

# Instant Payment Systems Security

## An SPA Position Paper

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### 1. Introduction

Instant payments persist as an issue in the retail payments industry - especially following the recent publication by the European Payments Council (EPC) of its Rulebook for the SEPA Instant Credit Transfer (SCT Inst) scheme. The Rulebook is set to be endorsed by European banks interested in the first SEPA cross-border retail instant payment system.

An electronic payment, executed with an instantaneous transfer of funds and guaranteed service availability, is certainly an attractive payment option. This paper explores the key trends, analyses the pros and cons and sets out the SPA position regarding this new retail payment instrument.

At this point it is worth pointing out that instant payment instruments can be used for face-to-face transactions at the Point of Sale (POS), as well as e-commerce and mobile remote payments. As a result, they may well find themselves in competition with existing card payment schemes.

But more of that later. First, let's take a look at what defines an instant payment.

Instant payments are equivalent to "real-time" or "immediate" payments. Because there is no standard definition of what an instant payment is, this document refers to the definition proposed by the European Retail Payments Board (ERPB).

The ERPB considers that an "instant payment" service must be available 24/7/365 and results in the immediate or close-to-immediate (within 10 seconds of payment initiation) interbank clearing of the transaction and the crediting of a payee's account with confirmation to the payer.

While real-time payments certainly have the power to transform Business-to-Business payments (B2B), this paper focuses exclusively on "retail" instant payments. In other words, payments initiated by an individual and not a corporation: Person-to-Person (P2P) and Person-to-Business (P2B) payments.

### 2. What Banking Initiatives Are Fueling Retail Instant Payments?

The EPC has just announced that the specifications for the SEPA SCT Inst, named the Rulebook v1.0, are ready for implementation by payment service providers. The initiative is one of a number of innovative projects designed to renew European retail payments. Once the clearing and settlement infrastructure has been modernized, the new SEPA instant payment scheme is expected to be operational in one year's time.

It is worth remembering that the deployment of an Instant Payment scheme is not an exclusively European concern. In the US, the payments industry and regulators are working together under the Faster Payments Program to update payment infrastructures.

The Instant Payment scheme aims to tackle the slow inter-banking circulation of money, which is a chronic problem for the US economy and a key issue that the payments industry is now facing. In October 2012, the US Federal Reserve Financial Services (FRFS) issued a strategic plan for 2012–2016 which emphasized enhancing end-to-end speed, security, and efficiency as the most important short-term needs for the US payments systems. The plan was followed by an intensive research effort to better understand the motivations behind end-user payment behaviors. In September 2016 the “Same Day ACH” faster payments scheme was launched in the US and this network seems to have been well received. However the “Same Day ACH” performances are far from the ECB criteria for instant payments.

Other than in the EEA and US, many local instant payments initiatives – typically pilots -are currently going on and doing reasonably well. So clearly, rather than being a financial market hype, Instant Payments seems to be an established trend for the payments industry that has a huge potential for adoption.

### **3. What Are The Real Needs For An Instant Payment System?**

Generally speaking, a faster circulation of money is correlated with an increased level of economic activity. By increasing the speed of money in circulation, the exchange of goods and the provision of services become frictionless. On the other hand, more commercial transactions require more money circulation and new payment instruments that facilitate painless payment boost commercial growth and welfare. So, faster payment systems are both the result and driver of economic prosperity.

Aside from the general economic perspective, the business model/business case remains an issue: who supports the investment required to offer the service, how is payback guaranteed, and who are the true beneficiaries of instant payments?

In the first instance, these questions could be resolved by evaluating what the incentives are for banks (payment service providers in general), acceptors (retailers, individuals and small businesses), payers and regulators.

#### **1. The incentives for the banking industry to invest in an instant payment system.**

The motivation for the banks to issue the instant payment service is to eliminate payment intermediators and develop a direct contractual relationship with end customers. The extension of the SEPA Credit Transfer to the real-time domain also leverages existing payment infrastructures and so does not require significant additional investment compared to other payment alternatives. On the other hand, some instant payments use cases are likely to cannibalize cash transactions and help the move to a “cashless society”, a common objective shared by both commercial and central banks.

#### **2. The incentives for retailers and/or beneficiaries of instant payments to accept instant payments.**

Retailers and B2B SMEs are the main beneficiaries of instant payments. Receiving funds faster will make a substantial difference, in terms of cash flow, and minimizes the need for external financing. A further advantage for retailers is the finality of instant payments, useful in e-commerce or in oil stations contexts, with goods/services delivered against the payment, thus reducing the financial risk.

Yet the undisputed improvement in cash flow will ultimately depend on the business model and on the level of fees retailers and SMEs are charged. Instant payments are beneficial if “low cost” for both the sender and the recipient of the payment. Different charging models to fund the instant payments costs are likely to coexist.

### 3. The incentives for payers to adopt and use this new payment instrument.

Payment behavior research differentiates between the “adoption” and “effective use” of a payment instrument. While consumers will adopt different payment instruments (a variety of payment cards, checks and cash), they tend to privilege the use of only one: the one that is most accepted and easiest to use. It has been suggested that a new payment method must be “several times better” than an existing one to drive customer adoption. So, instant payments raise the issue of substitution. The problem with instant payments is that transferring other type of data from a mobile device (such as a picture using WhatsApp) is free for the sender. A payment order is a particular scenario of transmitting data over an open network; and the assumption that payers will be willing to pay for an instant transaction should not be taken for granted. Without a critical mass of payers, there is no business case.

### 4. The position of the financial regulators

Globally, financial regulators encourage private sector payment participants to provide faster payment services. Central banks play a critical role in pushing for the modernization of payment systems in order to achieve socio-economic objectives. What differs is the extent to which a local or regional regulator plays an effective role as a catalyzer or requires a formal commitment from the banking industry in terms of a schedule for offering the service. At SEPA level the ECB is a very active actor that is pushing the specification of the SEPA Instant Payment using a Credit Transfer, and contributing to the specification of the Instant Clearing & Settlement system required to process instant payments. Instant Payments will compete for transactions with cards. But while the PSD2 is agnostic in terms of retail payment methods, the competition between both payments instruments should drive down transaction fees - a key economic objective of the Interchange Fee Regulation.

### 5. Concerns about fraud and risks for the payments industry

Any new payment instrument has to be evaluated against the risk of fraud. Once fraud patterns have been identified, appropriate counter measures have to be implemented and evaluated. Instant payments feature finality; once the money is gone, it’s gone. If something goes wrong a liability shift procedure will need to be agreed early on between members participating in an instant payment scheme. These are fundamental aspects that the EPC Rulebook has not addressed yet. Moreover, because instant payments flows are more difficult to track, there is the issue of whether they could be used to facilitate money laundering or financial crime. Guidance on how to implement customer due diligence for instant payments is needed.

Security concerns for instant payments are elaborated below. The continuous improvement of the security of our payment products is a key concern for SPA members.

## 6. Lack of a standard check-out process at the Point-of-Sale

From a retailer perspective, the proposition of an instant payment solution at the Point-of-Sale as an alternative to a card is highly attractive. Yet, a standard mechanism to enable the capture of the transaction amount and the retailer payment account information in the customer's mobile is needed. Moreover, this process should be integrated in a F2F standard instant payment transaction that includes strong customer and retailer authentication information. The overall process could be managed using a mobile wallet storing a retailer-specific instant payment application. Yet the coexistence of a multiplicity of mobile wallets and/or instant payment applications, their activation and selection, is challenging.

In this respect, SPA highlights that a common standard user experience at the POS is a key advantage of card payments.

## 4. Security Issues in Instant Payment Systems

During the public consultation on the EPC Draft Rulebook in July 2016, SPA expressed the need to strengthen the security requirements for instant payments, taking into account their specific vulnerabilities, which were not identified in the Rulebook. Our understanding was that these security requirements were to align with the Regulatory Technical Standards developed to complete the European Payments Directive (PSD2).

Instant payments will speed up transactions for end-users and facilitate the circulation of money, but will also put pressure on the systems banks have in place to check suspicious transactions, look at the records of the payer and payee accounts and then assess the risk associated (fraud or system misuse) before authorizing the payment. This is a vulnerability that cybercriminals are aware of and appropriate countermeasures should be standardized, implemented and evaluated. These should include a specific certification program for those computing components processing critical assets. On the other hand, the fact that payments are instantaneous will substantially increase transaction volumes and overload banks risk management systems. In other words, these systems will have to inspect more frequently and in shorter time frames the nature of the payment. This may result in decisions relating to payment authorization being made without having all the necessary information available.

Instant Credit Transfers are "push" payments with finality, meaning it will be more difficult to recover money back if the payment is repudiated by any party supposedly involved in the transaction. Somehow, the easier it is to "push" money out, the harder it is to "pull" money back. Therefore proper strong authentication procedures have to be considered for the payer, the payee and the payment order itself.

For large value transfer amounts, a digital signature using a private key under the exclusive control of the payer might be required. If the payment is initiated from a mobile device, specific security objectives for the mobile will be needed. ISO 12812-2, just published, provides detailed security requirements for mobile financial services, with a focus on mobile digital signatures. This standard might be referenced by the SEPA EPC Rulebook.

Finally, in order to prove that payment is effectively "instantaneous" a time-stamping service for the end-user may be required. This adds an extra-layer of complexity to the scheme.

The above security considerations demonstrate that implementing a serious security policy for Instant Payments is not straightforward, especially when ever stronger legal requirements are being enforced to fight against money-laundering and financial crime.

Other than the security architecture, the infrastructures that support the instant payment services will need to be carefully designed. Several technical challenges for the update of the existing systems required to clear and settle instant payments are presented hereafter.

## 5. The Card Industry's Position On Instant Payments

Card payments are considered as "quasi-instant" payment systems. This fact is recognized by the European Retail Payments Board (ERPB), which includes the card as one of the potential payments instruments for the SEPA instant payment system.

Cards are issued in the context of a card scheme and transactions that are made using cards are cleared and settled in accordance with the rules of the card's scheme. However, the conditions that relate to the transfer of funds between the acquirer and the retailer are independent from the scheme.

Despite the fact that cards can effectively be used to fund an instant payment transaction, the preferred solution for banks is a credit transfer. Therefore instant payments are potentially a threat to card payments.

The retail payments industry is aware that cards can and are used but have not actually been optimized to pay in some contexts: e- and m-commerce, person-to-person and person-to-small business payments but also urgent payments. All these contexts are use cases for instant payments. To compete, card functionalities had to be adapted to these acceptance contexts. The challenge is not new, and in recent years card schemes have proposed "near real-time" payment solutions: card payments settled in minutes, not seconds. Examples are Visa Direct and MasterCard Send platforms.

Socio-economical evolutions are driving present innovations: millennials using mobile devices, 'uberization' of the economy, growing numbers of self-employed individuals and small home businesses, increasing number of migrant workers. For these segments and the working population, payment speed is often key and banks and card schemes have to react.

As observed, the past two years have seen the Card Schemes in Europe and the US conclude different alliances (Mastercard in the US with Stripe, VISA and Mastercard joining clearXchange P2P payments network) or acquire real-time payment systems (Mastercard with Vocalink). These alliances enable Mastercard and VISA to take foothold in the market of instant payments, either generated by the card or by other payment instruments.

In this context, SPA welcomes efforts intended to promote real-time payments compatible with a high level of security. In the short-term, there are two ways to implement this policy:

- ▶ Completing the EPC Instant Payment Rulebook, incorporating the card as a payment instrument and developing instant card payment systems, adapting existing card Clearing & Settlement facilities
- ▶ Protecting instant credit transfers application data in a hardware device tamper-resistant.

## 6. Conclusion: Recap Of Key Points

1. There are well-established use cases for instant payments intermediated by the financial industry. The rapid expansion of e-commerce and person-to-person payments have fueled demand among banks for real-time low-cost payment instruments.
2. The investment required to update the existing infrastructures is considered moderate for banks. This investment is intended to bring the capabilities of real-time processing and settlement to retail payments.
3. Despite the theoretical clear advantages for some entities and users, at present the business case for banks remains uncertain. Charging models may differ depending on the region and the profile of the customer.
4. The challenge is how to; (a) deploy a high-volume, low-cost, zero-fraud, new payment instrument, (b) access a bank account from a personal device, (c) use the standard SEPA Credit Transfer and (d) clear and settle transactions in less than 10 seconds.
5. There are technical (connectivity, application and integration), security (real-time risk evaluation, authentication and signature certification), governance (liability shift, payback and disputed payments) and business model (charging model, investment) issues to be faced.
6. Instant Payments require the use of appropriate controls and incident response procedures aligned with the rapidly evolving threat environment and the possibility ("push" payment) that payment originators inadvertently send an instant payment to a wrong payee.
7. Instant payments using credit transfers may represent a local alternative to card-based payments and cannibalize a certain number of card transactions. However in our opinion, there is extensive room for the frictionless coexistence of both retail payments instruments, including "physical" coexistence in a digital wallet.
8. However, despite the promising starting point for instant payments, some looming questions need to be asked about the real business opportunity and the risks brought about by instant payments, including transaction controls to detect and/or prevent money laundering.
9. Card technology is the most efficient cost-security trade-off to protect data used to initiate an instant payment. Yet, to compete with Instant Payment methods, card transactions must be faster and cheaper.