Stakeholders have raised concerns that the terms and conditions include 'non-negotiable terms' such as on the types of permitted use cases, and drive uncertainty as Apple is free to change, deny or delay access (or withdraw its

approaches across jurisdictions[15] and platforms[16] can make it harder to scale, and that limits on default status information[17] may weaken developers' ability to compete effectively. Therefore, while the Mastercard and Visa announcements represent some movement, broader competitive uptake is needed to demonstrate that access is effective in practice, and to ensure that the benefits of innovation and competition can be realised for businesses and UK consumers.

1.14 This outcome stands in stark contrast to international experience where access conditions better support entry at scale. In July 2024, the European Commission (**EC**) accepted legally binding commitments from Apple to provide NFC access for payment using HCE, with access free of charge and with supporting functionality such as default wallet choice.[18] Six months after the acceptance of these commitments, Vipps was the first developer in the world to launch an alternative app on iPhones to enable NFC payments[19] and, since then, multiple other providers have launched NFC payment apps in the European Economic Area (**EEA**) including PayPal,[20] Curve,[21] BBVA[22] and Klarna.[23]

1.15 While Apple argues that it provides NFC access through its NFC & SE Platform and that (if any intervention was necessary) it should be focused exclusively on SE, the continued absence of meaningful consumer-facing rollout in the UK

NFC & SE Platform offer) at any time. See [✂] response to invitation to comment dated [✂]. [✂] response to section 69 notice dated [✂]. 2 responses to questionnaires dated [✂] from: [✂].

[15] [✂] response to section 69 notice dated [✂]. [✂] response to questionnaire dated [✂]. Note of meeting with [✂]. [✂] response to section 69 notice dated [✂].

[16] [✂] response to section 69 notice dated [✂]. [✂] response to questionnaire dated [✂].

[17] As a first step, the objective of any potential intervention is to open NFC access. We will consider at a later date whether any measures around choice architecture are required, ie once any access interventions have been implemented. In the interim, we are proposing a potential requirement that Apple provide developers with access to an API which would enable them to check whether their app is the default contactless app for contactless transactions (see Chapter 4 below). 3 responses to questionnaires dated [✂] from: [✂]. [✂] submission to the CMA dated [✂]. Note of meeting with [✂]. [✂] response to section 69 notice dated [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Anonymous response to Proposed SMS Decision, [✂].

[18] EC, 'Commission accepts commitments by Apple opening access to 'tap and go' technology on iPhones', 11 July 2024, accessed by the CMA on 14 October 2026.

[19] Vipps MobilePay, 'Vipps MobilePay launches the world's first alternative to Apple Pay on iPhone', 9 December 2024, accessed by the CMA on 14 October 2026.

[20] PayPal launched in May 2025; see PayPal Newsroom, '"Better than cash": PayPal announces plans to revolutionize in-store payments in Germany', 5 May 2025, accessed by the CMA on 14 October 2026.

[21] Curve launched in June 2025, see Curve, 'The Future of Digital Wallets: How Curve Pay is Leading the Charge', accessed by the CMA on 14 October 2026.

[22] BBVA launched in October 2025; see Visa, 'BBVA launches BBVA Pay with Visa in Spain', 21 October 2025, accessed by the CMA on 14 October 2026.

[23] Klarna launched December 2025; see Klarna, 'Klarna launches Tap to Pay for in-store purchases across 14 markets', 2 December 2025, accessed by the CMA on 14 October 2026.

creates a clear and pressing case for intervention. Without timely and effective intervention, UK consumers and businesses risk missing out on benefits already emerging elsewhere, while UK firms lose valuable opportunities to invest, innovate and scale. Addressing these risks requires swift and meaningful action to secure effective access to this technology in the presence of Apple's substantial and entrenched market power (**SEMP**).

1.16 The evidence we have gathered indicates that Apple's current fees are too high to support commercially viable entry and expansion for many developers. The lack of NFC apps launching in the UK highlights the risk of pricing terms acting as a real barrier. Effective access depends not only on the availability of the underlying technology, but also on the commercial terms on which access is provided. Even where a technical route is available, fees that are not fair, transparent and non-discriminatory may prevent developers from establishing viable business models and limit their ability to enter, expand, invest and innovate.

1.17 We have also heard concerns about the level of Apple's fees being unjustified given the wider market context. The underlying technology was not developed by Apple and, when implemented by other mobile providers such as Google, is often provided for free or with minimal fees. While differences in business models and implementation may be relevant, such comparators indicate that effective NFC access can be provided without material access charges. Accordingly, we would expect any resulting fees to be low and substantially lower than Apple's current charges.

1.18 Without fair and reasonable pricing, technical access would not be sufficient to unlock the competition, innovation and consumer choice that the proposed intervention is intended to deliver. Our approach therefore seeks to ensure that the pricing terms for NFC do not undermine the benefits of access by creating barriers to entry, expansion or innovation, while still allowing Apple an appropriate return on its investments and protecting its incentives to innovate.

The role of the CMA

1.19 Part 1 of the Digital Markets, Competition and Consumers Act 2024 (the '**Act**') enables the CMA to promote competition and innovation in digital markets, and to protect consumers and businesses from unfair practices. Mobile platforms are central to that work. Almost every adult in the UK has access to a mobile

device,[24] and mobile platforms are now critical gateways for consumers to access services and for businesses to reach their customers.

1.20 The CMA identified NFC access as a potential area for intervention in its Final SMS Decision[25] and interventions roadmap[26] for Apple's mobile platform. That roadmap describes the CMA's broader programme of action on mobile platforms, including work on App Store rules, steering, interoperability and access to key operating system functionality. The common thread is to ensure that mobile ecosystems work in the interests of UK consumers and businesses: supporting consumer choice, enabling fairer routes to market, and allowing UK firms to compete and innovate on the services that depend on mobile devices.

1.21 The proposed NFC Access CR is a targeted part of that programme. It aims to unlock immediate competition in mobile payments, create the conditions for future contactless innovation, and ensure that Apple's legitimate interests in the security, privacy, integrity and functionality of its platform are protected. In doing so, the CMA is seeking to support a more open and competitive mobile environment that gives consumers greater choice, helps UK fintech and other businesses grow, and enables the UK economy to capture more of the benefits of digital innovation.

1.22 This consultation document sets out our proposals for the proposed NFC Access CR. It includes the following:

(a) Chapter 2: Aim of our proposed NFC Access CR;

(b) Chapter 3: Our proposed NFC Access CR and Interpretative Notes;

(c) Chapter 4: Provisional effectiveness of our proposed NFC Access CR;

(d) Chapter 5: Provisional proportionality assessment of our proposed NFC Access CR; and

(e) Chapter 6: Questions for consultation.

---

[24] Strategic Market Status Investigation into Apple's Mobile Platform: Final Decision (**Final SMS Decision**), paragraph 1.4.
[25] Our Final SMS Decision sets out that operating system-level functionalities play an intermediary role between hardware and software and fall within the scope of the designation, whilst Apple's own digital wallet (Apple Wallet and Apple Pay) does not. Final SMS Decision, 22 October 2025, paragraphs 4.41 and 4.42.
[26] Roadmap (Apple), 23 July 2025.

1.23 For more information about the digital markets competition regime or Apple's designation with SMS in mobile platforms see our case page.[27] For the framework for the assessment of CRs see **Appendix A** in this document.

[27] See Apple's mobile platform case page.

2. AIM OF OUR PROPOSED NFC ACCESS CR

2.1 The Act provides that the CMA must have regard to what the CR (or combination of CRs) is intended to achieve.[28] Accordingly, the CMA's starting point in imposing a CR will be to identify the aim of the CR, which will typically be more specific than the overarching statutory objective(s) for which it is imposed.[29]

2.2 The aim of the proposed NFC Access CR is to ensure effective access to NFC on fair, reasonable, transparent and non-discriminatory terms to enable developers to improve their existing offerings, or develop new innovative uses of NFC technology, ultimately improving consumer choice of NFC apps and supporting economic growth in the UK.

2.3 Specifically, the proposed NFC Access CR seeks:

(a) **To unlock immediate competition and innovation in payments to drive economic growth in mobile payments and UK fintech specifically, supporting both consumer choice and growth of the UK economy.**

(b) **To create a supportive environment and conditions in the UK for the development of new and innovative contactless uses of NFC across the wider digital economy.**

(c) **To protect the legitimate interests of Apple and its incentives to invest and innovate with its NFC platform**.

2.4 In designing our proposed NFC Access CR, we have carefully considered what would be required to encourage innovation and to drive benefits for UK businesses and consumers. By allowing developers to create new apps or improve their existing offering using NFC functionality, the proposed NFC Access CR would ensure:

(a) NFC access on iOS devices in the UK, which would allow developers to offer NFC transactions across all use cases:

[28] Section 19(5) of the Act.
[29] See Digital Markets Competition Regime Guidance (CMA194), paragraphs 3.22-3.26.

(i) would continue to be made available to developers who request access using SE; and

(ii) would be made available to developers who request access using HCE.

(b) NFC access would be available to all developers who request access, subject to very limited exceptions, regardless of the technology that is requested.

(c) Developers would have a choice of NFC access via HCE or SE, ensuring that a technological solution which is appropriate for the developer's proposed use of NFC would be available given that HCE and SE can serve different use cases.

(d) Developers would have effective access and interoperability with the software and hardware on iOS devices needed to enable NFC transactions, and developers would have access to the features and functionality that would enable them to innovate and compete effectively.

(e) Developers would have NFC access in the UK on fair, reasonable, transparent and non-discriminatory terms, relating to both (i) pricing of access, and (ii) non-pricing terms, so that take up of NFC access is viable, and such take up enables developers to: (i) launch new products or services or enhance an existing offering to support a vibrant developer ecosystem, and (ii) compete with the services or digital content provided by Apple.

(f) Developers would have recourse to a mechanism for raising and addressing complaints or concerns regarding Apple's provision of NFC access, and that such complaints would be handled in a fair, reasonable, transparent and non-discriminatory manner.

(g) Developers would have access to an API which allows developers to find out if their app is set as the default contactless app on an iOS device.

Statutory objective(s)

2.5 The Act allows the CMA to impose a CR if it considers that it would be proportionate to do so for the purposes of one or more of the statutory objectives.[30]

2.6 For the purposes of the proposed NFC Access CR, below we identify the distinct concerns arising in relation to each statutory objective and explain how the proposed NFC Access CR contributes to addressing each of these concerns.

2.7 The proposed NFC Access CR would be imposed on the basis of the '**fair dealing**' objective,[31] in particular by ensuring that:

(a) Apple would be obliged to provide NFC access to developers that request it except in specified limited circumstances;

(b) Developers would be granted NFC access on fair, reasonable, transparent and non-discriminatory terms relating to both pricing and other terms and conditions of access; and

(c) There would be accessible processes for developers to request NFC access and to raise complaints with Apple.

This would ensure that developers have confidence to invest and are able to develop and launch new, innovative products or improve their existing offerings utilising NFC access.

2.8 The proposed NFC Access CR is imposed on the basis of the '**open choices**' objective,[32] in particular by:

(a) Enabling new entry and the further development of apps in new, innovative ways, increasing consumers' choice of high-quality digital content and services between those offered by Apple and other developers; and

[30] Section 19(5) of the Act.
[31] Section 19(6) of the Act.
[32] Section 19(7) of the Act.

(b) Ensuring that developers have effective NFC access with all supporting functionalities which could enable the development of new features to compete effectively and give more choice to consumers. This includes:

(i) an API which would allow developers to find out if their app is set as the default contactless app. This would allow developers to send more effective and timely prompts to users, allowing users to take informed decisions as to which app they wish to set as the default contactless app and take advantage of the functionality which default status brings. This would make it easier for users to take an informed decision between their use of Apple's and other developers' contactless app offerings.

(ii) iOS functionalities to enable developers to build features equivalent to Express Mode and Power Reserve. This would enable developers to compete effectively for transit payments and other use cases that are sensitive to time and friction, and in turn, give users the option of completing unauthenticated transactions in a manner equivalent or similar to Express Mode.

Permitted type(s)

2.9 CRs must be of a 'permitted type' set out in an exhaustive list in the Act.[33,34]

2.10 The components of the proposed NFC Access CR would fall under various permitted types as set out below:

(a) Requirements for the purpose of obliging Apple to:

(i) trade on fair and reasonable terms (section 20(2)(a)) (through the obligation to ensure that the terms of access, including the fees, authorisation and request processes are fair and reasonable, the requirements relating to the provision and maintenance of NFC access and the conditions under which access may be permanently withdrawn or temporarily interrupted);

[33] Section 19(9) of the Act with the permitted types set out in s.20.
[34] The Explanatory Notes clarify that any CR imposed by the CMA may be framed as either an obligation or a restriction irrespective of which permitted type it falls within (ie s.20(2) or s.20(3) of the Act).

(ii) have effective processes for handling complaints by and disputes with developers (section 20(2)(b)) (through the requirement to establish and maintain a dedicated complaints handling process);

(iii) provide clear, relevant, accurate and accessible information about the relevant digital activity to users or potential users (section 20(2)(c)) (including through the requirements to establish and maintain an authorisation process, the transparency requirements obliging Apple to publish the terms of access, the requirements to allow developers to have access to an API enabling them to see whether their app is set as the default contactless app, and the requirements obliging Apple not to limit the number of times a developer is able to check whether it is set as the default contactless app);

(iv) present to users or potential users any options or default settings in relation to the relevant digital activity in a way that allows those users or potential users to make informed and effective decisions in their own best interests about those options or settings (section 20(2)(e)) (through the requirement of the flexibility principle in presenting options to developers in relation to the NFC access fee).

(b) Requirements for the purpose of preventing Apple from:

(i) restricting interoperability between the relevant product or service or digital content (the mobile platform and specifically iOS by virtue of which Apple controls NFC access) and products or services offered by other undertakings (NFC developers) (section 20(3)(e)) (including through the obligation to provide and maintain effective NFC access providing both HCE and SE and giving access to developers via HCE or SE according to the developer's request, the obligation to provide access to the functionalities of iOS which are used by Express Mode and Power Reserve, and the obligation to ensure that an end user can set a developer's app as the default contactless app);[35,]

[35] The Explanatory Notes state that this permitted type refers to requirements to prevent the designated undertaking from restricting the ability of the relevant digital activity offered by the designated undertaking to interact with and communicate with products offered by other undertakings. A designated undertaking could be prevented from, for example, restricting the functionality of certain applications on the designated undertaking's operating system for third-party developers.

(ii) restricting whether or how users or potential users (for example of alternative NFC app providers or other products and services) can use the relevant digital activity (the mobile platform and specifically iOS by virtue of which Apple controls NFC access) (section 20(3)(f)) (including through the obligation to provide and maintain effective NFC access through HCE or SE according to the developer's request);[36]

(iii) using its position in relation to the relevant digital activities (the mobile platform and specifically iOS by virtue of which Apple controls NFC access), including its access to data relating to that activity, to treat its own products (Apple Wallet and Apple Pay) more favourably than those of other undertakings (NFC developers) (section 20(3)(b)) (including through the requirement that the terms of access including the access fees are not unduly discriminatory, the obligation to ensure that commercially sensitive information must only be used in connection with the provision of NFC access, the obligation to ensure that end users are able to set an app as the default NFC app and the obligation that Apple must not limit the number of times a developer is able to prompt end users about switching their default contactless app);

(iv) restricting the ability of users or potential users (consumers) to use products of other undertakings (alternative NFC developers or other products and services) (section 20(3)(h)) (including through the obligation to provide and maintain effective NFC access, the requirement ensuring that end users are able to set an app as the default NFC app, and the obligation to provide access to the functionalities of iOS which are used by Express Mode and Power Reserve);

(v) applying discriminatory terms, conditions or policies to certain users or potential users or certain descriptions of users or potential users (contactless app developers or categories of contactless app developers) (section 20(3)(a)) (including through the obligation to

[36] The Explanatory Notes state that restricting whether or how users can access and use the designated digital activity could range from a blanket refusal to grant access to a particular platform to more implicit restrictions such as making access to a platform conditional on unfair terms.

provide and maintain effective NFC access and ensure that the terms of access are non-discriminatory).[37]

Consumer benefits likely to result from this CR

2.11 Before imposing a CR, the CMA must have regard in particular to the benefits for consumers that it considers would likely result from the CR.[38]

2.12 Consumers would benefit directly from the proposed NFC Access CR. We expect that the likely benefits (both direct and indirect) would flow from improved developer NFC access. Developers would be able to launch new contactless products and services, and to enhance their existing offerings, contributing to a vibrant developer ecosystem across current, new and future uses of NFC technology. Greater entry and competition would give consumers a wider choice of apps and encourage both Apple and other developers to improve the functionality, quality and value of their apps (which could include direct financial savings or rewards). Over time, improved NFC access could also support innovation in new uses of this technology and improve the range of apps using contactless functionality which would be available to consumers.

2.13 We expand on the likely benefits of this measure to consumers and other parties in our proportionality assessment in Chapter 5 below.

[37] The Explanatory Notes state that this may include, for example, a designated undertaking restricting the functionalities of web browsers that compete with its own when using the designated undertaking's operating system. Accordingly, we consider that this may include Apple restricting the functionalities of digital wallets or other NFC apps that compete with its own when end users use the mobile platform.
[38] Section 19(10) of the Act.

3. OUR PROPOSED NFC ACCESS CR AND INTERPRETATIVE NOTES

3.1 Having identified our aim (see paragraph 2.2 above) based on the concerns set out in Chapter 1, we are proposing to impose the following draft NFC Access CR based on the effectiveness and proportionality analysis set out in Chapters 4 and 5 below respectively.

Proposed NFC Access CR

Definitions

1. For the purpose of interpreting this conduct requirement and the accompanying interpretative notes:

   (a) except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in paragraph 2, and otherwise any word or expression shall have the same meaning as it has in the Digital Markets, Competition and Consumers Act 2024 (the **Act**);

   (b) headings and titles shall be disregarded;

   (c) expressions cognate with those referred to in this conduct requirement shall be construed accordingly; and

   (d) the Interpretation Act 1978 shall apply as if this conduct requirement were an Act of Parliament.

2. For the purposes of this conduct requirement:

   (a) **API** means application programming interface;

   (b) **Apple** means the Apple undertaking as defined in the Final SMS Decision;

   (c) **Apple Pay** means Apple's own payment service, known as Apple Pay at the time of imposing this conduct requirement, which enables a User to make payments using payment credentials stored on supported Apple devices, including contactless payments using NFC;

   (d) **Apple Wallet** means Apple's own application, known as Apple Wallet at the time of imposing this conduct requirement, through which a User has

the ability to store, manage and use credentials on supported Apple devices;

(e) **Authorised Developer** means a Developer whose request for NFC Access has been authorised by Apple;

(f) **Browser** means an application which enables a User to access the world wide web, view web pages and navigate by hyperlink;

(g) **Default NFC App** means an iOS App which is set as the default contactless app on an iOS Device, meaning that it is automatically launched by iOS in response to certain UK End-User actions. For example, when a UK End-User taps an iOS Device on a payment terminal, this will trigger the Default NFC App to complete a transaction unless a different contactless app is open on the screen at the same time when the UK End-User taps the iOS Device on that payment terminal;

(h) **Default Status API** means the API which Apple is required to provide pursuant to paragraph 24 of this conduct requirement;

(i) **Developer** means an app provider, owner and publisher (as applicable) of iOS Apps to the extent that those iOS Apps are made available to, or accessed by, UK End-Users. This definition includes an app provider, owner and publisher (as applicable) who outsources the coding of those apps;

(j) **Express Mode** means functionality provided by Apple, known as Express Mode at the time of imposing this conduct requirement, that enables compatible credentials in Apple Wallet to be used in a contactless transaction without requiring a User to unlock the device or authenticate the transaction.

(k) **Final SMS Decision** means the CMA's decision of 22 October 2025, designating Apple as having strategic market status (SMS) in respect of its Mobile Platform;

(l) **HCE** means a method of using software and Mobile Device hardware other than SE to complete NFC Transactions (the method is known as Host Card Emulation or HCE at the time of imposing this conduct requirement). This includes transactions where the device emulates a smartcard, and other types of NFC Transaction;

(m) **iOS** means Apple's Smartphone Operating System, known as iOS at the time of imposing this conduct requirement;

(n) **iOS App** means an application written to run on iOS which interacts directly with elements of the Smartphone Operating System in order to provide relevant features and functionality;

(o) **iOS Device** means a device which uses iOS;

(p) **Mobile Device** means an electronic device that can be held easily in the hand and has been designed with portability in mind. This definition includes a smartphone and tablet but excludes the following devices: (i) a personal computer (either a laptop or a desktop), (ii) a wearable device including a smart watch; (iii) a gaming console, and (iv) an e-reader.

(q) **Mobile Platform** means the combination of the following digital activities carried out by Apple on Mobile Devices:

(i) **Smartphone Operating System** (known as iOS at the time of imposing this conduct requirement), which means an operating system or equivalent, which acts as an intermediary between hardware and software on a smartphone, enabling software applications and services to run on the smartphone;

(ii) **Tablet Operating System** (known as iPadOS at the time of imposing this conduct requirement), which means an operating system or equivalent, which acts as an intermediary between hardware and software on a tablet, enabling software applications and services to run on the tablet;

(iii) **Native App Distribution** (known as the App Store at the time of imposing this conduct requirement) which is a service which enables the installation, distribution and operation of Native Apps on Mobile Devices; and

(iv) **Mobile Browser** (known as Safari at the time of imposing this conduct requirement), which means a Browser running on a Mobile Device and a Browser Engine (known as WebKit at the time of imposing this conduct requirement), which means the underlying technology which an application (including a Browser) on a Mobile

Device uses to transform a web page source code into content with which a UK End-User can engage.

(r) **Native App** means an application written to run on a specific Smartphone Operating System or a Tablet Operating System which interacts directly with elements of the Smartphone Operating System or Tablet Operating System in order to provide relevant features and functionality.

(s) **NFC Access** means interoperable access to the near field communication hardware and software which is necessary for a Developer to do one or more of the following: (i) enable a UK End-User to make an NFC Transaction from within the Developer's own iOS App, without the involvement of either or both of Apple Pay and Apple Wallet; (ii) test and develop a new iOS App, or new functionality or offering within an existing iOS App, through which the Developer intends to enable a UK End-User to make an NFC Transaction without the involvement of either or both of Apple Pay and Apple Wallet;

(t) **NFC Access Authorisation Process** means the process that Apple is required to establish pursuant to paragraph 15 of this conduct requirement;

(u) **NFC Access Fee** means a monetary charge, commission, levy, fee or other financial consideration imposed by Apple on a Developer in connection with, or by reference to, the provision of NFC Access, including a charge relating to the provision, maintenance, authorisation, use or continued availability of NFC Access. This includes a charge which, by its level, structure, operation or economic effect, has an equivalent effect in relation to NFC Access;

(v) **NFC App** means an iOS App through which an Authorised Developer enables, or intends to enable, a UK End-User to make an NFC Transaction and in respect of which Apple has authorised that Developer for NFC Access;

(w) **NFC Complaints Handling Process** means the process that Apple is required to establish pursuant to paragraph 27 of this conduct requirement;

(x) **NFC Terms of Access** means Apple's terms and conditions governing its trading in respect of the provision of NFC Access to a Developer under

this conduct requirement. This includes all non-pricing terms and conditions, pricing terms and conditions, and the terms and conditions governing the provision of the NFC Access Authorisation Process and the NFC Complaints Handling Process;

(y) **NFC Transaction** means the use of near field communication hardware and software to present, receive, authenticate or verify cryptographically protected information both for payment and non-payment use cases. For example, payment use cases include in-store contactless payments, transit payments, account-to-account payments and stablecoin; and non-payment use cases include digital identity services, loyalty cards, car and hotel keys and corporate badges;

(z) **Power Reserve** means the functionality provided by Apple, known as Power Reserve at the time of imposing this conduct requirement, that enables compatible credentials for which Express Mode is enabled to continue to be used for an NFC Transaction for a limited period when the device has insufficient power for iOS to operate normally;

(aa) **Requesting Developer** means a Developer who requests NFC Access through the NFC Access Authorisation Process;

(bb) **SE** means a secure element embedded within a Mobile Device which is used to complete an NFC Transaction. This includes a transaction where the device emulates a smartcard, and other types of NFC Transaction;

(cc) **UK End-User** means a User who is a consumer, who is ordinarily based in the United Kingdom and who has an Apple ID registered in the United Kingdom;

(dd) **User** means a person, whether legal or natural, who falls within one or both of the following descriptions:

(i) in relation to the digital activities as described in the Final SMS Decision, a user of the relevant service or digital content, as set out in section 118(1) of the Act;

(ii) in relation to iOS Devices or iOS Apps a user of the iOS Device or iOS App.

Obligations to grant and maintain effective NFC Access

3. Apple must:

   (a) grant to a Requesting Developer a right to NFC Access in respect of an iOS App or functionality within an iOS App, to be provided through HCE or SE according to the Requesting Developer's request; and

   (b) maintain an Authorised Developer's ongoing right to NFC Access in respect of an NFC App or functionality within an NFC App;

   except where the Requesting Developer's proposed, or Authorised Developer's actual, use of NFC Access does not comply with one or more of (i) applicable laws and (ii) applicable industry standards, including those relating to security and privacy requirements.

4. Apple must ensure that:

   (a) iOS Devices running on iOS [*Note: the first version of iOS that will be released following the CMA's final decision, should the CMA decide to impose this conduct requirement*], and all subsequent versions of iOS, comprise the necessary iOS functionalities to facilitate NFC Access on the terms set out in this conduct requirement; and

   (b) its provision of NFC Access through both HCE and SE continues to comply with evolving industry standards and permits implementation by Authorised Developers of evolving industry standards.

5. Apple must ensure that the NFC Access provided to an Authorised Developer is and remains effective. Without prejudice to the generality of this requirement, Apple must:

   (a) ensure that the NFC Access is of adequate quality to enable an Authorised Developer's NFC App to operate effectively on iOS;

   (b) ensure that NFC Access includes access to all supporting functionality and ancillary services; and

   (c) not impose an unjustified restriction of any nature which may undermine the effectiveness of the NFC Access, whether directly or indirectly, or through an act or omission. This includes, for example, technical or

procedural barriers by way of contractual terms, technical design requirements, app review processes and enforcement practices.

6. Subject to the exception set out in this paragraph, Apple must provide NFC Access to an Authorised Developer on a continuous basis, without restriction, suspension or other interruption. The exception arises in circumstances where, as a result of non-compliance on the part of the Authorised Developer or a third party (or both) with one or more of (i) applicable laws and (ii) applicable industry standards, there is an instance, or credible threat, of one or more of the following:

   (a) serious harm to the security, privacy or integrity of iOS;

   (b) serious harm to the security or privacy of User data; or

   (c) another form of serious harm to UK End-Users.

   Where the exception arises, Apple may temporarily restrict, suspend or otherwise interrupt an Authorised Developer's ability to exercise the right to NFC Access without providing advance notice.

7. Where Apple restricts, suspends or otherwise interrupts an Authorised Developer's ability to exercise the right to NFC Access under paragraph 6, Apple must ensure that:

   (a) the restriction, suspension or interruption is strictly necessary, and goes no further than necessary, to prevent, remedy or mitigate the harm*;* and

   (b) it is able to demonstrate to the CMA's satisfaction both that there is an instance or credible threat of serious harm of the type described in paragraph 6, and that sub-paragraph 7(a) is satisfied.

8. Apple must:

   (a) provide to an Authorised Developer interoperable access to all functionalities of iOS which are used by Express Mode and Power Reserve (as applicable); and

   (b) insofar as the NFC App supports transactions without authentication and is the Default NFC App, allow that Authorised Developer's NFC App:

(i) to conduct transactions without the requirement for authentication or unlocking the iOS Device in a situation where Apple Pay and Apple Wallet would not require authentication or the iOS Device to be unlocked; and

(ii) to complete a transaction when the iOS Device, whether the screen is on or not, is presented to a terminal.

Fair, reasonable and non-discriminatory terms

9. Apple must ensure that its NFC Terms of Access are:

(a) Fair and reasonable; and

(b) Not unduly discriminatory. Without prejudice to the generality of this paragraph 9(b), Apple must ensure that its NFC Terms of Access do not:

(i) result in an imbalance of rights and obligations as between Apple and the Developer to the detriment of the Developer;

(ii) confer on Apple an advantage that is disproportionate to the NFC Access granted to a Developer; or

(iii) give rise to any unjustified difference in treatment (1) between Apple and a Developer or a category of Developer, or (2) among Developers or categories of Developers, including as a result of a Developer's preference as between HCE and SE.

Setting NFC Access Fees

10. Apple may require a Developer to pay an NFC Access Fee. In relation to a fee so offered, payable or proposed, Apple must secure, and must be able to demonstrate to the CMA's satisfaction, that each NFC Access Fee is fair, reasonable and non-discriminatory by reference to the principles and considerations set out in paragraphs 9, 11 and 12.

11. Subject to paragraph 12, in setting each NFC Access Fee, Apple must apply the following principles, securing that each NFC Access Fee offered, payable or proposed is no higher than a fee set in accordance with those principles:

(a) cost-based principle:

This principle requires Apple to take appropriate account of the direct and indirect costs incurred by Apple in providing and maintaining NFC Access, and a reasonable rate of return on investments supporting NFC Access.

(b) value-based principle:

This principle requires Apple to take appropriate account of the value attributable to the services offered by Apple to Developers, ensuring that both Apple and Developers are fairly and reasonably treated for the value of their respective contributions in connection with NFC Access. This requires adjusting for the effects of Apple's market power in respect of its Mobile Platform and reflecting an aggregate net transfer of value between Apple and Developers.

(c) flexibility principle:

This principle requires Apple to design and offer NFC Access Fee structures which are appropriate, taking account of the nature and type of the activities carried out with the use of the NFC Access. Without prejudice to the generality of this provision, Apple must design and offer appropriate NFC Access Fee structures applicable across Developers or categories of Developers as appropriate, taking account of, at minimum, the following factors: (i) frequency of usage and usage patterns across UK End-Users; (ii) whether the type of the activity carried out with the use of NFC Access represents a new category of use case or otherwise involves a developing application of NFC Access; (iii) whether and if so, how revenue is generated per NFC tap. Apple must ensure that a Developer is able to select from, and subsequently change between, NFC Access Fee structures where a different fee structure becomes more appropriate for that Developer.

(d) administrative simplicity principle:

This principle requires Apple to put in place, and maintain, adequate safeguards to ensure that each NFC Access Fee structure is transparent and sufficiently specified and that all related terms associated with that NFC Access Fee structure do not impose technical, administrative or other constraints that would otherwise prevent or undermine the likelihood of NFC Access uptake by Developers.

12. In applying each of the cost-based principle and the value-based principle under paragraphs 11(a) and 11(b), Apple must:

    (a) not double count the same costs and investments (as applicable); and

    (b) exclude costs and investments (as applicable) relating to Apple's provision of its own downstream products or services that use NFC Access.

Transparency

13. Apple must publish its NFC Terms of Access, ensuring that they are: (i) readily accessible at a prominent place on Apple's website, and (ii) kept updated to reflect any amendments made following initial publication.

14. Where Apple proposes to amend its NFC Terms of Access, Apple must:

    (a) provide notice to Developers of the prospective amendment:

        (i) in relation to a fee reduction, Apple may implement a fee reduction without providing advance notice; and

        (ii) in relation to all other amendments, notice of such amendments must be provided no less than 30 days prior to the amendment coming into effect.

    (b) provide the notice required under paragraph 14(a) by:

        (i) directly informing Requesting and Authorised Developers of the prospective amendment and the proposed date on which it will come into effect; and

        (ii) publishing the prospective amendment and the proposed date on which it will come into effect at a prominent place on Apple's website alongside the existing NFC Terms of Access.

NFC Access Authorisation Process

15. Apple must establish and maintain a dedicated NFC Access Authorisation Process to enable Developers to request NFC Access.

16. Apple must ensure that the NFC Access Authorisation Process is clear, transparent and readily accessible. Without prejudice to the generality of this requirement, Apple must:

(a) as part of the published NFC Terms of Access set out:

(i) sufficient guidance to enable a Developer to submit an informed and sufficiently detailed request; and

(ii) the timelines involved at each stage of the NFC Access Authorisation Process;

(b) keep a Requesting Developer informed as to the status of its request on an ongoing and regular basis; and

(c) ensure that a Requesting Developer can at any time contact Apple for an update on the status of its request, and must respond to such requests as soon as reasonably practicable and, at the very latest, within the timelines published as part of its NFC Terms of Access.

17. Apple must review a request for NFC Access and communicate a decision (whether authorisation of a request, rejection of a request, or a requirement for further information in relation to a request) to the Requesting Developer as soon as reasonably practicable and, at the very latest, within the timelines published as part of its NFC Terms of Access.

18. Where Apple authorises a request for NFC Access, it must:

(a) inform the relevant Authorised Developer of this; and

(b) provide NFC Access to the Authorised Developer as soon as reasonably practicable after the request has been authorised and, at the very latest, within the timelines published as part of its NFC Terms of Access.

19. Where Apple rejects a request for NFC Access, Apple must:

(a) inform the relevant Requesting Developer of its decision, providing reasons for the rejection; and

(b) provide to the relevant Requesting Developer the opportunity to engage in dialogue with Apple about this with a view to enabling the Developer to fully understand the reasons for that rejection.

20. Where Apple and a Developer have in place a contractual agreement relating to access to NFC technology which predates the coming into effect of this conduct requirement, Apple must provide that Developer with the opportunity to request NFC Access in accordance with the terms of this conduct requirement.

Use of data

21. Where Apple has access to a Developer's commercially sensitive information, Apple must use this only in connection with Apple's provision of NFC Access under this conduct requirement.

22. Apple must establish and maintain appropriate organisational and technical measures in order to:

    (a) restrict access to, and sharing of, commercially sensitive information of the type specified in paragraph 21 to personnel who need it for the purpose specified in paragraph 21; and

    (b) prevent access to a Developer's commercially sensitive information by personnel involved in Apple Wallet, Apple Pay or another Apple product or service which competes with the product or service of the Developer.

Default Status API

23. Apple must ensure that a UK End-User is able to set an NFC App as the Default NFC App.

24. Apple must introduce and maintain an API which must be made available to all Authorised Developers, and through which an Authorised Developer can confirm whether its NFC App is a UK End-User's Default NFC App.

25. Apple must not limit the number of times an Authorised Developer is able to call the Default Status API.

26. Apple must not limit the number of times, or the frequency at which, an Authorised Developer is able to issue prompts to a UK End-User to switch the Default NFC App.

NFC Complaints Handling Process

27. As part of its provision of NFC Access under this conduct requirement, Apple must establish and maintain an NFC Complaints Handling Process, ensuring that that process is clear, transparent and accessible for the purpose of handling complaints from Developers in relation to Apple's provision of NFC Access.

28. Apple must ensure that a complaint raised by a Developer is considered by a person of sufficient seniority within Apple who:

    (a) was not involved in the original decision which is the subject of the complaint; and

    (b) was not, and is not, involved in Apple Wallet, Apple Pay or another product or service which competes with the product or service of the Developer.

29. Apple must respond to a complaint and communicate a final decision on that complaint as soon as reasonably practicable and, at the very latest, within the timelines published as part of its NFC Terms of Access.

30. Apple must retain a record of all complaints raised through the NFC Complaints Handling Process, including the outcome of each complaint, and Apple's reasons for reaching each decision. This information must be retained for six years from the date a complaint is received, or until the obligation under this paragraph ceases to apply, whichever is the earlier.

Interpretative Notes

1. The CMA may publish interpretative notes to accompany a CR. Interpretative notes will provide greater clarity over the CMA's interpretation of a CR, including how it may apply in particular circumstances, for the benefit of both the SMS firm and other industry participants.[39] It would be open to the SMS firm to take a different approach to the one outlined in the interpretative notes where it is able to demonstrate to the CMA that its approach complies with the terms of the CR.[40]

[39] See Digital Markets Competition Regime Guidance (CMA194), paragraphs 3.59 to 3.60.
[40] See paragraph 3.61 of the Guidance.

2. We propose that the proposed NFC Access CR be accompanied by the following set of interpretative notes.

Obligations to grant and maintain effective NFC Access

Jurisdiction

3. The CR obliges Apple to provide to an Authorised Developer interoperable access to the near field communication hardware and software which is necessary for that Developer to enable UK End-Users to make NFC Transactions from within the Developer's own iOS App, without involvement of either or both of Apple Pay and Apple Wallet; or for testing and development purposes where a Developer intends to do the same.

4. A UK End-User is a person ordinarily based in the United Kingdom, with an Apple ID registered in the United Kingdom. For the avoidance of doubt, this requires Apple to ensure that a Developer can facilitate NFC Transactions for a resident of the United Kingdom who is using iOS within the United Kingdom, or while travelling temporarily, without change of residence, outside the United Kingdom.

A Developer's request for HCE or SE

5. Paragraph 3 of the CR requires Apple to grant to a Requesting Developer a right to NFC Access, to be provided through HCE or SE, according to the Requesting Developer's request. Certain apps may require NFC Access through both HCE and SE; for example, wallet apps providing different use cases or functionalities within one app. For the avoidance of doubt, the CR does not preclude Developers of such apps being able to request access to both HCE and SE in respect of a single app:

   (a) It is open to Apple to require that separate applications be made through the NFC Access Authorisation Process in respect of a request for each technological solution.

   (b) In considering whether to require such separate applications, Apple should take into account its obligations under the CR, including to ensure its NFC Terms of Access are fair and reasonable and not unduly discriminatory,[41]

[41] NFC Access CR, paragraph 9.

and not to include an unjustified restriction of any nature which may undermine the effectiveness of NFC Access.[42]

Granting and maintaining the right to NFC Access

6. Pursuant to the obligations imposed under paragraph 3 of the CR, the CMA requires Apple to make NFC Access available to all Requesting Developers, subject to the possibility to refuse, or subsequently withdraw, the right to NFC Access only in the specified circumstances. For example, the CMA considers that Apple may refuse or withdraw NFC Access where:

   (a) A Requesting Developer is proposing to use, or an Authorised Developer has used, NFC Access for illegal activities, such as committing fraud through relay attacks or stealing Users' payment details.

   (b) A Requesting Developer, or an Authorised Developer, has failed to adhere to relevant and required security standards, for example EMVco for card payments.

   (c) The use of data by an Authorised Developer, or the proposed use of data by a Requesting Developer, is not compliant with one or more of applicable laws and industry standards. For the avoidance of doubt, the CR does not permit Apple to refuse or withdraw the right to NFC Access in circumstances where: (i) Apple does not agree with an Authorised Developer's or a Requesting Developer's policy on the use of data; (ii) the use of data by an Authorised Developer, or the proposed use of data by a Requesting Developer, does not align with Apple's own approach to the use of data.

7. In relation to compliance with industry standards in paragraph 3 of the CR, there may be more than one agreed or recognised industry standard in relation to a specific area or use case. In such circumstances, where a Requesting Developer or an Authorised Developer is compliant with one of those standards, Apple is expected to grant and maintain a right to NFC Access even if Apple itself has a preference for an alternative industry standard.

8. Insofar as new or innovative use cases are concerned, there may not yet be an established industry standard. Where: (i) no agreed or recognised industry

[42] NFC Access CR, paragraph 5(c).

standard addresses the proposed use case, and (ii) a Requesting Developer or an Authorised Developer proposes a means of implementing that use case, Apple is expected to grant NFC Access even if Apple itself has a preference for an alternative approach. In such circumstances, Apple may require the Requesting Developer or the Authorised Developer to demonstrate, by reference to objective evidence, that its proposed approach provides privacy and security protections proportionate to the nature and risks of the use case.

Effective access

9. Pursuant to Apple's obligations under paragraph 5(b) of the CR, the CMA expects Apple to provide the iOS-controlled supporting functionality and ancillary services reasonably necessary for an NFC App to operate effectively. Apple is expected to provide the following at minimum:

   (a) In cases of an Authorised Developer's app being set as the Default NFC App, access to the same or equivalent features associated with default status as those which Apple's own apps have access to when set as the Default NFC App;

   (b) The same or equivalent timing for presentation and cooldown as that to which Apple Wallet and Apple Pay have access;

   (c) Access to the same or equivalent authentication features as those to which Apple's own apps have access, including biometrics; and

   (d) In cases where an Authorised Developer's app is open on screen but not set as the Default NFC App, the ability for the Authorised Developer's app to override the Default NFC App so that an NFC Transaction is made using credentials in the Authorised Developer's NFC App.

Continuous access

10. In relation to restricting, suspending or otherwise interrupting an Authorised Developer's ability to exercise the right to NFC Access under paragraphs 6 and 7 of the CR, the CMA expects that, in considering whether a restriction, suspension or other interruption is strictly necessary and goes no further than necessary, the relevant considerations may include:

(a) whether the serious harm or credible risk of serious harm affects all NFC Access or only particular functionality and, where the latter, whether any interruption can be limited accordingly;

(b) how to ensure that any temporary interruption is limited in duration as far as possible, including by restoring access immediately or as soon as possible once the conditions giving rise to the temporary interruption have been addressed; and

(c) whether it would be possible and appropriate to give the Authorised Developer an opportunity to rectify or address the serious harm or credible risk of serious harm without interrupting the Authorised Developer's ability to exercise its right to NFC Access.

11. Paragraph 6 provides that Apple may take action under that paragraph without providing advance notice. However, the CMA expects that:

(a) Apple will engage with the affected Authorised Developer as soon as possible upon realising that such action has become necessary; and

(b) whilst there may be circumstances in which it will only be possible to inform the affected Authorised Developer of the restriction, suspension or other interruption after it has been implemented, Apple should seek to provide as much advance notice as possible in the circumstances.

Setting NFC Access Fees

12. In setting each NFC Access Fee, Apple must take account of the following principles and considerations which are all relevant to the assessment: (i) the cost-based principle; (ii) the value-based principle; (iii) the flexibility principle; (iv) the administrative simplicity principle; and (v) the considerations related to no undue discrimination as set out at paragraph 9(b). Each of those principles and considerations (as applicable) is defined and specified in the CR.

13. The CMA expects Apple to apply and observe those principles in order to set and maintain NFC Access Fees at levels that will ensure effective NFC access for Developers (both in terms of openness and accessibility of that access). In assessing Apple's compliance, the CMA expects to focus on considering whether Apple's application of the principles and the outcomes of that application are consistent with the aim that the CR is designed to achieve.

14. It is appropriate to provide Apple with flexibility in how it applies these principles in practice, subject to being able to demonstrate to the CMA's satisfaction that its approach takes account of each of the principles (as defined and specified in the CR) in a suitable way. The CMA expects Apple to support its chosen application of each of the principles with objective and verifiable evidence.

Default Status API

15. While Apple is expected not to charge an additional or standalone fee for access to the Default Status API, Apple may recoup all reasonable costs incurred in providing and maintaining this API through its NFC Access Fee, in line with paragraphs 9-12 of the CR.

Interaction of the provisions of the CR with Apple's commercial terms

16. The CMA recognises that there will be commercial agreements between Apple and Authorised Developers which govern the wider set of terms and conditions under which NFC Access is provided. These will cover commercial matters not specifically identified in the CR but in accordance with the provisions of the CR, Apple is required to ensure that these are fair, reasonable and not unduly discriminatory.[43]

[43] NFC Access CR, paragraph 9.

4. PROVISIONAL EFFECTIVENESS ASSESSMENT OF OUR PROPOSED NFC ACCESS CR

4.1 The CMA must identify a CR, or combination of CRs, that would likely be effective in achieving the aim set out in paragraph 2.2. As part of this, the CMA will consider both the content and form of potential CRs.[44]

4.2 In assessing whether the proposed NFC Access CR is effective in achieving our intended aim of ensuring effective NFC access in the UK, we have considered a range of factors.[45] These include the likely impact of the proposed NFC Access CR in addressing the concerns identified and delivering benefits for consumers, how timely its impact would be, the risk that it may not achieve its intended objective and/or give rise to unintended consequences, and the practical considerations associated with implementation, monitoring and enforcement. We have also considered whether the intervention is sufficiently flexible to remain effective in the face of changing business practices and technologies.

4.3 We have engaged extensively with Apple and other stakeholders in designing the proposed NFC Access CR.[46,47] This Chapter sets out the analysis we have undertaken to identify the effective design of our proposed NFC Access CR and the proposed interpretative notes. The Chapter covers:

(a) Our proposed design choices that resulted in the proposed NFC Access CR set out in Chapter 3 above (**Section A**); and

(b) Proposed implementation, monitoring and compliance (**Section B**).

---

[44] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.20(b).
[45] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.31.
[46] On 30 June 2026, we published a paper seeking views on two specific design elements of the proposed NFC Access CR relating to the technical method by which NFC access should be provided and the price charged for such access (**call for evidence**).
[47] For the purposes of designing our proposed NFC Access CR, we have spoken to 35 banks/fintechs/ID service providers, as well as 9 industry bodies, a technology provider in the payments chain, and other stakeholders (eg the Financial Conduct Authority (**FCA**), the Payment Systems Regulator (**PSR**), the Bank of England and the National Cyber Security Centre (**NCSC**)) to gather views on NFC access in the UK and to understand what opportunities exist for growth. Our work builds on the FCA and PSR's previous work in this space, which aimed to gain a better understanding of the implications of digital wallets' growing role in payments, and the implications for competition between payment systems, including A2A payments. The FCA and PSR launched a joint Call for Information on Big Tech and Digital Wallets in July 2024. In February 2025 they published a feedback statement which lists 42 stakeholders that consented to have their name publicly cited.

A. Our proposed design choices

4.4 This Chapter considers, in turn, how the proposed NFC Access CR would meet our aim regarding the following key design choices:

(a) The territorial scope of the intervention.

(b) The technology on which NFC access is based.

(c) The granting and maintaining of effective NFC access and ensuring NFC access on fair, reasonable and non-discriminatory terms.

(d) Ensuring that the NFC access fee is fair, reasonable and non-discriminatory so that it enables commercially viable and timely entry and improvements to developers' existing offerings, while protecting Apple's investment and innovation incentives.

(e) Other non-pricing terms and conditions of access.

(f) Enabling uptake of NFC apps through the default status API.

The territorial scope of the intervention

4.5 The proposed NFC Access CR seeks to encourage innovation and unlock opportunities for businesses to develop products and services using NFC, bolstering competition in making NFC transactions with iOS devices, and as such driving benefits for consumers and supporting economic growth in the UK.

4.6 Having considered the territorial scope that would be appropriate to achieve this aim, we have provisionally designed the proposed NFC Access CR so that Apple's obligations would apply in relation to developers of apps (irrespective of the location of those developers) to the extent these apps enable, or intend to enable, UK consumers to make NFC transactions that rely on NFC access. This focus on UK consumers would ensure that we continue to have regard to the benefits for consumers that would likely result from any CR.[48]

4.7 For the purposes of the proposed NFC Access CR, 'UK End-Users' are consumers who are ordinarily based in the UK and have an Apple ID registered in the UK. As such, UK residents should be able to continue to use authorised

[48] Section 19(10) of the Act.

third-party apps to make NFC transactions when travelling abroad temporarily, without change of residence. We provisionally consider that this continuity is important both from a consumer perspective as well as for developers, whose offering may be less attractive to consumers, and as such who may be disadvantaged, if they cannot offer the same continuity across borders as Apple is able to offer itself through its own products.

The technology on which access is based

4.8 In developing the proposed NFC Access CR, we have considered the technology on which interoperable access should be based and how developers could use the NFC access. As part of that, the key consideration has been whether requiring access through both HCE and SE is necessary to achieve our aim. Specifically, we have considered whether Apple should continue providing access to NFC in the UK using SE, should be required to provide access via HCE only, or whether instead Apple should enable developers to obtain access to SE or HCE (or both) according to developer preferences.

4.9 As set out in Chapter 1, both HCE and SE offer different technical routes to obtaining NFC access. In this section we evaluate these and in particular the evidence that:

(a) HCE is likely to support faster and lower cost entry, particularly for developers that already offer HCE based payment services on other platforms or in other jurisdictions; and

(b) There are existing and emerging use cases where SE may provide a better solution, particularly where those use cases require secure on-device storage, continuous offline operation or low-power functionality (eg digital car keys).

4.10 Therefore, although HCE may facilitate faster and lower-cost uptake of NFC-enabled services, including for payments, there may be limitations to relying on a single technological approach. This is particularly the case where the direction of innovation remains uncertain and SE-based solutions are already established as the prevailing standard for some alternative use cases.

4.11 Existing market practice also supports the case for considering both technologies, including as a result of differentiation based on their use cases:

(a) In the UK, Apple currently provides developers with access to SE via its NFC & SE Platform. In the EEA, Apple provides developers with access to HCE for payments[49] and SE for Government ID.[50]

(b) Android supports NFC access predominantly via HCE for the purposes of payments capabilities.[51] HCE is currently the most predominantly used technology, including by Google Wallet and Samsung Pay. Many Android mobile devices also have SE, including on Google Pixel and some Samsung smartphones. While less common, SE is used by some Android apps for NFC transactions, for example Samsung Wallet uses SE for car keys whilst using HCE for payments.[52]

4.12 Against this backdrop, while Apple argues that any intervention should be focused exclusively on SE, our provisional view is that relying on either technology alone risks only meeting part of our aim. Requiring access through both technologies would allow developers to choose the solution best suited to their product, use case and business model, which would in turn promote immediate innovation and competition in mobile payments as well as creating the conditions to support development of new and innovative contactless uses of NFC across the wider digital economy. We also provisionally consider that the proposed dual-technology approach with its careful design including the proposed pricing terms would be in line with protecting Apple's legitimate interests and incentives to invest and innovate.

4.13 We therefore provisionally consider that requiring Apple to offer both SE and HCE access is the only effective option to delivering effective NFC access consistent with our aim.

4.14 The rest of this section sets out the details of our effectiveness assessment for each option in meeting our aim, covering:

---

[49] The EC accepted legally binding commitments from Apple to provide NFC access for free, using HCE, within the EEA in July 2024. The commitments address competition concerns identified by the EC in its investigation of Apple's control of the NFC on iOS under Article 102 TFEU. See EC, 'Commission accepts commitments by Apple opening access to 'tap and go' technology on iPhones', 11 July 2024, accessed by the CMA on 14 October 2026.
[50] Apple has now started to provide access to its NFC & SE Platform for Government ID use, including to third parties, in the EU, alongside HCE for payments and other non-payment use cases. See Apple Developer Page, 'NFC & SE Platform for secure contactless transactions', accessed by the CMA on 14 October 2026.
[51] Android provides HCE for free on all original equipment manufacturer (OEM) and Google (Pixel) devices. SE availability depends on OEM. Google provides SE access to third parties for free on its mobile devices.
[52] Google Developer Page, Android Security and Privacy, 'Android Ready SE'; Android Developer Page, 'Host-based card emulation overview'; Samsung Newsroom, 'Unlock a new Experience: Galaxy Users Can Now Use Secure Digital Key With the Genesis GV60', 30 September 2021; Southern Security, 'Samsung Pay FAQ'; and Samsung, 'Use a Digital Key with Samsung Wallet', 14 April 2026, all accessed by the CMA on 14 October 2026.

(a) Speed and cost of entry to developers;

(b) Technical feasibility and the requirements under specific industry standards;

(c) Security considerations; and

(d) The available technical features (offline capability, low-power functionalities and storage capacity).

4.15 We have also considered whether NFC access should be extended to wearable devices.

Speed of entry and cost to developers

4.16 HCE is already operational for payments on iOS in the EEA and globally on Android. As explained in this section, we consider that access to HCE would provide the clearest route to faster entry for developers that have already invested in and deployed NFC solutions elsewhere, allowing them to bring services to UK consumers more quickly and at a lower cost. By contrast, where only SE-based access is available, developers may need to build new solutions for existing use cases, such as payments, which could delay entry and increase costs. At the same time, SE remains important for other use cases, including digital car keys, and future innovations where its technical characteristics may be particularly valuable. We therefore consider that facilitating access to both technologies, while ensuring developers can take advantage of the faster route to entry offered by HCE, delivers against the overall aim of the proposed NFC Access CR (as set out in paragraph 2.2) by promoting effective access to NFC functionality on fair, reasonable, transparent and non-discriminatory terms, supporting competition and innovation, increasing consumer choice and contributing to economic growth in the UK. We have also taken into account the relevant costs for developers to create and deploy NFC apps based on HCE and SE, as high development and implementation costs could serve as a significant barrier to entry (as noted in Chapter 1).

Apple's submissions on speed of entry and cost to developers

4.17 Apple submitted that it is not possible to accurately identify or quantify the costs associated with porting into the UK an app developed using the HCE solution that is available in the EEA in circumstances where the nature and scope of the

CMA's intervention has not yet been determined. Apple indicated that it could not be assumed that these costs would be small or that the steps involved would be simple. It stated that this would take time and be costly for developers to implement. Specifically, Apple said that developers may, for example, have to integrate their products with UK-specific APIs, go through new onboarding and entitlement processes, develop UK-specific commercial models, and make new user interface design choices.[53]

4.18 Apple also stated that it is not possible to accurately identify or quantify the costs associated with rolling out HCE solutions developed on Android in the UK in circumstances where the nature and scope of any possible intervention has not yet been determined. However, Apple indicated that it would also be an expensive and time-consuming process.[54] Apple noted that iOS and Android are fundamentally different platforms with separate technical architectures, APIs, and security and privacy models, and therefore developers would potentially need to undertake substantial development work to repurpose HCE solutions for iOS in the UK.[55] In contrast, Apple said that in general, adapting apps to different technical architectures is a routine part of app development.[56]

4.19 Apple said that it had seen no evidence to suggest that developers would incur higher costs to develop SE solutions on the NFC & SE Platform compared to HCE solutions.[57]

4.20 Apple submitted that Mastercard and Visa recently launched iOS SE SDKs that are available to license by developers seeking to build NFC contactless payment solutions and have publicly stated that the service will reduce the complexity of developing SE-based solutions for iOS.[58]

4.21 Apple stated that [✂].[59]

---

[53] Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].
[54] Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].
[55] Note of meeting with Apple on [✂]. Apple's response to call for evidence dated 30 June 2026, [✂].
[56] Apple's response to call for evidence dated 30 June 2026, [✂].
[57] Apple's response to call for evidence dated 30 June 2026, [✂].
[58] Mastercard, 'Ushering in a new era of digital wallet innovation' dated 15 July 2026, accessed by the CMA on 14 October 2026. Apple's response to call for evidence dated 30 June 2026, [✂]. Note of meeting with Apple on [✂]. [✂]. Visa, 'Visa Token Service now supports iOS SE use cases', dated 2026, accessed by the CMA on 14 October 2026.
[59] Apple's response to section 69 notice dated [✂].

Stakeholder submissions on speed of entry and cost to developers

4.22 Multiple stakeholders, including banks and fintechs, told us that from a technical perspective, developing for HCE is easier, quicker and cheaper than developing for SE, and so requiring HCE would enable immediate entry for developers in the UK.[60] One stakeholder said that HCE is used for services where flexibility and scalability are important.[61] In contrast, developers would need to undertake significant engineering work to create new solutions based on SE which would delay entry into the UK.[62] This is because developing SE solutions requires building additional code that is specific to the SE, time-consuming applet certification,[63] and additional testing, provisioning and lifecycle management.[64]

4.23 Multiple banks, fintechs and industry associations told us that HCE-based technical solutions that have already been built and deployed across iOS in the EEA and Android could quickly and easily be repurposed for deployment in the UK, without significant additional engineering work.[65] In this situation, multiple banks and fintechs told us that HCE solutions could be rolled out in the UK within two weeks to three months.[66] The same stakeholders said that deploying an SE-based solution in the UK would take 12+ months, or require them to duplicate the time it took them to develop their HCE solution.[67]

4.24 One bank without a pre-existing solution told us that developing an HCE-based solution from scratch would take 12-18 months, whereas developing for SE would take 18+ months.[68] Another bank stated that it would take 6-12 months to deploy an HCE solution in the UK, compared to 12+ months, from the date the

---

[60] Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. 6 responses to call for evidence dated 30 June 2026 from: [✂].
[61] [✂] response to section 69 notice dated [✂].
[62] Note of meeting with [✂]. 2 responses to section 69 notice dated [✂] from: [✂]. Note of meeting with [✂]. [✂] response to questionnaire dated [✂]. Note of meeting with [✂]. 8 responses to call for evidence dated 30 June 2026 from: [✂].
[63] An applet is a small application that runs on a SE and is used to store and process sensitive data. Applets can be used to enable NFC transactions.
[64] Note of meeting with [✂]. [✂] submission to the CMA dated [✂]. 6 responses to call for evidence dated 30 June 2026 from: [✂].
[65] Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. 2 responses to section 69 notices dated [✂] from: [✂]. [✂] response to questionnaire dated [✂]. 8 responses to call for evidence dated 30 June 2026 from: [✂].
[66] Note of meeting with [✂]. [✂] response to call for evidence dated 30 June 2026, [✂]. [✂] response to questionnaire dated [✂]. [✂] response to section 69 notice dated [✂].
[67] [✂] submission to the CMA dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂]. [✂] response to questionnaire dated [✂]. [✂] response to section 69 notice dated [✂].
[68] [✂] response to call for evidence, dated 30 June 2026 [✂].

project is prioritised and funded, based on SE.[69] A fintech told us that it took 12 months to deploy an HCE solution in the EEA, from project start to launch. The fintech said that it would take 18-24 months to launch an SE solution.[70]

4.25 Multiple stakeholders submitted that it would be costly to develop an NFC contactless solution using SE when they have already developed an HCE solution in the EEA or on Android,[71] and said that divergence of the availability of technical solutions across jurisdictions and mobile platforms adds unnecessary costs and complexity to entering and expanding as an NFC app provider.[72]

4.26 Multiple stakeholders told us that enabling NFC access via HCE technology would support quicker and cheaper entry into the UK compared to SE for developers focused on providing NFC-enabled payment apps, given pre-existing NFC architecture on iOS in the EEA and on Android.[73] However, two banks stated that if presented with a single technology option, they would prefer SE given better support for use cases requiring offline capability, although both stakeholders supported a dual-technology approach.[74] Multiple banks, fintechs and industry associations told us they viewed SE as value-added technology that could be applied for use cases requiring better offline performance, storage of high assurance credentials and use cases where industry standards have mandated the use of SE.[75]

CMA assessment on speed of entry and cost to developers

4.27 As described in Chapter 1, we have seen developers launch NFC apps using HCE within 6 months of access being allowed on iOS. Whilst this is a relatively short time to launch an app, many stakeholders emphasised to us that the existence of a live HCE-based iOS app in another jurisdiction would likely further speed up and lower the cost of launching on HCE in the UK.

---

[69] [✂] response to call for evidence dated 30 June 2026, [✂].
[70] [✂] submission to the CMA dated [✂].
[71] [✂] response to section 69 notice dated [✂]. [✂] response to section 69 notice dated [✂]. 2 responses to questionnaires dated [✂] from: [✂]. [✂] submission to the CMA dated [✂]. Note of meeting with [✂].
[72] 3 responses to questionnaires dated [✂] from: [✂]. Note of meeting with [✂]. Note of meeting with [✂]. [✂] submission to the CMA dated [✂].
[73] 7 responses to call for evidence dated 30 June 2026 from: [✂].
[74] [✂] response to call for evidence dated 30 June 2026, [✂]. [✂] response to questionnaire dated [✂].
[75] 7 responses to call for evidence dated 30 June 2026 from: [✂].

4.28 While Mastercard and Visa have recently launched iOS SE SDKs[76] to support NFC payment solutions, which may reduce the complexity and cost of developing SE-based solutions for iOS,[77] we have not currently seen evidence to conclude that they will encourage uptake of SE solutions by developers. Moreover, both SDKs are licensed for payment use cases only and therefore would not support developers seeking to build SE solutions that include non-payment use cases. Further, one stakeholder told us that while Mastercard and Visa provide SDKs to support the development of HCE-based solutions, they do not reduce development time for NFC solutions and that stakeholder said it prefers to retain these processes in-house to avoid dependency on another party.[78] As part of this consultation, we are inviting views on the likely impact that the introduction of these solutions would have on the roll-out in the UK of NFC-enabled apps (see Chapter 6).

4.29 Based on the evidence set out above, we provisionally conclude that HCE-based solutions are likely to be deployed faster in the UK compared to SE-based solutions. Developers with HCE solutions on iOS in the EEA and on Android in particular could port their products to the UK with limited incremental development cost, while the established HCE framework enables developers to build solutions from the ground up more quickly. This maximises opportunities for developers to scale their products and supports our aim (as set out in paragraph 2.2) by promoting effective access to NFC functionality on fair, reasonable, transparent and non-discriminatory terms, supporting competition and innovation, increasing consumer choice and contributing to economic growth in the UK. We further explore costs to both developers and Apple in Chapter 5.

Technical feasibility and industry standards

4.30 We have considered the extent to which it is technically feasible for developers to offer current and future use cases with HCE and/or SE.

---

[76] A software development kit (SDK) is a set of software development tools and APIs. Companies like Thales, Mastercard and Visa offer SDKs to make developing HCE and now SE-based NFC apps easier.
[77] For example, they may reduce the need to manage separate integrations or payment-specific certifications such as EMVCo; Mastercard, 'Ushering in a new era of digital wallet innovation' dated 15 July 2026, accessed by the CMA on 14 October 2026. Apple's response to call for evidence dated 30 June 2026, [✂]. Note of meeting with Apple on [✂]. Visa, 'Visa Token Service now supports iOS SE use cases', accessed by the CMA on 14 October 2026.
[78] Note of meeting with [✂].

4.31 A key requirement for developers to be able to offer a particular use case within their apps is whether they can meet industry standards relevant to that use case. Standards are collectively agreed rules and technical specifications that govern how technologies operate, interoperate and are secured.[79] For apps supporting sensitive use cases, such as payments or digital identity, government and industry regulations often require that developers comply with relevant standards. We have therefore considered whether access to HCE and SE respectively enable developers to comply with relevant standards.

4.32 Many industry standards relevant to common NFC use cases are compatible with both HCE and SE. Examples include EMVCo for card payments, EUDI for digital identity wallets in the EU, and US implementations of digital identity.[80]

4.33 Some standards are currently only compatible with SE, including the Car Connectivity Consortium (**CCC**)[81] digital car key standard.[82] In other parts of the world, where stored-value cards are more widely used, there are also some standards such as FeliCa where HCE support is limited.[83] However, the presence of standards only compatible with SE does not preclude the development of similar HCE standards. Card payments, for example, initially relied on secure elements before HCE compatible standards emerged.[84] Further, a developer told us that not all developers use SE for car keys, giving the example of Tesla's app.[85] Apple's own HCE solution in the EEA also allows the use of HCE for digital car keys.[86]

4.34 The FCA, which is likely to be involved in setting regulatory requirements relevant for emerging or potential future use cases in the UK including Open Banking and A2A, noted during our engagement that the relevant standards

---

[79] Standards can be set by formal standard bodies, such as the ISO/IEC 14443 standard which defines NFC, or industry bodies, such as the EMVco standards for digital card payments. Standards can also be established norms within an industry and not set by a specific formal organisation or industry body; see Intellectual Property Office, 'Technical Standards and Standard Development Organisations', dated 22 July 2024, accessed by the CMA on 14 October 2026.

[80] EMVCo, 'Software-Based Mobile Payment Evaluation Process'; EMVCo, 'Chip & Platform Approval Process'; EUDI Wallet, 'European Digital Identity Wallet Architecture and Reference Framework'; AAMVA, 'Mobile Driver's License (mDL) Implementation Guidelines Version 1.6', July 2026, all accessed by the CMA on 14 October 2026.

[81] CCC is an industry group that develops standards for digital car keys.

[82] CCC, 'Digital Key V3.1.4 & V4.1.0 Specification Download' accessed by the CMA on 14 October 2026.

[83] [✂] response to section 69 notice dated [✂]. FeliCa, 'Mobile FeliCa Platform' accessed by the CMA on 14 October 2026.

[84] Visa 'Visa to Enable Secure, Cloud-Based Mobile Payments' 19 February 2014, accessed by the CMA on 14 October 2026.

[85] [✂] submission to the CMA dated [✂].

[86] Apple Developer Page, 'HCE-based contactless NFC transactions for apps in the European Economic Area (EEA), accessed by the CMA on 14 October 2026.

had not yet been determined. The FCA recognised the range of stakeholder views on the relative merits of HCE and SE and that future standards could require either technology or both. The Office for Digital Identities and Attributes (**OfDIA**), which is involved in setting standards for digital identity, made the same point.[87] The Bank of England similarly said that open access to both SE and HCE would be positive for its work on innovation in payment initiation and acceptance.

Apple's submissions on technical feasibility and industry standards

4.35 Apple said that the CCC digital car key standard requires the use of an SE.[88] Apple pointed to what it saw as security, privacy, offline usage, and performance benefits of SE for other use cases, such as digital identity. Apple also noted that governments are showing a preference for SE and that legislative initiatives are requiring the use of SE through the use of the eIDAS regulation for digital ID in the EU, although we understand it is also compatible with HCE.[89]

Stakeholder submissions on technical feasibility and industry standards

4.36 Multiple stakeholders did not identify any use cases that would be technically impossible to achieve with either HCE or SE and said that both technologies are compatible with a range of use cases including card payments, digital identity, event tickets, and loyalty cards.[90]

CMA assessment on technical feasibility and industry standards

4.37 We provisionally consider that both HCE and SE would allow developers to comply with relevant current standards for most use cases. For card payments and transit, which make up the large majority of current use, standards tend to be technologically neutral, and evidence points to HCE and SE being equally effective.

---

[87] OfDIA is a team within the Department for Digital, Culture, Media and Sport that is responsible for implementation of Part 2 of the Data (Use and Access) Act 2025 and provides governance for and oversight of the digital verification services sector.

[88] Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].

[89] Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].

[90] [✂] submission to the CMA dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂]. Note of meeting with [✂]. Note of meeting with [✂]. [✂] response to section 69 notice dated [✂].

4.38 However, there are particular current use cases (eg CCC) that require or appear potentially better suited to SE. Whilst evidence suggests that HCE can potentially also work for this use case, our provisional view is that there is a risk that an HCE-only remedy could limit developers' ability to comply with other standards in the future. Similarly, as standards for future use cases have yet to be set, it is also possible that SE by itself may not allow developers to comply with all future standards, which would also not meet our aim of creating the environment for innovation using NFC.

4.39 For this reason, we have included at paragraph 4(b) of our proposed NFC Access CR a requirement that Apple's provision of NFC access through both HCE and SE continues to comply with evolving industry standards and permits implementation by Authorised Developers of evolving industry standards.

Security

4.40 NFC apps support sensitive use cases, such as card payments and digital identity, and a breach of security could lead to a significant risk of fraud or other harms for users. Therefore, for developers to be able to offer a particular use case, it is important that the technology is sufficiently secure and can meet relevant security standards. Payment and non-payment use cases have different characteristics and we therefore distinguish between these in our assessment. We have considered the extent to which the security of HCE and SE may limit developers' ability to compete and innovate for payment and other use cases.

Apple's submissions on security

4.41 Apple raised a number of concerns around the inherent security risks of HCE including that: on-device malware could steal payment details from HCE wallets, malicious apps could impersonate NFC apps, and that NFC apps could be used to commit, and are susceptible to relay attacks. Apple explained that the NFC & SE Platform is designed to mitigate each of these risks.[91] A recent CCC whitepaper specifies on-device secure hardware, such as SE, ought to be

[91] Apple's response to section 69 notice dated [✂]. Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂]. Note of meeting with Apple on [✂].

used to ensure security for digital car keys.[92] We consider whether these concerns pose a risk to users further in Chapter 5.

4.42 Apple's HCE solution in the EEA permits developers to use it across a range of use cases and Apple has said that HCE can and is being used across use cases, although it sees the security risks associated with doing so are higher relative to SE-based solutions.[93]

Stakeholder submissions on security

4.43 Industry experts stated that both HCE and SE are secure, but that their security is derived from different layers. For SE, security focuses on the hardware layer, relying on the security of isolated hardware. In contrast, HCE security is focused on software security measures, such as tokenisation.[94] Further, the EC has said that 'HCE-based solutions can achieve comparable and equally effective levels of security, by utilising tokenisation, limiting usage of tokens or making use of specific cryptography'.[95]

4.44 Multiple stakeholders, including developers who have launched NFC apps using HCE in the EEA and industry experts, told us that the security of HCE is sufficient for payments because security measures such as tokenisation and cryptography are effective.[96] Some stakeholders, including some that said HCE is secure for payments, also said that SE has benefits for security over HCE as information is stored on the device, rather than in the cloud. However, no developer submitted that HCE security was insufficient, or that they would not enter using HCE specifically on the grounds of security.[97] HCE is also currently widely used for payments, including by Samsung Wallet and by Google Wallet. One stakeholder indicated that fraud rates are broadly comparable for HCE-based transactions and Apple Wallet.[98]

---

[92] CCC, 'CCC Digital Key™ V4 whitepaper' 25 June 2026, accessed by the CMA on 14 October 2026.
[93] Apple Developer Page, 'HCE-based contactless NFC transactions for apps in the European Economic Area (EEA)', accessed by the CMA on 14 October 2026. Note of meeting with Apple on [✂].
[94] Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂].
[95] EC decision in Case AT.40452 Apple Mobile Payments dated 11 July 2024, paragraph 122.
[96] Note of meeting with [✂]. 2 responses to questionnaires dated [✂] from: [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂].
[97] 2 responses to section 69 notices dated [✂] from: [✂]. 2 responses to questionnaires dated [✂] from: [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂].
[98] [✂] submission to the CMA dated [✂].

4.45 As regards non-payment use cases, multiple stakeholders suggested that future use cases including digital ID, and A2A could work well with HCE.[99] Others agreed HCE could work but highlighted the security benefits of being able to store credentials securely on device in the SE for some sensitive use cases, such as digital identity.[100] We discuss the potential risks to users further in Chapter 5.

CMA assessment on security

4.46 Our provisional conclusion is that both HCE and SE can be used securely for payments and are capable of supporting effective competition and innovation in payment services. For some non-payment use cases, such as digital identity, HCE may be able to be used securely, but there is some evidence that access to SE could provide benefits for high-risk use cases where on-device credentials are beneficial. We discuss the potential risks to users further in Chapter 5.

4.47 Overall, we provisionally consider that both HCE and SE would effectively enable innovation and competition in payments, but that SE may be more suitable for some non-payment use cases.

Offline capability

4.48 One of the most noted differences between HCE and SE is offline performance, which is the ability of the technology to continue operating without an internet connection for a prolonged period of time. We have considered whether the offline performance of either HCE or SE could limit developers' ability to compete and innovate for payments and other use cases.

Apple's submissions on offline capability

4.49 Apple said that SE solutions store credentials on the SE, allowing offline retrieval, whereas HCE stores credentials in the general-purpose memory of the

[99] [✂] submission to the CMA dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂]. Note of meeting with [✂]. Note of meeting with [✂].
[100] 2 responses to questionnaires dated [✂] from: [✂]. Note of meeting with [✂]. [✂] response to section 69 notice [✂]. Note of meeting with [✂]. Note of meeting with [✂]. [✂] response to section 69 notice dated [✂]. [✂] response to section 69 notice dated [✂].

device or depend on the cloud. Apple also stated that SE has benefits for digital identity and can reduce latency.[101]

Stakeholder submissions on offline capability

4.50 Multiple stakeholders said that SE can work indefinitely offline as the credentials are stored on the device itself, whilst HCE needs to regularly reconnect to the internet to refresh tokens generated from credentials securely stored in the cloud.[102] For some NFC use cases, such as card payments, offline performance is less important as they are unlikely to occur continuously in an area without internet access. In contrast, for use cases such as digital keys, being able to function continuously offline may be more important.

4.51 Views differed on the impact this would have in practice. Multiple stakeholders said that HCE works well offline for payments, as tokens can be stored offline allowing for a number of offline uses.[103] Other stakeholders noted that SE's offline performance means that it has benefits for payments, such as increased reliability or reduced latency.[104]

4.52 For non-payment use cases, multiple stakeholders pointed to the benefits of SE for digital ID. However, stakeholders generally did not highlight offline performance and said that it was possible to use HCE for digital identity, as has been shown by the rollout of digital ID with HCE support in the US and EU.[105]

CMA assessment on offline capability

4.53 We provisionally consider that both HCE and SE work offline, though there are some benefits to SE which can work offline continuously. As shown by its widespread usage, we understand that HCE works well offline for card payments and other similar use cases and would be effective in allowing

---

[101] Apple's response to section 69 notice dated [✂].
[102] Note of meeting with [✂]. [✂] response to call for evidence dated 30 June 2026, [✂]. 2 responses to questionnaires dated [✂] from: [✂].
[103] [✂] response to call for evidence dated 30 June 2026, [✂]. Note of meeting with [✂]. [✂] response to section 69 notice [✂].
[104] [✂] response to questionnaire [✂]. 2 responses to call for evidence dated 30 June 2026 from: [✂].
[105] [✂] response to section 69 notice dated [✂]. [✂] submission to the CMA dated [✂]. [✂] response to questionnaire dated [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. 2 responses to call for evidence dated 30 June 2026 from: [✂]. EUDI Wallet, 'European Digital Identity Wallet Architecture and Reference Framework'; AAMVA, 'Mobile Driver's License (mDL) Implementation Guidelines Version 1.6', July 2026, all accessed by the CMA on 14 October 2026.

developers to compete and innovate in the payment sector. For other use cases, such as digital car keys, our provisional view is that HCE's offline performance may limit developers from innovating and competing.

Low-power functionalities

4.54 Low-power functionality may be particularly important for use cases such as digital car keys, where reliability is very important, and the CCC highlights this as a key feature of their specification.[106] However, the use of this feature is necessarily limited by the need to use a SE and user's inability to authenticate or choose between credentials in this state.

4.55 We consider further in the section on Power Reserve (see paragraph 4.107 below) whether it is necessary for Apple to provide access to iOS functionalities related to low power functionality.

Apple's submissions on low-power functionalities

4.56 Apple told us that its proprietary low-power feature, Power Reserve, is a feature of Express Mode that allows users to continue using Express Mode-enabled credentials (which are stored on a device's SE), even when the device's battery is critically low or has run out. Power Reserve involves the NFC controller performing Express Mode transactions under the same conditions as when iOS is running, except that transactions are indicated only with haptic notifications (no visible notification is shown).[107]

Stakeholder submissions on low-power functionalities

4.57 Multiple stakeholders submitted that using SE brings benefits for low power use, as in contrast to HCE it can continue to operate for a period after the mobile device switches off due to low power.[108]

---

[106] CCC, 'Digital Key Use Cases', accessed by the CMA on 14 October 2026.
[107] Note of meeting with Apple on [✂].
[108] [✂] response to section 69 notice dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂]. [✂] response to questionnaire dated [✂]. [✂] response to section 69 notice [✂].

4.58 Multiple stakeholders said that HCE worked well in general, and did not raise low-power functionality as an issue.[109]

CMA assessment on low-power functionalities

4.59 We provisionally consider that for use cases such as payments, low-power functionality is not strictly needed for developers to develop compelling offerings. However, there are some use cases, such as digital car keys, where a lack of access to SE's low power functionality could limit developers' ability to develop apps and compete.

Storage capacity

4.60 It is important that users can install third-party NFC apps, and add credentials within those apps, in addition to using Apple Wallet. With SE, credentials must be stored on physical hardware and there must be sufficient storage for these other apps and credentials to be installed. In contrast, as HCE stores credentials in the cloud, in practice there is not a strict limit on the number of credentials in an NFC app. We have considered whether constraints on the number of credentials stored for SE could limit developers' ability to compete and innovate for payments and other use cases.

Apple's submissions on storage capacity

4.61 Apple said that the SE can currently store around [20-40] [✂] credentials and if capacity on the SE runs out, customers will be able to delete credentials and manage storage between NFC apps.[110]

Stakeholder submissions on storage capacity

4.62 One stakeholder stated that, while storage on the SE is limited, HCE does not have the same limitations.[111]

---

[109] Note of meeting with [✂]. 2 responses to questionnaires dated [✂] from: [✂]. [✂] response to section 69 notice dated [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂].
[110] Note of meeting with Apple on [✂].
[111] [✂] response to questionnaire dated [✂].

CMA assessment on storage capacity

4.63 Our provisional assessment is that SE storage does not currently limit developers' ability to offer users NFC apps. However, in the future where users may have several NFC apps that store credentials across a wide range of use cases, SE's limited storage may mean that users cannot install multiple NFC apps, limiting third parties' ability to compete. As HCE is not subject to limits on the number of credentials we consider that it would be effective in allowing third parties to compete, even where many credentials may need to be stored.

Wearable devices

4.64 Two stakeholders raised concerns about NFC access on wearables, particularly in relation to Apple Watch.[112] We note that watchOS is not part of the mobile operating system designated activity, and therefore is not in scope of this proposed NFC Access CR.

Overall CMA assessment on the technology on which access is based

4.65 The aim of the proposed NFC Access CR (as set out in paragraph 2.2) includes unlocking immediate competition and innovation in payments to drive economic growth in mobile payments and UK fintech specifically, and creating a supportive environment and conditions in the UK for the development of new and innovative contactless uses of NFC across the wider digital economy. This also involves supporting Apple's incentives to invest and innovate while minimising the barriers, including the cost and time required for developers to bring NFC-enabled products and services to market.

4.66 The evidence suggests that new products and services are continuing to emerge and that relevant technical standards are evolving in response to changing market needs. In these circumstances, there is uncertainty as to which technological approach would best support a given future use case. When assessing technology choices, we therefore need to balance the objective of promoting effective competition, investment and innovation against the costs and risks associated with different technological approaches (also discussed in Chapter 5). This includes considering both the benefits of enabling faster and lower-cost market entry and the risk that favouring a particular

[112] 2 responses to call for evidence dated 30 June 2026 from: [✂].

technology could limit the scope for future innovation or constrain the development of use cases that may be better supported by alternative solutions.

4.67 Taking these considerations into account, our provisional conclusion is that interoperable access through both HCE and SE is necessary and appropriate for the proposed NFC Access CR to be effective. HCE offers the clearest route to faster and lower-cost entry for established payment use cases, while SE may be better suited to use cases requiring specific features and capabilities. Providing both HCE and SE supports timely entry while preserving developer choice as new use cases and industry standards develop. Our provisional view is that requiring Apple to provide access through both HCE and SE is the only effective way of achieving these objectives. At the same time, we recognise that our aim also includes protecting the legitimate interests of Apple, including by preserving its incentives to invest and innovate in its NFC & SE Platform in the UK. We provisionally consider that the proposed approach with its careful design would be consistent with this aspect of our aim. We discuss this issue further in the context of pricing below.

The granting and maintaining of effective NFC access and ensuring NFC access on fair, reasonable and non-discriminatory terms

4.68 The aim of the requirements under paragraphs 3-8 of the proposed NFC Access CR is to ensure that (i) developers can obtain interoperable NFC access upon request through SE or HCE; and (ii) once interoperable access has been granted, developers can rely on that access remaining available on an ongoing basis subject to limited and clearly defined circumstances in which Apple may refuse, withdraw or temporarily interrupt access. Developers require certainty around the granting and maintaining of ongoing reliable access to have the confidence to invest in developing, launching and maintaining NFC offerings.

4.69 The requirements under paragraph 5 of the proposed NFC Access CR ensure that the access provided to a developer is effective. It is crucial that the access provided to developers is adequate in nature and quality to enable developers, in turn, to develop and provide effective NFC offerings to consumers.

4.70 As such, the certainty around the granting, and reliable provision, of effective interoperable NFC access is of fundamental importance to the overall effectiveness of the proposed NFC Access CR, and to realising the wider objectives of promoting entry, innovation, competition and consumer choice.

Granting and maintaining effective NFC access

4.71 For the proposed NFC Access CR to be effective, it is crucial to strike an appropriate balance between allowing Apple to protect its systems and users, whilst constraining the discretion that Apple has in determining how decisions governing the granting and maintaining of access will be taken. Even where NFC access is available in principle, developers may be reluctant to invest in NFC-enabled products and services if they consider that access could be granted, maintained or withdrawn on terms that are unpredictable.

Apple's submissions on granting and maintaining effective NFC access

4.72 Apple submitted the terms of access for the NFC & SE Platform. Under Apple's current approach, developers must first request access to the NFC & SE Platform, which Apple then reviews, to determine whether access will be granted. [✂].[113] [✂].[114]

4.73 Apple's existing terms and conditions give it a broad degree of discretion in determining whether access is granted. [✂].[115]

4.74 [✂].[116]

4.75 Separate to these provisions, Apple retains significant discretion in relation to the ongoing operation of the platform and the circumstances in which [✂].[117]

4.76 [✂].[118] Apple confirmed that in practice it gives developers [✂] days' notice of material changes to the terms and conditions.[119] [✂].[120]

Stakeholder submissions on granting and maintaining effective NFC access

4.77 Stakeholder views reflect the high degree of discretion that Apple has over granting and maintaining access. Stakeholders have raised concerns that:

---

[113] Note of meeting with Apple on [✂].
[114] Note of meeting with Apple on [✂].
[115] Apple's NFC & SE Program Terms and Conditions, [✂].
[116] Apple's NFC & SE Program Terms and Conditions, [✂].
[117] Apple's NFC & SE Program Terms and Conditions, [✂].
[118] Apple's NFC & SE Program Terms and Conditions, [✂].
[119] Apple's response to additional questions dated [✂].
[120] Apple's NFC & SE Program Terms and Conditions, [✂].

(a) This discretion gives Apple considerable control over whether access is granted;

(b) Access could be restricted or withdrawn after they have made significant investments;

(c) Apple may change the terms at any time; and

(d) The discretion which Apple has may reduce developers' ability to rely on NFC access as part of their commercial offering and may weaken incentives to invest in services that depend on such access.[121]

4.78 Two stakeholders have also emphasised the importance of ensuring that Apple provides access on fair, objective and non-discriminatory terms.[122] Developers should be able to rely on terms and conditions that are applied consistently across comparable circumstances and without unjustified difference in treatment relative to Apple or other developers.

CMA assessment on granting and maintaining effective NFC access

4.79 Currently, Apple's terms and conditions for the NFC & SE Platform permit Apple, in its sole discretion, to take action which limits, suspends or withdraws access at any time, and for any period of time. [✂].[123]

4.80 Developers would require certainty that, under the proposed NFC Access CR, interoperable access to NFC would be available and, once granted, would remain available under both SE and HCE (as applicable). The prospect that NFC access may not be granted, or that access could be withdrawn without objective justification, may undermine investment in the development, launch and ongoing maintenance of products and services that depend on NFC access.

4.81 We recognise that Apple may need to refuse, restrict, suspend or withdraw NFC access in certain limited circumstances, which is reflected in our proposed NFC Access CR:

---

[121] [✂] response to section 69 notice dated [✂]. [✂] response to section 69 notice dated [✂]. [✂] response to section 69 notice dated [✂]. 3 responses to questionnaires dated [✂] from: [✂].
[122] 2 responses to call for evidence dated 30 June 2026 from: [✂].
[123] Apple's NFC & SE Program Terms and Conditions, [✂].

(a) Paragraph 3 provides that Apple must grant and maintain a right to NFC access except where a requesting developer's proposed use or an authorised developer's actual use of NFC access is not compliant with applicable laws or industry standards, including those in relation to privacy and security. Given stakeholders' concerns about the discretion afforded to Apple by the current terms and conditions governing its NFC & SE Platform to refuse or withdraw NFC access, we provisionally consider that the underpinning objective of compliance with applicable laws or industry standards to inform such decisions is an effective way of constraining Apple's discretion. This would still permit Apple to act in appropriate circumstances to protect its systems and users.

(b) Paragraph 6 provides that once Apple has granted a right to NFC access, it must provide this on a continuous basis except in limited circumstances relating to instances, or credible threats, of serious harm. In such circumstances, Apple would be able to temporarily restrict, suspend or otherwise interrupt a developer's ability to exercise its right to NFC access, recognising that there could be circumstances outside the limited grounds specified in paragraph 6 where it may be appropriate and legitimate for Apple to interrupt NFC access in order to protect its systems, users and UK end-users. In order to constrain Apple's discretion to temporarily interrupt NFC access, paragraph 7 of the proposed NFC Access CR provides that the temporary interruption must be strictly necessary, and must go no further than necessary to prevent, remedy or mitigate the harm, and that Apple is able to substantiate both the necessity and the instance or credible threat of serious harm itself.

4.82 We provisionally consider that the requirements around the granting and maintaining of interoperable NFC access are of crucial importance in achieving the aim of the proposed NFC Access CR. By providing certainty to developers that NFC access would be available, except in clearly defined and objectively identifiable circumstances allowing Apple to protect its systems and users, these measures would support investment, entry and expansion, helping to achieve the aim of the proposed NFC Access CR by supporting competition and innovation, increasing consumer choice and contributing to economic growth in the UK.

Effective access

4.83 The effectiveness of NFC access depends not only on the availability of interoperable access, but on whether this access would enable developers to compete and innovate in practice. Without this, NFC access could be available in principle, while remaining insufficient in practice. Limitations on access to the features and functionality necessary to develop and deploy compelling products could constrain firms' ability to invest, differentiate and bring new services to market. Over time, this could reduce the scope for innovation in contactless services, limit consumer choice, and weaken the wider economic and growth benefits that could otherwise arise from greater competition and technological development in the UK.

4.84 Stakeholders told us that obtaining effective NFC access would require Apple to enable third party access to iOS features and functionalities, in addition to those directly needed for NFC transactions. Stakeholders stated that Apple would need to:

(a) Enable users to select rival NFC apps as the default choice[124] and access to the features associated with default status (Double Click,[125] Field detect).[126]

(b) Enable developers to use authentication methods available to Apple Wallet (eg using TouchID or FaceID).[127]

(c) Align timing windows for third-party payment presentment and cooldown periods with Apple Wallet.[128]

(d) Provide access to functionality that Apple is using for Apple Wallet such as Express Mode and Power Reserve.[129]

Default choice

4.85 NFC transactions on iOS are often triggered by shortcuts such as Field Detect, where a user taps their phone on a terminal to trigger a transaction, or Double

[124] 11 responses to call for evidence dated 30 June 2026 from: [✂].
[125] 6 responses to call for evidence dated 30 June 2026 from: [✂].
[126] 4 responses to call for evidence dated 30 June 2026 from: [✂].
[127] 6 responses to call for evidence dated 30 June 2026 from: [✂].
[128] 2 responses to call for evidence dated 30 June 2026 from: [✂].
[129] 4 responses to call for evidence dated 30 June 2026 from: [✂].

Click, where a user taps the side button twice to open the NFC app. Shortcuts can only trigger one NFC app. It is therefore important that users can choose which app is launched in response to these actions. Under both the NFC & SE Platform and the HCE solution in the EEA, Apple allows users to choose a default contactless app, which is launched in response to these shortcuts.[130]

Stakeholder submissions on default choice

4.86 Multiple stakeholders said that the user's ability to set their app as the default contactless app with access to the associated shortcuts was essential for effective access and to compete with Apple Wallet.[131]

CMA assessment on default choice

4.87 We provisionally conclude that the ability for third-party apps to be set as default with the same features as Apple Wallet is necessary and appropriate to support the aim of the proposed NFC Access CR by enabling effective competition and innovation, increasing consumer choice and facilitating the development of new NFC-enabled services.

Authentication

4.88 Authentication is the process by which a user confirms their identity and their intent to complete a transaction. NFC apps often use biometrics, such as facial recognition, or passcodes to do this. It is important that third parties can access the software and hardware needed for authentication as, with a few exceptions, it is required to make NFC transactions. For example, Apple's NFC & SE Platform and HCE solution in the EEA each require every transaction to be authenticated, and Apple supports this in both cases.[132]

---

[130] Apple, 'HCE-based contactless NFC transactions for apps in the European Economic Area (EEA)'; Apple 'NFC & SE Platform for secure contactless transactions' all accessed by the CMA on 14 October 2026.

[131] 8 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to questionnaire dated [✂]. Note of meeting with [✂].

[132] Apple, 'HCE-based contactless NFC transactions for apps in the European Economic Area (EEA)'; Apple 'NFC & SE Platform for secure contactless transactions' all accessed by the CMA on 14 October 2026.

Stakeholder submissions on authentication

4.89 Multiple stakeholders have submitted that, given the need for users to authenticate transactions, they need access to authentication software and hardware equivalent to Apple Wallet.[133]

CMA assessment on authentication

4.90 Given Apple's requirement that authentication must be used and its wider benefits for security, we provisionally consider that access to authentication is necessary and appropriate to enable third parties to compete and innovate effectively.

Third-party presentment intent assertion and cooldown periods.

4.91 A presentment intent assertion is a mechanism by which non-default NFC apps can override the default. It is important that third parties can offer this in a frictionless manner, as users may wish to use multiple NFC apps, or try one out before switching the default. Apple currently offers this feature under both the NFC & SE Platform and the HCE solution in the EEA.[134]

4.92 However, Apple's current approach to presentment intent assertions has several restrictions. Whilst a user has the non-default NFC app open, the app can request an intent assertion which allows that app to complete an NFC transaction. This intent assertion expires after 15 seconds, and a new intent assertion can only be requested after another 15 seconds.

Apple's submissions on third-party presentment intent assertion and cooldown periods

4.93 Apple stated that presentation and cooldown times via the Suppression API exist to ensure a third-party wallet can suppress the default NFC app (usually Apple Wallet) only for a defined duration. This is to prevent the third-party wallet from taking over the user experience indefinitely and potentially frustrating the user's intention to continue using their default contactless app when it is held in proximity to an NFC reader (eg if a user left a third-party wallet open and

[133] 6 responses to call for evidence dated 30 June 2026 from: [✂].
[134] Apple, 'HCE-based contactless NFC transactions for apps in the European Economic Area (EEA)'; Apple 'NFC & SE Platform for secure contactless transactions' all accessed by the CMA on 14 October 2026.

subsequently wanted to present their phone to pay with their separate default contactless app). It also protects device performance, by ensuring the phone's NFC radio does not remain active for prolonged periods.[135]

Stakeholder submissions on third-party presentment intent assertion and cooldown periods

4.94 Two stakeholders submitted that time limits can add friction for the user and render third-party NFC apps inferior to Apple Wallet. A stakeholder also noted that Apple Wallet was able to request a longer intent assertion and was not subject to a cooldown. The stakeholders said that they need equivalent timings to Apple Wallet to compete.[136]

CMA assessment on third-party presentment intent assertion and cooldown periods

4.95 Our provisional assessment is that third-party NFC apps should have access to presentment intent assertions on the same basis as Apple Wallet, including relevant timings.

Express Mode

4.96 For some use cases, completing transactions without unlocking the phone can be convenient and increase security by reducing the risk that a passcode is observed by a malicious actor. This is particularly true for use cases such as transit, which often occur in busy public environments and where users are very sensitive to the time transactions take.

4.97 Apple offers this feature via Express Mode in Apple Wallet which uses SE. Google and Samsung also offer it via respective transit modes in Google Wallet and Samsung Wallet, which both use HCE. Both Express Mode and the Android implementations of transit mode allow users to make transactions without unlocking the device and authenticating. Due to security considerations, Apple's Express Mode and Android's transit mode can only be used for specific use cases.

[135] Note of meeting with Apple on [✂].
[136] 2 responses to call for evidence dated 30 June 2026 from: [✂].

4.98 Express Mode uses functionalities built into iOS to communicate with terminals via the Enhanced Contactless Polling (ECP) protocol. These functionalities allow Apple Wallet to be activated while the device is locked and match a particular transaction to a credential without user action.[137]

4.99 Transit is [✂] use case of Apple Wallet. Between November 2019 when Express Mode was introduced and March 2024, use of Apple Pay across Transport of London's network has increased [✂]. The available evidence also shows that Apple is expanding Express Mode across the UK including into Manchester and Edinburgh.[138]

Apple's submissions on Express Mode

4.100 Apple submitted that it considers Express Mode to be a feature of Apple Wallet and not part of the mobile operating system.[139] Apple said that it had not fully considered what work would need to be done to provide third parties with access to the underlying functionality, but [✂].[140]

4.101 Apple also stated that Express Mode works through a combination of software and hardware on the device, but also on the NFC terminal, and that allowing third-party access may require changes to NFC terminals and commercial agreements in addition to their own software.[141]

Stakeholder submissions on Express Mode

4.102 Multiple stakeholders submitted that the ability to offer a feature equivalent to Express Mode is needed to effectively compete with Apple, particularly for these specific use cases.[142] Multiple stakeholders also pointed to how frictions, such as users not being able to make transactions without unlocking their phone,

---

[137] In relation to how Express Mode operates from a technical perspective, before using Express Mode, the user chooses which card, digital ID or other credential should be used automatically for a particular purpose, such as paying for public transport or accessing a workplace. When the user taps their device on a compatible reader, the device automatically recognises what type of credential is needed (matching a signal sent by the terminal, indicating eg the transit network or access badge reader concerned) and selects the appropriate card or pass from Apple Wallet. The transaction is then completed without the user needing to unlock their device or verify their identity.

[138] Apple's response to section 69 notice dated [✂].

[139] Apple's submission to the CMA dated [✂]. Apple's response to section 69 notice dated [✂].

[140] Note of meeting with Apple on [✂]. Note of meeting with Apple on [✂].

[141] Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].

[142] [✂] response to questionnaire dated [✂]. [✂] response to questionnaire dated [✂]. Note of meeting with [✂]. [✂] submission to the CMA dated [✂]. 3 responses to call for evidence dated 30 June 2026 from: [✂].

would reduce their ability to compete.[143] With only Apple Wallet having access, if users wish to use these features, they would be forced to set up and use Apple Wallet, possibly in addition to their preferred third-party NFC app. Further, if a user sets their default to a third-party wallet but taps a terminal with their device locked, Apple Wallet is still used, potentially causing user confusion and the wrong wallet being used.

4.103 A transport network operator which supports Express Mode submitted that Express Mode uses open protocols, and that these are the same across Apple, Google and Samsung. The transport network operator stated that no work on their side would be needed to enable third parties' ability to offer unauthenticated transactions using the ECP protocol.[144] A terminal manufacturer also said that, from a technical perspective, they would not need to make changes to support third-party apps and devices adopting the currently implemented protocol, provided this is done in accordance with Apple's existing technical specifications. In addition, the terminal manufacturer noted they could support third-party unauthenticated transactions using the ECP protocol.[145]

CMA assessment on Express Mode

4.104 The evidence submitted by Apple and stakeholders shows the importance of unauthenticated transactions, particularly for use cases such as transit, which are sensitive to transaction time and friction.[146] We therefore provisionally conclude that for developers to be able to compete effectively for transit payments and other similar use cases, developers require interoperable access to the iOS functionalities which are used by Express Mode in order to offer unauthenticated transactions in a manner equivalent or similar to Express Mode.

4.105 Our proposed NFC Access CR therefore includes a provision which would require Apple to give interoperable access to the underlying operating system functionalities, namely the software and hardware needed to complete NFC

[143] 4 responses to call for evidence dated 30 June 2026 from: [✂].
[144] Note of meeting with [✂].
[145] [✂] response to section 69 notice dated [✂].
[146] We provisionally consider that enabling a third-party app to interact with relevant NFC terminal is technically possible, although the precise implementation remains to be determined. We welcome stakeholder views on this aspect as part of our consultation.

transactions without user authentication or device unlock. In particular, we provisionally consider that this includes:[147]

(a) Providing third-party apps with the option to not authenticate transactions where Apple Wallet and Apple Pay do not require their users to authenticate an equivalent transaction.

(b) Providing access to the iOS functionalities which are used by Express Mode.

(c) Linking this functionality to the default contactless app. In particular, where the default contactless app supports unauthenticated transactions and the user taps a locked mobile device to an NFC terminal, the default NFC app should be activated.

4.106 The requirements of the proposed NFC Access CR do not cover Express Mode as a feature of Apple Wallet, and third parties would need to develop their own app feature in order to handle this type of transaction and associated user selection of credentials.

Power Reserve

4.107 Power Reserve is a feature of Apple Wallet where users can make NFC transactions using Express Mode for a period of time after the main device has entered a low-power mode and is inoperable. As the main device is inoperable, authentication and user selection of credentials is not possible, and so all transactions are currently completed using Express Mode via Apple Wallet. Power Reserve requires the credential be stored on a SE, as only the SE will continue to fully operate in this mode.

Apple's submissions on Power Reserve

4.108 As discussed in paragraphs 4.54-4.59 Apple told us that Power Reserve enables Express Mode-enabled credentials (which sit within the device's SE) to remain available for use when an iOS device's battery has been depleted during a window after which the device would be considered powered off. Apple said

[147] The proposed NFC Access CR governs access to the platform only. It does not alter the regulatory status of participants or affect the continuing legal and regulatory obligations of issuers, payment service providers, electronic money issuers or other relevant firms, including requirements under the Payment Services Regulations 2017, for example.

that Power Reserve is a direct interaction between an NFC reader and the SE, without engaging the display.[148] Apple also noted it has not considered what work would need to be done to give third parties access to Power Reserve, but that theoretically third-party NFC apps with their own version of Express Mode could make use of this feature.[149]

Stakeholder submissions on Power Reserve

4.109 Multiple stakeholders highlighted this feature as a benefit of SE, as it increases reliability and provides users peace of mind that they will still be able to use their NFC app for important use cases if their phone is out of power.[150] The CCC also highlights this functionality as a key feature of their specification for digital keys.[151]

CMA assessment on Power Reserve

4.110 Our provisional assessment is that developers require interoperable access to the iOS functionalities which are used by Power Reserve to offer low-power functionalities equivalent to Power Reserve. Access to this functionality would enable them to compete effectively for use cases such as digital car keys, where reliability is particularly important. Our proposed NFC Access CR would also require Apple to link this functionality to the default contactless app. This means that when a user wants to initiate a transaction in low power mode, the default contactless app would be used.[152]

4.111 However, in our view Apple should not be required to provide the Power Reserve feature directly for third parties. Rather, Apple should be required to provide interoperable access to the software and hardware capabilities necessary to develop equivalent or similar functionality to support the aim of the proposed NFC Access CR.

---

[148] Note of meeting with Apple on [✂].
[149] Note of meeting with Apple on [✂].
[150] [✂] response to section 69 notice dated [✂]. [✂] response to call for evidence dated 30 June 2026 [✂]. [✂] response to questionnaire dated [✂]. [✂] response to section 69 notice dated [✂].
[151] CCC, 'Digital Key Use Cases', accessed by the CMA on 14 October 2026.
[152] If the default contactless app uses HCE, this will not apply and no other NFC app will be used in low-power mode.

Ensuring the provision of NFC access on fair, reasonable and non-discriminatory terms

4.112 For NFC access to be effective it is important that Apple should be subject to a requirement to ensure that terms and conditions of access are fair, reasonable and non-discriminatory. We also consider that in addition, when Apple is setting all terms and conditions of NFC access, it should take account of the need to ensure that those terms and conditions are not unduly discriminatory, as part of which Apple is required to ensure that they do not:

(a) Result in an imbalance of rights and obligations as between Apple and the developer to the detriment of the developer;

(b) Confer on Apple an advantage that is disproportionate to the NFC access granted to a developer; or

(c) Give rise to any unjustified difference in treatment (i) between Apple and a developer or category of developer, or (ii) among developers or categories of developers, including as a result of a developer's preference as between HCE and SE.

4.113 We have included these overarching requirements at paragraph 9 of the proposed NFC Access CR. We consider that this proposed obligation would ensure that developers are treated fairly and consistently and that they can compete and innovate effectively against Apple or as among themselves. This would in turn ensure that they can provide more choice and better services to consumers.

4.114 It is appropriate to consider how this should be applied in relation to pricing and non-pricing terms separately. In relation to non-pricing terms, there are specific minimum requirements which we have set out in the proposed NFC Access CR and which we have described in this consultation document. Below we specify how this is proposed to be approached in pricing.

Ensuring that the NFC access fee is fair, reasonable and non-discriminatory so that it enables commercially viable and timely entry and improvements to developers' existing offerings, while protecting Apple's investment and innovation incentives

4.115 Effective access to NFC functionality depends not only on the availability of the underlying technology, but also on the terms on which that access is provided.

Pricing terms can have a significant impact on whether firms are able to compete, invest and innovate. Even where technical access is available, fees that are not fair, reasonable and non-discriminatory may limit the ability of firms to develop viable business models and compete effectively.

4.116 We therefore consider that pricing is a key component of ensuring effective access under the proposed NFC Access CR. The objective of the pricing provisions is not to prescribe a particular commercial outcome or prevent Apple from receiving an appropriate return on its investments. Rather, it is to ensure that pricing does not undermine the benefits of access by creating barriers to entry, expansion or innovation and thereby hindering competition. This is particularly important given the role that NFC functionality can play as an enabling technology across a range of existing and emerging use cases, including payments, identity, access, ticketing and other digital services.

4.117 Against this backdrop, we have considered whether there is a risk that pricing could be used in a way that limits effective competition and innovation. Based on the evidence collected, there is a strong reason to believe that the fees Apple currently charges for NFC access are not commercially viable for many developers and act as a significant barrier to entry and expansion.

4.118 While there may be a range of approaches capable of delivering fair, reasonable and non-discriminatory pricing, we have considered both the outcomes observed under Apple's current fee structure and relevant industry comparators. We note that NFC is an established industry technology rather than a proprietary technology developed by Apple. Other major mobile device manufacturers, including Google and [✂], charge developers minimal or no fees for access to NFC functionality.[153] While differences in business models and implementation may be relevant, these comparators indicate that effective NFC access can be provided without material access charges.

4.119 Although any assessment of compliance would depend on the specific facts, the limited evidence of competitive entry, extensive stakeholder concerns regarding the commercial viability of existing fees, and evidence from other mobile device manufacturers suggest that fees consistent with the aim of the proposed NFC Access CR would likely be low and substantially lower than Apple's current charges.

[153] Google's response to section 69 notice dated [✂]. [✂] response to section 69 notice dated [✂].

4.120 This section covers the principles-based approach and measures included in the proposed NFC Access CR which seek to address these concerns on pricing, by ensuring access to NFC on iOS (through SE or HCE) on fair, reasonable and non-discriminatory terms for developers.

Why we have decided to adopt a principles-based approach

4.121 We provisionally consider that in the context of NFC access, flexibility is required because of (i) a significant variety of use cases for NFC access, (ii) significant heterogeneity of developers and their business models, (iii) uncertainty about potential future innovations; and (iv) concerns about not just the level of fees but also their structure. Our provisional assessment is that a principles-based approach can better accommodate these factors and allow for a level of flexibility necessary to determine fair, reasonable and non-discriminatory fees on a forward-looking basis, allowing for changes in circumstances throughout the designation period. Therefore, we also provisionally propose that it is not necessary or appropriate at this stage for the CMA to specify a particular fee in the proposed NFC Access CR.

4.122 Adopting a principles-based approach at this stage does not mean that more specific requirements could never be justified in future. For example, if in practice Apple failed to comply effectively with this principles-based CR, or if we identified issues requiring correction through specific measures, the CMA has the legal powers to impose more detailed requirements.

4.123 Under our principles-based approach, compliance with the proposed NFC Access CR would require Apple to set all fees for NFC access applying the relevant principles, and to be able to demonstrate to the CMA's satisfaction that the fee level, structure and its operation comply with those principles.

4.124 In the rest of this section, we explain the different principles we have included in the proposed NFC Access CR:

(a) Fair and reasonable (including the cost-based principle and value-based principle);

(b) The no undue discrimination principle;

(c) The flexibility principle; and

(d) The administrative simplicity principle.

Fair, reasonable and non-discriminatory in the context of the Act

4.125 The concept of fair, reasonable and non-discriminatory pricing is a flexible standard used across different legal frameworks, including on an *ex-ante* basis. It is not confined to the application of any single regime-specific methodology; what methodology is appropriate depends on the legal framework in question and the specific regulatory objectives which the authority is pursuing based on its assessment of the relevant competition concerns.

4.126 We have carefully considered the legislative scheme under the Act, specifically in the context of setting fair, reasonable and non-discriminatory pricing CRs. It is clear that there is no explicit or implicit indication that Parliament intended for the CMA to be bound by the legal tests and principles applicable under different legal regimes,[154] particularly *ex-post* competition law. Specifically:

(a) As a matter of statutory interpretation, there is no provision in the Act or the Explanatory Notes linking sections 20(2)(a), 20(3)(a), 20(3)(f) and 20(3)(h) to the *ex-post* competition law test or another legal framework. Instead, the Explanatory Notes emphasise the distinct purpose of the Act and the insufficiency of existing competition and consumer laws to address digital market issues.[155]

(b) As a matter of legislative design, the Act is an *ex-ante*, forward-looking regime, which differs materially from other regimes and from *ex-post* competition law.[156] The Act does not require a finding of wrongdoing and instead enables the CMA to impose bespoke, flexible interventions to advance a broad set of statutory objectives, including fair dealing, open choices and trust and transparency. The concept of trading on 'fair and reasonable terms' is deliberately left undefined,[157] indicating that Parliament intended to confer discretion on the CMA rather than constrain it by fixed tests.[158]

---

[154] This is based on the statutory construction and consideration of accompanying Parliamentary materials, including the Act's Explanatory Notes.
[155] Paragraph 3 of the Act's Explanatory Notes states that 'It is the Government's view that the unprecedented market power, in relation to certain digital activities, of a small number of businesses, is holding back innovation and growth. Existing competition and consumer laws are not designed to address the unique barriers to competition in digital markets. In response, this Act establishes a new regime that is designed to boost competition in digital markets.'
[156] Paragraph 30 of the Act's Explanatory Notes.
[157] Paragraph 183 of the Act's Explanatory Notes.
[158] For the reasons set out in this section, we disagree with Apple's interpretation of the legal framework as set out in Apple's response to call for evidence dated 30 June 2026, [✂].

4.127 Instead, fair, reasonable and non-discriminatory pricing must be interpreted in light of the statutory framework set by the legislation for imposing CRs:

(a) What amounts to fair, reasonable and non-discriminatory pricing depends on the nature of the competition concerns being addressed and the regulatory objectives pursued to address them.

(b) Fair, reasonable and non-discriminatory pricing is a mechanism enabling the CMA to assess and stipulate appropriate pricing terms, for example through reflecting the costs of the goods or service provided, while taking account of the wider purpose of the UK's digital markets competition regime and the need to preserve appropriate incentives to invest and innovate.

(c) Fair, reasonable and non-discriminatory pricing should ensure that an SMS firm does not use its SEMP to impose prices that are unfair and unreasonable.

4.128 Nevertheless, we recognise that there are certain similarities between the Act's legal framework and the other regimes. In setting our proposed NFC Access CR, we have therefore considered approaches used in other circumstances, where appropriate, to inform our own thinking under the Act.

What fees might be fair, reasonable and non-discriminatory for NFC access

4.129 In the context of NFC access, the application of fair, reasonable and non-discriminatory pricing must be informed by the competition concerns the proposed NFC Access CR is designed to address and the regulatory and statutory objectives pursued through this intervention. In particular, fair, reasonable and non-discriminatory pricing is:

(a) Proposed to ensure that the proposed NFC Access CR's fair dealing and open choices statutory objectives are met in relation to NFC access fees. That requires pricing terms which would ensure that developers and users are treated fairly, are able to interact directly or indirectly with Apple on reasonable terms, and are able to choose freely and easily between the services or digital content provided by Apple and those provided by other undertakings; and

(b) Proposed to support the regulatory aim of the proposed NFC Access CR to ensure the effective NFC access for developers with the need to protect the legitimate interests of Apple and its incentive to invest and innovate with its NFC platform. Fair, reasonable and non-discriminatory fee terms are proposed to ensure that NFC access is commercially viable for developers, given the concern that high fees for NFC access can frustrate the remedy by discouraging developers from obtaining NFC access and developing their own apps. This would also insulate Apple's own fees from competitive pressure from viable third-party alternatives.

4.130 The level and structure of fees are directly relevant to ensuring developers can make meaningful choices regarding NFC access and trade on fair, reasonable and non-discriminatory terms with Apple. Fees that significantly reduce the incentive of developers to use NFC functionality, or that introduce complexity, uncertainty or deterrence, may limit developers' ability to improve their existing offering and develop new innovative uses of NFC technology, which in practice would weaken the effectiveness of the proposed NFC Access CR.

Apple's submissions on NFC access fees

4.131 Apple submitted that NFC access on iOS is open via the NFC & SE Platform to any interested developer, and that its NFC & SE Platform supports, or is capable of supporting, use cases such as contactless card payments, A2A payments, stablecoins, digital ID, digital currencies, and other non-payment cases.[159]

4.132 It further stated that there is no evidence that the NFC & SE Platform's fees or technical solution inhibit innovation or investment in contactless solutions and UK developer uptake.[160] Apple believes that the fact that EU regulation required it to offer a valuable product (ie, the HCE-based NFC solution) for free, and then experienced initial developer uptake, cannot be used to infer that any lack of uptake of the NFC & SE Platform is attributable to the fees Apple charges.[161]

4.133 In relation to payment use cases, Apple noted that developers have opportunities to monetise transactions (eg, through service and product fees, interchange fees, subscriptions, value-add services, or promotion and cross-

[159] Apple's response to call for evidence dated 30 June 2026, [✂].
[160] Apple's response to call for evidence dated 30 June 2026, [✂].
[161] Apple's response to call for evidence dated 30 June 2026, [✂].

selling of the developer's or third-party services) as the NFC & SE Platform's value proposition enables developers to retain end-to-end control of the contactless experience and maximise upselling opportunities (eg, offering buy-now-pay-later payment options at checkout).[162] Apple has also provided modelling showing that above a certain average order value and a particular proportion of credit versus debit payments, a developer providing NFC payments via Apple's NFC & SE Platform and charging the same fees to issuers that Apple Pay charges would earn positive transaction margins (see also CMA assessment at paragraph 4.144).[163]

4.134 In relation to non-payment use cases, Apple submitted that it expects [✂], and [✂].[164] [✂].[165]

4.135 Apple highlighted the following considerations to explain the limited uptake of its NFC & SE Platform offer to date: (i) developers have an incentive to push for the lowest possible fees and stall their development of solutions to maintain leverage pending CMA intervention; (ii) developer satisfaction with the current range of contactless methods, such as QR code-based contactless solutions; (iii) ordinary course development costs may be affected by wider macroeconomic and sector-specific trends, resulting in firms deprioritising NFC contactless solutions in favour of other commercial priorities; (iv) partner infrastructure investment requirements adding material cost, time and organisational challenges; and (v) a lack of demand for third-party wallets.[166]

4.136 Apple also submitted that, both generally and, from its perspective, within the context of the proposed NFC Access CR, it has a legitimate right to recover and earn a return on all costs it incurred establishing, and incurs maintaining, the NFC & SE Platform, including direct and indirect costs.[167] Apple further said that if the HCE solution is implemented instead of or alongside the NFC & SE Platform, this would significantly undermine Apple's ability to recoup its

[162] Apple's response to call for evidence dated 30 June 2026, [✂].
[163] Apple's response to call for evidence dated 30 June 2026, [✂]. Note of meeting with Apple on [✂]. Apple's submission to the CMA dated [✂].
[164] Apple's response to call for evidence dated 30 June 2026, [✂].
[165] Apple's response to call for evidence dated 30 June 2026, [✂].
[166] Apple's response to call for evidence dated 30 June 2026, [✂].
[167] Apple's response to section 69 notice dated [✂].

investment in the NFC & SE Platform, and would disincentivise its continued investment in maintaining the NFC & SE Platform in the UK.[168]

Stakeholder submissions on NFC access fees

4.137 We have heard from multiple stakeholders that NFC access fees set by Apple to access the NFC & SE Platform are currently set at a level that means entry is not commercially viable.[169]

4.138 Two stakeholders have also told us that the fee structure offered by Apple (comprising a periodic provisioning fee per credential and a per transaction fee) contributes to entry not being commercially viable.[170] One stakeholder explained that this is particularly the case where a customer has a card stored on the third-party wallet but does not use it, or uses it so infrequently that the transaction fee received by the third-party wallet provider is lower than the fees it pays to Apple.[171] The other stakeholder explained that Apple's per transaction charge means that effective costs for a bank enabled wallet increases as the average transaction value decreases, and this effect is particularly pronounced for debit cards where average transaction value and interchange revenues are lower.[172]

4.139 Two stakeholders explained that Apple's current fees and business practices more broadly constituted barriers to them entering with competing digital wallet options.[173] More specifically, one stakeholder explained that digital wallets had low or negative margins, and that per-transaction fees would be highly detrimental to the commercial case for investing in a new digital wallet to compete with Apple.[174] The other stakeholder stated that Apple's current access and commercial terms materially impacted their commercial incentive and ability to launch a wallet proposition in lieu of Apple Pay.[175]

4.140 Apple's approach to NFC access fees is in contrast with the approach of other mobile device manufacturers. Google told us that it (i) develops and maintains

---

[168] Apple's response to section 69 notice dated [✂].
[169] 3 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to questionnaire dated [✂]. 2 responses to section 69 notices dated [✂] from [✂]. [✂] response to section 69 notice dated [✂].
[170] [✂] response to call for evidence dated 30 June 2026, [✂]. [✂] response to questionnaire dated [✂].
[171] [✂] response to call for evidence dated 30 June 2026, [✂].
[172] [✂] response to questionnaire dated [✂].
[173] [✂] response to questionnaire dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].
[174] [✂] response to call for evidence dated 30 June 2026, [✂].
[175] [✂] response to questionnaire dated [✂].

open and free access to HCE technology to increase the attractiveness of the Android platform in competition with Apple; and (ii) facilitates third parties' use of the SE on Pixel devices to improve Pixel's overall value proposition in competition with other mobile devices.[176] [✂] charges developers minimal or no fees for access to NFC functionality, [✂].[177]

CMA assessment on NFC access fees

4.141 The aim of the proposed NFC Access CR is to ensure effective access to NFC on fair, reasonable, transparent and non-discriminatory terms to enable developers to improve their existing offerings, or develop new innovative uses of NFC technology, thereby unlocking competition and innovation, improving consumer choice of NFC apps and supporting economic growth in the UK. As part of this aim, we recognise the need to protect the legitimate interests of Apple and its incentive to invest and innovate with its NFC platform. The considerations around (i) effective access for developers and (ii) Apple's legitimate interests need to be balanced against each other. In relation to (i), we believe that a substantially low fee is required to ensure effective NFC access, in order to support innovation in the development of NFC transactions across the widest possible range of use cases. In relation to (ii), we also believe that Apple should be fairly remunerated for the services it provides, in order to maintain its legitimate interests to invest and innovate in NFC access. In light of this, we provisionally consider that for our proposed NFC Access CR to be effective, the level of the NFC access fee should be the lowest at which Apple is fairly remunerated for the services it provides and its legitimate interests to invest and innovate are protected.

4.142 We note that Apple's incentives to invest in its platforms do not only depend on the returns it makes on NFC access in the UK. For example, as indicated by other mobile device manufacturers (see paragraph 4.110 above) incentives to innovate and invest in NFC technology are likely to be driven by the incentive to increase the attractiveness of mobile devices.

---

[176] Google's response to section 69 notice dated [✂]. HCE is free on all Android OEM and Google (Pixel) devices. SE availability depends on OEM; Google provides access to SE for free or with minimal fee. Third parties' access to the SE on Android mobile devices varies by OEM and device model, as not all devices have an SE and OEMs control access. However, Android supports third-party access to SE where available and directly provides HCE as part of the OS.

[177] [✂] response to section 69 notice dated [✂].

4.143 Whilst there may be various reasons contributing to a low take up of Apple's NFC & SE Platform offering in the UK (including those raised by Apple, see paragraph 4.135), the feedback we have received from developers indicates that the main reason is high fees. The feedback on fees can be summarised as follows:

(a) Developers told us that fees are too high making entry commercially unviable.[178]

(b) Developers have not identified technologies such as QR or bar codes as suitable substitutes for NFC technology.[179]

(c) Developers have not identified the barriers and challenges cited by Apple as reasons for the limited take-up of existing NFC access in the UK.[180]

(d) Developers have entered, or are planning to enter, with new and innovative products and services in other jurisdictions or on other platforms where NFC access fees are lower, indicating a latent demand for these products and a willingness of developers to invest in them.[181]

(e) Developers told us that, depending on the fee level, and the technology available, they are able and ready to enter with new and improved products and services in the UK.[182]

4.144 To test the evidence on Apple's current fees further, we have conducted our own break-even analysis for a direct competitor (ie a 'copycat' entrant). Our analysis shows that:

(a) Revenues from interchange fees only cover Apple's fees (ie fixed and other costs are not considered) under a very specific set of assumptions or

---

[178] See paragraphs 4.137-4.139.
[179] While QR codes can support payments and other use cases, and there are no restrictions from Apple on the use of QR codes in apps on iOS, our proposed NFC Access CR focuses on NFC for several reasons: (i) unlike QR codes, NFC is commonly used for mobile contactless payments in the UK, and this is likely to continue to be the case in the near to medium term / during the designation period, (ii) switching to QR codes would require changes in consumer habits, away from tap-to-pay, and would introduce greater friction, (iii) switching to QR codes may also require changes in payment terminals, and (iv) QR codes may be less secure. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂].
[180] 5 responses to the call for evidence dated 30 June 2026 from: [✂].
[181] Multiple providers have launched NFC-enabled payment apps in the EEA including PayPal, Curve and Klarna (see paragraph 1.14). A range of providers want to bring their products to the UK market. [✂] response to questionnaire dated [✂]. Note of meeting with [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].
[182] [✂] response to call for evidence dated 30 June 2026, [✂]. [✂] response to section 69 notice dated [✂].

if the entrant has substantial cross-subsidising opportunities (see also Apple's submissions at paragraph 4.133).

(b) For any business model that does not attract the type of transactions that Apple has identified (eg when transaction values are lower or the share of credit card transactions is lower), fees have to be low and substantially lower than they are currently to enable that direct competitor entrant to monetise transactions through payment card scheme interchange fees.

(c) For any business model that does not offer the possibility of generating revenue through interchange fees (or other ways, including cross-subsidisation), fees would have to be even lower to ensure commercial viability of these business models.

4.145 Furthermore, our current view is that the fees that Apple charges its own downstream customers (eg banks) are unlikely to be an appropriate benchmark for the determination of the commercial viability of developers seeking NFC access (ie upstream customers such as fintechs) or reflective of a fair, reasonable and non-discriminatory fee level. This is because developers will bear other costs in addition to the fees they pay to Apple.

4.146 Based on the evidence set out above, we believe that there is a genuine unmet demand for NFC access and the lack of uptake of Apple's NFC & SE Platform offer cannot reasonably be explained by the expectation of lower, regulated prices in the future, or other factors alone (see Apple's submissions above). In any event, whilst we are aware of the possibility that developers may have an incentive to push for the lowest possible fees when they engage with the CMA, we do not believe that it would be rational for them all to forego commercial opportunities (and potential first-mover-advantages over later entrants) in the hope of lower regulated fees in the future as any intervention the CMA may take would also benefit legacy NFC & SE Platform customers.

4.147 As we have outlined above (see paragraph 2.12), we expect that improved developer access to the NFC would drive the launch of innovative products and services that benefit consumers.

Principles for arriving at a fair, reasonable and non-discriminatory fee for NFC access on iOS

4.148 Having outlined what 'fair, reasonable and non-discriminatory' fees mean in the context of NFC access, this section is concerned with how such a fee can be determined. We provisionally consider that the principles set out below provide an appropriate set of factors that are relevant for arriving at a fee that is fair, reasonable and non-discriminatory, and balance the CMA's aims of ensuring effective NFC access for developers and maintaining Apple's incentives to invest and innovate.

The role of the cost-based principle in our proposed approach to setting NFC access fees

Cost-based approaches to determining a fair and reasonable fee level

4.149 Cost-based approaches refer to methodologies in which fees are determined primarily by reference to a supplier's cost of producing (and delivering) a particular product or service and may then add a profit margin on top. Cost-based approaches are common and well-established in regulation, and different approaches allow a regulated firm to recover a broader or narrower range of costs. We have considered a 'cost-plus' approach below as we believe that this would be appropriate for the proposed NFC Access CR. Under such an approach, a fee would be determined by reference to the direct and indirect costs incurred in relation to providing and maintaining NFC access, and would also allow for a reasonable rate of return.

Apple's submissions on cost-based approaches

4.150 Apple submitted that a cost-based methodology would be both unnecessary and disproportionate.[183]

4.151 In particular, Apple stated that cost-based approaches are not suitable for innovative mobile platforms, and risk diminishing its investment incentives.[184] Apple provided a number of arguments for this view.

[183] Apple's response to call for evidence dated 30 June 2026, [✂].
[184] Apple's response to call for evidence dated 30 June 2026, [✂].

4.152 First, Apple stated that its costs are difficult to determine [✂].[185] A cost-based approach would fail to properly account for these [✂] costs.[186] Apple explained that [✂], value is more observable than an accurate cost figure.[187]

4.153 Second, Apple stated that it does not gather cost information [✂] in the way required for application of cost-plus, and therefore, it has no means of reliably calculating or apportioning costs in the manner that would be required for a cost-based approach to fees.[188]

4.154 Third, Apple stated that its NFC & SE Platform provides significant value to developers and the wider NFC transaction industry.[189] As such, assessing the fairness and reasonableness of Apple's fees based on costs alone would not adequately account for the value delivered by the NFC & SE Platform.[190] Apple therefore considers a cost-based approach would severely and disproportionately restrict it from earning remuneration on the value it provides through its IP-protected technology and in doing so, would diminish its incentives to invest.[191]

4.155 Fourth, Apple submitted that it considers cost-based controls are tools of utility-style regulation, developed for stable, natural monopolies with predictable demand, and that they are wholly unsuited to a dynamic, innovative, IP-driven, and security-critical platform providing a service to developers for which demand is nascent and uncertain.[192] Apple explained that anchoring returns to its costs would prevent it from participating in the upside of its successful, high-risk innovation and blunt its incentive to keep investing – instead allowing developers to free-ride on Apple's innovation and subverting one the CMA's main ambitions in the UK payments ecosystem.[193]

4.156 Apple further stated that there is in any case evidence showing its fees are fair and reasonable.[194] In particular, Apple explained that even if it had adopted a cost-plus approach and properly accounted for relevant costs (including the

---

[185] Apple's response to call for evidence dated 30 June 2026, [✂].
[186] Apple's response to call for evidence dated 30 June 2026, [✂].
[187] Apple's response to call for evidence dated 30 June 2026, [✂].
[188] Apple's response to call for evidence dated 30 June 2026, [✂].
[189] Apple's response to section 69 notice dated [✂].
[190] Apple's response to section 69 notice dated [✂].
[191] Apple's response to call for evidence dated 30 June 2026, [✂].
[192] Apple's response to call for evidence dated 30 June 2026, [✂].
[193] Apple's response to call for evidence dated 30 June 2026, [✂].
[194] Apple's response to call for evidence dated 30 June 2026, [✂].

significant indirect and shared costs) and applied an appropriate return, its fees for the NFC & SE Platform are already set at a more than fair and reasonable level.[195]

4.157 Apple particularly highlighted this by [✂]:[196]

(a) Apple explained that it factored in a [✂].[197]

(b) Apple stated that [✂].[198] [✂].[199]

(c) Apple further stated that [✂].[200]

(d) Apple considers that the prospect [✂] goes far beyond what the CMA could reasonably demand in assessing the fairness and reasonableness of the NFC & SE Platform fees.[201]

Stakeholder submissions on cost-based approaches

4.158 The vast majority of stakeholders that submitted responses to the CMA's call for evidence that commented on pricing, expressed a clear preference for Apple to roll out HCE access in the UK free of charge,[202] on the basis that HCE access is already available for free in the EEA and on Android.[203]

4.159 The vast majority of stakeholders that commented on pricing also expressed the view that a cost-based approach could be justified for SE.[204]

4.160 Some stakeholders explained that if the CMA were to find that a fee was justified for NFC access, it should be limited to a narrow cost-based approach.[205] Most stakeholders that commented on a cost-plus approach were

---

[195] Apple's response to call for evidence dated 30 June 2026, [✂].
[196] Apple's response to call for evidence dated 30 June 2026, [✂].
[197] Apple's response to call for evidence dated 30 June 2026, [✂].
[198] Apple's response to call for evidence dated 30 June 2026, [✂].
[199] Apple's response to call for evidence dated 30 June 2026, [✂].
[200] Apple's response to call for evidence dated 30 June 2026, [✂].
[201] Apple's response to call for evidence dated 30 June 2026, [✂].
[202] 9 responses to call for evidence dated 30 June 2026 from: [✂].
[203] 7 responses to call for evidence dated 30 June 2026 from: [✂].
[204] 8 responses to call for evidence dated 30 June 2026 from: [✂].
[205] 3 responses to call for evidence dated 30 June 2026 from: [✂].

against allowing Apple to obtain returns on its provision for NFC, on the basis that Apple had already earned a return on these costs, and that in any case these common costs are supported by Apple's broader ecosystem rather than just NFC access.[206] In the same vein, some stakeholders pointed out that NFC technology was not Apple's proprietary technology.[207] The two stakeholders that commented on the details of a cost-plus approach were of the view that the rate of return should be limited to reflect the low risk of providing NFC access.[208]

CMA assessment on cost-based approaches

4.161 A 'cost-plus' based fee is a well-established approach in regulation with recognised methodologies. However, we have also taken careful account of Apple's comments regarding its views on the potential risks of following utility style regulation.

4.162 In considering the most appropriate approach to adopt in this case, we recognise the different nature and dynamics of the products and services Apple provides as part of its mobile platform. We are proposing that a cost-plus consideration should be a relevant factor in determining fees alongside other considerations, including the value principle as set out below. This proposal is not driven by a desire to follow the prior established use of cost-based approaches in particular regulated sectors; rather, we provisionally consider that the cost-based principle in combination with the other principles would be well-suited and appropriate in this particular case, in the presence of SEMP.

4.163 We provisionally consider that a cost-plus approach would effectively meet the criterion for cost recovery as it would allow Apple to recoup the costs of establishing and maintaining the NFC & SE Platform and HCE solution, as well as other investments and innovations in the future. The cost-plus approach is specifically designed to support a regulated firm continuing to invest and innovate by allowing for an appropriate rate of return. In particular, it is appropriately flexible to enable a regulated firm to retain a share of the gains generated by successful investments and innovations, including accounting for any risk associated with them. Accordingly, we provisionally consider that it would not be appropriate to require Apple to provide access to the NFC & SE Platform and the HCE solution free of charge where doing so would prevent

[206] 4 responses to call for evidence dated 30 June 2026 from: [✂].
[207] 2 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to questionnaire dated [✂].
[208] 2 responses to call for evidence dated 30 June 2026 from: [✂].

Apple from recovering the relevant costs of providing that access and earning an appropriate return on relevant investments.

4.164 We also provisionally consider cost-plus would be capable of reflecting differentiation between products or services, if and in so far as differentiation leads to different costs: for example, higher quality products or services would command a higher fee under this approach if quality is associated with higher costs. As a result, cost-plus would enable Apple to reflect differences in the value conferred to customers, including between NFC access via HCE and SE.

4.165 The information we have obtained from Google and [✂] provides some context for how these considerations might apply in practice. As discussed above, they submitted that they provide access to NFC for free or with minimal fees, and while we recognise that this does not give a direct indication of what a cost-plus fee would be, it suggests that effective NFC access can be provided without material access charges.[209]

4.166 We recognise that the details of the practical application of cost-plus would involve a number of questions as to how to demonstrate taking account of the principle. We provisionally consider that it would be appropriate for Apple to design how to approach such issues in practice subject to being required to provide the necessary evidence to justify compliance in its approach on each of these elements. As indicated in the Interpretative Notes, we expect Apple to support its chosen application with objective and verifiable evidence.

4.167 Overall, we provisionally consider that a cost-plus approach can provide a relevant set of considerations for determining a fair and reasonable fee that achieves the CMA's aims of ensuring effective NFC access and maintaining Apple's incentives to invest and innovate. We also consider that this approach would be predictable and understandable to Apple and other stakeholders. We note that the fact that a cost-plus approach uses costs as its primary inputs does not imply that its outputs are incapable of reflecting value considerations.

[209] Google's response to section 69 notice dated [✂]. [✂] response to section 69 notice [✂].

The role of the value-based principle in our proposed approach to setting NFC access fees

Value-based approaches to determining a fair and reasonable fee level

4.168 Value-based approaches have been used across a range of regulatory contexts to help balance the need to constrain the exploitation of market power while maintaining incentives to invest and innovate, particularly where cost-based approaches alone may not always fully capture the contribution of the underlying asset or service.[210] For example, a value-based approach could be appropriate in the context of providing remuneration for the creation of a platform that did not exist previously, allowing new businesses to enter and create value of their own.

4.169 In the context of the proposed NFC Access CR, a value-based approach would allow Apple to capture a share of the surplus created where its offer to developers in relation to NFC access is particularly differentiated, valued, or the result of ongoing innovation. As noted below, a value-based approach is the preferred approach of Apple, given its submissions as to the importance of the value that the creation of, and innovations in, the technologies and services it provides to developers that are integral to the NFC & SE Platform.

4.170 The following section discusses our analysis of how a value-based approach may work and its appropriateness in the circumstances of NFC access.

Apple's submissions on value-based approaches

4.171 Apple submitted that a value-based approach is the only methodology under which to regulate the NFC & SE Platform and fees,[211] and that a cost-based approach would disproportionately restrict Apple from earning remuneration and would diminish its incentives to invest and innovate.[212]

---

[210] For example, in a Standard Essential Patents context, FRAND royalties are typically tied to the economic value of the underlying technology absent the additional bargaining power created by standardisation, with courts relying on comparable licences and hypothetical negotiation frameworks rather than pure cost-based analysis. Similarly, the Digital Markets Act (**DMA**) in the EU also contemplates benchmark-based assessments of whether access terms confer a disproportionate advantage relative to the value of the service provided.

[211] Apple's response to call for evidence dated 30 June 2026, [✂].

[212] Apple's response to call for evidence dated 30 June 2026, [✂].

4.172 Apple told us that the value to developers is delivered through [✂].[213] Apple added that it also delivers value through the services that are offered as part of the NFC & SE Platform, the multi-layered security architecture of both the NFC & SE Platform and Apple devices, and that the vast portfolio of Apple IP covering the technologies and services integral to the NFC & SE Platform, which evidences the significant value the NFC & SE Platform provides to developers.[214]

4.173 Apple submitted that the CMA's concern as set out in the call for evidence that a value-based approach would involve disentangling Apple's contribution from other sources of value is misplaced, and that it is entitled to capture the value of its product as a whole, regardless of whether it is based on prior innovation or not.[215]

4.174 Apple further submitted that the call for evidence suggestions that value is unobservable is also misplaced. Apple argues that the value of the NFC & SE Platform can be ascertained through metrics such as developers' avoided costs of building comparable infrastructure, prices charged by the nearest comparable benchmark services, and issuers' revealed willingness to pay.[216]

4.175 Apple submitted that the value that developers generate is distinct from the value those developers derive from the NFC & SE Platform. All developers however have access to the same technical components and service stack, which makes the current fee structure fair and reasonable for all developers regardless of their use case.[217]

4.176 Apple further submitted that the uncertainty surrounding innovation of future NFC use cases is a core reason why a value-based approach to price is appropriate, and that assessing future operational costs and the allocation of shared costs is equally unpredictable.[218]

4.177 Apple submitted that, in any event, its current NFC & SE Platform fees are fair and reasonable based on value (or costs, see section above). [✂]. Apple noted that it considered a number of other providers to be relevant comparators (in

---

[213] Apple's response to section 69 notice dated [✂].
[214] Apple's response to section 69 notice dated [✂].
[215] Apple's response to call for evidence dated 30 June 2026, [✂].
[216] Apple's response to call for evidence dated 30 June 2026, [✂].
[217] Apple's response to call for evidence dated 30 June 2026, [✂].
[218] Apple's response to call for evidence dated 30 June 2026, [✂].

broad terms) for the purpose of developing a commercial model for the NFC & SE Platform. This was [✂].[219]

Stakeholder submissions on value-based approaches

4.178 Overall, the vast majority of stakeholders that commented on a value-based pricing approach disagreed with it.[220] Most stakeholders pointed to the conceptual and practical challenges raised in the call for evidence dated 30 June 2026.[221] There were some concerns that value-based pricing could mean access fees reflect or embed Apple's market power.[222] And one stakeholder considered the usual justifications for regulatory adoption of value-based pricing ie uncaptured value or risk-taking innovation did not apply.[223]

4.179 A minority of stakeholders supported a value-based approach and they each provided views on its practical application. One stakeholder suggested value pricing would need to exclude Apple's market power, another shared a similar view but in relation to the pricing of SE access specifically.[224] And one stakeholder suggested a carefully calibrated value component could be used alongside a cost-based methodology.[225]

CMA assessment on value-based approaches

4.180 We provisionally consider that a value-based approach is relevant for determining fee levels for NFC access. In assessing the effectiveness of such an approach, we provisionally consider that it is capable of meeting the criterion for cost recovery. As set out in the section below, when the net value conferred to NFC customers exceeds the costs of maintaining the NFC & SE Platform, a value-based approach allows Apple to recoup its costs. In addition, in the context of the proposed NFC Access CR, a value-based approach would allow Apple to capture a higher share of the surplus created in the event that their offer to developers who access NFC via SE or HCE is particularly differentiated, valued, or the result of significant ongoing innovation.

---

[219] Apple's response to section 69 notice dated [✂].
[220] 10 responses to call for evidence dated 30 June 2026 from: [✂].
[221] 6 responses to call for evidence dated 30 June 2026 from: [✂].
[222] 5 responses to call for evidence dated 30 June 2026 from: [✂].
[223] [✂] response to call for evidence dated 30 June 2026, [✂].
[224] 2 responses to call for evidence dated 30 June 2026 from: [✂].
[225] [✂] response to call for evidence dated 30 June 2026, [✂].

4.181 However, we recognise the challenges raised by stakeholders in relation to a value-based approach, in particular the risk that it could result in fees that reflect not just the value of the service but also Apple's market power. There are also important practical considerations in applying such an approach, particularly where there are no, or very few, appropriate benchmarks.

4.182 In order to appropriately determine a fair and reasonable fee level using a value-based approach, we provisionally consider that it would need to:

(a) **Adjust for the effects of Apple's SEMP.** The current access fees for the NFC & SE Platform are likely to reflect Apple's SEMP and we provisionally consider that a fair and reasonable fee should be adjusted for this. This is because in the presence of effective competition some of the potential returns, for example for providing platform access and a means to acquire customers, would likely be competed away.[226] As a result, the proposed NFC Access CR requires an adjustment for SEMP to ensure that the NFC access fee reflects a level of value that is consistent with conditions of effective competition, under which firms would not generally be able to retain returns attributable solely to market power. In view of Apple's market power in relation to the mobile platform and its superior bargaining position, the adjustment required by the proposed NFC Access CR seeks to ensure that value attributable solely to market power is not reflected in the NFC access fee and instead focuses on value attributable to Apple's services and functionality in connection with NFC access.

(b) **Reflect the value attributable to Apple's services and functionality in connection with NFC access, including Apple's own specific investments in NFC technology**. The technology needed to enable NFC transactions using NFC forms part of Apple's hardware and operating system. Although Apple has developed and built this hardware (for its own Apple Wallet), many industry bodies have set standards and developed NFC including ISO, NFC forum and GSMA. Therefore, we provisionally consider that only value attributable to Apple's own specific investments (which may include outlays in relation to licensing the relevant technology) should be included when determining an appropriate fee level using a value-based approach. The mere existence of demand for NFC access, or

[226] For example, we note that the Standard Essential Patenting framework guidance discusses a similar concept where FRAND commitments prevent SEP holders from exploiting their strong bargaining power. See Standard Essential Patent licensing, section 1.2.

the value associated with NFC-enabled services generally, does not of itself demonstrate that such value is attributable to Apple's innovation, investment or risk-taking.

(c) **Reflect the two-way nature of the value exchange between Apple and developers**.[227] We recognise that value may flow in both directions between Apple and developers. When applying a value-based approach, it is also necessary to consider the two-way nature of the value exchange between Apple and NFC developers. On the one hand, developers may create value for Apple's ecosystem by offering end-users innovative products or services based on NFC access and thereby drive sales of Apple's products and services.[228] Apple may therefore derive value from the availability of third-party applications and services that enhance the attractiveness and utility of the mobile platform. On the other hand, developers may derive value from access to Apple's NFC functionality. Therefore, we provisionally consider that this two-way exchange should be reflected in any assessment of value by netting this off the value that Apple provides to developers.

4.183 Taking the evidence in the round, the lack of entry by developers to date suggests that the fees currently charged by Apple are not reflective of the value that developers would expect to receive from access to the NFC & SE Platform. This suggests that Apple's current fees may be discouraging entry and are not commensurate with the value that developers attribute to access. Accordingly, contrary to Apple's submission that its current NFC & SE Platform fees are fair and reasonable based on value (or costs, see section above), we provisionally consider that a fair and reasonable fee based on value would be low and substantially lower than Apple's current fees.

4.184 We acknowledge the potential difficulties in identifying an appropriate value for the specific products and services Apple provides in relation to NFC access as highlighted by third parties, and we consider that an important consideration in applying a value-based approach in practice is likely to be the availability of appropriate benchmarks. In using any benchmarks, Apple should justify why

[227] We note that a fee which is appropriately adjusted for the effects of market power would likely to reflect this two-way value exchange.

[228] Consistent with this, Google and [✂] submissions support the view that developer access to NFC functionality can enhance platform attractiveness, creating value for the platform owner as well as for developers. See paragraph 4.140.

these are reasonable comparators and how they meet the requirements set out in paragraph 4.182 above.

4.185 While there may be some practical challenges associated with it, we provisionally consider that, if applied appropriately, a value-based approach would provide a relevant methodology for determining a fee that achieves the CMA's aims of ensuring effective NFC access and maintaining Apple's incentives to invest and innovate.

The relationship between the cost- and value-based approaches in determining a fair and reasonable fee level

4.186 As described above, we provisionally consider that both a cost- and a value-based approaches, where applied appropriately, would provide a set of relevant considerations and points of reference for determining an appropriate fee level that achieves the CMA's aims of ensuring effective NFC access while allowing for cost recovery and maintaining Apple's incentives to invest and innovate. Accordingly, we have included both of these as requirements within our proposed NFC Access CR. However, we also recognise that each approach has some practical challenges which would need to be addressed in its application.

4.187 Based on our understanding of the anticipated costs and value, we would expect that under those proposed principles the fees charged by Apple to be low and substantially lower than Apple's current fees. This should reflect that: (i) Apple did not invent the technologies underlying the provision of NFC access which is likely to be reflected in the costs Apple incurred or would incur in developing its solutions; and (ii) the primary service Apple provides to developers is access to these existing technologies which is unlikely to be differentiated from the relevant service of other mobile device manufacturers.[229]

4.188 Under our proposed NFC Access CR, Apple is required to provide access to the NFC through both HCE and SE. As such, the expectation is that the cost-based approach and value-based approach would apply to both routes of access. This does not mean the price of HCE must equal the price of SE; rather, it means the same pricing considerations are applied consistently for both methods of

[229] As discussed in paragraph 4.163, we provisionally consider that it would not be appropriate for the CMA to require Apple to provide access to the NFC & SE Platform and the HCE solution for free at this stage. However, it is informative that these other mobile device manufacturers often charge no or only a minimal fee for NFC access on their devices (see paragraph 1.17).

access, including in relation to identification of the direct and indirect costs, and the appropriate rate of return, as well as the adjustments for SEMP, identification of specific investments, and the determination of net value, respectively.

No undue discrimination principle

4.189 We have provisionally included a provision on fair, reasonable and non-discriminatory terms paragraph 9 of the proposed NFC Access CR which applies to all of Apple's NFC Terms of Access.

4.190 With respect to pricing, we have included this to ensure that Apple does not unduly discriminate with respect to the fee levels it sets for NFC access. In the context of the pricing considerations discussed in this section, we refer to the application of this provision as the 'no undue discrimination principle'.

4.191 This would require Apple, when setting each and every NFC access fee, to ensure that these fees do not:

(a) Result in an imbalance of rights and obligations to the detriment of the developer;

(b) Confer an advantage on Apple which is disproportionate to the NFC access granted;

(c) Give rise to any unjustified difference in treatment that disadvantages a developer or category of developers relative to Apple or other developers or categories of developers, except where differences are objectively justified.

4.192 The no undue discrimination principle is aimed at maintaining an appropriate balance of rights and obligations between Apple and developers and ensuring that there is no unjustified differential treatment which undermines that balance. We provisionally consider that it is important for Apple to comply with the no undue discrimination principle in the context of pricing terms (as is the case in the context of non-pricing terms).[230]

[230] In relation to non-pricing terms, we discuss those at paragraph 4.112-4.114.

4.193 We have considered this principle specifically from two different angles relating to Apple's relationship with developers, which we address in turn below:

(a) Firstly, no undue discrimination by Apple against developers providing the same or similar downstream service; and

(b) Secondly, no undue discrimination as between developers or categories of developers.

No undue discrimination against developers providing the same or similar downstream service

4.194 In relation to the first aspect, this principle is intended to ensure that the fee level does not create a competitive disadvantage for third parties who, using NFC access, provide the same or similar services (downstream) as Apple. We believe that this may provide an additional safeguard and support incentives for developers to enter and compete with Apple by ensuring access fees do not distort competition for downstream services. For example, we consider that under this principle, charging NFC access fees or offering NFC access fee structures that unfairly favour Apple's products or services compared to similar products or services provided by a developer, without objective justification, could constitute a form of undue discrimination against developers providing the same or similar service downstream on the basis of NFC access fees.

4.195 Multiple stakeholders explained that Apple's current fees and business practices more broadly constituted barriers to entry and prevented rival third-party digital wallet providers from competing effectively with Apple's offering.[231] Notably, multiple stakeholders were concerned that Apple could use its NFC access fees to squeeze rival's margins or make investment in third-party wallets unviable.[232]

4.196 We believe that Apple could demonstrate compliance with this requirement in different ways, for example:

(a) It could demonstrate that there are positive returns associated with access: here its own downstream revenues could be used as a benchmark and compared against the fees third parties would pay for NFC access.

[231] 3 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to questionnaire dated [✂].
[232] 5 responses to call for evidence dated 30 June 2026 from: [✂].

Payment use cases may lend themselves to undertaking this kind of analysis. As we have outlined above (see paragraph 4.144) such an analysis shows that at Apple's current fee levels, entry would be commercially viable only under specific and limited circumstances.

(b) Apple could also demonstrate that a sufficient number of developers would be interested in accessing NFC and providing new and innovative consumer-facing, solutions to consumers at the fees set.

4.197 By ensuring fees are compatible with commercially viable entry, this principle reflects the aim of the proposed NFC Access CR, which is to ensure effective access to NFC on fair, reasonable, transparent and non-discriminatory terms to enable developers to improve their existing offerings, or develop new innovative uses of NFC technology.

No undue discrimination as between developers and categories of developers

4.198 In relation to the second aspect, the non-discrimination principle is intended to ensure that Apple does not unduly discriminate between developers. This seeks to protect against potential distortions of competition between developers. For example, we consider that under this principle, charging NFC access fees or offering NFC access fee structures that are available to certain developers or categories of developers, but not to other similarly situated developers or categories of developers, without objective justification, could constitute a form of undue discrimination between developers or between categories of developers on the basis of NFC access fees.

4.199 [✂].[233] [✂], we provisionally consider that Apple may have the ability and the incentive to engage with some developers in individual negotiations and give selective discounts [✂]. In one scenario, such selective discounts may spur innovation and competition between developers and, if passed on at least in part, may directly benefit consumers. In another scenario, selective discounts may distort competition between developers who are able to negotiate with Apple and those who are not, which may ultimately harm consumers (eg if those developers are unable to compete effectively or exit).

[233] Apple's response to section 69 notice dated [✂]. Note of meeting with Apple on [✂].

4.200 Having considered the potential benefits of equal treatment of developers against the risk of unintended consequences of not permitting discounts for some developers, and in light of the *ex-ante* nature of our intervention, we provisionally conclude that we cannot exclude the possibility that selective discounting leads to greater risks of competitive distortion. We provisionally consider that the non-discrimination principle would act as a proportionate safeguard in order to achieve the CMA's aim under the proposed NFC Access CR.

Flexibility principle

4.201 This principle is concerned with other design features that can ensure the effectiveness of our intervention. In particular, the flexibility principle considers how, for any given fee level, demand for NFC access can be increased by providing developers with greater choice over the fee structures Apple offers. As this principle expands the range of options that developers can choose from, we consider this principle to be consistent with the non-discrimination principle set out above.

4.202 In practice, any fee could be linked to a 'charging unit' which specifies the quantity or measure against which the fee is charged. For example, each individual transaction or 'tap' could represent a charging unit, which in turn could be a fixed amount or, where a monetary transaction is involved, an *ad-valorem* fee (ie percentage of the value of the transaction). Alternatively, a credential (eg the details of a single payment card, digital key, or ID) could represent a charging unit. There are also other ways in which developers could be charged for NFC access, including through fees that do not vary based on the number of transactions or credentials (eg lump-sum fees or capped fees). Apple's current NFC & SE Platform fee structure combines usage-based fees and per-credential fees.[234]

4.203 The flexibility principle requires Apple to offer developers a choice of different fee structures ('tariffs'), taking into account the differences between categories of use case, including payment and non-payment use cases, and requires Apple to ensure that the resulting NFC access fees do not prevent or unduly restrict the effective use of NFC access for such categories of use case. Fee structure options would be based on factors such as different usage patterns

[234] Note of meeting with Apple on [✂].

(eg low- versus high-frequency use) or whether a monetary transaction is involved, but not on developer characteristics. Such a choice is likely to support incentives to use NFC as developers can select the fee option which best suits them.

4.204 We believe having such a choice may be beneficial given the variety of business models with which developers could make use of NFC access. We believe that a one-size-fits-all fee structure would run counter to the aim of our proposed NFC Access CR and that there is a need for the fee structure to be flexible. As we have outlined above, NFC is a universal technology that can be used in a variety of applications which do not necessarily have to be linked to a monetary transaction or where the use of NFC directly generates revenue for developers, and we have seen evidence that a wide range of developers could take up NFC. This includes business ideas which are new and untested,[235] and we believe that Apple's current fee structure would not be viable for all of these developers.[236] We therefore consider that, when assessing whether the NFC access fee structures it offers are appropriate, Apple should consider whether an activity carried out with the use of NFC access represents a new category of use case or a developing application of NFC access.

4.205 Based on the above, we provisionally consider that including the flexibility principle within our proposed NFC Access CR is important in ensuring its effectiveness in achieving the aim of the intervention.

Administrative simplicity principle

4.206 This principle is intended to ensure that developers obtain NFC access that is effective in practice. It requires Apple to ensure that its NFC access fee structure and related terms are straightforward to understand and implement, and do not introduce unnecessary technical or administrative burdens for developers. This would ensure developers have certainty about the fees they are likely to pay, positively impacting incentives to use NFC.

---

[235] Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. 2 responses to call for evidence dated 30 June 2026 from: [✂].

[236] For example, a flat fee may be particularly suited to NFC use cases without underlying monetary transactions, as well as untested business models and innovations because it may help entrants reduce the risk associated with launching new activities, at least to some extent.

4.207 This is particularly important because developing and deploying NFC-enabled solutions can already be inherently complex and resource-intensive. As explained above at paragraph 4.22, stakeholders told us that developing SE-based solutions may require an additional code which is specific to the SE, time-consuming applet certification, and additional testing, provisioning and lifecycle management. Against that backdrop, we therefore consider it important that Apple should not add further avoidable complexity through the design of the NFC access fee structure, which should be straightforward to understand and implement.

4.208 We note that, to date we have seen limited evidence that Apple's existing fee structure for the NFC & SE Platform is unduly complex. We nevertheless consider it important to ensure that future NFC access fee structures remain straightforward and easy for developers to understand and navigate, so that unnecessary complexity does not become a barrier to uptake.

4.209 Against this background, the proposed NFC Access CR includes provisions designed to ensure that NFC access can be obtained and used without undue friction or unnecessary complexity. In particular, paragraph 11 of the proposed NFC Access CR requires Apple to establish and maintain appropriate safeguards to ensure that the NFC access fee structure is transparent and clearly specified. It also requires that the NFC access fee structure, together with any associated terms and conditions, does not impose technical, administrative or other constraints that could discourage or undermine developers' willingness or ability to take up NFC access. These requirements are intended to support the overall aim of the proposed NFC Access CR, particularly by ensuring effective access to NFC on fair, reasonable, transparent and non-discriminatory terms, thereby enabling developers to enhance existing offerings and develop new and innovative uses of NFC technology.

CMA overall assessment on the setting of NFC access fees

4.210 We provisionally conclude that Apple must apply all of the principles, appropriately and as set out in the sections above, namely:

(a) Arriving at a fair and reasonable fee for NFC access established by appropriate evidence of applying both a cost-plus and a value-based approach;

(b) The non-discrimination principle;

(c) The flexibility principle; and

(d) The administrative simplicity principle.

4.211 We expect Apple to provide sufficient evidence of the appropriate application of each of these principles to meet the compliance requirements of the proposed NFC Access CR. Where NFC access is provided through more than one technical solution, including SE and HCE, we expect Apple to be able to demonstrate to the CMA's satisfaction that the NFC access fees applicable to each such solution independently comply with all the principles set out above, and that any differences between such NFC access fees are justified by reference to those principles.

Other non-pricing terms and conditions of access

4.212 Developers also require confidence that the framework governing access is fair, reasonable, transparent and non-discriminatory. Without these regulatory safeguards, developers do not have the conditions of certainty and predictability which are crucial in fostering an environment which encourages developers to invest in, launch and maintain NFC-enabled products and services. In particular, we have sought to ensure that the proposed NFC Access CR provides for:

(a) Sufficient transparency for developers;

(b) A clear and predictable process for obtaining access;

(c) Safeguards around the use of commercially sensitive information; and

(d) Effective mechanisms for raising and resolving complaints.

Sufficient transparency for developers

4.213 These requirements seek to ensure that developers have sufficient transparency over the basis on which NFC access is available, both before and after they seek access. Upfront transparency is important to enable developers to assess whether seeking NFC access is commercially and operationally viable before committing resources to developing products. Developers also need ongoing transparency once access is granted, including around any changes to the terms, conditions or processes that apply, so that they can continue to assess the viability of their products and services and can adapt accordingly.

Apple's submissions on transparency

4.214 Under Apple's current approach developers must first submit a request to access the NFC & SE Platform and enter a non-disclosure agreement (NDA) before they can access the applicable access terms.[237] Apple submitted that confidentiality arrangements are necessary [✂].[238] Apple has also submitted that developers provide confidential information during the entitlement process and that the arrangements therefore protect [✂] developers' confidential information.[239]

Stakeholder submissions on transparency

4.215 Multiple stakeholders have raised concerns that the terms and conditions governing NFC access are not sufficiently transparent.[240] Two stakeholders have also expressed concerns that key commercial and procedural information is only made available after developers have entered confidentiality arrangements with Apple.[241]

4.216 Multiple stakeholders emphasised the importance of sufficient visibility of the terms at an early stage.[242] Stakeholders have also raised concerns about the predictability of the applicable terms, including uncertainty about when those terms may be amended.[243] Some stakeholders submitted that this makes it more difficult to assess the commercial and operational implications of obtaining and maintaining access.[244]

---

[237] The first step in requesting access to the NFC & SE Platform is to enter into a binding agreement and Confidentiality Agreement with Apple. Developer Support, 'NFC & SE Platform for secure contactless transactions', accessed by the CMA on 14 October 2026.
[238] Note of meeting with Apple on [✂].
[239] Note of meeting with Apple on [✂].
[240] 2 responses to questionnaires dated [✂] from: [✂]. Anonymous response to the Proposed SMS Decision, [✂]. [✂] response to section 69 notice dated [✂]. [✂] submission to the CMA dated [✂]. Note of meeting with [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].
[241] 2 responses to questionnaires dated [✂] from: [✂].
[242] [✂] response to questionnaire dated [✂]. 3 responses to call for evidence dated 30 June 2026 from: [✂].
[243] Note of meeting with [✂]. [✂] response to section 69 notice dated [✂]. [✂] response to questionnaire dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].
[244] [✂] response to section 69 notice dated [✂]. [✂] response to questionnaire dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].

4.217 These concerns are particularly relevant because engaging with the process of requesting access may require developers to incur legal, compliance, technical, engineering and product development costs before access is granted.[245]

CMA assessment on transparency

4.218 Transparency requirements would allow developers to better understand the commercial viability of entry, while also providing them with confidence that they are being treated fairly, that they are not being disadvantaged or unduly discriminated against in respect of the contractual terms they receive, and as such that the conditions exist for them to enter and compete effectively.

4.219 We recognise that Apple has a legitimate interest in [✂] and that [✂] developers may wish to protect commercially sensitive information submitted in support of an application. However, we do not consider that those interests require all access terms to be withheld until developers have entered confidentiality arrangements. Apple should remain able to [✂], while ensuring that developers have access to sufficient commercial and procedural information, including information on fees, all non-pricing terms and conditions, the NFC Access Authorisation Process, and the NFC Complaints Handling Process.

4.220 Relatedly, and as explained at paragraph 4.73, Apple retains significant discretion in the ongoing operation of the platform and [✂].[246] Apple has confirmed that in practice it gives developers [✂] days' notice of material changes to the terms and conditions.[247] However, this commitment is not specifically reflected in the contractual arrangements, [✂].[248] [✂], which could decrease certainty and predictability from a developer's perspective.

4.221 Developers seeking NFC access, and developers who already have access, should receive sufficient advance notice of changes to those arrangements. This would provide developers with greater certainty and predictability regarding changes that may affect their ability to access or use NFC functionality, rather than requiring them to rely on Apple's good faith practices. It would allow prospective developers to assess whether seeking access remains viable and

[245] 2 responses to questionnaires dated [✂] from: [✂]. Note of meeting with [✂].
[246] Apple's NFC & SE Program Terms and Conditions, [✂].
[247] Apple's submission to the CMA dated [✂].
[248] Apple's NFC & SE Program Terms and Conditions, [✂].

enable existing developers to understand the implications for current and planned NFC-enabled products and services and adapt accordingly.

4.222 We provisionally consider that transparency regarding the terms on which NFC access is available is necessary to support effective access in practice. We have therefore included at paragraphs 13 and 14 of the proposed NFC Access CR transparency requirements requiring Apple to publish its NFC Terms of Access on its website, keep them updated, and an obligation to provide no less than 30 days advance notice to developers of prospective amendments, except in respect of fee reductions which Apple may implement without providing advance notice. This exception for fee reductions ensures that the transparency requirements do not inadvertently require Apple to delay the implementation of fee reductions.

A clear and predictable process for obtaining access

4.223 These requirements seek to ensure that developers can obtain effective NFC access through an authorisation process which is fair, reasonable, transparent and non-discriminatory. Access may not be effective if developers cannot understand the steps required to obtain access or the likely timeframe for receiving a decision. As such, the process must be clear, predictable and capable of supporting timely entry.

Apple's submissions on process for obtaining access

4.224 Apple's current terms for the NFC & SE Platform set out a five-step process for a developer to request NFC access.[249] This includes entering into relevant contractual agreements, requesting entitlements and meeting technical, security and regulatory requirements.[250]

4.225 Apple told us that it aims to process applications promptly but that the time required may vary between applications.[251] Apple explained that the time spent by developers progressing through the development pipeline depends in part on the developer's response time and progress through the product

[249] Apple Developer Page, NFC & SE Platform for secure contactless transactions, accessed by the CMA on 14 October 2026.
[250] Apple Developer Page, NFC & SE Platform for secure contactless transactions, accessed by the CMA on 14 October 2026.
[251] Note of meeting with Apple on [✂]. Apple's submission to the CMA dated [✂]. Apple's response to section 69 notice dated [✂].

development.[252] Apple also confirmed that it has internal target timelines it operates on to approve requests, comprising of [✂].[253] [✂].[254]

Stakeholder submissions on process for obtaining access

4.226 Feedback from multiple stakeholders highlighted that the current access process can be lengthy and complex, with inadequate guidance available to help developers navigate the various stages involved.[255] Two stakeholders emphasised the importance of making the onboarding process as straightforward as possible.[256]

CMA assessment on process for obtaining access

4.227 We recognise that Apple needs to assess whether a developer's proposed use of NFC access is compliant with applicable laws and industry standards, including those relating to privacy and security requirements, before granting access. We also recognise that the complexity and duration of the process may vary depending on the proposed use case, the technology on which access is based and the issues raised by a particular application. However, the need for flexibility in assessing individual applications does not remove the need for a fair, reasonable, transparent and non-discriminatory process that is clear, predictable and capable of supporting timely entry.

4.228 Developers should be able to understand the stages of the authorisation process, the information they are required to provide and the basis on which requests will be assessed. They should also receive sufficient information about the progress of their applications and when a decision is likely to be made. Where access is refused, developers should receive sufficient information to understand the reasons for that decision and have an opportunity to engage with Apple regarding this.

4.229 We have therefore included at paragraphs 15-19 of the proposed NFC Access CR requirements for Apple to establish a fair, reasonable and non-discriminatory authorisation process that is clear, transparent and readily

---

[252] Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].
[253] Apple's submission to the CMA dated [✂].
[254] Note of meeting with Apple on [✂]. Apple's submission to the CMA dated [✂].
[255] 3 responses to questionnaires dated [✂] from: [✂]. Note of meeting with [✂]. 2 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to section 69 notice dated [✂].
[256] 2 responses to call for evidence dated 30 June 2026 from: [✂].

accessible. These requirements also include providing guidance and status updates, publishing timelines for each stage of the process and progressing requests as soon as reasonably practicable. Where access is refused, reasons should also be provided in accordance with those timelines at a minimum.

4.230 It is important that developers who have pre-existing contractual arrangements with Apple relating to access to NFC technology also have the opportunity to gain NFC access on Apple's revised terms of access, should the CMA decide to impose this CR. As such, we have included a requirement to this effect in paragraph 20 of the proposed NFC Access CR.

4.231 We provisionally consider that a clear and predictable authorisation process is necessary for NFC access to be effective in practice. Uncertainty about the process for obtaining access, or the time required to do so, may impede efficient planning and investment by developers and discourage entry. Greater clarity and predictability would support investment and market entry while preserving Apple's ability to assess whether developers satisfy appropriate requirements.

Safeguards around the use of commercially sensitive information

4.232 When providing NFC access, Apple may receive commercially sensitive information (eg during the application process, or during the process of running the platform).

4.233 If Apple used this information in ways that advantaged its own services that were in competition with the developer, or if developers believed that Apple would do so, it could reduce incentives to enter and result in any intervention being ineffective.

Apple's submissions on use of data

4.234 Apple told us that it has processes in place to minimise the risk of commercially sensitive developer information being used for purposes other than ensuring the running of the NFC & SE Platform.[257] However, Apple's terms contain

[257] Apple's submission to the CMA dated [✂].

provisions relating to Apple's use of developers' confidential information [✂].[258] Apple explained that these provisions are intended to [✂].[259]

Stakeholder submissions on use of data

4.235 One stakeholder said that measures should be taken to prevent Apple from using third-party data to identify and incentivise customers of competing wallets to use their wallet.[260]

CMA assessment on use of data

4.236 We have included at paragraphs 21-22 of the proposed NFC Access CR requirements that limit the purposes for which Apple may use commercially sensitive information that it has access to and require Apple to implement organisational and technical ringfencing measures to restrict access to this information. Acknowledging that Apple already has processes in place to safeguard commercially sensitive developer information, and that this has not been a key feature of stakeholder concern, we are proposing only high-level requirements.

4.237 We provisionally consider that these requirements support the effectiveness of the proposed NFC Access CR by ensuring that: (i) Apple does not actually gain a competitive advantage through access to this information; and (ii) developers have sufficient certainty around the security of their commercially sensitive information, to give them the confidence to invest in, launch and maintain NFC-enabled products and services.

An effective mechanism for raising and resolving complaints

4.238 Access may not be effective in practice if there is no accessible route through which developers are able to obtain timely resolution of issues arising before or after NFC access is granted.

[258] Apple's Confidentiality Agreement, [✂].
[259] Note of meeting with Apple on [✂].
[260] [✂] response to questionnaire dated [✂].

Apple's submissions on complaints and dispute resolution

4.239 Apple confirmed that as of April 2026 it has received no complaints from developers.[261] Apple has explained that developers can raise concerns directly with Apple (including through the developer portal, Feedback Assistant, Report a Concern, and Worldwide Developer Relations). Developers also have the option to refer those disputes to arbitration under the NFC & SE Program Terms and Conditions.[262] Apple's existing terms and conditions contain formal dispute resolution provisions [✂].[263]

Stakeholder submissions on complaints and dispute resolution

4.240 Stakeholders have not raised concerns about Apple's complaints and dispute resolution processes relating to NFC access. We have taken this into account in our design of the proposed requirements.

CMA assessment on complaints and dispute resolution

4.241 We have included, at paragraphs 27-30 of the proposed NFC Access CR, requirements for Apple to have in place a fair, reasonable, transparent and non-discriminatory process for handling complaints internally in relation to Apple's provision of NFC access. Acknowledging that Apple already provides a route for developers to raise complaints internally, and that it has not been a feature of stakeholder concern, the proposed NFC Access CR is not prescriptive on this process, stipulating several high-level requirements. These include that the process is clear, transparent and accessible, and that it facilitates timely resolution of complaints. We are proposing requirements for independent, senior review, and a record-keeping requirement with a view to incentivising Apple to assess disputes fairly and reasonably.[264]

4.242 We provisionally conclude that these requirements, which seek to ensure that concerns about the provision of interoperable NFC access can be addressed in practice, are an important component in ensuring the effectiveness of the proposed NFC Access CR. The complaints handling process would support all

---

[261] Note of meeting with Apple on [✂].
[262] Note of meeting with Apple on [✂].
[263] Apple's NFC & SE Program Terms and Conditions, [✂]. Apple's response to additional questions dated [✂].
[264] We have proposed a time period for record keeping which is six years from the date a complaint is received, or until the obligation ceases to apply, whichever is the earlier. We provisionally consider this period to be appropriate to support our compliance monitoring.

other requirements in the proposed NFC Access CR, including, for example, to ensure that the interoperable access is granted and maintained in line with the proposed NFC Access CR and that the terms are fair, reasonable, transparent and non-discriminatory. Indeed, the absence of a mechanism through which Apple and developers have the opportunity to reach a swift resolution of complaints could risk rendering the proposed NFC Access CR ineffective, with developers left in situations of uncertainty when concerns arise. Providing a clear route for complaints to be considered and addressed would also increase confidence that developers can rely on the access framework when making investment and entry decisions. This would help ensure that the benefits of interoperable NFC access are realised in practice.

4.243 As described above, we note the existence of Apple's current process for resolving complaints and disputes with its NFC & SE Platform. In complying with the proposed NFC Access CR (if imposed), it would be important for Apple to ensure that there would be an appropriate, practical and timely means of addressing concerns relating to interoperable NFC access, including in relation to the following:

(a) Not imposing an additional fee or expense on developers wishing to take advantage of the complaint handling process in relation to the NFC access with costs of establishing and maintaining that process being recovered through the NFC access fee determined in accordance with the proposed pricing principles.

(b) Ensuring that the process is appropriate (in particular its procedures on the confidential and binding nature) in light of the legal framework under the Act, bearing in mind the following: (i) the CMA is required to keep CRs under review,[265] and must have the ability to open a conduct investigation where it has reasonable grounds to suspect a breach of a CR,[266] (ii) parties are able to enforce rights arising under a CR directly in court.[267]

[265] Section 25 of the Act.
[266] Section 26 of the Act.
[267] Section 101 of the Act.

Overall CMA assessment of other non-pricing terms and conditions of access

4.244 Taken together, the requirements of the proposed NFC Access CR as set out in this chapter are intended to ensure that developers can access and use NFC on iOS devices on fair, reasonable, transparent and non-discriminatory terms. These requirements would reduce information asymmetries and procedural uncertainty, protect commercially sensitive developer information and give developers an effective route to challenge decisions and raise concerns.

4.245 Each of these elements is necessary to ensure that the technical and pricing requirements considered elsewhere in this chapter translate into effective interoperable access in practice. Without them, developers may remain unable to seek access, invest in NFC-enabled products or rely on access on an ongoing basis.

4.246 We therefore provisionally consider that these requirements are necessary for the proposed NFC Access CR, supporting competition and innovation, increasing consumer choice and contributing to economic growth in the UK, while preserving Apple's ability to protect legitimate security, technical and confidentiality interests.

Enabling uptake of NFC apps through the default status API

4.247 Apple's NFC & SE Platform does not currently provide NFC developers with the ability to check whether their app is set as the default contactless app on devices on which it is installed.[268] As a result, developers lack critical insight into consumer usage of their apps and are not able to send effective and timely prompts to users to set their NFC apps as the default 'contactless' app. The default contactless app on iOS gains access to two device shortcuts enabling seamless transaction experiences for users: Double-click and field-detect.[269]

4.248 Apple currently provides an API that allows browser developers to check whether their app is set as the default browser on iOS devices on which it is installed. Apple stated that to mitigate risks of developers over-prompting users,

[268] Apple Developer Page, 'Developer Documentation is:Default(:)', accessed by the CMA on 14 October 2026.
[269] Note of meeting with Apple on [✂].

it has implemented a limit on the number of times that developers can call on the API, which is currently set at four times per year.[270]

Apple's submissions on the default status API

4.249 Apple said that developers are already able to prompt users to set third-party apps as the default contactless app on iOS devices on which they are installed, at the time and frequency of the developer's choosing (and deep-link their prompts to direct users to the iOS device settings).[271] Apple raised concerns that allowing developers to check default status information is 'unnecessarily intrusive' and could encourage developers to excessively prompt users.[272]

Stakeholder submissions on the default status API

4.250 Multiple stakeholders told us that knowing whether their app is set as the default 'contactless app' is an important factor in enabling them to prompt users in an effective and timely manner.[273] For example, this includes providing users with precise onboarding information, instructions on how to trigger an in-store payment and for fraud alerts.[274] Two stakeholders told us that not having access to default status information may also prevent developers from offering different incentives to users depending on whether or not they have their app set as the default.[275]

4.251 Multiple stakeholders told us that a rate limit of four times a year would be ineffective as it would not allow them to obtain default status information on a regular basis, which is an important factor in providing users with effective and targeted prompts.[276] Multiple stakeholders said that no rate limit would be the most effective approach and would reduce the risks of over-prompting users, as they would exercise restraint to avoid irritating users.[277] Multiple stakeholders

---

[270] Apple's response to section 69 notice dated [✂].
[271] Apple's response to section 69 notice dated [✂]. Apple's response to section 69 notice dated [✂].
[272] Apple's response to section 69 notice dated [✂].
[273] 2 responses to questionnaires dated [✂] from: [✂]. [✂] submission to the CMA dated [✂]. [✂] response to section 69 notice dated [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Anonymous response to Proposed SMS Decision, [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].
[274] [✂] submission to the CMA dated [✂]. [✂] response to questionnaire dated [✂]. [✂] response to call for evidence dated 30 June 2026, [✂].
[275] [✂] submission to the CMA dated [✂]. [✂] response to questionnaire, dated [✂].
[276] 2 responses to section 69 notices dated [✂] from: [✂]. Note of meeting with [✂]. [✂] submission to the CMA dated [✂]. 3 responses to questionnaires dated [✂] from: [✂].
[277] [✂] response to section 69 notice dated [✂]. [✂] submission to the CMA dated [✂]. 3 responses to questionnaires dated [✂] from: [✂].

told us that without access to default status information, they would risk providing users with confusing or unnecessary prompts.[278]

CMA assessment on the default status API

4.252 We consider that developers' ability to effectively engage with users is important for enabling competition in NFC-based services, as users may not be aware that activating the full range of functionality for NFC transactions requires an app to be set as the default. In addition, access to the default status API may reduce the need for developers to prompt users who have already configured their preferred default contactless app. This could help reduce over-prompting by allowing prompts to be targeted, leading to an overall better user experience.

4.253 Therefore, for this intervention to be effective, we provisionally consider that developers should be able to easily check whether users have set their app as the default contactless app on iOS devices, enabling them to send effective and timely prompts to users by accessing the default status API. In addition, Apple may not impose a limit on the number of times that developers can call on the API.

4.254 We further consider the risks of over-prompting as a result of developer access to the default status API in Chapter 5.

Summary of key design considerations

4.255 In combination, we consider these requirements would allow the proposed NFC Access CR to effectively meet our aim (as set out in paragraph 2.2) by opening access to NFC functionality on fair, reasonable, transparent and non-discriminatory terms, supporting competition and innovation, increasing consumer choice and contributing to economic growth in the UK.

B. Proposed implementation, monitoring and compliance

4.256 Conduct requirements come into force at a time determined by the CMA.[279] Once in force, Apple would be required to provide the CMA with compliance reports in relation to the CR.[280] In the context of NFC access, the CMA would

[278] 3 responses to questionnaires dated [✂] from: [✂]. [✂] submission to the CMA dated [✂].
[279] Section 19(11)(a) of the Act.
[280] Section 84(1) of the Act.

be required to keep under review the extent to which Apple is complying with the NFC Access CR.[281] This section sets out our proposed approach to ensure that any final NFC Access CR is implemented effectively, and our proposed approach to monitoring and compliance.

4.257 We propose that the CR would come into force three months following our decision on any final NFC Access CR and its imposition. During this period Apple should, within one month of imposition, submit an implementation plan and engage constructively with the CMA and third parties to develop and implement changes to comply with the requirements.

4.258 We recognise that Apple may need to implement changes to the relevant technical infrastructure on iOS to facilitate NFC access on the terms set out within the proposed NFC Access CR. Therefore, paragraph 4(a) of our proposed NFC Access CR requires that Apple must ensure that the first version of iOS that is released following the CMA's final decision – should we decide to impose this CR – comprises the necessary technical infrastructure to facilitate NFC access on the terms set out within the proposed NFC Access CR.

4.259 We would use a variety of tools to ensure compliance with the CRs, including compliance reports from Apple every three months. As part of these reports, the CMA proposes to monitor both compliance with any final NFC Access CR as well as its effectiveness in achieving our aims.

4.260 To assess compliance and effectiveness, the CMA would require Apple to provide key information and data during the implementation phase. This includes a review of any changes Apple makes to its terms and conditions, an explanation of the approach to applying the pricing principles, an account of steps taken to publicise to developers Apple's NFC offering, and an overview of the measures in place to protect the information of developers applying for NFC access.

4.261 In addition, we propose to require Apple to supply the following metrics in each compliance report, in relation to NFC access for UK-based users since the previous report:

(a) The number of developers applying for NFC access including whether they are applying to use the HCE solution or the SE solution, the proposed use

[281] Section 25(b) of the Act.

for NFC access in each application, and the number of rejections (including reasons for rejection).

(b) Any withdrawals, suspensions, restrictions and other interruptions of NFC access (including reasons for withdrawal, suspension, restriction or other interruption). In the case of suspensions, restrictions and other interruptions, the outcome of this and whether it has been remedied, including whether NFC access has been reinstated, and how long this took.

(c) The average time taken to process NFC access applications, and to grant access.

(d) Any changes to Apple's terms and conditions for NFC access, and any changes to how Apple publicises NFC access to developers.

(e) Methodology explaining how Apple's ongoing fees are in line with the pricing principles, including, in particular, any changes to the fee structure since the last report.

(f) Any complaints regarding the functioning and quality of NFC access, and any complaints regarding Apple's terms and conditions for access.

(g) All instances where the NFC complaints handling process has been engaged, including the details and outcome of each dispute.

(h) Any changes to Apple's measures to protect the confidential information of developers applying for NFC access, and any instances where such information has been inappropriately shared.

4.262 Beyond this reporting, we would maintain regular communication with stakeholders on this CR.

Consistency with existing and expected laws and regulations

4.263 We have considered the proposed NFC Access CR in the context of relevant international and domestic regulations,[282] in particular:

[282] The proposed NFC Access CR concerns access to the platform and does not determine the regulatory status of any participant or modify the legal and regulatory requirements that may apply to them. Existing UK regulatory

(a) As mentioned in Chapters 1 and 2, in the EEA, Apple has committed to give digital wallet developers access to NFC functionality via HCE free of charge, primarily for payment use cases.[283]

(b) On 5 September 2023, the Commission adopted a decision designating Apple as a gatekeeper under the DMA for a number of its services, including its operating system iOS.[284] As a result, Apple must comply with the obligations set out in the DMA. Under Article 6(7) DMA, Apple must, free of charge, provide third parties with effective interoperability with, and access for the purposes of interoperability to, hardware and software features accessed or controlled via its operating system iOS.

4.264 In designing the proposed NFC Access CR, we have considered the implications of the position in the EEA. As described above (for example, see paragraphs 4.23 to 4.25), we have taken into account feedback from stakeholders around the impact of there already being an HCE solution available in the EEA, including views that this will increase speed of entry in the UK. However, we have not sought to replicate the approach taken in the EEA, diverging from that approach in certain key areas, including in relation to pricing.

4.265 As such, whilst considering the impact of Apple's obligations in the EEA, we have designed the proposed NFC Access CR in line with our distinct statutory framework, ensuring that the proposed NFC Access CR is proportionate (as set out below), whilst also delivering outcomes that are effective in the UK.

obligations continue to apply to all participants according to the activities they perform and the relationships that exist within the relevant model.

[283] EC, 'Commission accepts commitments by Apple opening access to 'tap and go' technology on iPhones', 11 July 2024, accessed by the CMA on 14 October 2026.

[284] EC, 'Summary of Commission Decision of 5 September 2023 designating Apple as a gatekeeper pursuant to Article 3 of Regulation (EU) 2022/1925 of the European Parliament and of the Council on contestable and fair markets in the digital sector, C/2023/548', 27 October 2023, accessed by the CMA on 14 October 2026.

5. PROVISIONAL PROPORTIONALITY ASSESSMENT OF OUR PROPOSED NFC ACCESS CR

5.1 We can impose a CR if we consider that it would be proportionate to do so for the purposes of one or more of the statutory objectives, having regard to what the CR is intended to achieve (as set out in Chapter 2 above).[285] As explained in our Guidance, our role when designing CRs is to address the risks associated with the existence of the SEMP and position of strategic significance held by the designated firm. CRs are intended to guide the practices of the designated firm in ways that address not only existing concerns but also protect against the risk that the firm may seek to take advantage of its market power and position of strategic significance to the detriment of competition and consumers.[286]

5.2 This Chapter sets out our provisional proportionality analysis for the proposed NFC Access CR. A proportionate CR is one that:

(a) Is effective in achieving its intended aim;

(b) Is no more onerous than it needs to be to achieve its intended aim;

(c) Is the least onerous CR, where the CMA has identified multiple equally effective options that would achieve the intended aim; and

(d) Does not produce disadvantages that are disproportionate to its aim.[287]

5.3 We have considered each of these four criteria below.

a) The proposed NFC Access CR is effective at achieving its intended aim

5.4 The analysis set out in Chapter 4 shows how the proposed NFC Access CR is designed to be effective in achieving our aim (as set out in paragraph 2.2) by opening access to NFC functionality on fair, reasonable, transparent and non-discriminatory terms. This would enable developers to improve their existing

[285] Section 19(5) of the Act.
[286] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.2
[287] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.33.

offerings or develop new innovative uses of NFC technology. In turn, this could improve consumer choice of NFC apps and support economic growth in the UK.

5.5 In the sections below, we present evidence on the benefits and costs associated with achieving this aim, given the proposed NFC Access CR design described above.

b) The proposed NFC Access CR is no more onerous than necessary

5.6 The proposals we have set out aim to be effective in meeting our aim while minimising the burdens for affected parties, including Apple. These measures include:

(a) Mandating NFC access that leverages Apple's existing NFC & SE Platform, and supporting business functions (billing, security, customer support) together with the HCE-based contactless solution already deployed in the EEA.

(b) Striking the right balance between ensuring that NFC access is granted and maintained effectively without friction or delay, whilst allowing Apple to take appropriate measures to protect its systems and users.

(c) Ensuring that fees for NFC access are fair, reasonable and non-discriminatory whilst protecting Apple's incentives to invest and innovate with its NFC platform, and allowing it to recover its costs.

(d) Ensuring that non-pricing terms for NFC access are fair, reasonable, and that there are appropriate protections against undue discrimination.

(e) Ensuring that developers have access to appropriate processes for requesting NFC access and complaint handling, whilst being non-prescriptive and giving Apple flexibility in the design of those terms and processes.

(f) Ensuring that commercially sensitive information belonging to developers is handled with all the necessary and appropriate protections by Apple, whilst being non-prescriptive in relation to the safeguards Apple must put in place to achieve this.

(g) Ensuring that Apple acts in a transparent manner by publishing terms of NFC access and giving an appropriate notice of any changes to those terms.

(h) Ensuring that developers have access to all supportive functionalities which could enable the development of new features, including: (i) access to the default status API once they have obtained NFC access and made aware of any changes to the way the API is provided; (ii) access to iOS functionalities to enable developers to build features equivalent to Express Mode and Power Reserve.

(i) Keeping the administrative burden relating to compliance and monitoring focused on what is necessary for us to monitor Apple's compliance with the proposed NFC Access CR, and its ongoing effectiveness.

5.7 We therefore provisionally consider that, given our analysis of the key design choices set out above, the proposed NFC Access CR is no more onerous than necessary.

c) The proposed NFC Access CR is the least onerous of equally effective measures

5.8 As explained in Chapter 4, we consider that all CR design elements as summarised in paragraph 5.6 above are required and appropriate to ensure the CR is effective in achieving its aim. Therefore, the provisions of the proposed NFC Access CR represent the only effective measure.

5.9 In assessing each aspect of the proposed intervention, we considered the minimum set of regulatory obligations required to achieve our aim. Taking this approach has resulted in a small number of minimum requirements we propose to impose, leaving flexibility to Apple to design and implement processes which are best aligned with its business model and commercial practices.

5.10 We have not identified any other equally effective CR designs which would take a different form than the proposed obligations. For example, we considered whether a CR limited to a single technology approach (either Apple's existing NFC & SE Platform or an HCE-only approach) could represent a less onerous means of achieving the aim. However, as we set out in further detail in Chapter 4 our provisional view is that a single technology approach would not provide

developers with effective access across the range of current and future NFC use cases.

5.11 We therefore provisionally consider that the proposed NFC Access CR as a package is the least onerous of equally effective measures.

d) The proposed NFC Access CR does not produce disadvantages which are disproportionate to the aim

5.12 In the assessment below, we set out the potential costs and benefits of the proposed NFC Access CR for Apple and other parties, and our assessment of their relative magnitudes.

5.13 As set out in the Final SMS Decision, the CMA found that Apple has SEMP and a position of strategic significance in respect of its mobile platform. NFC access is part of the smartphone operating system (which in turn is part of the designated mobile platform) and is a critical input for any developer intending to develop their own app using NFC functionality. The proposed NFC Access CR intends to address the imbalance of power between Apple and developers inherent in Apple's NFC access offering. As a result, the benefits to developers are measured in terms of the opportunities they would have to launch or improve their own apps using NFC functionality and the improvement this would bring to the competitive environment, with resulting benefits to businesses and UK consumers. The total costs include those borne by Apple, which are measured in terms of the costs it would face to amend its systems and processes to allow developers to access this functionality on the terms set out in the proposed NFC Access CR, costs which Apple has been unable so far to quantify.

5.14 As discussed in the effectiveness assessment, we consider access through both Apple's existing NFC & SE Platform and the HCE-based solution to be necessary to ensure effective access across the range of current and foreseeable NFC-enabled use cases. We recognise that requiring both routes would involve greater implementation and operational obligations than a single-technology solution. We have therefore considered those additional requirements as part of the balancing exercise set out below and assessed whether they are justified by the benefits of ensuring effective and future-proof access to NFC functionality.

5.15 When assessing the costs and benefits overall to Apple, developers and consumers, we have taken into account the following context:

(a) Apple already offers the NFC & SE Platform in the UK, and the proposed NFC Access CR requires changes to the terms and conditions under which NFC access is provided; and

(b) Apple has an HCE solution in the EEA which is, at a minimum, a starting point for any work Apple may need to do to offer an HCE solution in the UK.

5.16 In conducting our assessment, we focus on the incremental additional benefits and incremental additional costs that the affected parties face as a result of the proposed measures. This reflects the fact that certain benefits and costs would exist even in the counterfactual scenario in which the CR is not in place and Apple's market power in respect of NFC access was not addressed. In particular, we reflect that Apple would already incur costs relating to its existing SE provision in the UK and HCE provision in the EEA, and developers would incur costs to build for SE[288] (including current access fees) if choosing to adopt NFC. We note to date, that we have not seen any evidence of benefits for developers or users arising from the NFC & SE Platform since no NFC apps have launched using it.

Potential costs of the proposed NFC Access CR

5.17 In this section we assess in turn the potential costs that (i) Apple, (ii) developers, and (iii) consumers may experience from our proposed NFC Access CR.

Costs to Apple

5.18 There are a number of aspects of the proposed NFC Access CR which are likely to incur costs for Apple. These include certain technical and administrative changes, in particular:

(a) Apple already offers SE in the UK, but the proposed NFC Access CR would require Apple to provide SE on regulated terms. Apple does not currently offer HCE in the UK but does so in the EEA. This means that

[288] Since access to NFC in the UK on iOS is currently provided only through SE.

overall, Apple should be able to implement an HCE solution technically based on its EEA model without incurring significant cost and time, although we recognise that there may be some technical changes needed. While unlikely to be zero, we would expect the costs of such changes to be limited. In both cases of NFC access provided through SE and HCE, Apple would also be required to set its price by reference to the pricing principles proposed as part of the CR, and would also be required to implement other fair, reasonable, transparent and non-discriminatory terms of access. In addition, Apple would be required to implement an authorisation, a complaints-handling, and a use of data processes.

(b) Apple would also be required to provide further technical functionality to developers such as access to a default status API, and access to the software and hardware capabilities necessary to develop features such as Express Mode and Power Reserve.

Apple's submissions on costs

5.19 We requested information from Apple on the costs associated with a technical and operational implementation of the key elements of the proposed NFC Access CR. Apple did not provide quantitative estimates for two reasons. First, it explained that it had not previously considered the work required to implement the relevant changes and was therefore unable to estimate the associated costs.[289] Second, it said that it does not track or allocate costs in a way that would allow it to provide estimates for implementing the relevant changes.[290]

5.20 Apple nevertheless provided some submissions outlining its view on the costs those elements of the potential NFC Access CR could impose on it. We summarise Apple's submissions in terms of: (i) implementation costs; and (ii) monitoring and ongoing compliance costs.

Implementation costs

5.21 In relation to making HCE available in the UK, Apple submitted that launching a product or service in a new geographic market would require additional technical and non-technical work, even if the product or service is available in

[289] Apple's response to section 69 notice dated [✂]. Apple's response to section 69 notice dated [✂].
[290] Apple's response to section 69 notice dated [✂].

other markets.[291] Apple stated that the extent of that work can vary considerably.[292]

5.22 Accordingly, Apple said it expected implementing HCE would at a minimum require the following: [✂].[293]

5.23 In relation to continuing to make SE technology available in the UK, Apple confirmed that it would incur no new implementation costs given the NFC & SE Platform is already available in the UK.[294] Apple's expectation was based on existing conditions remaining in place, for example, its current pricing model.[295] Apple submitted that its costs would increase if it were required to make changes to its operational processes.[296]

5.24 As regards providing both HCE and SE technology, Apple submitted that this would increase the burden on its teams to develop, maintain, and support multiple onboarding processes; to develop, maintain, and support specific terms of access for an HCE-based solution in the UK; introduce complexity and costs for its Developer Relations team which provides developer support; increase cost and complexity of compliance measures for HCE and SE; and create divergent compliance programs for HCE in the EEA and UK.[297] Apple also submitted that it could incur costs as a result of developers gaming the availability of both an HCE solution and the NFC & SE Platform to pay the lowest cost.[298]

5.25 In relation to the requirements to make additional features and functionality available to developers, which includes giving access to: (i) the default status API; and (ii) the software and functionality needed to develop equivalent or similar features to Express Mode and Power Reserve:

(a) [✂].[299] [✂].[300]

---

[291] Apple's response to section 69 notice dated [✂].
[292] Apple's response to section 69 notice dated [✂].
[293] Apple's response to section 69 notice dated [✂].
[294] Apple's response to section 69 notice dated [✂].
[295] Apple's response to section 69 notice dated [✂].
[296] Apple's response to section 69 notice dated [✂].
[297] Apple's response to section 69 notice dated [✂].
[298] Apple's response to section 69 notice dated [✂].
[299] Apple's response to section 69 notice dated [✂].
[300] Apple's response to section 69 notice dated [✂].

(b) Apple submitted Express Mode operates using Apple's proprietary technologies and in a distinct, purpose-built proprietary framework that relies on initiation by an Express Mode-enabled terminal or reader. Given these architectural characteristics, enabling third-party apps to use Express Mode, or to offer a functionally equivalent feature, would likely require substantial engineering work and potentially significant modifications to the existing Express Mode framework.[301]

(c) Apple submitted that it had not considered what work would need to be undertaken to give third parties access to Power Reserve.[302]

Monitoring and ongoing compliance costs

5.26 We did not receive information from Apple on monitoring costs it would face as a result of the proposed NFC Access CR. Nevertheless, our assessment below considers the likely magnitude of these costs based on the requirements set out at paragraphs 4.260 and 4.261.

Stakeholder submissions on costs

5.27 To help assess the potential costs to Apple to make HCE and SE available in the UK, we attempted to collect data from Google on the costs of providing third parties access to NFC. Google provided data on the number of employees working on HCE and SE within Android. It estimated that there were at least [0-30] [✂] full-time employees (**FTEs**) in 2025.[303]

[301] Apple's response to section 69 notice dated [✂].
[302] Apple's response to section 69 notice dated [✂]. Note of meeting with Apple on [✂]. Note of meeting with Apple on [✂].
[303] Google's response to section 69 notice dated [✂].

CMA assessment on costs to Apple

Implementation costs

HCE

5.28 Apple already provides access to HCE in the EEA. We provisionally consider there are good reasons to expect the incremental costs to Apple to offer access to HCE in the UK would be low. In particular:

(a) Apple has previously built an HCE solution for iOS devices. Therefore, Apple would not be starting from scratch in building the technical infrastructure and would be able to leverage its previous work to launch an HCE solution for iOS devices in the UK.

(b) Apple has staff responsible for maintaining access to HCE on iOS in the EEA.[304] In making an HCE solution available in the UK, Apple could therefore leverage internal resources and expertise, which is likely to reduce its incremental costs.

(c) The processes and documentation developed for HCE in the EEA could reduce the time and cost needed to develop equivalent arrangements for the UK, particularly where the same processes or technical documentation can be reused.

5.29 Notwithstanding this, Apple has submitted that the work required to launch in another jurisdiction (even where previously launched in other geographic markets) can vary significantly.[305] We therefore sought further evidence to understand the scale of potential implementation costs.

5.30 In assessing this, we assumed that the main cost driver for the activities that Apple outlined would be required to make HCE available in the UK (see paragraph 5.22) is likely to be staff, including product and engineering teams as well as cross-functional staff (eg legal, policy, customer support and technical support teams).[306]

---

[304] Apple's response to section 69 notice dated [✂].
[305] Apple's response to section 69 notice dated [✂].
[306] This is based on an assessment of the steps outlined by Apple and further supported by submissions from Google which outlined what it considers are key cost drivers in terms of providing HCE and SE access on Android. Google's response to section 69 notice dated [✂].

5.31 Given Apple has not provided any cost estimates for implementing HCE, we used a comparator to assess the potential magnitude of staff costs. We considered figures available from Google as a comparator, and this was for the number of staff working on developing and maintaining HCE and SE based NFC technology on Android on a global basis. Google estimated that there were at least [✂] [0-30] FTEs working on HCE and SE in 2025.[307]

5.32 Google's figure relates to the design, development and maintenance of its global HCE and SE solutions on Android. The steps Apple outlined that it would need to take to offer HCE to the UK are narrower, more specifically: the work relates to a single jurisdiction and predominantly introducing a technology (HCE) that it already offers elsewhere.

5.33 We consider that Apple would likely require significantly less FTE resource to implement HCE in the UK than Google requires to develop and maintain SE and HCE on a global basis. Based on this, we consider the available evidence suggests that the resource required to implement HCE in the UK is unlikely to result in significant costs.

5.34 Therefore, on the basis of the available evidence, we consider that it is reasonable and appropriate to assume that Apple is likely to incur low implementation costs.

5.35 With regards to costs associated with the ongoing running of the HCE solution, Apple explained that it would face such costs to support the underlying infrastructure that developers access.[308] The proposed NFC Access CR would allow Apple to charge fair, reasonable and non-discriminatory fees for HCE access, and this proposed requirement has been designed to enable Apple to recover the costs of maintaining its HCE solution in the UK.

SE

5.36 Apple confirmed in its submissions that it would face no implementation costs in terms of the technical costs to continue to make SE technology available.[309]

5.37 We recognise Apple would face ongoing costs in relation to maintaining the NFC & SE Platform. As discussed above for HCE, we provisionally consider

---

[307] Google's response to section 69 notice dated [✂].
[308] Apple's response to section 69 notice dated [✂].
[309] Apple's response to section 69 notice dated [✂].

that ongoing costs in relation to supporting the infrastructure for access via SE would be recoverable through the fair, reasonable and non-discriminatory fees Apple is able to charge for NFC access.

Dual-technology approach

5.38 We consider the incremental cost specific to running both technologies together are likely to be limited. As mentioned above, Google estimates it needs [✂] [0-30] FTEs to develop and maintain its HCE and SE offerings globally.[310]

5.39 Apple submitted that the dual-technology solution would increase the burden on its team to develop, maintain and support its client onboarding, developer support and compliance monitoring.[311] However, Apple did not provide further evidence demonstrating what this would mean for its costs.

5.40 We consider that the burden and complexities would be captured by the incremental increase in personnel required for implementing and maintaining access to HCE which, as we explained above, we provisionally consider are likely to be low and/or recoverable costs for Apple.

5.41 Regarding Apple's submission that developers could game the availability of both HCE and SE solutions, Apple did not explain how such conduct would generate costs (see paragraph 5.24). We have therefore been unable to establish what additional costs Apple might incur.

Processes and administrative procedures

5.42 Under each of HCE and SE as well as under a dual-technology approach, Apple would be required to implement additional processes and administrative procedures such as an authorisation process, complaints handling, and processes concerning the use of data. We believe that these are required to give developers confidence in their use of NFC access on iOS. This is because Apple is a large company with SEMP and developers will not have the necessary level of bargaining power to protect their commercial interests. Therefore, robust processes should be in place.

---

[310] Google's response to section 69 notice dated [✂].
[311] Apple's response to section 69 notice dated [✂].

5.43 Apple has not provided cost information for any of the above elements, and we would expect any such costs to be limited, captured in the staff costs we discussed above, and in any event recoverable.

Providing developers access to additional features and functionality

5.44 Apple confirmed [✂].[312]

5.45 We provisionally conclude that while Apple would face costs to enable third-party access to the underlying iOS functionalities allowing developers to have their own version of Express Mode, and their own version of Power Reserve for those developers using SE, any such costs would be recoverable through the NFC access fees.

Monitoring and ongoing compliance costs

5.46 We provisionally consider monitoring and compliance costs to be necessary and appropriate features of the proposed NFC access CR for it to meet the aim of effective access to NFC on fair, reasonable, transparent and non-discriminatory terms, and that they are unlikely to be substantial. We consider that the costs for putting in place, fair, reasonable, transparent and non-discriminatory prices, non-pricing terms, and conditions of access should not be treated as costs of our intervention as a whole. This is because Apple's current prices, terms and conditions for access reflect its position of SEMP. As we have described, the aim of the proposed NFC Access CR is to ensure effective access to NFC better reflecting the price Apple would charge, and terms and conditions of access it would set when faced with more effective competition. This is consistent with the CMA's approach in other statutory contexts.[313]

---

[312] Apple's response to section 69 notice dated [✂].
[313] For example, the CMA's Markets Regime Guidance, February 2026 (CMA3), paragraph 8.96 states that: '*In selecting and designing remedies, the CMA will also have regard to the potential for more competitive markets to create profitable opportunities for new and innovative competitors. There may be cases of poor competition where businesses are earning returns, or incurring costs, above what might be expected in a competitive market, and as such these firms may earn lower profits or incur losses as a result of the introduction of greater competition. The CMA would not usually give significant weight to the anticipated reduction of such profits as a negative effect of a remedy.*'

Costs to developers

5.47 In this section, we set out our provisional assessment of any potential costs and unintended consequences from the perspective of developers.

Apple's submissions on cost to developers

5.48 Apple submitted that requiring the provision of HCE alongside the NFC & SE Platform would significantly undermine its incentive to invest in the NFC & SE Platform, as it would force Apple to provide a different solution in the UK to the one it has adopted in the ordinary course of business based on significant upfront investment. [314] Apple submitted that this may have a negative impact on developers that have applied for the NFC & SE Platform and are already in the process of developing solutions for it.[315]

CMA assessment on cost to developers

5.49 The pricing principles of the proposed NFC Access CR seek to ensure that Apple is fairly remunerated for providing access to HCE and SE. We provisionally conclude that this would mitigate the risk that Apple's incentives to invest in the NFC & SE Platform are reduced and as such consider the risk of a negative impact to developers is low.

5.50 We provisionally consider that the proposed regulated access in accordance with the CR, including the pricing requirements and the dual-technology approach, would create opportunities for developers and would likely lead to avoided costs compared to the situation where Apple's market power in respect of NFC access was not addressed. Specifically:

(a) The pricing principles seek to ensure that access fees would be fair, reasonable and non-discriminatory, resulting in lower fees for developers compared to the counterfactual.

(b) The requirement for Apple to make HCE available in the UK would mean some developers with existing HCE solutions would face lower costs if they were able to leverage their existing development work on HCE in

[314] Apple's response to section 69 notice dated [✂].
[315] Apple's response to section 69 notice dated [✂].

developing a UK solution, compared to building a new SE solution (see paragraphs 4.23 and 4.25).

(c) Developers would also likely benefit from the ability to develop key equivalent features such as Express Mode and Power Reserve (for SE); fair, reasonable, non-discriminatory and transparent non-price terms and processes in respect of the NFC access; and the requirement that the provision and maintenance of the NFC access remains effective, enabling developers to compete. We have considered these effects in the benefits assessment below.

5.51 Although there would be some additional costs for developers to implement a solution in the UK under the proposed NFC Access CR, we provisionally consider that these incremental costs would be very low, for example where a developer extends a solution already in place in the EEA. Additionally, the precise scale of these costs would depend on uptake of NFC by developers and would be closely related to the benefits of the CR. We consider these costs further when comparing costs and benefits.

Costs to consumers

5.52 In this section, we assess the potential for a negative impact on users in terms of security, privacy and fraud, and in terms of user experience, arising from our proposed NFC Access CR.

Security and privacy

Apple's submissions on security and privacy

5.53 Apple submitted that the SE technology that the NFC & SE Platform uses is more secure and private than the HCE solution adopted in the EEA.[316] Apple explained that HCE security does not rely on hardware trust and so presents a broader attack surface than SE-based solutions.[317] Apple submitted HCE presents multiple risks, specifically:

(a) If a user's device with an HCE wallet or app becomes infected with malicious apps, this may lead to card details or credentials being stolen

[316] Note of meeting with Apple on [✂]. [✂]. Apple's response to section 69 notice dated [✂].
[317] Apple's response to section 69 notice dated [✂].

and allow fraudulent transactions. Apple also said that its NFC & SE Platform is not susceptible to this type of attack as payment data is stored securely separate from the main operating system.[318]

(b) HCE wallets can be subject to relay attacks, a type of attack which involves a bad actor using a mobile device to pretend to be an NFC terminal and reading payment details from a target device.[319]

(c) Malicious third parties may use HCE to commit relay attacks (ie using the phone as an NFC reader). Apple stated that NFC & SE Platform has no reader mode functionality, and so cannot be used to maliciously read other card credentials.[320]

5.54 Apple submitted that requiring HCE to be provided alongside SE means end-users potentially lose the benefits of a more secure and private solution in SE (including use of authentication; certification by an independent security lab; lack of ability to check for standards compliance being problematic with HCE).[321] Apple also reasoned that developers choosing HCE do not necessarily have the incentive to internalise privacy and security costs when implementing a less private and secure solution. Apple said that users of HCE-based NFC apps would inevitably bear the costs of these heightened risks. [322]

5.55 Apple provided over twenty academic and industry reports and articles related to the different security profiles of SE- and HCE-based solutions for NFC transactions:[323]

(a) Materials dated 2014 to 2016 noted HCE and Android HCE wallets were relatively nascent then; HCE was not as secure or standardised as SE and needed additional security measures.[324]

---

[318] Apple's response to section 69 notice dated [✂]. Note of meeting with Apple on [✂]. Apple's response to section 69 notice dated [✂].
[319] Apple's response to section 69 notice dated [✂].
[320] Apple's response to section 69 notice dated [✂].
[321] Apple's response to section 69 notice dated [✂]. Apple's response to call for evidence dated 30 June 2026, [✂]. Note of meeting with Apple on [✂].
[322] Apple's response to section 69 notice dated [✂].
[323] Apple's response to section 69 notice dated [✂].
[324] Consult Hyperion, 'HCE and SIM Secure Element: It's not black and white', June 2014; Federal Reserve Bank of Boston, 'Understanding the Role of Host Card Emulation' 10 May 2016; Smart Card Alliance, 'Host Card Emulation (HCE)', 18 June 2015; Mobey Forum, 'The Host Card Emulation in Payments: Options for Financial Institutions' 19 November 2014, all accessed by the CMA on 14 October 2026.

(b) Materials dated from 2022 to 2026 described security issues affecting HCE apps on Android, such as malicious apps impersonating legitimate ones, or apps that have not obtained EMVCo certification.[325] A number of these materials were specifically about Chinese apps on Android.

(c) A 2018 academic article that identified security issues in Canadian banking apps using NFC (including lack of root detection and legacy app versions) and found that in contrast Android Pay did not have these issues.[326]

(d) A literature-based expert report dated [✂].[327] This document predates publication of Apple's HCE solution in the EEA by over two years and covers the risks of HCE which we listed above.

5.56 Apple did not provide any documents setting out independent audits of its SE and HCE solutions, fraud statistics comparing these solutions, or stakeholder complaints about actual harms.[328]

5.57 As regards the risks of allowing third-party access to Express Mode and Power Reserve or the corresponding underlying OS functionality, Apple also submitted that if stakeholders were permitted to access Express Mode / Power Reserve functionality in their own NFC applications, Apple could not ensure that equivalent safeguards would consistently be implemented or enforced by developers (ie restraining Express Mode to a limited set of uses eg transit, access badges; functioning only with approved Express Mode readers; users

---

[325] Bleeping Computer, 'Android malware combo takes out loans and relays victims' credit cards', 12 August 2026; Cleafy, 'SuperCard X: exposing a Chinese-speaker MaaS for NFC Relay fraud operation', 18 April 2025; Cleafy, 'NFC Relay Goes Local: How AI is accelerating a New Wave of independent Malware Developers', 18 May 2026; European Central Bank, 'FAQs on the digital euro pilot', 14 July 2026; European Payment Council, '2024 Payment Threats and Fraud Trend Report', 22 November 2024; ESET Research, 'NGate: Android malware, which relays NFC traffic to steal victim's cash from ATMs', 22 August 2025; ESET Research, 'New NGate variant hides in a trojanized NFC payment app', 21 April 2026; Group-IB, 'Ghost Tapped: Tracking the Rise of Chinese Tap-to-pay Android Malware', 7 January 2026; Group-IB, 'TX-NFC'; Group-IB, 'Gone with the WindRelay: A New Malware Combo Behind a Growing Fraud Scheme', 12 August 2026; Infosecurity Magazine, 'Ghost Tap Malware Fuels Surge in Remote NFC Payment Fraud', 7 January 2026; Keysight 'Analysing the security of Cloud-Based Payment Apps on Android', 19 October 2024; Resecurity, 'NFC Fraud Wave: Evolution Of Ghost Tap On The Dark Web', 22 April 2025; Zimperium, 'The increase in mobile wallet adoption impacts the need for security', 28 April 2022; Zimperium, 'NGate: NFC Relay Malware Enabling ATM Withdrawals Without Physical Cards', 12 November 2025; Zimperium, 'SuperCard X Malware', all accessed by the CMA on 14 October 2026.

[326] Kaur et al, 'A Security Assessment of HCE-NFC enabled E-Wallet Banking Android Apps', 2018, 42nd IEEE International Conference on Computer Software & Applications, page 497, accessed by the CMA on 14 October.

[327] [✂].

[328] Apple's response to section 69 notice dated [✂].

needing to affirmatively select which card or credential is used with Express Mode).[329]

Stakeholder submissions on security and privacy

5.58 Multiple stakeholders stated that the risks to users from apps using HCE are low, specifically:

(a) Multiple established industry experts and fintech stakeholders told us that HCE is sufficiently secure and private for payments, thanks to methods including tokenisation and whitebox cryptography and given the EMVCo certification process.[330]

(b) Similarly, following technical investigations and market response, the EC found 'HCE-based solutions can achieve comparable and equally effective levels of security, by utilising tokenisation, limiting usage of tokens or making use of specific cryptography'.[331]

(c) The NCSC submitted that, where cards are stored using HCE, the card data needs to be stored securely (preferably outside the operating system),[332] or an exploit in the operating system may allow malware to access the card data. NCSC added that these types of attacks would realistically require a jailbroken or unpatched device,[333] as other methods are highly expensive and sparingly used. [334]

(d) Regarding the risk of relay attack, Apple submitted that its NFC & SE Platform is more secure because it does not have a reader mode functionality meaning it does not include the necessary functionality to enable reading a user's payment card information to support an attack.

---

[329] Apple's response to section 69 notice dated [✂].
[330] Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. Note of meeting with [✂]. [✂] response to questionnaire dated [✂]. [✂] response to section 69 notice dated [✂].
[331] EC decision in Case AT.40452 Apple Mobile Payments dated 11 July 2024, paragraph 122.
[332] We note that the storage of credentials in a secure cloud and use of time-limited tokens provide such a mitigation.
[333] We note that HCE apps generally require that the application is up to date and incorporate root detection to mitigate the risk from jailbroken or unpatched devices.
[334] NCSC's response to questionnaire dated [✂].

However, we note that Apple's HCE solution in the EEA, does not appear to have a read mode functionality either.[335]

5.59 One stakeholder also submitted that Apple's conduct is inconsistent with Apple's views regarding security. This is because Apple allows payments to be made via technologies that are objectively more susceptible to interference, such as QR codes and Bluetooth, and Apple historically allowed hotel room apps to use Bluetooth to open hotel rooms.[336]

5.60 Additionally, evidence from stakeholders and public sources indicated similarly low rates of security and fraud harms across both HCE and SE, more specifically:

(a) One stakeholder submitted that there had been almost no real-world security breaches for either SE or HCE, minimal to no security threats found in labs and that both technologies similarly provide higher security levels relative to physical cards (such as two-factor authentication).[337] One stakeholder further explained mobile payment fraud consists of three broad categories – identity fraud, provision fraud and device theft or takeover – which third-party NFC apps on iOS and Apple Wallet are equally susceptible to.[338]

(b) A white paper by UL Solutions concluded that a 'review of publicly available information found no indication of actual risk differential between the different types of mobile payment systems. Designs based on HCE or SE, or open NFC or closed NFC, do not seem to make a difference to fraud rates or real-world attacks'.[339] A stakeholder also submitted, that given tokenisation and other mitigations in their wallet, they do not consider that the use of HCE for payments materially increases the fraud risk to which consumers are exposed.[340]

---

[335] Apple Developer Documentation, 'Framework, ProximityReader'; Apple Developer Page, 'HCE-based contactless NFC transactions for apps in the European Economic Area (EEA)', all accessed by the CMA on 14 October 2026. Apple's response to section 69 notice dated [✂].
[336] [✂] response to questionnaire dated [✂].
[337] [✂] response to questionnaire dated [✂].
[338] [✂] submission to the CMA dated [✂].
[339] UL Solutions, 'Card and Mobile Payment Threat Models', 2021, accessed by the CMA on 14 October 2026.
[340] [✂] response to questionnaire dated [✂].

(c) Another stakeholder submitted that access to HCE has been provided for several years on Android with fraud risks effectively mitigated.[341] This is consistent with fraud statistics provided by a stakeholder, which showed in-person payments using Apple Wallet or Google Wallet had fraud count rates closely comparable to each other and three times lower compared with physical cards.[342]

(d) An industry association submitted that feedback from its members does not indicate a clear fraud or security advantage for SE over HCE in their payment data, and fraud arguments should therefore not be used as a basis for limiting access or for imposing discriminatory commercial terms.[343]

5.61 Some stakeholders also submitted that wallet and NFC app providers generally will have strong incentives to keep customer privacy and fraud protections to the highest possible standards, and that not having those protections in place would make the wallet unattractive for customers and would also impact on card scheme certifications.[344] One stakeholder also submitted that it would seek some form of security attestation or documentation from any new wallet.[345]

5.62 As regards security requirements that Apple may set, two stakeholders submitted the breadth of potential use cases, and associated risk profiles, supports a tiered approach to safeguards.[346] One stakeholder noted security requirements should be evidence-based and proportionate, capable of being met by a range of credible market participants.[347]

5.63 We have not come across evidence demonstrating that Apple could not require current safeguards be maintained for access to Express Mode and Power Reserve. A transport network operator also told us that removing authentication with Apple Pay is the digital equivalent to what is done with physical cards using contactless. They explained that there are other ways to mitigate security risks at different levels in the system. They also stated that fraudulent uses on their

---

[341] [✂] response to questionnaire dated [✂].
[342] [✂] submission to the CMA dated [✂].
[343] [✂] response to call for evidence dated [✂].
[344] [✂] response to section 69 notice dated [✂]. [✂] response to questionnaire dated [✂]. [✂] response to questionnaire dated [✂]. [✂] response to questionnaire dated [✂]
[345] [✂] response to questionnaire dated [✂]
[346] 2 responses to call for evidence dated 30 June 2026 from: [✂].
[347] [✂] response to call for evidence dated 30 June 2026, [✂].

network were low.[348] We also note that both Google and Samsung have functionality similar to Express Mode and Power Reserve, which allows unauthenticated payments, and continued operation during low-power modes, and we are not aware of any major security incident.

CMA assessment on security and privacy

5.64 Our proposed NFC Access CR would ensure that many of the security and privacy benefits of Apple Wallet and Apple's current NFC & SE Platform also apply to third-party NFC apps in the UK, whether they choose to use SE or HCE. This includes access being subject to developers meeting security and privacy requirements and, for example, the ability for apps to require that users authenticate using biometrics.

5.65 We have considered the evidence that Apple submitted in support of its security concerns but place limited weight on some of the material when assessing the incremental risk arising from the proposed NFC Access CR. Several studies submitted to us date from 2014 to 2016, when HCE was comparatively new and relevant security standards and mitigations were less established. More recent materials principally concern attacks against Android devices involving sideloaded malicious applications, social engineering or other circumstances that do not closely reflect the proposed access model for iOS. Further, Apple's literature-based expert report predates the introduction of its HCE implementation in the EEA and does not assess the safeguards incorporated into that implementation or required under our proposed NFC Access CR.

5.66 We have also considered whether the absence of identified material harm following the EEA rollout should be given limited weight because that rollout is relatively recent and attackers may not yet have had sufficient time or incentive to target it. We recognise that vulnerabilities may take time to emerge and do not treat the absence of reported harm in the EEA as conclusive. However, the possibility that attackers may target the implementation in the future does not in itself, without evidence that the proposed access model creates a material additional risk, establish that HCE is insufficiently secure or private. We have therefore considered that evidence alongside the longer-standing use of HCE on Android, comparative evidence on fraud rates, applicable industry security

[348] Note of meeting with [✂].

and privacy standards, as well as the safeguards specific to HCE access on iOS.

5.67 Industry experts and other stakeholders have told us that HCE is sufficiently secure and private for payments where adequate mitigations are implemented (see paragraph 5.58(a)). Multiple third-party wallets have entered on iOS in the EEA using HCE since May 2025, and we have not seen evidence of any material increase in harms to consumers, whether from malware stealing credentials or other attacks. On Android in the UK, digital wallets preinstalled or distributed through the Play Store have used HCE for several years and we have not seen evidence that this has led to material harms to consumers. Evidence points to reasonable security measures, often required by standards, such as root-detection, tokenisation and whitebox cryptography to be effective at mitigating HCE-specific risks. We therefore provisionally consider the risk of this kind of attack to be low.

5.68 In line with submissions from multiple parties, we acknowledge that the on-device hardware-backed security provided by SE may be better suited for certain use cases such as those involving high-assurance credentials. Accordingly, our proposed NFC Access CR would allow developers the choice of technology best suited to their needs.

5.69 The most concrete recent examples provided to us principally concern malware combined with social engineering, including attacks in which users are persuaded to install malicious apps or disclose payment information. These examples do not closely reflect the proposed access model on iOS, under which access would be available only to developers meeting requirements and would remain subject to App Review. Separately, although Apple Wallet and other NFC apps have been vulnerable to relay attacks, these are relatively rare and mitigations have evolved so that they rarely lead to real-world harms. Other fraud risks also apply equally to SE and HCE.

5.70 The evidence also shows industry self-regulation has been effective at mitigating the risks from opening up NFC access for NFC transactions, through standards and certifications for both HCE and SE, as well as through checks at different levels in the payment system. Payment providers and card networks have incentives to protect the security and privacy of consumers in order to maintain consumer trust. The proposed NFC Access CR reflects that different use cases may have different security and privacy requirements, and the industry is well placed to agree these. In addition, the proposed NFC Access

CR also provides Apple with the ability to ensure security and privacy best-practice is followed by developers, and increased competitive pressure could result in improvements to aspects of privacy and security over time.

5.71 The evidence available does not suggest that opening up access to functionality underpinning Express Mode and Power Reserve would lead to a material increase in security or privacy risks.

5.72 Taking the evidence as a whole, we provisionally consider that the identified risks can be mitigated effectively and that any residual additional security or privacy risk arising from the proposed NFC Access CR is likely to be low.[349]

User experience

5.73 We have also assessed the potential risks in relation to the user experience on Apple devices resulting from developer access to the default status API and our proposed measures in relation to presentation and cooldown windows. This is an important factor to consider given that degraded user experiences may be a significant cost to users that disincentivises them from using Apple's mobile platform, therefore creating a risk of potential loss of revenue for Apple. In Chapter 4, we provisionally concluded that preventing access to the default status API or limiting the number of times it can be called would result in an ineffective CR. We also concluded that presentation and cooldown time should be the same for any mobile wallet which is not the default wallet.

Apple's submissions on user experience

5.74 Apple told us that providing access to the default status API may result in over-prompting and user fatigue as it would effectively incentivise developers to meet a target conversion rate. This, in turn, would risk user frustration and lower levels of engagement, with users either dismissing prompts without proper consideration or accepting them solely to avoid repeated prompts.[350] Apple also added that access to the default status API could lead to unintended risks for

[349] This assessment considers only the incremental risks associated with the proposed technology design. It does not alter or replace existing regulatory requirements, and firms remain responsible for complying with all applicable legal and regulatory obligations

[350] Apple's response to section 69 notice dated [✂].

users, for example, referring to evidence of a developer on Android that has blocked users from accessing their app until it has been set as the default.[351]

5.75 Apple stated that presentation and cooldown times were to ensure a third-party wallet could not suppress Apple Wallet indefinitely (eg if a user left a third-party wallet open, switched to using for example a social media app and wanted to present their phone to pay with Apple Wallet), and also to protect device performance, by ensuring the phone is not constantly monitoring for nearby compatible NFC readers.[352]

Stakeholder submissions on user experience

5.76 Multiple stakeholders said that access to the default status API would reduce the risks of over-prompting users, as without access to default status information, they would risk providing users with confusing or unnecessary prompts.[353] Stakeholders said that they have strong incentives to avoid over-prompting given the risks of irritating users.[354]

CMA assessment on user experience

5.77 We consider that if developers have access to the default status API, the risks posed to users regarding over-prompting are likely to be low, in particular:

(a) The CMA's mobile browsers and cloud gaming market investigation found that developers understand that the overuse of prompts can be intrusive, and that most browser vendors aim to target users who have not yet set their mobile browser as default, therefore avoid unnecessary prompting.[355] We expect that NFC developers would behave in a similar manner and would be reluctant to repeatedly prompt users given the risk of creating a poor user experience.

(b) We also note that there are safeguards in place that would prevent the risks of over prompting, for example, developers are subject to Apple's App Review Guidelines in respect of user experience and app design

---

[351] Apple's response to section 69 notice dated [✂].
[352] Note of meeting with Apple on [✂].
[353] 4 responses to questionnaires dated [✂] from: [✂]. [✂] submission to the CMA dated [✂].
[354] [✂] response to section 69 notice dated [✂]. [✂] submission to the CMA [✂]. 4 responses to questionnaires dated [✂] from: [✂].
[355] Mobile Browsers and Cloud Gaming Final decision report, March 2025, page 419.

requirements, and apps that offer a degraded experience may be removed from the App Store.[356]

(c) Finally, an equivalent default status API is available on Android for providers of products or services using NFC, and Google has not implemented a rate limit.[357] Google did not raise any concerns regarding privacy or security risks over over-prompting of users as a result of access to arising from the existence of the API.[358]

5.78 On presentation and cooldown timings, we provisionally consider that NFC apps that are not the default contactless app should not be able to suppress the default contactless app indefinitely, and that a presentation and cooldown timing for apps not set as default contactless app is necessary to avoid negatively impacting device performance. We provisionally consider such timings should apply equally to Apple Wallet and third-party NFC apps, when they are not set as default, and that this would not present any material cost to users, in fact consistent treatment between Apple Wallet and other apps is likely to minimise user confusion.

CMA overall assessment on costs

5.79 Overall, based on the evidence available, we provisionally consider the incremental costs to Apple for implementing and complying with the proposed measures are unlikely to be significant, although there is uncertainty around the costs associated with some provisions:

(a) For the provisions requiring Apple make HCE available and continue to make SE available, the available evidence indicates the associated costs are low. Apple was unable to provide us with cost estimates, however, we consider that given Apple currently provides SE in the UK and HCE in the EEA this would suggest the incremental costs to provide both technologies in the UK would be low. Additional evidence supports this view, Apple submissions confirm that continuing to make SE available would require limited additional work, and comparator data from Google suggests Apple likely requires a low level of resource to implement HCE in the UK, meaning its costs are likely to be low.

---

[356] Apple Developer Page, 'App Review Guidelines, 'Design'', accessed by the CMA on 14 October 2026.
[357] Android Developer Page, 'RoleManager', accessed by the CMA on 14 October 2026.
[358] Google's response to section 69 notice dated [✂].

(b) For other provisions,[359] there is limited evidence available to estimate these costs precisely. Notwithstanding this, we consider that (i) the costs of implementing additional processes and administrative procedures are likely to be low and recoverable; and (ii) the costs of enabling developers the ability to develop equivalent or similar features to Express Mode and Power Reserve can be recovered through the fair, reasonable and non-discriminatory fees Apple is entitled to charge for effective NFC access. Taken together, these factors suggest that the cost associated with these measures are likely limited.

(c) Finally, we consider the monitoring and compliance costs Apple would face are necessary for the proposed NFC access CR to meet the aim of effective access to NFC. In particular, we consider that the costs for putting in place, fair, reasonable, transparent and non-discriminatory prices, non-pricing terms, and conditions of access should not be treated as costs of our intervention as a whole, since they seek to reflect the effects of more effective competition overcoming Apple's SEMP.

5.80 We provisionally consider that our proposed NFC Access CR would create opportunities for developers and would likely lead to avoided costs compared to the situation where Apple's market power in respect of NFC access was not addressed. In particular, developers that choose to use the HCE and/or SE solution on iOS in the UK would face some implementation cost, however, we provisionally consider that these would be limited, notably when set off against avoided costs given:

(a) The dual-technology option would enable developers to leverage existing solutions (including those available in the EEA or on Android), saving them the costs and time of developing new solutions from scratch.

(b) The scale of implementation costs for all developers would depend on uptake. However, we provisionally consider that these implementation costs would need to be offset against the substantial benefits developers would expect to make from the regulated access under the proposed NFC Access CR as described below. We would not expect developers to enter this market if it is not commercially viable for them to do so.

[359] Including the requirement to implement additional processes and administrative procedures, and the requirement to provide developers access to the software and hardware needed to develop equivalent or similar features to Express Mode and Power Reserve (for SE).

5.81 We provisionally consider that any potential security and privacy risks for users from HCE, and any corresponding costs to users, are unlikely to be material. This is because third-party evidence and other public sources indicate that risks pointed out by Apple are either unsubstantiated or equally apply to SE and Apple Wallet. Further, our proposed NFC Access CR would allow for a tiered approach, and stakeholders can choose between SE or HCE depending on use cases and risk profiles, with these developers also having incentives to minimise these risks. Similarly, we consider any costs to users attributed to the default API to be low, based on third-party evidence, particularly considering effective self-regulation of this on Android.

Potential benefits of the proposed NFC Access CR

5.82 We provisionally consider that the proposed NFC Access CR is likely to bring substantial benefits to developers, consumers and the wider UK economy, supporting the government's National Payments Vision[360] of a trusted world leading and resilient payments ecosystem, delivered on next-generation technology, where consumers and businesses have a choice of payment methods to meet their needs.

5.83 The proposed NFC Access CR is intended to facilitate immediate entry for developers of NFC applications, thereby increasing competition in mobile contactless payments and delivering greater choice, innovation and higher quality for end users. It is also intended to create conditions that support the development of new and innovative NFC-enabled services.

5.84 We have received evidence that multiple developers are interested in accessing NFC on iOS.[361] The proposed NFC Access CR increases developers' ability and incentives to enter by addressing the barriers that have limited their entry on iOS.[362]

5.85 More specifically, by requiring Apple to implement fair, reasonable and non-discriminatory access fees, the proposed NFC Access CR should help make

[360] See HM Treasury, 'National Payments Vision', updated 2 July 2026, accessed by the CMA on 14 October 2026.
[361] Apple submitted [✂] [0-100] developers based in the UK or proposing to distribute solutions in the UK have applied for the NFC & SE Platform entitlement. Apple's submission to the CMA dated [✂]. The CMA also received evidence from multiple stakeholders interested in taking up NFC. 5 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to the questionnaire dated [✂]. [✂] response to the section 69 notice dated [✂]. [✂] submission to the CMA dated [✂]. Note of meeting with [✂].
[362] See Chapter 1.

entry commercially viable for developers. Further, by requiring Apple to implement fair, reasonable, transparent and non-discriminatory non-price terms and conditions, the proposed NFC Access CR seeks to provide the certainty, and predictability developers need to commit to investing, entering and expanding in NFC applications.

5.86 Entry could occur relatively quickly, enabling immediate competition. This is facilitated by the dual-technology approach proposed in the CR. Several developers in the payments space already offer HCE solutions in the EEA or on Android and they have told us that access to HCE would enable them to launch in the UK within one year.[363]

5.87 The proposed dual-technology approach also supports the widest range of NFC applications: developers would be able to choose the technology that best supports the services or innovations they wish to bring to market. For instance, some use cases, such as digital car keys, currently require SE-based NFC access.[364]

5.88 While addressing fees, non-price terms and technology by which NFC access is provided would support immediate entry and the widest range of NFC based applications, additional measures are also required to support effective competition. In particular, other measures in the proposed NFC Access CR include allowing developers access to the default status API and allowing them access to the software and hardware needed to create their own Express Mode and Power Reserve features. This is intended to support developers in competing more effectively against Apple and each other.

5.89 This increased competition would lead to benefits for end users and other third parties[365] through:

(a) **Greater choice**: Entrants would increase the range of products and services available to iOS users across payment and non-payment use cases. Multiple stakeholders have submitted that NFC access could support alternative digital wallets as well as age verification services,

[363] 3 responses to call for evidence dated 30 June 2026 from: [✂]. Note of a meeting with [✂]. [✂] response to section 69 notice dated [✂].
[364] See paragraph 1.1. The proposed dual-technology approach would also allow developers, who have already developed, or are in the process of developing SE solutions, to maintain these solutions.
[365] For example, UK card issuers who are customers of Apple.

digital car keys, hotel keys student IDs, public transport credentials, loyalty cards, event tickets and building-access tools.[366]

(b) **Greater innovation:** New entrants would likely seek to differentiate their offerings by investing in new products, services and features. Multiple stakeholders have submitted that this could include direct financial savings or rewards,[367] a wider range of payment features, and security and privacy improvements[368] including from banks being able to provide NFC transactions directly rather than through a third-party wallet.

(c) **Higher quality:** Increased competitive pressure would likely incentivise both Apple and rival providers to invest and improve the quality and functionality of their existing products and services.

5.90 We consider the benefits arising from increased competition could be substantial in value:

(a) Increases in choice, innovation and quality across payments and non-payment services could benefit many end-users. These benefits could arise if new entrants successfully attract users or if greater competitive pressure leads Apple to improve Apple Pay and Apple Wallet. We estimate Apple Pay and Apple Wallet has potentially 22 million users in the UK, indicating a large number of end-users could benefit from increased competition.[369] As an illustrative example of the potential magnitude of benefits in this space, an estimate in a 2026 survey from Which? suggests that the indicative value of a digital wallet incorporating four innovative features (automatic loyalty points, receipt storage, ID storage and flexible cards) could be around £119 million per year in the UK.[370]

(b) Card issuers, including UK fintechs, could also benefit if alternative digital wallets enter the market and increased competition places downward pressure on Apple Pay fees. In 2025, card issuers paid a total of £[✂][0-

---

[366] 6 responses to the CMA's call for evidence dated 30 June 2026 from: [✂].
[367] Note of meeting with [✂]. Note of meeting with [✂]. [✂] response to questionnaire dated [✂].
[368] [✂] response to questionnaire dated [✂]. Note of meeting with [✂]. 2 responses to call for evidence dated 30 June 2026 from: [✂].
[369] The CMA estimates c.22 million people use Apple Wallet and Apple Pay at least once a month. This is based on UK population figures the percentage of the UK population that uses a digital wallet for point-of-sale transactions at least once a month and percentage of UK population that used Apple Pay for in-person transactions in 2024. Finder, 'Digital Wallet Statistics: Usage and Market size', 9 September 2026, accessed by the CMA on 14 October 2026.
[370] Which?, 'Unlocking the benefits of digital wallets', September 2026, pages 5 and 29-31, accessed by the CMA on 14 October 2026.

150] million in per-tap fees to Apple for point-of-sale transactions processed by Apple Pay.[371] Even a small percentage decrease in per-tap fees as a result of competition could result in substantial savings for them. These savings could also be passed on to end-users.[372] For example, one card issuer told us that in the competitive retail banking market it operates in, cost efficiencies typically create greater capacity to invest in customer propositions, improve services and enhance value for customers over time.[373] It added lower wallet costs would strengthen the business case for investing in payment innovation, security enhancements, and customer-facing features.[374]

5.91 In the longer term, the proposed NFC Access CR could generate wider benefits for merchants, end-users and the UK economy. For example, multiple stakeholders have identified NFC access as an enabler of A2A payments.[375] These stakeholders explained that effective NFC access is one of multiple necessary pre-requisites for the widespread adoption of A2A propositions that could compete effectively with card-based wallets such as Apple Pay.[376] Indeed, one of the goals of A2A is to provide a lower cost alternative to card payments for merchants and commercially viable NFC access terms are necessary for such propositions to compete effectively.[377]

5.92 In line with our intention to benefit UK consumers, businesses and the economy, we expect that our proposed NFC Access CR, by enabling effective NFC access, would support the development and adoption of A2A payment solutions. To illustrate the benefit of this, one stakeholder told us that increased adoption of A2A payments has the potential to reduce payment costs for merchants, expand payment choice for end-users and generate wider economic benefits.[378] Notably, a report by Ernst and Young and Open Banking Limited estimated that A2A accounts may generate £1.9 billion in business opportunities, by reducing administrative fees associate with current POS

---

[371] Apple's response to a section 69 notice dated [✂].
[372] 2 responses to call for evidence dated 30 June 2026 from: [✂]. [✂] response to questionnaire [✂].
[373] [✂] response to questionnaire dated [✂].
[374] [✂] response to questionnaire dated [✂].
[375] 3 responses to call for evidence dated 30 June 2026 from: [✂].
[376] 6 responses to call for evidence dated 30 June 2026 from: [✂].
[377] See HM Treasury 'National Payments Vision' updated 2 July 2026, accessed by the CMA on 14 October 2026. 4 responses to call for evidence dated 30 June 2026 from: [✂].
[378] [✂] response to call for evidence dated 30 June 2026, [✂].

payments.[379] While our proposed NFC Access CR does not automatically unlock all of these benefits, it is a necessary stepping-stone in ensuring that these benefits can arise in the near future.

5.93 Finally, access to NFC on commercially viable terms helps to create the conditions in which UK innovators can build the next generation of secure, convenient and consumer-facing contactless services. While difficult to specifically quantify, the benefits of this dynamic competition would ensure that UK consumers are able to benefit from the highest quality range of products, regardless of which company they come from.

Comparing the costs and the benefits of our proposed NFC Access CR

5.94 In this section we bring together the evidence on the costs and benefits and consider their relative magnitude.

5.95 As explained in the potential benefits section, the proposed NFC Access CR would support effective entry and lead to increased competition in NFC apps, delivering substantial benefits to developers, consumers and the wider UK economy. While the precise value of these benefits is difficult to quantify, we consider the magnitude of the benefits would likely be significant because:

(a) We expect entry to occur with multiple developers incentivised to take up NFC, and the proposed NFC Access CR would enable effective competition to take place at pace.

(b) There are large number of users of digital wallets in the UK on iOS meaning that even small improvements in choice, quality and innovation from increased competition in NFC contactless payments could lead to material benefits for end-users as illustrated in paragraph 5.90(a).[380]

(c) As discussed in paragraph 5.90(b) above, card issuers, including UK fintechs, could benefit from competition placing downward pressure on digital wallet fees. If these cost savings were passed on through improved product quality or greater investment and innovation, this would also generate benefits for UK consumers. Indeed, mobile contactless payments

[379] Open Banking Limited, 'Unlocking the everyday, the value of growth and opportunity of open banking in the UK', March 2026, slide 18, accessed by the CMA on 14 October 2026.
[380] See paragraph 5.90(a).

are now mainstream,[381] and if usage continues to increase, the aggregate value of these potential savings would also increase. This means that the benefit could become increasingly material as demand for mobile contactless payments grows.

(d) There would be significant benefits associated with long-term innovations like A2A of which effective NFC access is a key enabler in supporting its adoption.[382]

5.96 In contrast, while we have not been able to quantify costs, the available evidence suggests that they would likely be very low relative to the benefits the proposed NFC Access CR would deliver, more specifically:

(a) We provisionally consider that taken together, the incremental costs to Apple to enable effective access to NFC are unlikely to be significant:

(i) The available evidence suggests costs for Apple to implement the proposed NFC Access CR would be low. However, even if they are higher than our provisional view, their one-off nature limits the extent to which they scale relative to the benefits, which are expected to accrue and scale over the years.

(ii) Apple would face ongoing costs to support HCE and SE provision; however, these costs would be recoverable through the fair, reasonable and non-discriminatory fees Apple charges for NFC access, thereby limiting the magnitude of ongoing costs relative to the benefits the CR would deliver.

(iii) Other ongoing costs that Apple faces in relation to monitoring and compliance are necessary features of the proposed NFC Access CR to meet the aim described in Chapter 2 by addressing Apple's SEMP, and the magnitude of any residual costs is unlikely to be substantial.

(b) We provisionally consider that the costs to users we have identified in relation to security and privacy, and default API would present low risks and, overall, would be unlikely to materialise.

[381] See paragraph 1.6.
[382] See paragraphs 5.91-5.92.

(c) We expect costs to developers to be low (to the extent their solutions already exist in the EEA or on Android) and to be incurred only where developers expect a net benefit (ie the benefits of entry outweighing the costs).

5.97 Based on the above, we provisionally consider that the benefits of the proposed NFC Access CR would likely outweigh its costs. This includes the additional costs associated with supporting both technology routes, which we consider are justified by the benefits of ensuring effective access across the full range of current and future NFC use cases.

Provisional conclusion on proportionality

5.98 Our overall provisional assessment is that the proposed NFC Access CR is effective and proportionate. We will continue to refine our understanding of the likely costs and benefits of the measure as part of the final proportionality assessment, to inform our decision about whether to impose the proposed NFC Access CR.

6. QUESTIONS FOR CONSULTATION

6.1 We welcome views on any aspect of the proposed NFC Access CR design or analysis set out above. We are particularly interested in stakeholder feedback on the following questions:

The technology on which access is based

6.2 Given the overall design of our proposed NFC Access CR (including allowing Apple to charge a fair, reasonable, and non-discriminatory fee), would you still expect there to be a demand for both HCE and SE across different use cases, eg payments vs non-payments? Please explain your reasoning for this.

6.3 Under what circumstances would you have the incentive to switch to a different access technology compared to your current preference?

6.4 To what extent would Mastercard and Visa's iOS SE SDKs reduce the complexity of developing SE solutions? Please explain whether these SDKs would shorten the timeframe to deploy SE contactless solutions on iOS in the UK.

Express Mode and Power Reserve

6.5 What impact would being unable to offer unauthenticated transactions and not having access to iOS functionalities used by Express Mode and Power Reserve have on the development, operation or uptake of NFC apps (and would this differ by use case)? Please provide supporting evidence and, where available, an estimate of the impact.

6.6 Would allowing third parties to offer unauthenticated transactions and access to iOS functionalities used by Express Mode and Power Reserve require any changes to existing protocols, NFC terminals or supporting infrastructure? If so, please describe those changes, who would need to make them and cost implications.

6.7 Would access to iOS functionalities used by Express Mode and Power Reserve, and the ability to complete transactions without authentication allow you to develop features equivalent to Express Mode and Power Reserve? Please provide a description of any development that would need to be completed.

6.8 Would providing access to the iOS functionalities used by Express Mode and Power Reserve create any security or privacy risks? If so, please provide a detailed description and any measures which might mitigate them.

NFC access fees

6.9 Are you planning to launch or have you considered launching products or services in the UK that require NFC access on iOS? If so, please provide the following information for each product or service:

(a) Please provide a layperson's description and how it differs from existing products or services.

(b) Please explain whether Apple's current NFC & SE Platform fees are commercially viable for your product or service.

(c) Please provide analysis of the fee level at which each of your NFC products or services breaks even.

(d) Please provide the (estimated) launch date. Please explain how this date would move depending on the level of NFC & SE Platform fee reduction.

6.10 What advantages and disadvantages may arise for (i) you and (ii) other stakeholders from requiring Apple:

(a) Not to engage in undue discrimination between:

(i) itself, Apple, and developers, and

(ii) different developers?

(b) To offer different 'tariffs' from which developers can choose and switch? Please explain any differences between different 'tariff' options (eg, the choice of charging unit, variable or fixed fees, etc).

6.11 What are the main parameters of competition (that is, what do consumers care most about; eg, price, quality, range or service) in the supply of (i) payments and (ii) non-payment NFC-based apps?

Proportionality

6.12 Please list any other benefits or costs you foresee arising (i) to you and (ii) more generally from the proposed NFC Access CR, and please provide an estimate of the magnitude of their effect, including any supporting evidence available.

6.13 To the extent you previously identified benefits arising from effective NFC access being provided for free on iOS (for example, in your response to the CMA's call for evidence), please discuss if these benefits would still arise should effective NFC access be provided at a fair, reasonable and non-discriminatory price.

6.14 If you are a developer interested in taking up NFC on iOS, do you foresee any unintended consequences resulting from the measures included in the proposed NFC Access CR?

Responding to this consultation

6.15 Stakeholders are invited to comment on the proposed measures set out in this consultation document. We particularly welcome comments on the specific questions we have set out above. We will carefully consider responses to this consultation, in addition to our ongoing stakeholder engagement and wider analysis, before proceeding with any proposed measures.

6.16 Responses should be submitted to mobilesms@cma.gov.uk or made via the consultation portal no later than 5pm on 17 November 2026. We would expect to publish responses to the consultation, subject to any representations made in relation to confidentiality of the information provided.

6.17 Where responses include confidential information, this should be clearly marked. A non-confidential version should also be provided that can be published on the CMA's website.

6.18 Any non-disclosure agreement a party may have in place with Apple should not prevent them from responding to this consultation. Apple has also confirmed that it will not use any other confidentiality provision with a party to prevent them from responding to this consultation.

7. APPENDIX A: FRAMEWORK FOR THE ASSESSMENT OF CONDUCT REQUIREMENTS

7.1 CRs are requirements as to how the designated firm must conduct itself in relation to the digital activity in respect of which it has SMS.[383] CRs are intended to guide the practices of an SMS firm in ways that address not only existing issues in relation to a relevant digital activity, but also protect against the risk that the firm seeks to take advantage of its SEMP and position of strategic significance in respect of that digital activity in ways that could exploit consumers and businesses or undermine fair competition. The Act provides the CMA with the power to impose a CR or combination of CRs where the CR(s) meet certain legislative requirements, as summarised below.

7.2 First, the CMA may only impose a CR or combination of CRs on an SMS firm if the CMA considers it would be proportionate to do so for the purposes of one or more of the three objectives in the Act, having regard to what the CR or combination of CRs is intended to achieve.[384] These objectives are:

(a) **Fair dealing**: users or potential users of the relevant digital activity are treated fairly, and able to interact, whether directly or indirectly, with the SMS firm on reasonable terms;

(b) **Open choices**: users or potential users of the relevant digital activity are able to choose freely and easily between the services or digital content provided by the SMS firm and services or digital content provided by other firms; and/or

(c) **Trust and transparency**: users or potential users of the relevant digital activity have the information they require to enable them to understand the services or digital content provided by the SMS firm through the relevant digital activity, including the terms on which they are provided, and make properly informed decisions about whether and how they interact with the SMS firm in relation to the relevant digital activity.

7.3 Second, the CMA may only impose a CR where it falls within one or more of the 'permitted types' set out in the Act.[385] They must be for the purpose of obliging

[383] Section 19(3) of the Act.
[384] Section 19(5)-(8) of the Act.
[385] Section 19(9) of the Act

the designated firm to do certain things (eg to trade on fair and reasonable terms) or preventing the designated firm from doing certain things (eg restricting interoperability or using data unfairly).[386]

7.4 Third, before imposing a CR or a combination of CRs on an SMS firm, the CMA must have regard to the benefits for end-users that it considers would likely result (directly or indirectly).[387]

7.5 The CMA may only impose a CR or a combination of CRs on a designated firm if it considers that it would be proportionate to do so for the purposes of one or more of the statutory objectives, having regard to what the CR or combination of CRs is intended to achieve.[388] A proportionate CR or combination of CRs is one that

(a) Is effective in achieving its intended aim;

(b) Is no more onerous than it needs to be to achieve its intended aim;

(c) Is the least onerous, where the CMA has identified multiple equally effective options that would achieve the intended aim; and

(d) Does not produce disadvantages that are disproportionate to its aim.[389]

7.6 Finally, as explained in its published guidance,[390] when considering whether and how to address issues in relation to a relevant digital activity the CMA has regard to its Prioritisation Principles.[391] These principles help to guide our choice of work where we have discretion to act. They consist of five key considerations:

(a) **Strategic significance**: does CMA action in this area fit with the CMA's objectives and strategy, having regard to the Government's Strategic Steer to the CMA?

(b) **Impact**: how substantial is the likely positive impact of CMA action?

---

[386] Section 20 of the Act.
[387] Section 19(10) of the Act.
[388] Section 19(5) of the Act.
[389] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.33.
[390] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.11.
[391] CMA Prioritisation Principles, October 2023 (**CMA188**).

(c) **Is the CMA best placed to act**: is there an appropriate alternative to CMA action?

(d) **Resources**: does the CMA have the right capacity in place to act effectively?

(e) **Risk**: what types of risks are associated with CMA action, and how significant are they?

7.7 In brief, as set out in its published guidance, the CMA's approach to designing effective and proportionate CRs follows three steps:

(a) **Step 1 (Aim)**: the CMA identifies what the CR is intended to achieve. CRs must be imposed for the purpose of one or more of the objectives set out in legislation and will typically be intended to ensure that SMS firms do not take advantage of their powerful positions in ways that could exploit consumers or businesses or undermine fair competition.

(b) **Step 2 (Effectiveness)**: the CMA considers CRs within the permitted types set out in legislation to identify CRs or combination of CRs that would be effective in achieving the CMA's aim in relation to a particular issue. As part of this, the CMA will consider both the content and form of CRs – including outcome-based, action-focused, higher level and more detailed CRs; and

(c) **Step 3 (Proportionality)**: the CMA considers the proportionality of any CRs that it proposes to impose.[392]

[392] See Digital Markets Competition Regime Guidance (CMA194), paragraph 3.20.