

Euro Retail Payments Board (ERP)

Interim report of the ERP Working Group on Instant Payments at POI

ERP Meeting 13 June 2019

Contents

0.	Introduction.....	3
1.	Stocktaking exercise	3
1.1.	Questionnaire	3
1.2.	Summary of results	4
1.3.	Barriers reported in the stocktake	5
	Annex 1: List of ERPB Working Group participants.....	9
	Annex 2: Mandate ERPB Working Group Instant payments at POI.....	11
	Annex 3: Questionnaire.....	13
	Annex 4: Summary on inputs received	19

1. Introduction

In February 2019, the ERPB established the ERPB Working Group on Instant Payments (IPs) at the point of interaction (POI). Hereby the POI is defined as “the initial point in the merchant’s¹ environment (e.g. POS, vending machine, payment page on merchant website, QR-code on a poster, etc.) where data is exchanged with a consumer device (e.g., mobile phone, wearable, etc.) or where consumer data is entered to initiate an instant credit transfer”.

The aim of the working group, set up with the participation of relevant stakeholders (see Annex II), is to analyse the requirements for the pan-European reach of solutions for instant payments at the POI, to help foster the broader setting up of an integrated pan-European instant payment landscape.

As stated in its mandate ERPB/2018/020 (see Annex I), the working group was expected to take a two-step approach: (i) conduct a stocktaking of existing and planned end-user solutions for SCT Inst based POI payments and (ii) on the basis of the stock-taking outcome and of the consultative report of the European Payments Council’s multi-stakeholder group on mobile initiated SEPA Credit Transfers (MSG MSCT), analyse in detail the barriers to pan-European reach and usability, and determine what would be required to overcome such barriers to enable pan-European SCT Inst based POI payments, focusing in particular on requirements for harmonisation/standardisation/interoperability. This second step would take into account and complement where necessary the interoperability implementation guidelines that are expected to be delivered by the MSG MSCT first as a draft early Q2 2019 and in their final version thereafter.

The present document is an interim report on the stocktake as requested in the mandate.

2. Stocktaking exercise

2.1. Questionnaire

For the stocktaking, the working group has developed a dedicated questionnaire (see Annex III), to obtain a survey on

- A. Existing solutions for instant credit transfer payments at the POI,
- B. Planned solutions for instant credit transfer payments at the POI,
- C. Issues or barriers that may prevent the development of solutions with pan-European reach,

¹ Under merchant is understood retailers (including digital goods) and other businesses in the services sector (e.g., accommodation, restaurants, entertainment, recreation, professional (e.g., hairdressers, plumbers, electricians, builders, car repair, etc.), and many more.).

while addressing both business and technical related aspects.

Inputs to the questionnaire were gathered through the Eurosystem. Responses were received from all 28 EU countries, plus Norway and Switzerland, although not all respondents completed all parts.

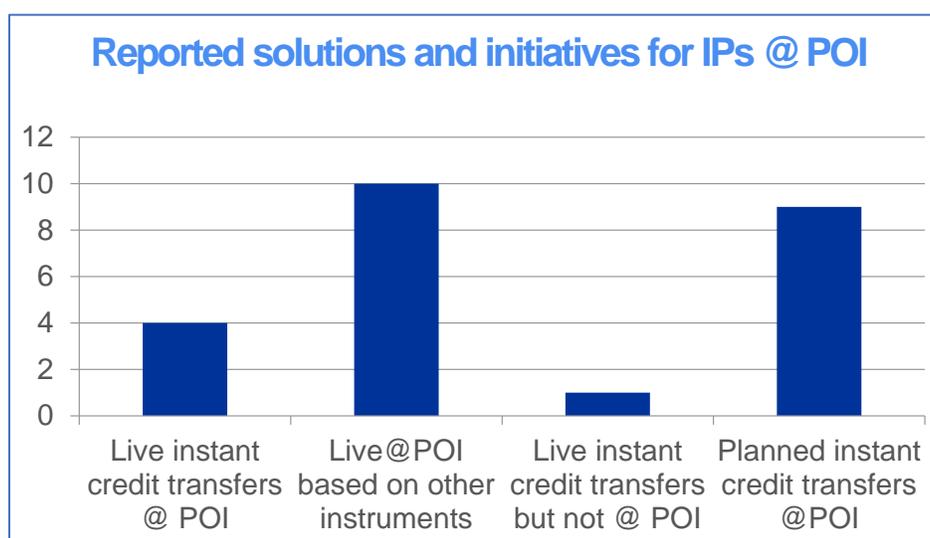
2.2. Summary of results

Based on the inputs received, the working group has developed a summary (see Annex IV) on the reported solutions in the form of tables that categorise the solutions in the following way:

- Live solutions based on instant credit transfers;
- Solutions that are live, but currently not based on instant credit transfers (most with plans to support instant credit transfers in the future);
- Solutions that are live and based on instant credit transfers, but not yet for POI payments;
- Planned solutions based on instant credit transfers
- Initiatives for which little information was made available.

Note that the overview in Annex IV is only based on the inputs received through the 2019 stocktake through the Eurosystem. The ERPB WG recognises that some solutions may be missing in this overview since they were not reported. In addition, PISPs may act as facilitators for instant payments at the POI but their specific solutions are not included in this overview either.

The table below provides an overview on the number of solutions reported in each category.



In the summary, next to some general information on each solution, market data as available and technical characteristics are also covered.

From this summary, the main findings listed below can be derived:

- Often the solutions are not exclusively focused on payments to merchants (POI-based) but also cover P2P payments;
- Most solutions are provided by ASPSPs² or ASPSP-owned companies;
- Most solutions are geographically limited to one country;
- There is only limited usage data available for most solutions due to the early stage of development;
- Most of the solutions use domestic proxies for the IBAN;
- Some solutions already cover request-to-pay messages, but mostly based on a proprietary format;
- Many use proprietary QR-codes³, some (also) NFC⁴, BLE⁵;
- User experience varies even if the same basic technology is used;
- Services on merchant side include confirmation messages, reconciliation, integration with cash registers.

2.3. Barriers reported in the stocktake

From the dedicated questions in Part C of the questionnaire, a number of potential barriers and gaps have been identified, as represented in the following table with a short description for each barrier. These will be further analysed in more detail in the next phase by the working group, while drafting the final report.

² Account Servicing Payment Service Provider

³ Quick-Response code

⁴ Near Field Communication

⁵ Bluetooth Low Energy

Potential barriers for pan-European reach	
Business-related	Technical
<ul style="list-style-type: none"> • Limitation to IBANs and/or phone numbers from one country • Interoperability rules between solutions, e.g. liabilities, disputes • Payments between # currency areas in SEPA • Robust business model while co-existing with card-based solutions • Lack of common pan-European label • Take-up, availability and reachability of instant payments • Challenge to create added value for PSUs compared to other payment solutions • Communication and awareness 	<ul style="list-style-type: none"> • Implementation of technical gateways between solution providers • Different technologies for payment initiation (QR codes/NFC/BLE) • Lack of standardisation even if the same proximity technology is used • Proximity conflicts @ POI • Merchant integration (reconciliation, fund reservation, repayment, etc.) • Lack of standardisation / scheme for Request-to-Pay • Open access to all mobile device features • Trust in PSU on-boarding (KYC) • Confirmation of payment to merchant

Business barriers

Limitation to IBANs and/or phone numbers from one country: since the mapping of proxies to IBANs is limited to users of a single provider, there is an interconnection needed between these providers to enable a wider usage.

Interoperability rules between solutions, e.g. liabilities, disputes, etc.: there is a need for a governance model to address these business issues between solution providers.

Payments between # currency areas in SEPA: the processing of IPs in SEPA between Euro and non-Euro countries.

Robust business model while co-existing with card-based solutions: the development of a business model for all stakeholders next to existing card-based solutions at the POI.

Lack of a common pan-European label: the possible form of recognition by the PSUs of the acceptance of SCT instant payments at the POI.

Take-up, availability and reachability of instant payments: the pan-European take-up of SCT instant is a key factor for the success of these payments at the POI – currently the take-up is at different pace across European countries.

Challenge to create added value for PSUs compared to other payment solutions: the creation of added value (e.g. convenience, security, transparency, additional services) for the PSUs is an important factor for the adoption of SCT Instant at the POI by both consumers and merchants.

Communication and awareness: there is a perceived lack of knowledge/awareness by PSUs about SCT Instant payments.

Technical barriers

Implementation of technical gateways between solution providers: an interconnection needs to be developed between the different solutions to create pan-European interoperability.⁶

Different technologies for payment initiation (QR codes/NFC/BLE): current solutions use different technologies for exchanging transaction data at the POI.

Lack of standardisation even if the same proximity technology is used: current solutions use proprietary proximity implementations for exchanging transaction data at the POI.

Proximity conflicts @ POI: when the POI supports multiple proximity technologies, the consumer's mobile device may perform a transaction over an unintended interface.

Merchant integration (reconciliation, fund reservation, repayment, etc.): the complexity of integration and maintenance of multiple solutions in the merchant environment (POI, electronic cash register, ERP⁷) while covering all payment functionalities is a major challenge that also includes business aspects.

Lack of standardisation / scheme for Request-to-Pay: different proprietary solutions for Request-to-Pay functionality have been adopted by the reported solutions – hence there is a definite need for standardisation.

Open access to all mobile device features: there is a strong demand for more openness of the (new) solutions which are entering or on the market today to support competitiveness; examples are an open (but secure) and free access to the mobile device capabilities (including the NFC antenna, any component being it the SE⁸ or HCE⁹).

Trust in PSU on-boarding (KYC): different on-boarding processes are adopted for instant payment solutions which may result in a lack of trust by stakeholders (e.g. consumers, merchants, PSPs), more in particular in a cross-border context.

Confirmation of payment to merchant: the lack of (a standard for) instant confirmation to the merchant of availability of funds on their account, which would enable the immediate release of goods and services is a major obstacle for merchant adoption.

3. Conclusions

Most of the barriers listed above have also been identified and described in the final draft Mobile Initiated SEPA Credit Transfer Interoperability Implementation Guidelines (MSG MSCT 026-18v0.9), developed by the dedicated ad-hoc multi-stakeholder group (MSG) established by the EPC, which are currently under a 3-month public consultation¹⁰. Note that

⁶ More information is to be found in chapter 17 in the draft MSCT IIGs (<https://www.europeanpaymentscouncil.eu/document-library/implementation-guidelines/mobile-initiated-sepa-credit-transfer-interoperability>)

⁷ Enterprise Resource Planning

⁸ Secure Element

⁹ Host Card Emulation

¹⁰ See <https://www.europeanpaymentscouncil.eu/news-insights/news/public-consultation-draft-mobile-initiated-sepa-credit-transfer-interoperability>

the main technical barriers will also be further analysed by a dedicated work-stream of the MSG MSCT in the coming months while their findings will be submitted for consideration by the ERPB working group on instant payments at the POI in their second phase of work. The barriers related to Request-to-Pay services will be submitted for consideration to the dedicated ad-hoc multi-stakeholder group established by the EPC, on which it will also report to the ERPB in November 2019. The purpose of further analysing these barriers is to contribute to the future interoperability of instant payments at POI across Europe.

On the basis of the above, the working group believes that its main task for the second phase up to November 2019 will be the monitoring of how the identified barriers are addressed in the different fora in order to avoid any duplication of work. Thereafter, depending on a positive outcome of the work underway, the WG would complement the analysis where necessary on the remaining barriers.

Annex 1: List of ERP Working Group participants

Name	Surname	Nominating Institution
Co-Chairs		
Dag-Inge	Flatraaker	EPC (DNB)
Michel	Van Mello	EuroCommerce (Colruyt)
ERP Stakeholders		
Jean	Allix	BEUC
Massimo	Battistella	EACT (Telecom Italia)
Gerhard	Huemer	SMEs United
Pascal <i>alternate:</i>	Spittler	EuroCommerce (Ikea)
Pierre	Lansade	EuroCommerce (Carrefour)
Michael <i>alternate:</i>	Knetsch	EPC (Deutsche Bank)
Harris	Monteiro da Silva	EPC (Crédit Agricole)
Rita <i>alternate:</i>	Camporeale	EBF (ABI)
Anni	Mykkänen	EBF
Didier <i>alternate:</i>	Darmouni	EACB (Natixis)
Pablo	Lahoz	EACB
Christian <i>alternate:</i>	Schollmeyer	ESBG (DSGV)
Ignacio	Mascarell	ESBG (La Caixa)
Ruth	Mitchell	EMA
Regis	Massicard	EPIF (Ingenico)

ERP Working Group Instant Payments at POI

PISPs		
Carlos <i>alternates:</i>	Blanco	Eurobits
Ralf	Ohlhausen	PPRO & Tink
Joan	Burkovic	Bankin
NCBs		
Hannes	Hermanky	Austria
Rainer	Olt	Estonia
David	Ballaschk	Germany
Deniss	Filipovs	Latvia
Rui <i>alternate:</i>	Pimentel	Portugal
Hugo	Mira	
ECB		
Mirjam	Plooi	ECB
Observer		
Roxane	Romme	European Commission
Secretariat		
Marijke	De Soete	EPC

Annex 2: Mandate ERP Working Group Instant payments at POI



ERP Secretariat

23 January 2019 ERP/2018/020

MANDATE OF THE WORKING GROUP ON INSTANT PAYMENTS AT THE POINT OF INTERACTION

Based on Article 8 of the mandate of the Euro Retail Payments Board (ERP), a working group is set up with the participation of relevant stakeholders to analyse the requirements for the pan-European reach of solutions for instant payments at the point of interaction (POI)¹, to help foster the broader setting up of an integrated pan-European instant payment landscape.

Scope

The potential usage of the SEPA Instant Credit Transfer (SCT Inst) scheme and the benefits it could provide to end-users can be greatly increased if SCT Inst services are offered in combination with end-user solutions that are adapted to specific use cases. POI payments are an important use case for instant payments because of the high number of transactions involved.² The availability of safe, efficient and user-friendly POI solutions could therefore have significant impact on the uptake of instant payments and could bring benefits to merchants and consumers across Europe. The pan-European nature of the SCT Inst scheme offers an opportunity for POI solutions with pan-European reach. Existing initiatives, however, tend to be limited in their geographical scope both on the consumer and on the merchant side, and to use proprietary standards for e.g. messaging. There is therefore a need for standardisation to ensure that European payment service users' can pay EU-wide using interoperable solutions, while not stifling innovation.

Deliverables

The working group is expected to take a two-step approach: (i) conduct a stocktaking of existing and planned end-user solutions for SCT Inst based POI payments and (ii) on the basis of the stock-taking outcome and of the consultative report of the European Payments Council's multi-stakeholder group on

¹ A point of interaction is the initial point in the merchant's environment where data is exchanged with the mobile device or where consumer data is entered (e.g. physical POI, QR-code on a poster).

² A 2017 ECB study showed that in 2016, households in the euro area made a total of 157 billion payments at the physical POI, using mainly cash and cards.

mobile initiated SEPA Credit Transfers (MSG MSCT), analyse in detail the barriers to pan-European reach and usability, and determine what would be required to overcome such barriers to enable pan-European SCT Inst based POI payments, focusing in particular on requirements for harmonisation/standardisation/interoperability. This second step would take into

account and complement where necessary the interoperability implementation guidelines that are expected to be delivered by the MSG MSCT first as a draft early Q2 2019 and in their final version thereafter.

Time horizon

The working group will be established in January 2019 and shall deliver an interim report including the stocktaking by June 2019 and the full analysis by November 2019, including if relevant a proposal on the next steps.

Participants and chairmanship

The working group shall include relevant stakeholders, including representatives of i) ERPB member associations and ii) payment initiation service providers as a relevant third party. Other relevant stakeholders may also be invited to join as relevant third parties. One representative of the ECB and a limited number of representatives of euro area NCBs are invited to join the working group as active participants. A representative of the EU Commission will be invited as observer. The working group will be co-chaired by EuroCommerce (demand side) and European Payments Council (supply side). The Secretariat will be provided by the European Payments Council.

Members representing their associations and the co-chairs will be appointed by the ERPB Chair based on suggestions from their respective associations. Other participants – after expressing interest to the ERPB secretariat – may be invited by the ERPB Chair to join the group based on consultation with the members of the ERPB.

Rules of procedure

The mandate of the ERPB defines a broad set of rules for the procedures of its working groups: the working group takes positions on a ¾ majority basis; dissenting opinions are mentioned in any relevant documents prepared by the working group. The members of the group decide on how to organise secretarial support, timing and rules of meetings and communication via written procedure, as well as on the need and format of any interim working documentation produced. Costs related to the operation, meetings, chairmanship and secretariat are carried by the members of the group themselves.

Annex 3: Questionnaire

Questionnaire 2019 stocktaking Instant Payments at POI

A. Instant Credit Transfers at POI already in the market	
Are there any end-user solutions currently on the market in your country that enable instant payments at the POI?	
Name of solution:	
Provider(s):	
Launch date and Operational status:	
Geographic coverage:	Within country:
	Cross-border:
Currency:	
What types of POIs and merchants does the solution cover?	
Is the solution open to all PSPs <ul style="list-style-type: none"> • on the consumer side? Please elaborate. • on the merchant side? Please elaborate. 	
Available data for solution:	Number of consumers:
	Number of POIs (merchants):

	Total number of instant credit transfer transactions at POI in last 12 months:
	Overall amount of instant credit transfer transaction at POI in last 12 months:
Does the solution make use of a proxy for the merchant/transaction, and if so, which one (e.g. proxy replacing the IBAN, etc.)?	
Does the solution use “Request-to-Pay¹¹” messages, and if so, which standard?	
What and how is the payment data (transaction amount, IBAN, merchant transaction identifier, token, etc.) exchanged between the merchant and the consumer? Please elaborate on the technology used as appropriate (QR-codes, NFC, BLE, etc....), POIs (upgrade of existing POIs, mPOS, ...) and the parties involved in this payment preparation phase.	
What is the average transaction time at the physical check-out?	
Are there any technical constraints in the usage of the instant credit transfer solution (e.g. mobile device, POI, etc...)?	
How is the consumer / transaction authentication performed?	
When, how and by whom is the execution of the instant credit transfer transaction confirmed to the merchant (availability of funds), including reconciliation data?	
When, how and by whom is the execution of the instant credit transfer transaction confirmed to the consumer?	

¹¹ This is a message transmitted to the payer as a request for payment, containing the transaction details (e.g., transaction amount, beneficiary name, IBAN_ben).

Does the solution contain a repayment/refund ¹² /reservation service and how is it performed?	
In case a mobile instant credit transfer application is involved on the mobile device, is it hosted on a secure element (if so on which one, UICC ¹³ or embedded) or is it software-based?	
Is there any (security) evaluation on the mobile instant credit transfer application hosted on the mobile device?	
Please join, if possible, a high-level diagram providing an overview of the solution.	
Any additional information? Please provide a link to a website on the solution if available.	

B. Planned Instant Credit Transfers at POI

Are there any end-user solutions planned to be launched on the market in your country that enable instant payments at the POI?	
Name of solution:	
Provider(s):	
Planned launch date	
Geographic coverage:	Within country:
	Cross-border:

¹² Please refer to the SCT and SCT Instant rulebooks for the definition of a “refund” (www.epc-cep.eu)

¹³ Universal Integrated Circuit Card, also known as SIM Card.

Currency:	
What types of POIs and merchants will the solution cover?	
Is the solution open to all PSPs <ul style="list-style-type: none"> • on the consumer side? Please elaborate. • on the merchant side? Please elaborate. 	
Forecasted data for solution:	Number of potential consumers:
	Number of potential POIs (merchants):
	Potential total number of transactions in 1 year:
	Potential overall total of transaction amounts in 1 year:
Does the planned solution make use of a proxy for the merchant/transaction, and if so, which one (e.g. proxy replacing the IBAN, etc.)?	
Does the solution use “Request-to-Pay¹⁴” messages, and if so, which standard?	
What and how is the payment data (transaction amount, IBAN, merchant transaction identifier, token, etc.) exchanged between the merchant and the consumer? Please elaborate on the technology used as appropriate (QR-codes, NFC, BLE, etc....), POIs (upgrade of existing POIs, mPOS, ...) and the parties involved in this payment preparation phase.	
What is the estimated average transaction time at the physical check-out?	

¹⁴ This is a message transmitted to the payer as a request for payment, containing the transaction details (e.g., transaction amount, beneficiary name, IBAN_ben).

Are there any technical constraints in the usage of the instant credit transfer solution (e.g. mobile device, POI, etc...)?	
How is the consumer / transaction authentication performed?	
When, how and by whom is the execution of the instant credit transfer transaction confirmed to the merchant (availability of funds), including reconciliation data?	
When, how and by whom is the execution of the instant credit transfer transaction confirmed to the consumer?	
Will the solution contain a repayment/refund¹⁵/reservation service and how is it performed?	
In case a mobile instant credit transfer application is involved on the mobile device, will it be hosted on a secure element (if so on which one, UICC¹⁶ or embedded) or is it software-based?	
Is there any planned (security) evaluation on the mobile instant credit transfer application hosted on the mobile device?	
Please join, if possible, a high-level diagram providing an overview of the solution.	
Any additional information? Please provide a link to a website on the solution if available.	

C. Challenges/barriers

Interoperability of instant credit transfers across SEPA would mean that a consumer that is on-boarded with MSCT service “X” can make a purchase with a merchant that takes part in MSCT service “Y”, whereby the MSCT service providers may be operational in different countries.

¹⁵ Please refer to the SCT and SCT Instant rulebooks for the definition of a “refund” (www.epc-cep.eu).

¹⁶ Universal Integrated Circuit Card, also known as SIM Card

<p>To achieve interoperability of instant credit transfer solutions at POI across SEPA, could you please identify and elaborate on the perceived main barriers from a user (both consumer and merchant) and a PSP/MSCT provider perspective?</p>	
<p>Issue/Barrier 1:</p>	
<p>Possible Solution for Issue/Barrier 1:</p>	
<p>Issue/Barrier 2:</p>	
<p>Possible Solution for Issue/Barrier 2:</p>	
<p>Issue/Barrier 3:</p>	
<p>Possible Solution for Issue/Barrier 3:</p>	
<p>Issue/Barrier 4:</p>	
<p>Possible Solution for Issue/Barrier 4:</p>	

ERP Inst@POI 013-19v1.0

27 May 2019

Annex 4: Summary on inputs received

Disclaimer: This overview is based on the inputs received through the 2019 stocktake through Eurosystem. The ERPB WG recognises that some solutions may be missing in this document since they were not reported. In addition, PISPs may act as facilitators for instant payments at the POI but are not included in this overview.

Live solutions based on instant credit transfers

Name		MobilePay	Plick	Swish	Vipps: mobile wallet
Launch date		07-05-2013	2017	12-12-2012	2015
Provider(s)		MobilePay Denmark A/S	PayDo Srl	Getswish AB (bank owned company)	Vipps AS
Geographic coverage	Within country	DK	IT	SE	NO
	Cross-border		No	No	Not yet
Currency		DKK	EUR	SEK	NOK
Types of POI and merchant		All POI (use-cases) for almost all types of merchants	P2P and P2B proximity and remote	Two products for merchants: - Swish Corporate (P2B POI) – simple solution for small merchants with limited integration between payee cash register SWISH - Swish Commerce (POI and e-commerce) – a more advanced solution including integration between payee cash register and SWISH enabling reconciliation and refund	Mobile phones, cards, invoice, physical shops, web shops
Open to all PSPs	Consumer side	Open for all customers +13y	Yes	Yes it is open; at the moment 13 banks are resellers of the consumer app (payer interface)	Distributed directly, available to all with a bank account
	Merchant side	Open for almost all types of merchants		Yes it is open; at the moment: 7 banks are resellers of Swish Corporate and 6 banks are resellers of Swish Commerce	Yes, both through PSPs and direct integration

ERP Working Group Instant Payments at POI

Use of proxy for merchant/transaction		Consumer: phone no. (alias for the consumer and their account/ payment cards) Merchant: Merchant ID (alias for merchant and its IBAN/ account)	email address or telephone number of payee	We are using alias for both consumer (MSISDN) and corporates (numbers starting with 123)	
Request-to-pay messages		All use-cases except invoicing/ subscriptions: Consumer initiates followed by a payment request by merchant (push)	No	Yes, proprietary messages based on ISO20022	Yes, proprietary format
Data exchange merchant-consumer		Short code, QR, payment link, NFC, BLE to identify consumer; merchant request (push) with trx amount etc. is done back-end for security reasons; generally, data is registered and/or verified by MobilePay's payment infrastructure	The information exchanged are: email address or telephone number of the payee, amount and description. Using this information, the payer creates a Plick within his bank's app or website. The request is sent to the Plick's data center: there an email or SMS is generated and sent to the payee. The payee can then fill the plick with the missing information (i.e. IBAN) and confirm the payment. At that point the payment is executed using a SCT or a SCT Instant.	Supported options: QR and Bluetooth Tokens for both QR and app switching (end user app opens up SWISH app for payment), as well as integration via partners such as ECR systems, ePSPs and POS terminals	Oral communication of phone number, then direct integration between Vipps backend and merchant system
Transaction time at physical check-out		Depends on setup/ environment etc.; on average less than a heartbeat	30-60 seconds	4-5 seconds	Not publicly available
Technical constraints		Can be account or card-based Consumer: mobile device required (older OS not supported for security reasons) and a card is required for on-boarding although the transaction are primarily account-based Merchant: integration to API and suitable POI or non-integrated solution (MobilePay software on own device); POI requires either MobilePay software/ hardware or integrations/ upgrading of terminals (e.g. with BLE chip)	Both payer and payee must have a smart phone and bank account	Mobile device and Mobile BankId and enrolment via bank	
Consumer/transaction authentication		In MobilePay's own environment (using pin, face, finger touch); for subscriptions the consumers authenticates when setting up the agreement	Payments are made through banks' online or mobile banking platforms; therefore, the security level is defined by every single bank	Using the Mobile BankId solution in Sweden which is a strong customer authentication solution provided by Finansiell ID Teknik AB	Vipps two factor authentication (phone + PIN/bio)
Confirmation	To the merchant	The confirmation of transactions is done instantly by MobilePay merchant communication, via API/web-services	Plick, using an SMS	Instantly; the Swedish real time payment system BIR settles in real time towards the bank and Swish acts as a pre-authorized system towards BIR due to the fact that Swish does the validation towards the bank	Instantly, through integration, by Vipps
	To the consumer	The confirmation of transactions is done instantly by MobilePay via communication to consumer's device			

ERP Working Group Instant Payments at POI

Repayment/refund/reservation service	Reservation as well as full and partial refunds supported using MobilePay's APIs or MobilePay software (merchant initiated)	Information not publicly available	SWISH offers a refund solution for existing payments	Reservation and refund possible through API calls
Secure element/software-based	Software-based	Service is integrated in banks' internet banking or mobile banking apps	Software-based	Software-based
(Security) evaluation on the mobile instant credit transfer application hosted on the mobile device	Yes	See previous answer	No public information available	Yes, several
Website	www.mobilepay.dk	www.plick.eu	www.getswish.se	

Solutions that are live, but currently not based on instant credit transfers (most with plans to support instant credit transfers in the future)

Name	Bluecode	Digicash	IRIS	Lydia	Lyf Pay	OK	Payconiq	Paylib	Satsipay	Tap-to-go
Launch date	For instant solution: 09-2019 field, pilot in summer							Card-based POI: 09-2013 SCT-based P2P: 05-2018	2013	
Currently based on	SDD	SCT, based on immediate execution on the transaction and immediate confirmation to the payee; funds availability at D+1, but PSPs may provide immediate availability for on-us transactions	SCT	E-money	E-money	SDD	SCT, SDD	Cards (POI), SCT (P2P)	E-money (+SDD to top up the wallet from a bank account)	SDD
Provider(s)	Bluecode	Part of Payconiq since 2017	DIAS SA	Lydia Solutions	Born with the merger of two existing wallets, Wal and Fivory (backed by BNP Paribas, Carrefour, Crédit Mutuel (CIC), Auchan,	OK	Payconiq International	Paylib Services, an economic interest group composed of French banking groups (BNP Paribas, La Banque Postale, Société Générale,	Satsipay Limited	Albert Heijn (a large supermarket chain in the Netherlands)

ERP Working Group Instant Payments at POI

						Mastercard, Oney, Total)			Crédit Mutuel Arkéa, Crédit Agricole, Groupe BPCE, Crédit Mutuel CIC)		
Geographic coverage	Within country	Based in AT	LU: low market penetration compared to card payments in terms of acceptance; 5 PSPs offer Digicash	GR	FR: limited coverage	FR: limited coverage	NL	BE, NL, LU (migrated from Digicash; see separate entry)	FR: full coverage	IT	NL: only at all AH-to-go supermarkets
	Cross-border	For instant solution: pilot AT, then DE, IT, HU + others	No	No				See previous answer	For the existing POI solution, Paylib already has a partnership with Masterpass	No	
Currency		EUR, later HUF	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR
Types of POI and merchant		Stationary retail, kiosk, vending machines m-commerce, e-commerce - all channels	N/A	Merchants: All types POI: POS, QR-code on a poster	Specific merchants through partnerships (for example with grocery stores chain Franprix)	Two major French retailers (Auchan and Casino)	Physical shops, web shops, amusement parks, zoos, etc.	Shops, restaurants, online and P2P	Small businesses, retailers and e-commerce; POS, mobile application, tablet, website, etc.	Proximity and remote P2P Proximity and remote P2B P2G remote P2Charity	All AH-to-go supermarkets
Open to all PSPs	Consumer side	The solution encompasses an SCA proxy to guarantee an acceptable customer experience. This requires		No, it is under consideration	Yes (after enrolment)	Yes (after enrolment)	It seems so	Yes	Users can only be customers of the participating banks	No, it's a closed circuit available only to end users and merchants	Yes

ERP Working Group Instant Payments at POI

		an individual contract between Bluecode and the ASPSP according to PSD2. But every (AS)PSP is invited to join this open ecosystem.									
	Merchant side	There is a conversion friendly acceptance solution that requires soft integration at the merchant. Any PSP that integrates that is invited to join.									No, just the AH supermarkets
Use of proxy for merchant/transaction		There is a legal entity operating the merchant acceptance plugin in cash registers and apps; they also collect fees and hold merchant data including bank data. This can be or can be linked to an SPL.	IBAN is included in the QR code together with the amount	Phone number			No		Yes	No	No

ERP Working Group Instant Payments at POI

Request-to-pay messages	Proprietary following the existing Bluecode specifications to reuse existing and proven infrastructure . This also allows running multiple other solutions at the same time, even including AliPay.	Not for POS payments (only for P2P)	At the moment no discussion on RtP			No		Not at the moment	No	No
Data exchange merchant-consumer	The payment authorisation and authentication happen through linking consumer and merchant via Bluecode token (barcode, QR, NFC and BLE). Unless required due to dynamic linking requirements where merchant name & amount is	QR code (can be dynamic, e.g. at POS or fixed, e.g. leaflet) BLE	Payment data are in the books of the local ACH i.e. DIAS SA; most appropriate technologies are NFC and QR-codes	QR code	QR code	QR code	QR code	- P2P: proxy - C2B: proxy, NFC	In the app, the payer chooses a merchant from a list sorted by proximity (using GPS) or through search, enters the amount and sends the payment. Other option: a QR code generated on the POS	Via an SDD which is processed within a (few) day(s) after the transaction.

ERP Working Group Instant Payments at POI

	<p>displayed in the Bluecode app, no payment data is exchanged between merchant and user. This all happens securely in the backend. BC Instant will reuse existing ECR-linked software infrastructure . Parties during customer authorisation are: customer app + merchant plugin + merchant + Bluecode token service initiating the request to pay, thereafter sender bank.</p>									
<p>Transaction time at physical check-out</p>	<p>240ms + instant payment time; definitely less than 2 seconds including</p>	<p>2-3 seconds</p>		<p>2-10 seconds</p>	<p>2-10 seconds</p>			<p>2-10 seconds</p>	<p>A few seconds</p>	

ERP Working Group Instant Payments at POI

		authorisation (no SCA login necessary)									
Technical constraints		User uses a mobile app that features normal Bluecode; bank is integrated with Bluecode; merchant is integrated with Bluecode; Bank and merchant are within the same CSM	Mobile app	One constraint could be the investment cost			OK-app on smartphone, POS terminal accepting OK technology	Payconiq app and a payment terminal equipped to process Payconiq transactions are needed	- P2P: N/A - C2B: the impossibility of using NFC on iPhones is a big constraint	Both the payer and the merchant need to use the app on a smartphone; Wi-Fi or a 4G+ network required	Tap-to-go card (NFC) at supermarket price tags in shop
Consumer/transaction authentication		PIN validation in the Bluecode app. The sending bank has a technical integration based on a contract with Bluecode, allowing to use Bluecode SCA instead of being forced to use the SCA of the ASPSP as a TPP PISP would be.	PIN or fingerprint	Mobile app requires login authentication			SDD mandate	Pincode of the mobile phone, fingerprint or face-id	Authentication with the mobile application	Usually, the app requires the user to input a PIN or use biometrics (face ID or touch ID)	Via the agreement to the SDD contract; in closing the contract, 1 cent needs to be paid
Confirmation	To the merchant	Bluecode receives an	Merchant receives	Execution of the transfer				Via normal bank		Real time; merchant	

ERP Working Group Instant Payments at POI

		instant request from the payment plugin of the merchant, forwards the ready request to pay to the payer bank. They send and confirm to Bluecode who confirms to the plugin gateway provider who sits in the cashier system directly. Thus providing immediate feedback. Payer bank can chose to acknowledge transaction at sending or upon CSM completion.	immediate confirmation of the funds but has no immediate availability	will be confirmed instantly and mainly by the availability of funds				account channels	Directly in the mobile application	receives a push notification on his own version of the app	According to the SDD rulebook
	To the consumer	By both payer bank and Bluecode upon CSM completion	Immediate, by Digicash, after confirmation of the execution by the payer's PSP	Confirmed by the local ACH						By the merchant and by the app	

ERP Working Group Instant Payments at POI

Repayment/refund/reservation service	All of those as additional transaction types that will also be premium transaction types for open banking	No	Confirmed by the local ACH			(at the moment still based on SDD)			No specific feature for this use case	According to the SDD rulebook
Secure element/software-based	Software based, although payment logic is not on the phone	Software-based	Software-based					Relying on the consumer account holder mobile application	Information not publicly available	
(Security) evaluation on the mobile instant credit transfer application hosted on the mobile device	Yes, although the system is based on the operational Bluecode scheme which is regularly evaluated	Yes: user (payer) pairs the app with web banking, using the SCA of the web banking, and SIM authentication (with mobile operator)	Yes; every PSP has its own app						Information not publicly available	
Website	www.bluecode.com -> website www.bluecode.biz -> developer portal no specific instant page yet	www.digicash.lu		www.lydia-app.com	www.lyf.eu	ok.app	www.payconiq.com	www.paylib.fr	www.satispay.com	ahtogo.nl/taptogo

Solutions that are live and based on instant credit transfers, but not yet for POI payments

Name		Bizum
Launch date		Launched in October 2016 as P2P E-commerce planned May 2019; Consolidated electronic payments including physical POS probably 2020
Currently use case(s)		
Provider(s)		26 Spanish banking brands are offering Bizum today; SdPP owned by 25 banks manages and promotes Bizum
Geographic coverage	Within country	ES
	Cross-border	
Currency		EUR
Types of POI and merchant		Initially, in May 2019, virtual POIs; later, in 2020, physical POIs
Open to all PSPs	Consumer side	Now, the solution is for Spanish banks in both sides, because they are who can issue IBANs, processed by SCT Inst in the National System of Electronic Settlement supervised by Banco de España. Other PSPs can get commercial agreements with them.
	Merchant side	
Use of proxy for merchant/transaction		Mobile phone number/email of the end-user
Request-to-pay messages		Bizum offers request-to-pay messages for P2P that will be extended to payments in merchants. In physical POI operations, the current terminal could ask to the user for Bizum's PIN, after holding the phone to the POI, or could send a request-to-pay message in order to finish the purchase
Data exchange merchant-consumer		E-commerce: consumer clicks Bizum button, enters phone number and Bizum PIN. Payment data include transaction amount and merchant/user identifiers (mobile phone), not IBANs (offered by de SdPP data base). Alternatively: request-to-pay message by merchant directed to consumer's banking app. Physical POI: NFC, QR-code, request-to-pay message, etc.
Transaction time at physical check-out		Equivalent to cards (<5sec)
Technical constraints		None
Consumer/transaction authentication		Bizum's PIN plus authentication in the environment of the user bank, or the whole authentication process in the banking app
Confirmation	To the merchant	Instantly by the merchant bank through the appropriate message to de POI and in account statements
	To the consumer	Instantly by the user bank through the appropriate message to de POI and in account statements
Repayment/refund/reservation service		Yes, through an instant transfer from the merchant IBAN to the user IBAN for the refunded amount
Secure element/software-based		SE is not required, for example, in case of NFC payments, Bizum would use Host Card Emulation.
(Security) evaluation on the mobile instant credit transfer		Bizum is in the mobile banking app of each bank, so it's subjected to all the security evaluation that banks apply to their apps/channels

ERP Working Group Instant Payments at POI

application hosted on the mobile device	
Website	bizum.es

Planned solutions based on instant credit transfers

Name	BANCOMAT Pay	eps instant	Flik	KEKS Pay	Pay by Bank app	tbd (AT)	tbd (HU)	tbd (IE)	Vipps instore with BankAxept
Launch date	16-07-2019	2021	09-2019	Payments at the POI in 2019; instant payments at the POI available at a later date, when the instant payment scheme is available in Croatia		09-2019	Instant payments will be launched in July 2019 – retail solutions based on a national QR-code; proxies and RTP will be gradually developed	End 2020; it is envisaged that the service will launch on SEPA Credit Transfer, and will migrate to SCT Inst.	Q3 2019
Provider(s)	BANCOMAT S.p.A.	STUZZA GmbH	All SI banks	Erste& Steiermärkische Bank	Mastercard	Raiffeisen Bankengruppe Österreich in cooperation with Bluecode	The central bank with the Hungarian ACH will provide the core infrastructure, additional innovative end-user payment services (e.g. mobile payments) to be developed by market participants. Some actors (e.g. one of the most important cash register manufacturers in Hungary and some PSPs) have already indicated their intention to develop such services. The central bank, in cooperation with Hungarian market stakeholders will	To be determined following a procurement process by the Banking & Payments Federation Ireland	Vipps as wallet BankAxept as national debit scheme

ERP Working Group Instant Payments at POI

								provide guidelines for the basic payment processes.		
Geographic coverage	Within country	IT + San Marino, Vatican City	AT	SI: full coverage	HR	UK-wide	Based in AT	HU	IE: all banks	NO
	Cross-border		N/A	Possible in the future	tbd		DE + ambition to further expand in Europe		No firm date as yet	No
Currency		EUR	EUR	EUR	HRK	GBP	EUR	HUF	EUR	NOK
Types of POI and merchant		Merchant application on smartphone/tablet, mops and smartPOS, POI standard with proprietary solution, cash register, remote payment e-commerce and m-commerce with online payment page	Potentially all, online and POS	All types of POI, supported on existing (stationary) POS devices and with a mobile POS application for merchants	Dynamic QR codes: - printed on retail-receipts - displayed on ecommerce websites - displayed on POS devices	Online payments in the early stage; with potential to spread to physical POS	Focussing on stationary commerce at the beginning	All types of POIs and merchants can be covered by services based on the core infrastructure.	Mobile based a/c to a/c domestic payment scheme: POS, online, p2p, bill payment, APIs for service integration	
Open to all PSPs	Consumer side	Open to all BANCORMAT S.p.A. associates, either within banks' own mobile applications or through white label app provided	Any ASPSP is free to join as an issuer; currently 98% of AT banks support eps	Yes, all banks joined the national so-called Flik scheme and will offer the solution to end customers (consumers and merchants)	Yes	Only the PSPs that sign up to the solution	Potentially yes, if they join the scheme	In order to ensure interoperability, market participants must disclose the technical details of applied data entry solutions and these solutions should be freely usable by all other service providers.	Customers of participating banks (within scheme)	

ERP Working Group Instant Payments at POI

		by BANCOMAT						Additionally, common technical standards are to be elaborated for the data entry solutions expected to be used the most often, and these standards must be made freely available to all stakeholders.		
	Merchant side	Yes, either through specific application provided by a bank or through suppliers (cash register); BANCOMAT provides a white label app for banks without proprietary merchant solutions	Any merchant is free to join via his account- managing bank / via an acquirer, legal restrictions may apply			Depending on the acquirer used	Yes, it they join the scheme		Any merchant that enrolls	
Use of proxy for merchant/transaction		Consumer: mobile phone number + Bpay card reference (PAN-like alias of the ccount). Merchant: specific token that includes all merchant's data	No	Mobile phone number and e- mail address	No		Not yet defined	The new MNB Decree on the execution of payment transactions allows the use of the payee's secondary account identifier (proxy) (mobile phone number registered within the EEA, email address, domestic tax identification code, tax number). The core infrastructure will support the use of such proxies. It will also be possible to initiate request-to- pay messages with the payer's proxy.	Mobile number initially, potentially email and vehicle registration	

ERP Working Group Instant Payments at POI

Request-to-pay messages	Yes, for POI and P2P. The message depends on the use case, always with mobile phone number as proxy; message is formatted with SOAP + XML schema on WSDL interface	No	pain.013	Yes	Yes, proprietary message	Not for the go live	The core infrastructure will support the initiation of request-to-pay messages. However, unlike instant credit transfers the use of this service will not be mandatory. Merchants – if they meet certain requirements – can connect to the central infrastructure directly to send request-to-pay messages.	Request-to-pay is on the roadmap and QR codes are being discussed	
Data exchange merchant-consumer	In-store: QR-code (dynamic and static) on merchant's smartphone/tablet application, mops and smartPOS, cash register and existing POI, with unique exchange between buyer and merchant based on payload of QR-codes (amount and	Online: within the existing eps infrastructure: a redirect model At the POS: QR-codes Routing of all data/messages by the central scheme operator between the merchant and the user's online/ mobile banking	Existing POS devices will be upgraded to support NFC and QR; a mobile application will be developed for merchants not using stationary POS devices; RTP message will be enabled for online merchants	QR/NFC/ BLE	Payment data is passed on directly to the customer's bank; the customer then authorises the payment via the bank's app	Barcode, NFC, QR-Code	All kinds of data entry solution – e.g. NFC, QR code – will be possible to use for instant payments. The central bank will support this work with the elaboration of a national QR code standard. The central bank also defined optionally used data fields (e.g. shop ID, POS ID etc.), which can be transmitted in credit transfer and request-to-pay messages. It will be mandatory by regulation to PSPs	Combination of NFC, QR-Code, BLE; upgrade of existing merchant equipment is likely	

ERP Working Group Instant Payments at POI

	merchant data). E-commerce: merchant uses the customer mobile phone number inserted into a payment page to obtain the link to let the buyer complete the transaction on mobile app						to be able to process all data content – including optional fields – through their PSD2 APIs.		
Transaction time at physical check-out	5-7 seconds	Depending on the banks' authorisation method in use 5-20 seconds	15 seconds from the point of time when payer decides to pay until payment is finished; transaction itself should not take more than 1 to 3 seconds	Up to 10 seconds		6 seconds covering all; 2.5 seconds for payment	No estimation for the average transaction time at the physical check-out; maximum execution time of the instant credit transfer itself is 5 seconds.	Unknown at this stage	
Technical constraints	Both banks must adhere to SCT Inst. In 2020 we expect that the whole system will use SCT Inst/	No	Apple does not allow access to NFC to third parties, which makes developing the same user experience for Android and iOS devices impossible;	Different technical options available		Mobile device is needed; operating system Windows is not supported; POS accepts Bluecode. User does not need	Since the data entry methods must be open (i.e. with public documentation and readable to everyone), there are no such technical constraints within the system, but it cannot be excluded that e.g. mobile	Unknown at this stage	

			QR code as fall back solution			active data connectivity.	phone producers apply such constraints (e.g. limited use of NFC).		
Consumer/transaction authentication		Basic method: application PIN, with a derivation part stored into a mobile server Advanced method: biometric, using functionalities of the mobile operating system	Depending on the bank authorisation methods in use which may vary – depending on the channel	Password/ PIN or fingerprint ID	Consumer authentication: mobile (soft) tokens Transaction authentication: in the app		Defined SCA	SCA	
Confirmation	To the merchant	Instant notification, pushed by the platform to the banks and directly pushed to the merchant; platform notifications are based on a centralized service (AWS)	Instantly by the issuing bank via scheme operator	Merchant gets instant positive or negative information; in the case of POS devices and mobile application sent by a common back end solution which receives information directly from the central instant payments infrastructure	In real time through means appropriate for the specific POI		Merchant interface hands over the OK of the ASPSP	Use cases in development	
	To the consumer	Instant notification, pushed by	As the payment is done in the	Consumer receives an instant	In real time through a push		SDK/user app hands		

ERP Working Group Instant Payments at POI

		the platform to the banks; platform notifications are based on a centralized service (AWS)	normal online/mobile banking environment, feedback to the user is given instantly, tx is included in the tx history instantly	notification which is sent by a back end solution which receives information directly from the central instant payments infrastructure	message in the app		over the OK of the ASPSP			
Repayment/refund/reservation service		Refund is supported for all transactions that the merchant can choose to reimburse; reservation is already in progress for gasoline purchase operations	Refund option is available in the eps environment	End-user solution will not contain these; these can be performed using regular banking channels	Yes		Not for the go live, planned for phase 2	No refund or chargeback rules will be defined at the central level, but market stakeholders will have the option to elaborate their own brands for supplementary services (e.g. their own mobile wallets), with their own business (chargeback /refund) rules.	Intention would be to offer these facilities	
Secure element/software-based		Software-based		Software-based	Software-based		No, works with dynamic tokens only		Software-based	
(Security) evaluation on the mobile instant credit transfer application hosted on the mobile device		As for all mobile apps a third party company performs code review, penetration tests and all security test evaluations		Mobile application will be submitted to a security evaluation	Yes		Yes		App will be securely tested	

ERP Working Group Instant Payments at POI

Website	bancomat.it/it/bancomat/bancomat-pay%20AE		Not yet available	paybybankapp.mastercard.co.uk					github.com/vippsas
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Initiatives that are not end-user solutions (but rather e.g. standardisation or interoperability initiatives)

Name		HIPPOS System
Launch date		Tbd as the initiator tries to convince banks/PISPs to participate in a pilot; some retailers are open to conduct this pilot very soon, starting with a POS implementation.
Provider(s)		Standardisation initiative by GS1 Germany and HDE (German Retailer Association) – started in 2017 Provider would be GS1
Planned Geographic coverage	Within country	DE (first step)
	Cross-border	Euro area (second step)
Currency		EUR
Types of POI and merchant		All kind of POS payments as well as e-Commerce and P2P
Open to all PSPs	Consumer side	Yes
	Merchant side	
Use of proxy for merchant/transaction		
Request-to-pay messages		
Data exchange merchant-consumer		HIPPOS standard covers the data carrier (QR code) and the information which is coded, the technical interfaces and data fields. Other technologies (NFC, web APIs etc.) are also supported.
Transaction time at physical check-out		No more than 10 seconds, but depends on the scope of the measurement
Technical constraints		Every merchant which can handle or display a QR code or uses NFC is able to participate
Consumer/transaction authentication		SCA based on requirements of the ASPSP and/or the payment solution on the user's smartphone
Confirmation	To the merchant	By the beneficiary bank or the PSP of the retailer; in an updated version of the HIPPOS System a conformation could conceivably be sent by the sending bank
	To the consumer	By the payment solution provider/bank
Repayment/refund/reservation service		Yes
Secure element/software-based		Depends on the solution of the payment app provider; normally a mobile banking app without a SE is sufficient
(Security) evaluation on the mobile instant credit transfer application hosted on the mobile device		
Website		

Other information	<p>GS1 Germany together with some of the well-known retailers (approx. 30) in Germany is working on a SCT Inst solution for POS / e-Commerce & P2P. It's more an initiative than a ready-made solution – trying to build a platform of collaboration with/between stakeholders like banks, retailers, PSPs and PISPs. Initiated by GS1 and HDE (The German Retail Association) and supported the EHI Retail Institute.</p> <p>The HiPPOS approach is divided into two core aspects.</p> <p>1) Defining a standard for POS / e-commerce and P2P transactions by describing the data transmission between the end user's smartphone and the merchant's POS system/e-commerce shop and e.g. P2P solutions. The standard covers the data carrier (QR code) and the information which is coded via the QR code, the technical interfaces and the data fields which are used. The objective is to build an open and independent infrastructure by defining and publishing transmission protocols (via different technologies like QR code, NFC and web APIs) where solution providers (PSPs, PISPs, other stakeholders) could connect their systems/solutions very easily and support SCT Inst trx with merchants.</p> <p>2) Running the HiPPOS System. A centralised registry (web) where all participants of this open infrastructure have to register themselves to be validated and accredited by GS1 for the HiPPOS System / SCT Inst trx at POS, e-commerce and P2P. Banks, PSPs, PISPs have to register their company (legal entity), solution, etc. Merchants have to register their company (legal entity) and their IBAN. HiPPOS makes sure that only validated companies could participate in the system. The idea is to pilot HiPPOS on a national level but to extend this approach to all euro markets/countries/jurisdictions very soon.</p>
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Initiatives for which little information is available through the stocktake

- BG: Initial discussions for a domestic instant payment solution have been conducted between the local retail payment systems operator (BORICA AD) in its capacity of a possible solution provider, the banking community and the Bulgarian National Bank
- CH (SIC): early stage analyses are running
- CY: there is no planned date to launch an end-user solution but there are ideas which are not mature yet
- DE: (savings banks)
- DE: (Westhafen Group): No dedicated solution; Westhafen is an expert forum of PSPs and corporates to focus on the usage of instant payments while addressing the barriers identified. They do not develop an own solution
- EE: roadmap on SCT Instant solution for P2P and C2B under finalisation under the national retail forum– no further information provided
- HR: The Croatian National Payment Committee approved the implementation of an instant payment scheme in HRK. Processor for clearing and settlement will be FINA (Financijska agencija / Financial Agency). All planned activities are ongoing and the planned start of the new payment scheme is on 03 June 2019. FINA also announced implementation of a payment solution for merchants, but it is in the initial phase. On 14th September 2019, based on PSD2 requirements, the Instant CT service in HRK will be implemented in the Third Party Provider (TPP) channel for web shop POI.
- LV: roadmap under discussion.
- PL: Currently the Polish National Clearing House – KIR SA is carrying out an analysis related to introduction of such payments. This is at an early stage so disclosing details is not possible at the moment. KIR is open to collaboration with other entities in this respect as they perceive instant credit transfer payments at the POI as a promising business case, better end-customer experience also in European context, opportunity to increase the speed of circulation of money and reduction of cash usage.

No Initiatives reported through the stocktake

- CZ
- FI
- LT
- MT
- PT
- RO
- SK