

Code of Conduct for the Authentication of Machine-Dispensed Banknotes

Review of the Code



BANK OF ENGLAND



BRITISH RETAIL CONSORTIUM
for successful and responsible retailing



Published 22 April 2015

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Executive Summary

The Code of Conduct for the Authentication of Machine-Dispensed Banknotes ('the Code') was launched in July 2013. To help maintain confidence in the currency, the Code requires Bank of England banknotes dispensed through Customer-Operated Cash Dispensers (COCDs) to have been machine-authenticated prior to their dispense. Whilst the majority of notes dispensed by COCDs have been authenticated in the wholesale sector (according to clearly defined and monitored Bank of England standards) the Code specifically addresses notes recycled outside the wholesale sector, requiring that the same authentication controls are applied in this growing practice.

The Code was launched with a staggered implementation timetable extending to September 2016. The first major implementation milestone in September 2014 sought the compliance of all self-service checkouts (SCOTs) and the majority of ATMs, with low-transacting ATMs having later compliance deadlines. This Review of the implementation of the Code was timed to follow the September 2014 milestone, to allow conclusions to be drawn on the impact of the Code so far and possible changes for the future.

Overall, the current volume of COCDs complying with the Code is high. For members of the public, this provides significant reassurance that only machine-authenticated notes are dispensed by the majority of the COCDs from which they may receive a Bank of England note.

Current levels of compliance with the Code

| | Percentage of note-dispensing SCOTs | Percentage of LINK ATMs dispensing Bank of England notes |
|---|-------------------------------------|--|
| Fully compliant with the Code | 75% | 75% |
| Non-compliant with the Code, or only partially compliant ¹ | 25% | 25% |

75% of all SCOTs which dispense Bank of England notes (as change or cashback) are compliant with the principles of the Code, and 75% of all the ATMs connected to the LINK network² which dispense Bank of England notes are also compliant. Of the ATMs covered by the September 2014 target, only 14% are not yet compliant. Two thirds of the non-compliant ATMs process fewer than 500 cash transactions per month, with many of them falling significantly below this figure. So in terms of the volume of cash transactions (or the value of cash dispensed), the rate of compliance is higher than the 75% of ATMs. (Details of compliance levels are given from page 6 of the report.)

Clearly, however, there is still work to do. The rate of self-certification among retailers was disappointingly low, with even a number of those organisations which do follow Code compliant processes not submitting a formal certificate. It will be important to achieve a higher level of certification in future. More materially, a small number of organisations (both retailers and ATM operators) need to do more to ensure compliance with the Code for COCDs which were due to be compliant by the first deadline. Many of these have plans in place and the Code Sponsors are working closely with these organisations to support achievement of higher compliance levels. And Code compliance also needs to be rolled out to the less active ATMs to ensure that the entire sector offers users the same counterfeit protection.

On the basis of the compliance achieved so far, the Review has concluded that there is no current need for significant change to the Code. Specifically, the Code Sponsors remain comfortable that the current voluntary approach can work.

¹ Some SCOTs are compliant for some denominations of notes, but non-compliant for others due to a different source of the different denominations

² The LINK network covers the vast majority of UK ATMs

A number of clarifications have been made to the Code as a result of the Review, with a revised version launched. The new version better reflects current practice, clarifies requirements and definitions and anticipates future industry change. The changes do not, however, materially affect the principles or requirements of the Code.

In the light of feedback and an improved understanding of the practical impact of the Code, the Code Sponsors have agreed to a number of changes to its implementation:

- The timetable for the implementation of the Code across the remaining ATM estate has been changed to be more compatible with the timetable for the introduction of polymer (and smaller sized) £5 and £10 Bank of England banknotes. In particular, the timetable for compliance for merchant-fill ATMs processing fewer than 500 transactions per month is now March 2017, *after* the introduction of the Bank of England polymer £5.
- The compliance reporting timetable for non-LINK Members (including retailers with self-service checkouts) has been aligned with LINK Members - all now as at end March annually.
- The compliance self-certification form and process for retailers will be reviewed and changes will be agreed with the British Retail Consortium ahead of the next certification round (as at end March 2016).

In support of the future roll-out, specifically to less well-used ATMs, many of which are in the convenience sector, the Code Sponsors plan to develop more targeted communications during 2015.

The Code Sponsors considered a number of more substantive changes to the scope of the Code and reached the following conclusions:

- There should be a consultation on how to extend the scope of the Code to cover notes issued by the Scottish and Northern Ireland banknote issuers. This will take place in 2015, in line with the launch of a Framework for the Testing of Automatic Banknote Handling Machines for their banknotes.
- There should be a consultation on whether and how the compliance timetable and reporting process for the Code should be extended to cover other sectors where the practice of COCDs dispensing banknotes is starting to be seen (e.g. transport ticket machines dispensing banknotes as change), or may be seen soon. This consultation will follow a period of further research and is likely to take place in 2016.
- Quality sorting of banknotes will not be added to the Code at this stage. Whilst the recirculation of good quality banknotes is very important because high-quality notes lead to more reliable authentication and more efficient machine dispense, only highly sophisticated banknote sorting machines are currently able to make judgements against quality standards. The Bank of England plans to publish quality standards for its new polymer banknotes and may consider extending the scope of the Framework to (optionally) include quality testing in due course. Only after any such extension of the Framework would the Code Sponsors consider whether it would be appropriate to extend Code principles to cover quality sorting for those who undertake local recycling on a significant scale. Were this to happen, the Code Sponsors would consult the industry on how this could be done in a proportionate way. The Code continues to strongly encourage quality sorting of banknotes, particularly by those who are recycling notes on a significant scale. An Annex to the Code sets out quality settings for recycled banknotes.

The Code Sponsors would like to thank the industry – in particular those who have made investments or changes to processes – for their engagement with the Code so far and for playing their part in ensuring that the public can retain their confidence in the currency. We look forward to continuing to work with you to further this aim.

Introduction to the Code and its implementation

Cash is an integral part of the UK's payment services. The British public spend over £260 billion each year in cash; for the public to trust and want to continue to use cash, they need to be confident that the banknotes they acquire are genuine.

Recent advances in cash-handling technology have led a number of financial institutions, ATM operators, and retailers to look at using banknotes tendered by the public to refill ATMs, SCOTs or other COCDs, and others may follow suit. These innovations help to keep cash cost-effective as a payment mechanism, but they also change the way cash circulates.

The Bank of England's Note Circulation Scheme (NCS) distributes the vast majority of banknotes in the UK and works to clearly-defined and monitored standards to ensure that only genuine, fit notes reach the public. This wholesale method³ is increasingly being supplemented by notes 'recycled' locally, outside the Bank of England's contracted controls. These banknotes need to be authenticated according to the same standards to ensure that the public can always trust that the banknotes they receive are genuine, regardless of where they receive them. Counterfeit levels are low, but the rise of local recycling could, without proper mitigants, increase the risk of a member of the public receiving a counterfeit note from a COCD.

To help maintain confidence in the currency, the Code requires Bank of England banknotes which are dispensed through COCDs to have been machine-authenticated prior to their dispense. Authentication can be carried out by a bulk supplier (e.g. an NCS member or a cash-in-transit (CIT) company) or locally using a machine which has passed the Bank of England's *Framework for the Testing of Automatic Banknote Handling Machines* ('Framework').

The Code is sponsored by the Bank of England, Payments Council, Cash Services, British Retail Consortium (BRC) and LINK (the 'Code Sponsors'). It was introduced in 2013 and required organisations to work towards an implementation timeframe which is staggered and dependent upon the type of dispensing COCD and the number of transactions it processes, as below.

Initial implementation timetable

| | By end of |
|---|--|
| Newly installed ATMs, or renewed contracts at existing ATM sites | March 2014 |
| Self-service checkouts | September 2014 |
| Existing ATMs achieving 500 or more cash transactions per month (Tranche 1) | September 2014 |
| Existing ATMs achieving 150 or more cash transactions per month (Tranche 2) | September 2015 |
| All ATMs (Tranche 3) | September 2016 (but subject to review) |

The Code is expected to evolve alongside cash handling practices and as new technologies emerge. The Review Group⁴ monitors developments, including through receiving feedback and suggested improvements from stakeholders.

³ Along with the Bank of England's contractual arrangements with the Northern Ireland Issuing Banks

⁴ The Review Group consists of representatives of the Bank of England, British Retail Consortium, Cash Services, LINK and the Payments Council. The Association of Commercial Banknote Issuers is an observer.

Compliance levels and methods of compliance

The first implementation deadline of the Code passed at the end of September 2014. ATMs achieving 500 or more cash transactions per month and all SCOTs were due to be compliant with the Code by this point. To measure levels of compliance, retailers were asked to complete self-certificates outlining details of compliance levels across their SCOT estates. Retailers and ATM operators were further asked to complete a survey which sought information on the measures organisations had undertaken to achieve compliance. In the following statistics, where notes are sourced from bulk suppliers, we have assumed that they are compliant (in future, confirmation of this will be sought).

Compliance levels - Retailers

The 33,400⁵ banknote-dispensing SCOTs in the UK are operated by eleven large retailers. Of these, only four completed the self-certification process to report on their compliance as at end September 2014. The following table sets out compliance figures based on this reporting, where a retailer is deemed non-compliant if a completed self-certificate was not returned.

| | Number of SCOTs | Percentage of total SCOTs |
|-----------------|-----------------|---------------------------|
| Fully compliant | 12,200 | 37 |
| Non-compliant | 21,200 | 63 |
| Total | 33,400 | 100 |

A more complete picture of compliance has been compiled using data gathered informally through surveys and bilateral conversations. Of the eleven retailers, eight are understood to be fully compliant with Code principles, two are non-compliant and one is partially compliant. A summary of the compliance state of SCOTs (as at end September 2014) is shown below.

| | Number of SCOTs | Percentage of total SCOTs |
|----------------------------------|-----------------|---------------------------|
| Fully compliant | 25,300 | 75 |
| Non-compliant | 6,900 | 21 |
| Partially compliant ⁶ | 1,200 | 4 |
| Total | 33,400 | 100 |

Compliance levels - ATM operators

All but a handful of ATMs in the UK operate as part of the LINK scheme.⁷ Compliance reporting for LINK Members is undertaken as part of the annual LINK attestation process and results from this process are not due until summer 2015. Conclusions have therefore been based on informal surveys and bilateral discussions, rather than formal self-certification.

⁵ This number is constantly changing. The quoted figures represent a reasonable approximation of the actual number at the time of the Review.

⁶ The partially compliant SCOTs dispense only £5 and £10 notes; the £5 notes are sourced from a compliant bulk supplier, while the £10 notes are recycled from the store takings (and not authenticated before COCD dispense) so are non-compliant.

⁷ The non-LINK ATMs are covered by the Code and are most likely to fall into tranches 2 and 3 in terms of implementation timetables.

There are 31 LINK Member ATM operators, who between them run 69,000 ATMs.⁸ We estimate that 66,000 of these dispense Bank of England notes.⁹ A summary of ATM compliance is shown below.

| | Number of ATMs | Percentage of LINK ATMs dispensing Bank of England notes |
|-----------------|----------------|--|
| Fully compliant | 49,500 | 75 |
| Non-compliant | 16,500 | 25 |
| Total | 66,000 | 100 |

Taking the information provided along with knowledge of ATM estates, it is estimated that 75% of LINK ATMs that dispense Bank of England notes are Code compliant. The majority of compliant ATMs are filled with bulk supplied notes. The 25% of ATMs which are not compliant are those filled with locally recycled notes that have not been authenticated prior to their dispense from the ATM.

LINK estimates that 42,600 ATMs are covered by Code Tranche 1¹⁰ (those ATMs achieving 500 or more cash transactions per month and dispensing Bank of England notes). Of these, we estimate that at least 36,800 are Code compliant through being filled with notes sourced from a bulk supplier or with locally sourced notes that have been authenticated in a Code compliant manner. The remaining 5,800 ATMs are not yet filled in a Code compliant manner. The majority of these are merchant-fill ATMs (i.e. ATMs hosted by a merchant (e.g. retailer, leisure outlet) where the notes used to fill the ATM are sourced by the host).

Work needed to achieve fuller compliance

Whilst there is already a high level of overall compliance, some organisations have more work to do to roll compliance out to their entire estate. The Review Group is working closely with these organisations to understand their plans for moving towards fuller compliance. A number of the retailers have already made suggestions about their approach; the Review Group will continue to work with all three retailers who are not fully compliant to ensure credible plans are made and proposed actions are followed through. Once there is formal reporting on ATM compliance later this spring, the Review Group will liaise with the operators of non-compliant Tranche 1 ATMs to confirm that action plans are progressing to further compliance. In particular, the Review Group will focus on working with the merchant-fill ATM sector to implement their plans to comply with the Code, including understanding the most appropriate solutions for this sector. Such solutions could also inform operators' plans for roll-out to the later tranches of ATMs.

Approaches to compliance

A number of approaches have been taken by organisations to achieve Code compliance. The different compliance methods below have each been reported as in use by at least one retailer or ATM operator.

Retailers – see page 11 for diagrams

SCOTs accept notes as a method of payment and dispense them as change or as cashback. Some SCOTs are able to internally recycle notes so that notes accepted as payment from one customer may be dispensed to another customer as change or cashback. Other SCOTs do not have the ability to internally recycle and instead have two separate hoppers that hold notes; one holds notes that have been accepted as payment and the other holds notes

⁸ The number of ATMs in the UK is constantly changing. The figures above represent a reasonable approximation of the actual number at the time of the Review.

⁹ The remaining 3,000 ATMs dispense only Scottish and Northern Ireland notes so do not need to comply with the Code at this time.

¹⁰ The number of ATMs in Tranche 1 changes as usage ebbs and flows over time. The figures above represent a reasonable approximation of the actual number at the time of the Review.

ready for dispense. Both these methods will require the SCOT to be filled with notes for dispense at some point, since even those which internally recycle will experience an imbalance in flows.

Retailers described the following methods for achieving Code compliance:

1. **Bulk supplier sourced** – the SCOT dispense hopper is filled with notes provided by a bulk supplier.
2. **Internally recycled** – the SCOT internally recycles notes, i.e. notes pass through a Framework-listed authenticator on acceptance; notes that cannot be authenticated will be rejected, notes that have been accepted can be dispensed since these have been machine-authenticated and so are compliant with the Code.
3. **Authenticated by SCOT** – the SCOT dispense hopper is filled with notes that have been previously accepted by a SCOT. These notes will have been authenticated as they pass through the SCOT's Framework-listed note validator on acceptance to the SCOT. Since the SCOT does not automatically recycle notes, staff physically move the notes from the acceptance hopper to the dispense hopper, possibly via a stock take process outside the COCD. Care must be taken to ensure that notes authenticated by the SCOT are kept separate from other notes.
4. **Authenticated on loading** – the note validator on the SCOT is used to authenticate notes as they are loaded into the SCOT dispense hopper by staff. The note validator must be listed on the Framework.
5. **Authenticated by standalone machine** – a standalone, Framework-listed machine is used to authenticate banknotes tendered to the retailer at manned tills before loading them into the SCOT dispense hopper.

Retailers may use any combination of the above methods to refill or top-up SCOTs, or may devise their own method; however, regardless of refill method chosen, care must be taken to ensure all notes are Code compliant.

There is no one dominant SCOT refill method; each of the above methods is used by retailers in practice. Bulk supplier sourced (method 1) is the traditional approach to filling SCOTs, which is still used by some retailers (for at least some note denominations). Internally recycling SCOTs (method 2) have increased in popularity as technology has improved, and an equal number of retailers are now using this approach as are using the bulk supplier sourced method. Authenticating the notes when loading them into the SCOT (method 4) is used by a small number of retailers, as is authentication by standalone machine (method 5) or by SCOT (method 3).

ATM operators – see page 12 for diagrams

ATM operators have described the following methods for achieving Code compliance:

1. **Bulk supplier sourced** – the ATM is filled with notes provided by a bulk supplier.
2. **Authenticated by standalone machine** – a standalone, Framework-listed machine is used to authenticate banknotes tendered to the host of the ATM (at a manned till or branch counter) before loading them into the ATM. The standalone machine could be a point of sale note authenticator or a desktop note sorter/authenticator, for example.
3. **Internally recycled** – the ATM/deposit accepting machine internally recycles notes. Notes pass through a Framework-listed note validator on acceptance; notes that cannot be authenticated will be rejected, notes that have been accepted can be dispensed since these have been machine-authenticated and so are compliant with the Code.

An ATM operator may use any combination of the above methods to fill or top-up ATMs, or may devise their own method; however, regardless of refill method chosen, care must be taken to ensure all notes are Code compliant.

Bulk supplier sourced (method 1) is the dominant refill method for ATMs. Authentication by standalone machine (method 2) is used by some large financial institutions (FIs) and amongst operators of merchant-fill ATMs (predominately Independent ATM Deployers (IADs)). FIs adopting method 2 use desktop note sorters/authenticators in large branches to service a number of high use ATMs, while operators of merchant-fill ATMs typically rely on merchants using point-of-sale authenticators to check notes before accepting them into their till. Hosts of merchant-fill ATMs may also use desktop note sorters/authenticators if they have a number of tills from which notes are taken to fill ATMs. Internally recycling (method 3) is an infrequent approach used by a small number of FIs; however this is increasing due to developments in COCD technology and the number of deposit-accepting and recycling COCDs in bank branches growing.

Impacts of the Code: costs and removal of COCDs

Many retailers have not needed to make any changes to be compliant with the Code; they simply continue to use notes authenticated in a Code compliant manner to fill their SCOTs. Likewise, the majority of ATM operators continue to use notes sourced from a bulk supplier to fill ATMs, so have not changed their processes to comply with the Code.

A number of FIs use authenticators as part of a local recycling process. They report using two types of note authenticators, both being high-end machines with a number of functions and dealing with bulk cash processing and recycling. A high-end desktop authenticator costs between £550 and £5,600 and a deposit-accepting and internally recycling ATM costs around £25,000. FIs tend not to attribute the costs of authenticators to the implementation of the Code; those FIs that are recycling notes have been doing so for a number of years and see authentication as a key part of their customer offering. One FI stated that Framework machines were installed as part of their note processing strategy rather than to obtain Code compliance, with another saying their machines had multi-function capability focused on delivering a self-service environment for customers, and that the devices had been deployed for reasons other than compliance with the Code.

In contrast, the IADs tend to attribute their costs (and the costs incurred by their merchants) directly to Code implementation. IADs reported deploying much simpler machines, typically point-of-sale authenticators, specifically in order to achieve Code compliance for their merchant-fill estate. Through the use of a point-of-sale authenticator, merchants are able to protect themselves from the acceptance of a counterfeit note, ensuring that these are identified at the point of acceptance, rather than when they are further handled or banked, at which point the merchant would face a loss of value. Basing their counterfeit protection measures on an authenticator instead of judgement based tools such as UV lamps and detector pens should provide merchants with greater protection, ensuring benefits to them over and above the added protection they are offering through Code compliance to those of their customers who use their ATM.

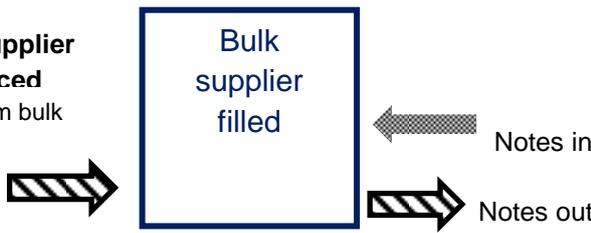
Whilst point-of-sale authentication machines are significantly cheaper than those used by FIs, the IADs noted a number of set-up costs to position themselves to be ready for rolling these out to their merchant-fill customer base, including mailshots, staff time and legal advice for a revision and reprint of customer contracts. Excluding such one-off costs, the average cost for installing a Framework-listed point of sale authenticator to allow a merchant-fill ATM to achieve compliance is £110. Given the current scale of usage of merchant-fill ATMs, this might suggest a total Tranche 1 cost of £880,000 for this sector, and a total cost of £1.88m for all merchant-fill ATMs across all three

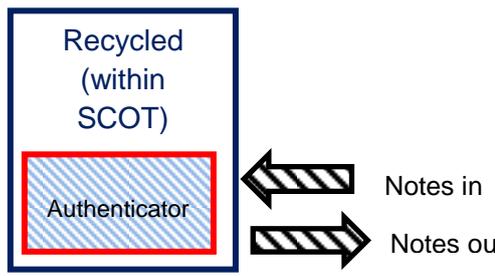
tranches. The typical approach adopted by the IADs is to use one authenticator to cover one ATM (given the wide distribution of ATMs), whereas FIs typically use one authenticator/sorter to cover many ATMs in one branch.

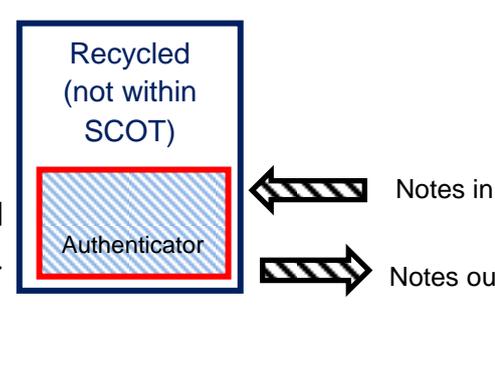
As of yet, there have been no reports of COCDs being removed solely as a result of the Code. However one ATM operator has stated that the imposition of the Code across its entire merchant-fill estate might result in as many as 8% of ATMs being removed from its ATM estate. This suggests that resistance to the Code and the need to change processes may result in the removal of a number of merchant-fill ATMs due to Code non-compliance, or alternatively these ATMs would be persistently non-compliant.

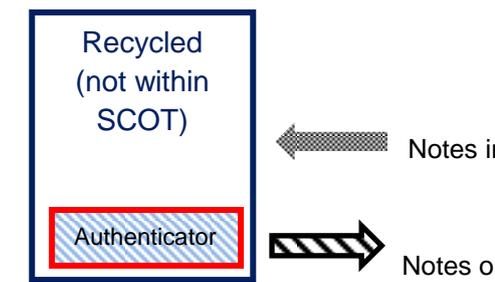
Retailers

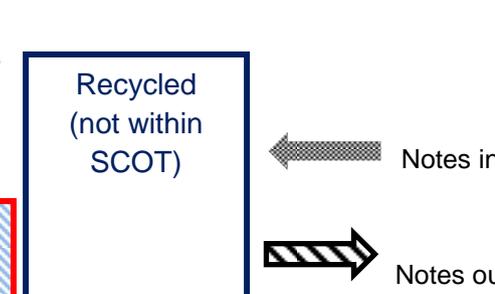
| Method of Compliance | Explanation |
|----------------------|-------------|
|----------------------|-------------|

| | | |
|--|--|----------|
| <p>Bulk supplier sourced Notes from bulk supplier</p>  | <p>Bulk supplier filled</p> <p>Notes in</p> <p>Notes out</p> <p>SCOT dispense hopper is filled with bulk supplier notes only, i.e. notes that have been delivered by CIT.</p> | <p>1</p> |
|--|--|----------|

| | | |
|---|---|----------|
| <p>Internally recycled</p>  | <p>Recycled (within SCOT)</p> <p>Authenticator</p> <p>Notes in</p> <p>Notes out</p> <p>SCOT internally recycles notes. Notes pass through an authenticator on acceptance; notes that cannot be authenticated will be rejected, notes that have been accepted have been authenticated, so can be dispensed.</p> | <p>2</p> |
|---|---|----------|

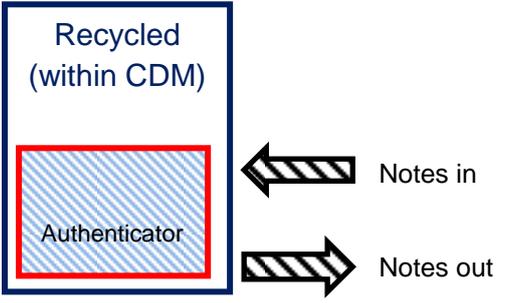
| | | |
|---|---|----------|
| <p>Authenticated by SCOT</p> <p>Notes removed from acceptance hopper</p>  <p>and loaded into dispense hopper</p> | <p>Recycled (not within SCOT)</p> <p>Authenticator</p> <p>Notes in</p> <p>Notes out</p> <p>SCOT dispense hopper is filled with notes that have been previously authenticated by a SCOT. Notes are removed from the acceptance hopper in a SCOT, for example for cash reconciliation in the back office. These notes are segregated from all other notes to avoid contamination with notes that have not been machine-authenticated. The notes that had previously been accepted by a SCOT are then used to replenish the SCOT dispense hopper.</p> | <p>3</p> |
|---|---|----------|

| | | |
|--|---|----------|
| <p>Authenticated on loading</p> <p>Notes from non-wholesale source i.e. other customers</p>  | <p>Recycled (not within SCOT)</p> <p>Authenticator</p> <p>Notes in</p> <p>Notes out</p> <p>SCOT dispense hopper is filled with locally recycled notes, i.e. notes from store takings. These notes are fed by an employee into the SCOT using the note validator, which authenticates the notes as it accepts them.</p> | <p>4</p> |
|--|---|----------|

| | | |
|---|--|----------|
| <p>Authenticated by standalone machine</p> <p>Notes from non-wholesale source i.e. other customers</p>  | <p>Recycled (not within SCOT)</p> <p>Notes in</p> <p>Notes out</p> <p>SCOT dispense hopper is filled with locally recycled notes, i.e. notes from store takings. Notes are machine-authenticated by a standalone authentication machine, for example in the store cash office, before being loaded into the SCOT.</p> | <p>5</p> |
|---|--|----------|

Retailers may operate SCOTs that utilise a number of refill methods. Retailers must ensure all banknotes have been authenticated before being dispensed from SCOTs.

ATM operators

| Method of Compliance | Explanation |
|--|---|
| <p>Bulk supplier sourced</p>  | <p>ATM is filled with bulk supplier notes only, i.e. notes that have been delivered by CIT.</p> <p style="text-align: right;">1</p> |
| <p>Authenticated by stand-alone machine</p> <p>Notes from non-wholesale source i.e. store takings or customer deposits</p>  | <p>ATM is filled with locally recycled notes, i.e. notes from store takings or notes accepted over bank branch counters. Notes must be machine-authenticated e.g. using a point-of-sale authenticator or desktop note sorter/authenticator, before loading them into the ATM.</p> <p style="text-align: right;">2</p> |
| <p>Internally recycled notes (Cash and deposit machines - CDMs)</p>  | <p>CDM internally recycles notes. Notes pass through a note validator on acceptance: any notes that cannot be authenticated are rejected; notes that have been accepted have been authenticated, so can be dispensed.</p> <p style="text-align: right;">3</p> |

Operators may have ATMs that utilise a number of refill methods. Operators must ensure that all banknotes have been authenticated before being dispensed from ATMs.

Minor amendments to the Code and its implementation

Code clarifications and updates

The Review helpfully identified some areas where the Code could be more clearly explained or needed to be updated to reflect industry developments (for example, to reflect changes to the sorting and distribution of Bank of England notes in Northern Ireland). The changes have been summarised below, and a revised Code has been issued alongside this Review. The changes do not affect the requirements or the implementation of the Code, but simply seek to better explain it and ensure it remains up to date.

The new version more clearly defines two different, Code compliant, approaches to note authentication by bulk banknote suppliers. For the COCD operator, Code compliance can be achieved by sourcing notes authenticated by either of these approaches. The key to ensuring Code compliance for an organisation which sources its notes from a bulk supplier is to confirm with the supplier that the notes have been authenticated via one of these methods and have not been recirculated since the authentication. The new definitions cover:

- 'Wholesale' – notes that have been authenticated by a cash processor according to the terms of a contract it has with the Bank of England. The Note Circulation Scheme (NCS) Members and the Northern Ireland issuing banks each sort notes under such contracts. These notes are authenticated robustly and compliance is monitored by the Bank of England.
- 'Other bulk supply' – notes that have not been authenticated under contract with the Bank of England. These notes are compliant with the Code so long as they are authenticated in accordance with the principles of the Code using a machine and software/firmware version listed on the Framework.

Wording has now also been included to explicitly state that organisations should confirm with their note supplier that notes are authenticated in line with Code principles. This will aid organisations when reporting Code compliance. The revised definitions also make clearer to bulk suppliers the actions they need to take to ensure that their customers can be Code compliant, and that they should expect their customers to seek confirmation of this. Code Sponsors will work with bulk suppliers to ensure that they understand the requirements that these new definitions place on them in terms of transparency to customers and the ways in which they can provide the confirmation that will be sought.

Other changes are:

- Definition of local recycling (p3) – this has been amended to provide clarification of who undertakes local recycling and how.
- Diagram and wording (p4) – these have been amended to reflect the change in definition of wholesale.
- Implementation timetable (p8) – this has been updated to reflect the change in implementation timeframes.
- Flow diagrams in appendices (p12-13) – these diagrams have been amended to reflect the change in definition in wholesale. A third flow diagram was removed as it did not aid understanding of the Code or its reporting requirements.
- Information on compliance reporting (p15) – the wording has been amended to make the requirements clearer.
- The final two pages of the Code have been removed as the organisations referenced therein are undergoing change. Information on these organisations can be accessed on their websites, listed on p16 of the Code.

Retailer self-certification process

A number of retailers had difficulties completing the self-certification form, despite being given the opportunity to provide feedback on draft versions of the form. Advice and assistance had also been provided by the Review Group to retailers on how to complete the forms. Now that the first compliance reporting round has been completed, the Review Group will work with the retailers to understand the difficulties faced in completing the forms and how the form can be improved, whether this would take the form of material changes in the documentation or additional information and support on the certification process. This will be completed in advance of the next reporting round (as at end March 2016).

Responsibility for compliance of merchant-fill ATMs

The Code places responsibility for the compliance of ATMs on the member of the settlement scheme – in practice and in most cases, on the LINK ATM Operating Member. In the traditional model, an FI might own the ATM, be responsible for the filling of the ATM (or outsource it to a CIT company which sources the notes from a bulk supplier) and be the LINK member. Here, the LINK member has clear control over the ATM and the notes used to fill it, so Code compliance clearly fits with them. Alternative models, however, see a separation between the LINK Member and the responsibility for filling the ATM. For example, in a merchant-fill model, the host of the ATM (possibly a small retailer) has a contract with a LINK member for settlement (and other) services but it may be the host who arranges the filling of the ATM and sources the notes (possibly from their takings over the counter). Here, the LINK member is responsible for ensuring that the merchant has a working Code-compliant authenticator, with up-to-date software, on an on-going basis and for reporting on compliance.

A number of LINK Members use a merchant-fill approach for some or all of their ATM estate. Some of these have queried the Code's approach, noting that they cannot enforce the Code's principles on the merchant and that their annual reporting on compliance can only reflect what they are told by the merchant (or witness on an occasional site visit). Whilst they can supply authenticators to the merchants (or require the merchant to source their own) they cannot enforce their use and therefore cannot guarantee full and consistent Code compliance by their merchant-fill estate. They have suggested that it would be more effective for the Code to place responsibility for compliance, and for reporting, on the entity responsible for filling the ATM – in this case the merchant.

At present, the Code Sponsors consider the current approach to be the most likely means of achieving high levels of Code compliance amongst the merchant fill estate. Merchant-fill ATM hosts are a wide and diverse group with a multitude of different business arrangements and ATM contracts. The complexities of their individual approaches to achieving Code compliance and the selection of appropriate authentication equipment and processes is better understood by their ATM provider than by the Review Group. The Code Sponsors are therefore grateful for the work that the LINK Members are doing with this sector to help them to understand the Code and its significance for them, and to define and implement the best approach to their compliance. The alternative approach of placing responsibility directly on the merchants would achieve full and complete compliance only through making the Code compulsory via a legislative route and backing this with a complex and costly reporting and compliance regime. Given that the current approach continues to make good progress, the Code Sponsors consider that the Code objectives can be achieved without taking this step. To support the LINK Members in rolling out Code compliance to the merchant-fill sector (in particular as this rolls out to lower use ATMs, involving even higher numbers of merchant-fill hosts), the Review Group plan to produce additional information on the Code and its relevance to ATM hosts later this year. Relevant LINK Members and retailer groups will be asked to contribute to the drafting of this to make it as effective as possible in promoting Code compliance to this important group.

Future substantive changes to the Code

Other Sectors

The Code's principles of compliance are relevant for all types of COCDs. However, as it currently stands, the Code is clearly focused on ATMs and SCOTs. Both the timetable for compliance and the structures and processes for compliance reporting relate only to ATMs and SCOTs.

At the time the Code was issued, this focus was appropriate as ATMs and SCOTs were the only widely used COCDs which dispensed notes. However, as technology continues to develop and new COCDs and processes are adopted, the dispense of notes (generally as change items) by COCDs is starting to be seen in other areas of business. For example, some ticketing machines (e.g. travel ticket machines, car park payment machines) now have the capability to issue lower denomination notes in change. Whilst this practice is still isolated, it has the potential to roll out quickly in these and other sectors. It is important for the maintenance of confidence in the currency that any such roll out is done in a way which is compatible with the aims, and therefore compliant with the principles, of the Code. We therefore propose to explicitly extend the scope of the Code timetable and compliance reporting processes to cover all sectors.

The Code Sponsors believe that early discussions with the appropriate sectors can ensure their understanding of, and engagement with, the Code before investment decisions are made and processes are developed. As has been learnt from the roll out of the Code to the existing sectors, implementing Code-compliant arrangements is much easier at an early stage in rolling out recycling practices than retrospectively, once investment is made and processes embedded.

Technology and processes will continue to evolve and further new sectors may start to deploy banknote dispensing COCDs. It will therefore be important that any changes to the Code to cover these known new areas are sufficiently generic to cover further sectors as and when they emerge.

Since changing the scope of the Code to explicitly cover (through a timetable and compliance reporting process) other sectors would constitute a 'meaningful change' in the Code requirements, a consultation will be undertaken with affected stakeholders. This is currently anticipated to take place in the first half of 2016. In order to inform that consultation, the Review Group will initially undertake further research, engaging with the sectors currently affected and those which may be in future, for example the gaming / gambling industries. Our prior expectation is that the implementation timetable for any formal extension of the Code into these areas would not pre-date the introduction of the polymer £10 in H2 2017, given the scale of change necessary in the industry before then. However, the research period will consider in more detail whether there are any interlinkages between preparations for polymer notes and Code compliance which would make an earlier extension sensible and the consultation will explicitly cover the timetable.

Scotland and Northern Ireland banknotes

The Code applies currently to Bank of England notes, wherever they are machine-dispensed across the United Kingdom. When the Code was published, it noted that the banks authorised to issue Scottish and Northern Ireland banknotes ('S&NI issuers') were developing a similar approach in relation to the recirculation of their banknotes and that it was anticipated that the Code would be amended in due course to include their banknotes.

The S&NI issuers have now agreed in principle to establish their own Framework for the Testing of Automatic Banknote Handling Machines ('S&NI Framework'). The machines listed on the S&NI Framework will assess the authenticity of notes issued by those banks, applying the same techniques and approaches as for Bank of England notes. They will be subjected to equivalent tests to those used for the Bank of England Framework and the success criteria determining

which will be listed will be the same. The two Frameworks will publish separate lists, but users will easily be able to check whether a machine is listed on one, both or neither of the lists.

The S&NI issuers anticipate that the S&NI Framework will be available later in 2015. Information for manufacturers on how to submit their machines for testing will be available ahead of the launch. The S&NI issuers anticipate that the machines will follow the same testing cycle as for the original Framework, so that a full list would be expected a year after the initial launch of the S&NI Framework.

The Code Sponsors are committed to undertaking a consultation with affected stakeholders ahead of any meaningful change to the Code. Therefore a full consultation would be carried out before any extension of the Code to include S&NI issuers' notes. This would most likely focus on the timetable for the change,¹¹ but would also include aspects such as the compliance monitoring processes. We anticipate launching a consultation on the extension of the Code in the last quarter of this year, with the aim of publishing the results by early 2016.

Quality

To maintain their confidence in the currency, the public expect notes in circulation to not only be genuine but also of high quality. The recirculation of good quality banknotes is important not just because people do not like 'tatty' notes, but because high quality notes lead to more reliable authentication and more efficient dispense from COCDs. A poor quality genuine note can be hard to authenticate as features may be damaged or obscured; likewise, it may be easier to pass a counterfeit note if features on genuine notes in circulation are not clear due to excessive wear. Further, poor quality notes can get stuck during the handling processes of a COCD, causing jams and downtime. For these reasons, it is in the interest of both the customer and the cash industry that the quality of notes used in COCDs is maintained at a high level.

Quality sorting of banknotes to a set standard by a machine requires significantly more sophisticated equipment than authentication. Banknotes processed by the Note Circulation Scheme, for example, are sorted according to specified quality standards using large-scale banknote handling equipment. Some banknote processing equipment designed for medium-scale, back-office use is capable of making judgements against such standards and these machines are used by some FIs who recycle notes at busy branches. While it would be desirable, from a quality perspective, for all organisations to sort using such equipment, the machines are significantly more expensive than authenticators alone and might be excessively costly on a per note basis for small scale operations. Aside from extreme cases where a note is of such poor quality that it will not pass through, or be recognised by, the equipment, most small-scale authentication devices are not able to make such quality judgements.

The Code strongly encourages quality sorting of banknotes to be machine-dispensed, particularly by those who are recycling notes on a significant scale. An Annex to the Code sets out quality settings for recycled banknotes: notes failing to meet these standards should be deposited with a bank or wholesale supplier and not recirculated. The Bank of England plans to publish a standard for **defects** (e.g. tears, holes, attached tape) in polymer notes as part of the lead up to the launch of the new £5 note in 2016. Once the industry has experience of how these new notes degrade in practice (e.g. the typical extent, location and severity of ink wear) the Bank will also publish quality standards for **degradation**. The Code Sponsors expect manufacturers of banknote sorting equipment to work with these standards and that machines will increasingly be able to apply them. Once such standards are agreed, the Bank will consider whether it

¹¹ In order to ensure maximum availability of S&NI Framework-listed machines, any extension of the Code to cover S&NI issuers' notes will not be implemented before a full list of machines is available (i.e. no earlier than one year after the launch of the S&NI Framework).

would be appropriate to extend the Framework to cover quality sorting as an optional extra feature (i.e. authentication-only machines could still pass Framework tests; results for quality sorting tests would be listed separately). This would allow those organisations who opt to sort for quality to select machines on the basis of independently derived information about their effectiveness. This should help to encourage quick and complete adoption of the standards by the manufacturers.

If the Framework was extended, the Code Sponsors would then consider whether it might be appropriate to extend Code principles to cover quality sorting for those who undertake local recycling on a significant scale. Were this to be considered, the Code Sponsors would consult the industry on how quality could be added to the Code in a proportionate way.

Timetable for future roll-out of the Code

The timetable for the roll-out of the Code was one of the main areas of feedback during the course of the Review – as it had been during the initial consultation on the Code.

The Code was launched in July 2013 and set out a timeframe for compliance that reflected consultation feedback around proportionality. The highest transacting ATMs were therefore made due for compliance at an earlier stage than lower transacting ATMs, with the timetable for the final tranche of ATMs (those processing fewer than 150 cash transactions per month) set at more than three years after launch and subject to the findings of this Review.

In December 2013, the Bank of England announced that the next £5 and £10 banknotes would be printed on polymer (a thin and flexible plastic film) and around 15% smaller than the current paper notes. The new polymer £5 note will be issued in the second half of 2016 and the new £10 around a year later. Cash handling machines, including both COCDs and authenticators, will need to be adapted for the new notes. Adaptation is likely to require a software update, which is normal practice when a new banknote design is issued. Additional hardware upgrades may be required for some machines because of the change to a polymer substrate and the reduction in the size of the notes.

Since the polymer announcement, and particularly during the Review of the Code, affected stakeholders have highlighted interactions between the Code and the introduction of polymer notes and have sought changes to the Code timetable to reflect these. Specifically, in order to comply with the Code, some ATM operators need to invest in Framework-listed authentication machines. These ATM operators wanted to understand how authentication machines would need to be adapted for the polymer notes, and the potential cost of implementing those adaptations. Whilst a general indication of this information is already available, machine manufacturers will be unable to provide the level of detail and reassurance sought until closer to the launch of the notes. These ATM operators have therefore sought a delay to Code implementation until such details are available.

The Code Sponsors have taken into account the evidence on the readiness of authenticators for the introduction of polymer banknotes and balanced this with the need for timely implementation of the Code. They have recognised that the operators of merchant-fill ATMs have particular concerns about buying machines now without detailed information on the adaptations needed for them to work for polymer. The Code Sponsors have concluded that there would therefore be an advantage in aligning the application of the Code to the introduction of polymer notes and have endorsed modifications to the Code timeframe as follows:

- the compliance deadline for non-merchant-fill ATMs achieving 150-500 cash transactions per month will be moved by six months, from September 2015 to end March 2016;
- the compliance deadline for all ATMs achieving fewer than 150 cash transactions per month will be moved by six months, from September 2016 to end March 2017; and
- the compliance deadline for merchant-fill ATMs achieving 150-500 cash transactions per month will be aligned with the deadline for all ATMs achieving fewer than 150 cash transactions per month, i.e. March 2017.
- The definition of merchant-fill for these purposes is: 'where the cash loaded into the ATM comes directly from the merchant and is not processed by the ATM operator before being loaded into the ATM'.

With these changes to the timetable reflecting industry feedback, the Code Sponsors see no impediment to the revised deadlines being met and expect that the Code will be implemented in a timely fashion.

In summary, the new implementation timetable is (changes in *italics*):

| | By end of |
|--|-------------------|
| Newly installed ATMs, or renewed contracts at existing ATM sites | Already in place |
| Self-service checkouts | Already in place |
| Existing ATMs achieving 500 or more cash transactions per month (Tranche 1) | Already in place |
| Existing <i>non-merchant-fill</i> ATMs achieving 150 or more cash transactions per month (Tranche 2) | <i>March 2016</i> |
| All ATMs (Tranche 3) | <i>March 2017</i> |

In line with these changes, the timing of the compliance reporting process will be aligned for all stakeholders. Reporting will now be due as at end March each year. For LINK Members, this will continue to form part of their annual attestation round. For SCOT deployers and deployers of non-LINK ATMs, the self-certification will be due by end May each year. For this latter group, the next self-certification round will therefore be due by end May 2016, reporting on compliance as at end March 2016. This has, for the retail community, the advantage of moving the compliance reporting timetable away from their peak Christmas period. It will also ensure that all stakeholders are reporting on compliance at the same time, providing a consistent basis for analysis.

Future Reviews of the Code

The Code includes a commitment for the Review Group to report to the Cash Services Senior Group (CSSG) at least annually, but more frequently during the transition period, on the level of uptake of the Code, feedback received and suggested improvements.

Following this Review, the Review Group next plan to report to CSSG in autumn 2015. The consultation on the expansion of the scope of the Code to cover S&NI issuers' notes is also planned for around this time.

The Code Sponsors plan to publish another Review in summer 2016, when the scale of compliance for both tranches 1 and 2 can be covered. This Review could also form part (either the launch or the conclusion) of the consultation on the extension of the Code to cover other sectors and will provide an update on the Bank's work on establishing quality standards for polymer notes.