UCC and emerging technologies
Payment systems subgroup
Discussion document

This survey identifies the technological changes identified by the Subgroup that might prompt a recommendation from the Study Committee to consider changes to UCC Articles 3, 4 and 4A or the introduction of a new UCC Article.

The co-chairs of the Subgroup will review the responses and will send forward the recommendations to the chair of the Study Committee. As previously noted, when we send forward the position of the subgroup it will be organized as follows:

- Unanimous view to recommend action
- Unanimous view to recommend no action
- Significant subgroup support but not unanimous
- Minority view

By sending forward the position of the subgroup in this way, the chair of the Study Committee will have visibility into all views. We ask that each participant identify its recommendation for each topic so that your views may be counted. We have also provided space for additional comments.

Consistent with feedback from the Subgroup, if the Subgroup conveys a recommendation to address the definition of money either in the context of fiat currency or with respect to private virtual currencies, the recommendation will include a suggestion that the drafting committee may find the work of certain international bodies such as The Financial Market Task Force and the Committee on Payments and Market Infrastructures in the area of virtual currency may be useful reference materials.

Please keep in mind the following as you respond:

- There is a separate virtual currency subgroup
- There is a separate work stream on electronic notes and drafts (other than checks which are already addressed through Check 21, Regulation CC, and system rules)
- Proposed drafting efforts are intended to relate to changes in technology and business practices resulting from new technology – in other words this is not about changes to these articles generally
- There was a general view that the law supporting check is sufficient as written but the subgroup was asked to revisit this conclusion in the context of remote deposit capture

Article 4A issues:

Topic 1: Security Procedures

There are several technological developments that could support having the Study Committee recommend looking at the security procedure provisions including in no particular order:

- 4A-202 is one of the few provisions of the UCC that still requires a writing as opposed to a record. A drafting committee might want to explore whether the rationale for requiring a writing as opposed to a record continues to exist. If there were a decision to permit a record as opposed to a writing, the statute would need to be revised.

- 4A-201 defines the term security procedure and provides in part that a security procedure "may require use of algorithms or other codes, identifying words or numbers, encryption, callback procedures, or similar security devices. Comparison of a signature of the customer is not by itself a security procedure." A drafting committee may want to consider whether current technologies fit into the definition of security procedure. Is the use of biometrics a "similar security device"? Are all forms of AI properly viewed as an algorithm? Are smart contracts used for authentication either of the two? Is reliance on a known IP address permissible (e.g., is this akin to signature? At least one court has found that an email address alone would be)? If there were a decision to address modern technologies in the context of what constitutes a security procedure changes to the commentary would likely suffice.

- 4A-202 requires among other things that a receiving bank prove that it complied with an agreed upon security procedure. A drafting committee might want to explore whether new technology business models that may introduce third parties other than funds transfer systems as part of the security procedure (e.g., a SaS providers or DLT nodes) suggest a need for additional clarity on the risk allocation in 4A-202 and 4A-203. Commentary to 4A-203 explains that the burden placed on a receiving bank is to make available a commercially reasonable security procedure while the burden placed on the sender is to supervise its employees and to assure compliance with the procedure. Neither the statutory text nor the commentary address how a receiving bank might demonstrate compliance with a security procedure that relies on the shared responsibility of the sender and the receiving bank to adopt security measures offered by a third-party service provider or the consequences that follow a sender's failure to comply with a security procedure. Changes to the commentary should be able to address these concerns.

- Article 4A-202 and 203 were carefully crafted to lace the risk of unauthorized transfers on the party best positioned to prevent such risk and on the receiving bank where the risk is not reasonably prevented by either party. A drafting committee might want to consider whether additional guidance is needed in light of new data rich payment order formats, heightened supervisory expectations around AML and fraud that are driving the banking industry to expand their compliance efforts beyond traditional payments data, advances in technology that may be able to support real-time fraud detection for institutions that can afford to implement the technology (e.g., AI?), Assuming a similar policy objective

continues to exist, how should Article 4A treat these developments when considering what is commercially reasonable and what is good faith. (4A-202 defines "commercially reasonable" in part by reference to "security procedures in general use by customers and receiving banks similarly situated." In addition, courts applying 4A-202's good faith acceptance requirement have tended to apply a negligence standard notwithstanding the definition in Article 4A and its related commentary.). Depending on the view of the drafting committee there may be a need statutory changes or changes to commentary may suffice.

Recommendation Alt 1: The Study Committee should recommend that a drafting committee explore modifications to 4A-201 through 4A-204 on Security Procedures and its related commentary.

Recommendation Alt 2: The Study Committee should not recommend that a drafting committee explore modifications to 4A-201 through 4A-204 on Security Procedures and its related commentary.

Recommendation Alt 3: The Study Committee should not recommend that a drafting committee explore modifications to 4A-201 through 4A-204 on Security Procedures and its related commentary generally but rather should recommend that a drafting committee focus on the issues outlined in the comment box below.

Additional comments: [TEXT BOX]

Topic 2 Scope of Article 4A – definition of money

- Article 4A only covers instructions to pay "money". Money is defined in Article 1 as a medium of exchange authorized or adopted by a domestic or foreign government. There are several foreign governments that appear to be on the verge of adopting a virtual currency in lieu of issuing paper notes and coins. Is Article 4A as currently drafted able to accommodate such currencies or does it depend on how it is stored and transferred?
- Article 4A does not provide a lot of guidance on payment other than when various obligations to pay arise and that the beneficiary will be paid as specified in the payment order. Although not entirely clear from the statute, Article 4A can be reasonably read to assume that all payment obligations that arise in a funds transfer will be satisfied in the currency stated in the original payment order. If this reading of Article 4A is accurate, then the introduction of fiat virtual currency with only exist if the originator directed payment to the beneficiary in such virtual currency.
- As currently drafted, Article 4A does not require a receiving bank (other than a beneficiary's bank) to execute a payment order. As a result, if a payment order is originated in a fiat virtual currency that a bank does not wish to or cannot handle, Article 4A would allow the bank (and each subsequent intermediary bank) to reject the order (the bank customer might need to be revised).
- While there are some important nuances, as a general rule a beneficiary's bank automatically accepts a payment order under 4A-209 if it is paid for the order.

Presumably, however, if the beneficiary's bank receives payment in the fiat virtual currency it should be able to pay its customer.

- For these reasons, it may not be necessary to revise Article 4A to address fiat virtual currency other than to clarify, perhaps in commentary, the intent of Article 4A with respect to the nature of the settlement asset – must it be in the currency denominated in the initial payment order.
- Doing nothing, however, would likely result in certain types of fiat virtual currencies being used in funds transfers and certain types being excluded. This outcome may result if a specific implementation of the fiat virtual currency would not permit parties to a funds transfer to comply with Article 4A. For example, if the virtual currency implementation requires the intermediation of a nonbank entity in the funds transfer chain (e.g., a nonbank wallet provider or a currency exchange). If there is a policy reason to ensure that all implementations of fiat virtual currency can be used in a 4A funds transfer, then it will be necessary to consider each provision of Article 4A and known or reasonably likely implementations of virtual currency.

Recommendation Alt 1: The Study Committee should recommend that a drafting committee add commentary to Article 4A to address how the current provisions of Article 4A would work if a payment order directs payment in a fiat virtual currency. If there is a need to have statutory provisions addressing transfers of virtual currency by non-banks, the need should be addressed in a new article (see topic 7 below).

Recommendation Alt 2: The Study Committee should recommend that a drafting committee explore modifications to Article 4A to accommodate all reasonably foreseeable implementations of fiat virtual currencies.

Additional comments: [TEXT BOX]

Topic 3: Scope of Article 4A – unconditional promise to pay

- To qualify as a payment order under Article 4A the instruction cannot state a condition to payment to the beneficiary other than time of payment (note that the amount of a payment order can be fixed or determinable). See 4A-103. The use of "smart contracts" in the payments space may create some questions as to whether there is an unconditional promise to pay. For example, if a trading platform leverages smart contracts to ensure that a payment to a beneficiary is only made if certain actions happen first, is there a conditional payment order? What if the smart contract is used solely as a tool to authenticate the sender of the payment order? If there are circumstances under which the use of smart contracts could be viewed as creating an instruction that contains a condition to payment, then absent a change to Article 4A (or at least new commentary), the universe of payments that today would fall under Article 4A may be reduced even when as a policy matter the drafters might have wanted those payments to remain within Article 4A.

Recommendation Alt 1: The Study Committee should recommend that a drafting committee explore modifications to 4A-103 and its related commentary to address the meaning of unconditional promise in the context of smart contracts.

Recommendation Alt 2: The Study Committee should recommend that a drafting committee not explore modifications to 4A-103 and its related commentary to address the meaning of unconditional promise in the context of smart contracts.

Additional comments: [TEXT BOX]

Topic 4: Scope of Article 4A – bank

- Article 4A is limited to payment instructions to a bank. The term "bank" is defined in Article 4A as "a person engaged in the business of banking including …" Given the rise of money services business and fintechs that do not accept deposits but that are increasingly involved in the transfer of "funds," does the current definition in Article 4A extend to such persons?
- 4A strikes a delicate balance on how liability is allocated and assumes players on equal footing. There is a sense that 4A intended to define "banks" as we typically think of them. There wasn't a desire to broaden the definition because nonbanks don't necessarily have the same maturity as banks. If we want to extend Article 4A to address nonbanks or payment flows (see below) the Study Committee should consider recommending a new Article 4b that would consider all aspects of the nonbank dynamic including insolvency law
- Assuming an interest to keep the original scope of Article 4A intact, a drafting committee might want to provide clarity that the business of banking for purposes of Article 4A requires deposit taking. This might be able to be handled in commentary depending on answer – see Lacewell v. OCC, No. 1:18-cv-08377-VM, 2019 U.S. Dist. LEXIS 182934 (S.D.N.Y. Oct. 21, 2019) (Amended Final Judgment filed Oct. 23, 2019) (The Court denied the OCC's motion to dismiss, finding that "the term 'business of banking,' as used in the [National Bank Act], unambiguously requires receiving deposits as an aspect of the business,"….").

Recommendation Alt 1: The Study Committee should recommend that a drafting committee add commentary to Article 4A to clarify the definition of bank such that it is limited to trust or non-trust deposit taking entities. If there is a need to have statutory provisions addressing funds transfers by non-banks, the need should be addressed in a new Article 4B. (see topic 7 below)

Recommendation Alt 2: The Study Committee should recommend that a drafting committee not take any action with respect to the definition of bank in Article 4A.

Additional comments: [TEXT BOX]

Topic 5: Message Formats

- Perhaps one of the most significant changes in US funds transfer practice is the adoption of the new ISO 20022 message standard sometime in the next three years. This change which has already been announced by the three major funds transfer systems used in the US (CHIPS, Fedwire Funds Service, and SWIFT) introduces terminology that is in tension with Article 4A terminology (e.g., all intermediary banks are referred to as agents notwithstanding Article 4A's default rule that an intermediary bank is not an agent, originators are referred to as debtors, and beneficiaries are referred to as creditors) and includes the identification of persons that are not intended to be parties to the funds transfer but are in the message because of some interest in the payment (e.g., there is the possibility of two new nonbank entities referred to as the ultimate debtor and the ultimate creditors – Article 4A only permits the originator and beneficiary to be nonbanks). In general the format introduces the possibility of a lot more information than is assumed in Article 4A's definition of payment order. This is an area that is ripe for commentary. If there is not further clarity in this space, there are payments one would expect to be under 4A that may be kicked out based on the technology format.

Recommendation Alt 1: The Study Committee should recommend that a drafting committee explore modifications to Article 4A commentary to address the proper interpretation of Article 4A with new message formats.

Recommendation Alt 2: The Study Committee should recommend that a drafting committee not explore modifications to Article 4A commentary to address the proper interpretation of Article 4A with new message formats.

Additional comments: [TEXT BOX]

Topic 6: Article 4A and new technologies generally

There are several technological developments that could support having the Study Committee recommend looking at the entirety of Article 4A to ensure that the words used in the Article remain technology neutral. Some examples are below but if this recommendation is sent forward the new drafting committee would go section by section – we expect that these issues could be addressed in commentary.

- Separate from fiat virtual currency, does Article 4A need to be revised to support the use of DLT or block chain by banks and funds transfer systems. What does it mean to receive something when DLT/block chain is used? Similar to the above discussion of money, the way in which DLT is implemented could matter. Are banks relying on a DLT to record customer balances (i.e., outsourcing their core ledger) or are they relying on DLT just as a way to convey information to other parties (e.g., giving notice of balances for informational purposes only). Does it matter if the DLT is operated by a single, central entity versus totally distributed nodes (private v. public)? A sending bank executes a payment order when it issues a payment order – does use of DLT require any clarification of when a sending bank executes?

- The use of artificial intelligence and machine learning may also raise some questions under Article 4A. Under 4A-207, banks may rely on the account number of the beneficiary to process a payment order even if the account number and the name identified in the payment order identify different persons and the bank does not know of the difference. Will new technologies, such as AI or ML, provide the banks with the ability to identify beneficiaries more easily, undercutting the efficiency rationale for the rule outlined in 4A-207?

Recommendation Alt 1: To aid courts in properly applying Article 4A, the Study Committee should recommend that a drafting committee explore modifications to Article 4A commentary to explain the application of the law when new technologies are used.

Recommendation Alt 2: Article 4A as written supports the use of new technologies and it is unlikely that a court would reach the wrong conclusions if the statute and commentary are left unchanged. Therefore, the Study Committee should not recommend that a drafting committee explore modifications to Article 4A commentary to explain the application of the law when new technologies are used.

Additional comments: [TEXT BOX]

Topic 7: New Article(s)

Article 4A was drafted, including its allocation of liability, based on its narrow scope to transfers that are wholesale in nature and conducted through highly regulated/supervised banks. The subgroup discussed whether new technologies and business models suggest the need to expand UCC Article 4A. Given the careful balance in Article 4A, there is general agreement that Article 4A itself should not be broadened.

Ripe for consideration by the Study Committee, however, is whether technology changes and business practices suggest the introduction of one or more new Articles. There are new commercial practices that might benefit from the type of clarity that Article 4A provides to funds transfers through banks. These practices include introduction of nonbank entities that operate payment systems whether through ledger entries or otherwise and/or new payment flows. Consider for example business disbursements to other businesses that start out of a bank account but are intended to end in a wallet or other ledger system like PayPal or a debit transfer from a commercial payer account followed by origination of Article 4A ACH credits.

Distinct from the issue above that considers the introduction of new types of intermediaries or payment flows is the question of whether there is a need for a law that supports the transfers intended to satisfy payment obligations denominated in non-fiat virtual currencies or a subset of virtual currencies, crypto currencies. If there was a view that such a law might be necessary, it would likely be important to consider what type of virtual currencies are covered – which implementations are really intended to be mediums of exchange as opposed to a commodity (Article 2), an investment security (Article 8), an electronic note (which is being addressed by another group in the context of Article 3)? Similarly, which implementations simply reflect

transfers between bank deposit accounts using a new type of ledger (operated by the bank itself or outsourced by the bank to a third party) that might already be governed by Article 4A?

Presumably, any new article would address issues like discharge, creditor process/adverse claims, and finality – legal issues that are especially important to payments and that may be difficult to address through bilateral and multilateral contracts (absent a statute that permits system rules to affect third party rights), or for public (non-permissioned), distributed ledger implementations.

It would also be important to be clear as to whether the scope of any new article would include all transfers or only wholesale transfers. Recent drafting efforts that attempt to address topics that impact consumers have been challenging. At the same time, the need for the new article may be significantly diminished if it does not capture consumer payments.

Topic7a – Introduction of nonbank entities

- Is there a current (or reasonably anticipated) commercial practice need for a "funds transfer" law to support an electronic medium of exchange that where the transfer system is operated by or involves one or more intermediaries that is not a bank -- regardless of whether the medium of exchange may be characterized as a private virtual currency (e.g., transfers of a private virtual currency between a wallet provider and exchange OR transfers by traditional nonbank payment providers)?

Recommendation Alt 1: There is a current (or reasonably anticipated) commercial practice need and therefore the Study Committee should recommend that a drafting committee explore the development of a new article to provide default rules for transfers using an electronic medium of exchange where the transfer system is operated by or involves one or more intermediaries that is not a bank.

Recommendation Alt 2: Given challenges that will inevitably arise in the drafting of a payments law that applies to consumer payments, but recognizing a commercial practice need, the Study Committee should recommend that a drafting committee explore the development of a new article to provide default rules for non-consumer transfers using an electronic medium of exchange where the transfer system is operated by or involves one or more intermediaries that is not a bank.

Recommendation Alt 3: There is no (or limited) need for the Study Committee to recommend that a drafting committee explore the development of a new article to provide default rules for transfers using an electronic medium of exchange that where the transfer system is operated by or involves one or more intermediaries that is not a bank.

Additional comments: [TEXT BOX]

Topic 7b Non-Fiat Virtual Currencies

- Is there a current (or reasonably anticipated) commercial practice need for a "funds transfer" law to support transfers intended to satisfy payment obligations that are denominated in non-fiat virtual currencies or a subset of virtual currencies, crypto currencies

Recommendation Alt 1: The Study Committee should recommend that a drafting committee explore the development of a new article to provide default rules for transfers intended to satisfy payment obligations that are denominated in non-fiat virtual currencies or a subset of virtual currencies, crypto currencies. (If you recommend only a subset, identify the subset in the comment box)
Recommendation Alt 2: Given challenges that will inevitably arise in the drafting of a payments law that applies to consumer payments, but recognizing a commercial practice need, the Study Committee should recommend that a drafting committee explore the development of a new article to provide default rules for non-consumer transfers intended to satisfy payment obligations that are denominated in non-fiat virtual currencies or a subset of virtual currencies, crypto currencies. (If you recommend only a subset, identify the subset in the comment box).

Recommendation Alt 3: The Study Committee should not recommend that a drafting committee explore the development of a new article to address transfers intended to satisfy payment obligations denominated in non-fiat virtual currencies.

Additional comments: [TEXT BOX]

UCC Articles 3 and 4 Issues

The Study Committee has agreed that it will consider changes needed to the UCC to support electronic notes and drafts (other than checks where Check 21, Regulation CC, and system rules already address "electronic items.") and that this work will be done on a separate path.

Articles 3 & 4 were adopted, and the last set of revisions were proposed, before the advent of remote-deposit capture (RDC), before Regulation CC introduced transfer and presentment warranties and indemnities for electronic checks, and before on-line and mobile banking were the primary means through which customers transact business with their banks. While there is a general sense that these changes are being addressed adequately through Regulation CC and agreements between parties, there may be opportunities to address gaps in the current legal framework.

Topic 1: Remote Deposit Capture Issues

- Under Regulation CC if a payee remotely deposits a check and then deposits the original paper check a second time with a different bank, if the paper check is returned and the depositary bank cannot charge back the payee's account, the depositary bank would have a warranty claim against the bank that accepted the remote deposit (the "truncating

bank"). Regulation CC does not address the situation where the second deposit is done not by the payee but by a holder in due course (HDC) like a check casher. In such a situation, when the check is returned to the depositary bank, the depositary bank will charge back the HDC. The HDC (or the depositary bank if the HDC no longer has an account with the bank) will not be able to pursue a claim based on Regulation CC's remote deposit capture warranty but may be able to bring a claim on the instrument against the drawer. It is not at all clear that the drawer would have a defense to payment or a claim against the truncating bank. Is this the right policy outcome or should the UCC be revised to expand the warranties provided by the truncating bank under certain circumstances (e.g., there was no RDC restrictive endorsement on the original check)?

- Is there a need to have Article 3 of the UCC address a situation where a check is deposited remotely and destroyed and the depositor later determines that the check image was never received by the depositary bank and credited to the depositor's account? Will the depositor be able to pursue a claim under UCC 3-309 and does the plain language of 3-309 provide for such a claim under these facts – the image disappears at some point prior to reaching the depositary bank and the original check is purposefully destroyed. Is it possible that the intentional destruction of the original check might be treated as discharge under 3-604?

Recommendation Alt 1: The Study Committee should recommend that a drafting committee revise UCC Articles 3 and 4 to allocate loss due to issues that could arise with RDC that are not addressed by Regulation CC and add commentary where needed to address how provisions such as 3-309 and 3-604 should be interpreted.

Recommendation Alt 2: The Study Committee should recommend that a drafting committee not revise UCC Articles 3 and 4 to allocate loss due to issues that could arise with RDC that are not addressed by Regulation CC and add commentary where needed to address how provisions such as 3-309 and 3-604 should be interpreted.

Additional comments: [TEXT BOX]

Topic 2: Mobile and on-line banking

- In recent years the use of on-line banking and mobile banking has become the norm. The services allow for the sharing of information 24/7 and rely to varying degrees on phone service, internet service, and electricity. These banking services also are what enable remote deposit capture. Given these changes, might it be time to revisit part 4 of UCC Article 4 to refine or in some instance establish default rules governing the bank customer relationship. For example, should 4-406 be revised to address information needs of depositors using RDC and to address the need of depositary banks for prompt reporting of errors with respect to its processing of RDC deposits? Should 4-406 or its commentary provide more guidance as to what it means for a bank to make information available to its customers (e.g., must the bank provide notice that each account statement is available online)? Do customers need a force majeure provision excusing their delay if they are unable to promptly report issues to their bank due to power or telecom outages

affecting them or their bank? Should issues that arise from electronic check collection other than alteration and forgery be captured in 4-406 (e.g., double payment)?

Recommendation Alt 1: The Study Committee should recommend that a drafting committee be charged with drafting revisions to part 4 of UCC Article 4 that address on-line/mobile banking and RDC.

Recommendation Alt 2: Given the likely challenges in developing default terms acceptable to both consumer advocates and the banking industry, the Study Committee should not recommend that a drafting committee be charged with drafting revisions to part 4 of UCC Article 4.

Additional comments: [TEXT BOX]

Topic 3: Regulation CC

- In order to understand the legal framework for checks, it is necessary to know UCC Articles 3 and 4 and Regulation CC. While not uniquely about technology changes, the increase in electronic checks and RDC usage along with recent amendments to Reg CC introducing related transfer and presentment warranties and indemnities means that check-related issues increasingly fall outside the scope of the UCC. Providing a roadmap of how Regulation CC affects UCC provisions (similar to the commentary in Regulation CC that often refers back to the UCC) would be useful to practitioners and judges that are not steeped in either.

Recommendation Alt 1: The Study Committee should recommend that a drafting committee revise the commentary to UCC Articles 3 and 4 to address how Regulation CC affects the provisions of the UCC.

Recommendation Alt 2: The Study Committee should recommend that a drafting committee not revise the commentary to UCC Articles 3 and 4 to address how Regulation CC affects the provisions of the UCC.

Additional comments: [TEXT BOX]