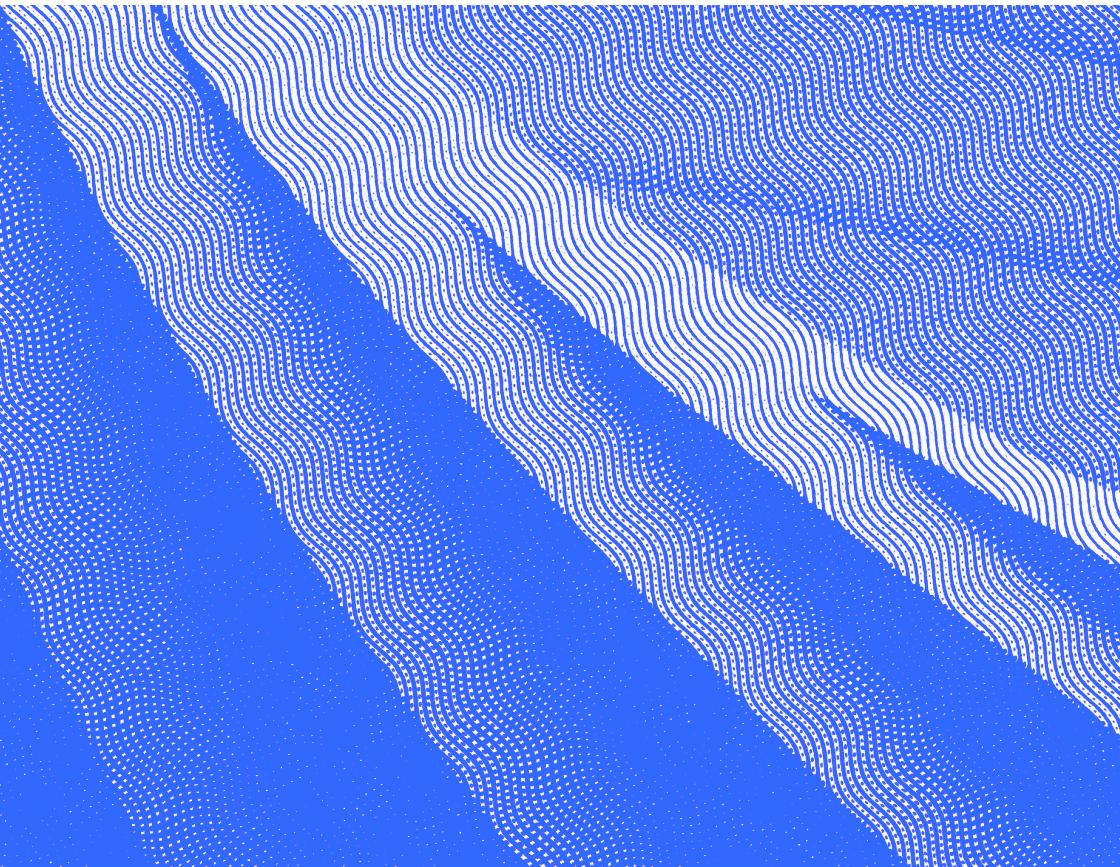
numeral

The ultimate guide to SEPA

For payment operations teams and their partners



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Introduction

Since 2008, the Single Euro Payments Area (SEPA) has made euro-denominated bank payments simpler and faster. In 2021, SEPA payments accounted for more than 95% of all bank-based payments in the European Union and enabled the transfer of value between individuals, companies, governments, and non-governmental organisations across the 36 countries of the SEPA zone.

SEPA payments facilitate diverse use cases from paying salaries, insurance claims, and large purchases to collecting taxes, loan repayments, and rents to funding wallets and investment accounts. With 43 billion payments per year, SEPA payments are the pulse of the European economy.

The SEPA initiative is actively pushing innovation through new schemes such as Instant Credit Transfer and Request-to-Pay – standards that continue to accelerate payments and facilitate online and offline commerce. But, understandably, SEPA is becoming increasingly challenging to comprehend.

This guide is brought to you by the team behind Numeral, the API-first payment operations software helping companies accelerate their SEPA payments with their banking partners.

We aim to provide readers with a thorough overview of how SEPA works, while highlighting recent additions and improvements so that readers more familiar with the initiative can refresh their knowledge. We also outline challenges companies processing SEPA payments face around connectivity, file formats, and automation.

By reading this guide, you will learn everything you have always wanted to know about SEPA and how the initiative continues to evolve to improve payments for consumers and businesses across Europe.

SEPA 101

What is SEPA?

SEPA is a single payment area that uses the euro as its single currency. The four SEPA payment schemes are used to send and receive different types of euro payments from one bank account to another, with the SEPA technical and operational standards enforcing speed, cost, and security guarantees.

SEPA was introduced for credit transfers in 2008, direct debits in 2009, and instant credit transfers in 2017. Credit transfers (regular and instant) are used to send a payment from account A to account B. Direct debit is used to debit money from a third-party account B and credit it to account A, based on the authorisation granted through a direct debit mandate signed between the debtor and the creditor.

The development of SEPA is part of the mandate of the Eurosystem, a group composed of the European Central Bank (ECB) and national central banks of other eurozone member states. National central banks make the necessary market infrastructure available to the banks in their respective countries.

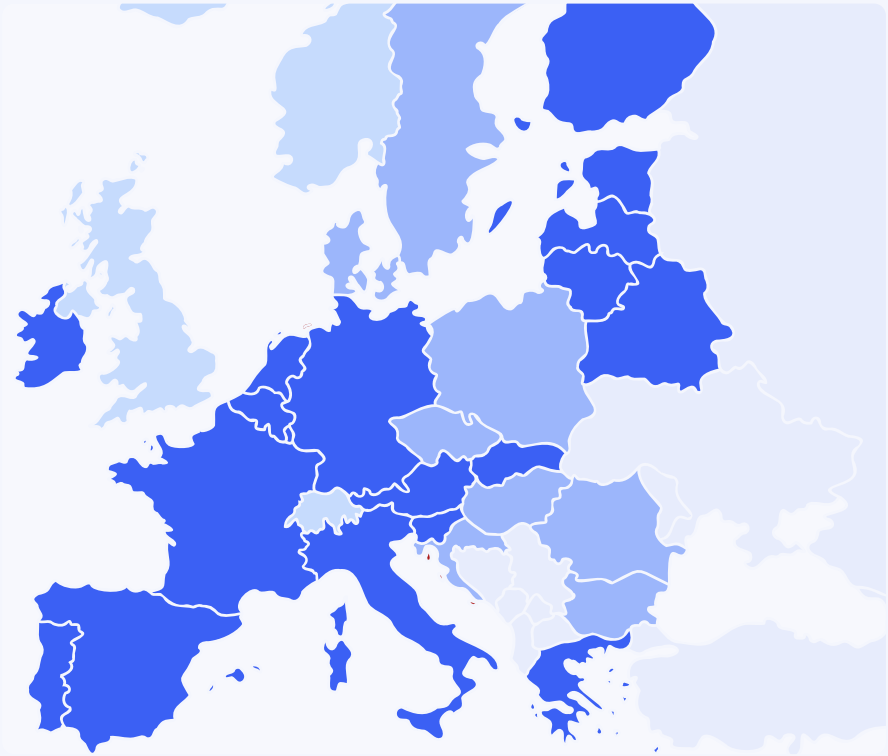
SEPA members

As of September 2022, the SEPA zone spans 36 European countries, including:

- ✓ The 27 countries members of the European Union (EU)
- ✓ 4 members of the European Free Trade Association (EFTA) (Liechtenstein, Norway, Iceland, and Switzerland)
- ✓ 4 microstates with special arrangements with the EU (Andorra, Monaco, Vatican City, and San Marino)
- ✓ The United Kingdom after they left the EU in 2020

Of the 36 countries in the SEPA zone, 14 do not use the euro as their official currency. Only the payments sent and received in euro in these countries can be made as SEPA payments. Payments sent and received in local currencies to and from these countries use other local or international payment schemes and are not SEPA payments.

SEPA Members
As of July 2022



EU Member State with Euro as its currency

EU Member State with a currency other than the Euro

Non-EU SEPA country

Non-EU, non-SEPA country

How SEPA works

SEPA payments involve and require the active involvement of account holders, payment service providers (PSPs), clearing and settlement mechanisms (CSMs), and the European Central Bank (ECB).

A SEPA payment is a euro movement from one account held by a PSP in the SEPA zone to another PSP in the SEPA zone. The payment can be initiated and pushed from the debtor account (credit) or initiated and pulled from another account (debit).

PSPs are responsible for sending and receiving payments as well as holding the debtor's and the creditor's accounts, that is to say, increasing and decreasing their respective balances. Historically, banks were the only PSPs participating in the SEPA. However, the evolution of European regulations through directives such as EMD2 (2009), PSD1 (2007) and PSD2 (2016) directives enabled a new generation of PSPs to emerge.

CSMs are responsible for clearing and settling the payments between PSPs, with settlement occurring through PSP's accounts held by the ECB.

History of SEPA

SEPA Origins

The origins of SEPA are tightly linked to the formation and strengthening of the European Community and the European Union. SEPA aims at simplifying, harmonising, and accelerating payments across SEPA members, by using the euro as a single currency and by leveraging standardised payment schemes.

SEPA Key Dates

Year	Event
1957	The Treaty of Rome creates the European Community.
1992	The twelve founding members of the European Community form the European Union. Among other things, the Treaty of Maastricht creates the euro as a single currency and the eurozone.
2002	First euro coins and banknotes go into circulation.
2008	The SEPA Credit Transfer (SCT) scheme is introduced.
2009	The SEPA Direct Debit (SDD) Core and B2B schemes are introduced.
2014	SEPA credit transfers and direct debits become the dominant form of payments in the euro area, respectively 94% and 80% of all payments as of February 2014.
2017	The SEPA Instant Credit Transfer scheme is introduced.
2020	The SEPA Request-to-Pay scheme is introduced.
2021	SEPA payments account for 94% of all credit transfers and 98% of direct debits in the eurozone.

Organisations Involved in SEPA

Various organisations are involved in standardising and operating SEPA payments.

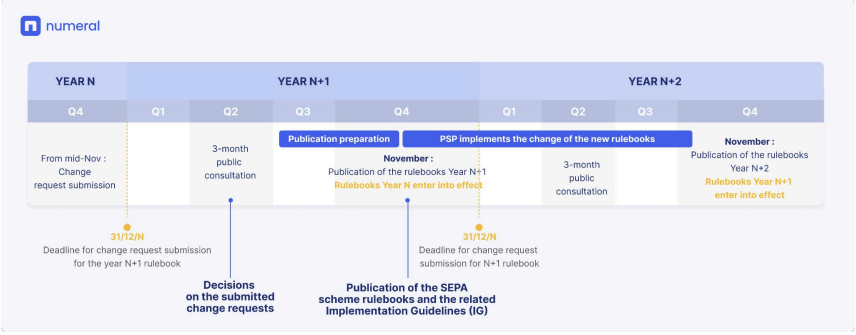
European Commission

The European Commission, with inputs from the ECB and the European Payments Council (EPC), is responsible for drafting the regulations and directives that form the legal and technical framework for SEPA.

European Payments Council

Founded in 2002 as a not-for-profit association and now counting 77 members, the EPC is responsible for harmonising payments across Europe. The EPC specifies the payment schemes used by PSPs and operated by clearing and settlement mechanisms (CSMs). The EPC is not a regulator and does not have a mandate from the EU or any other political, legislative, or regulatory institution, but rather represents and defends PSPs in front of European institutions, such as the ECB.

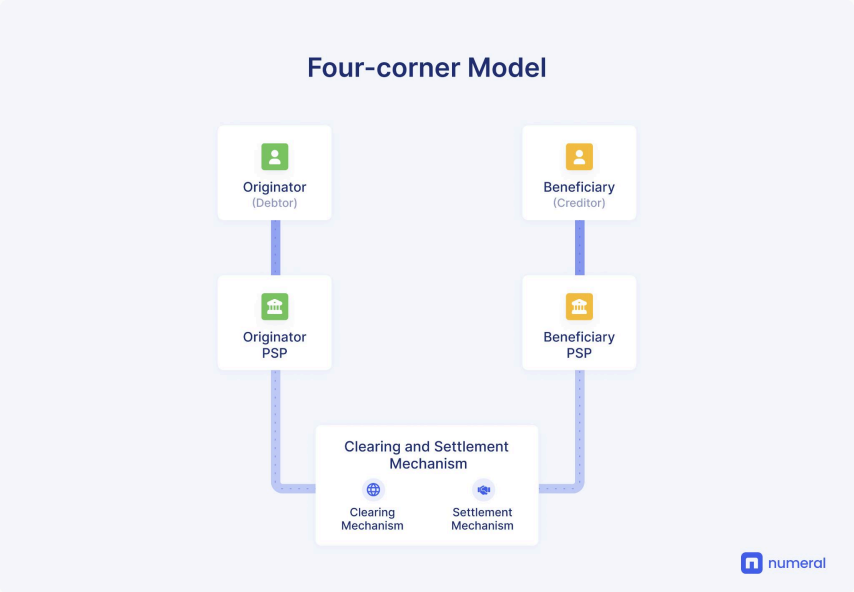
The role of the EPC is to provide the technical framework for each SEPA payment scheme. One of the key publications of the EPC is the SEPA rulebook. SEPA rulebooks define the business rules and technical standards which oversee each SEPA payment scheme. New rulebooks are published every year in November and come into effect in November of the following year. When a new rulebook comes into effect, SEPA participants as well as CSMs are expected to update their systems and processes by implementing new validation rules and adjusting existing ones as well as supporting new SEPA message formats.



Four-corner Model

SEPA payments rely on a four-corner model, based on one originator and its PSP (in most cases a bank) and one beneficiary and its PSP. PSPs are not connected to each other, but are interconnected through a CSM for the clearing and settlement of their payments.

A simplified version of how a SEPA credit transfer is processed is as follows. The originator places a credit transfer order to their PSP. The originator PSP makes the necessary checks to ensure that the order is complete and that the order can be executed successfully. After the execution, the payment is sent to a Clearing and Settlement System (CSM) which, after successful completion of its own checks and processing, forwards it to the beneficiary PSP. The beneficiary PSP informs its customer, the beneficiary, that their account has been credited.



Account Holders

An account holder can be an individual, a governmental or non-governmental organisation, a company, or any other entity that holds an account with a PSP.

Account holders send or receive payments as part of their everyday lives or business operations using a variety of channels including mobile or web banking applications, cash or treasury management software systems, or bank branches.

Account holders can be both debtors and creditors depending on the payment.

Payment Service Providers

A PSP can be a credit institution (often referred to as a bank), a payment institution, or an electronic money institution. Regardless of their exact regulatory status and name, which can vary across countries, a key role and responsibility of PSPs is to send and receive payments on behalf of their customers by holding customer accounts and by connecting to the CSMs. More than 3,900 PSPs participate in at least one SEPA scheme, with some participating in multiple SEPA schemes.

Starting from 2009, the European Commission passed new directives to foster competition across the EU and the European Economic Area by allowing non-bank PSPs to send and receive payments as well as hold accounts. Such directives, named electronic money and payment services directives (respectively EMD and PSD1 / PSD2), created nine new regulatory statuses, including electronic money institution (EMI) and payment institution (PI). Among other services, EMIs and PIs can send and receive SEPA payments on behalf of their customers.

Unlike SEPA direct participants, SEPA indirect participants do not connect directly to the CSMs. Instead, a SEPA indirect participant partners with another PSP that is a SEPA direct participant. The responsibilities of a SEPA indirect participant are more limited than SEPA direct participants, as they need to support fewer payment flows and related processes. Most PSPs are SEPA indirect participants. Indirectly connecting to a CSM as an indirect participant is faster and cheaper than connecting directly as a direct participant.

Clearing and Settlement Mechanisms

CSM Role

CSMs are an invisible yet essential piece to the SEPA puzzle. To understand how CSMs work and the role that CSMs play in payments, let's take the example of Jane Doe and TravelCo. To pay for her trip to Greece, Jane Doe wants to transfer money from her account held by PSP A to the account of TravelCo held by PSP B. When Jane instructs a payment and if Jane holds sufficient funds the money is moved to the account of TravelCo.

Under the surface, Jane Doe's bank, Alpha, sends a message to ClearingCo, a local CSM, asking to move the money to TravelCo's bank Beta. ClearingCo aggregates all the payment instructions from and to banks Alpha and Beta during a given period. At the end of the period, ClearingCo calculates the net amount of all the payment instructions from and to banks Alpha and Beta. The net amount is transferred between banks Alpha and Beta. Jane Doe's account at bank Alpha is debited and TravelCo's account at bank Beta is credited.

CSMs Across SEPA

There are two distinct types of CSMs: retail systems (payments from individuals and companies) and large-value payment systems or LVPS (payments by financial institutions).

There are 25 reported retail payment systems within the euro area in 2021. Around 50 billion payments were processed through retail payment systems in 2021, with a combined value of €41.1 trillion. There continues to be a high degree of concentration in euro area retail payment systems. However, each member state can have local CSMs used to execute payments across banks within the same country.

As an example, the French CSM CORE is owned and operated by STET, a group of 6 major French banks, and is used for payments between banks in France. The three largest systems in terms of number of payments (STEP2-T and CORE in France and RPS in Germany) processed 69% of the volume and 72% of the value of all payments processed by euro area retail payment systems.

Banks rely solely on pan-European CSMs (PE-ACH) to execute payments with other banks from the SEPA zone. As of September 2022, there is one single pan-European CSM used by 99% of the SEPA banks, STEP2. Operated by the Euro Banking Association Clearing (EBA Clearing), STEP2 accounts for 50% of all payments in value.

After netting payments sent by member banks during the day, STEP2 settles the payments with accounts held at the ECB through a large-value payment system (LVPS), which can be either the Eurosystem's Real-Time Gross-Settlement system (RTGS) TARGET2 or the EBA Clearing's equivalent EURO1.

LVPS payments are ECB money movements between bank ledgers. The ECB debits one bank account and credits another one with the netted amount. In 2021, the TARGET2 and EURO1 systems settled 140 million payments with a total value of €510 trillion.

Impact of Instant Payment on CSMs

Since 2017, the introduction of instant payments has challenged the established payment infrastructures. Instant payments offer final and irrevocable settlement of payments in euro, at any time of day and on any day of the year — a significant change from once-a-day settlement.

Clearing and settling SEPA instant payments therefore requires a modern technical infrastructure developed specifically for the purpose of settling instant payments. It needs to be designed to:

- ✓ Secure an end-to-end processing time of 10 seconds or less, as required by the SEPA Instant Credit Transfer scheme. As a comparison, existing RTGS systems like TARGET2 process 99.9% of their transactions under 1 minute
- ✓ Support the expected large volumes of payments and meet scalability requirements

- ✓ Secure availability around the clock without maintenance windows, contrary to RTGS systems which have been historically closed over week-ends and certain public holidays
- ✓ Enable a deployment process with no interruption of service

This has led to the introduction of two payment systems dedicated to instant payments. Launched in 2017, Real-Time 1 (RT1) is a modern, 24 / 7 instant payment CSM used by 80 members against an annual fee to process SEPA instant credit transfers. In 2018, the Eurosystem launched the TARGET Instant Payment Settlement (or TIPS) payment infrastructure to process instant payments. Instant payments are settled in ECB money. The biggest differentiator of TIPS versus RT1 is that it can be used by both direct and indirect SEPA participants. As a result, TIPS provides a more open system to PSPs and other financial institutions.

Software Providers

A variety of software providers are used by individuals and companies to send and receive SEPA payments with their banks.

Bank Mobile and Web Applications

Bank mobile and web applications are developed and distributed by banks to their consumer and corporate customers. Although applications might differ depending on the customer type, they usually enable customers to check their accounts and initiate payments.

Due to limited automation capabilities, banking apps are most suited for occasional usage involving a limited number of bank accounts and payments.

Bank Direct Connectivity Solutions

Bank direct connectivity solutions, also called host-to-host solutions, take the form of file servers (SFTP, EBICS, SWIFTNet...) or APIs to which corporate customers can connect to automate the sending of payment instructions and the receiving of various reports, such as payment status reports and account reports, through files or API requests and responses.

Although very stable and scalable, they can be complex, time-consuming, and expensive to deploy. Direct connectivity also requires a high degree of technical capabilities to integrate with other systems. Last but not least, bank direct

ERP, TMS, and Cash Management Applications

ERP (for Enterprise Resource Planning), TMS (for Treasury Management System), and cash management applications are used by medium to large-size companies to run the operations of specific departments such as finance, accounting, and treasury.

ERP, TMS, and cash management applications can be integrated with bank direct connectivity solutions to enable straight-through processing of payments and reports and a single, aggregated view of all accounts.

Enterprise-scale applications can be complex to deploy, integrate, and customise. They usually require significant staff training as well as the active involvement of external consultants, which can result in costly implementation projects.

Numeral

Numeral is a payment operations software abstracting the complexity of bank direct integrations and manual file management. By exposing a single API across banks and payment methods, Numeral helps businesses to accelerate their payments and reconciliations with real-time connectivity to banks, robust automations, and built-in controls. Numeral can be deployed in weeks in an organisation thanks to developer-friendly API and a central dashboard for finance and operations teams.

Types of SEPA Payments

Common Characteristics

While the four SEPA payment schemes each have a different purpose, they share five common characteristics.

Euro as the Sole Currency

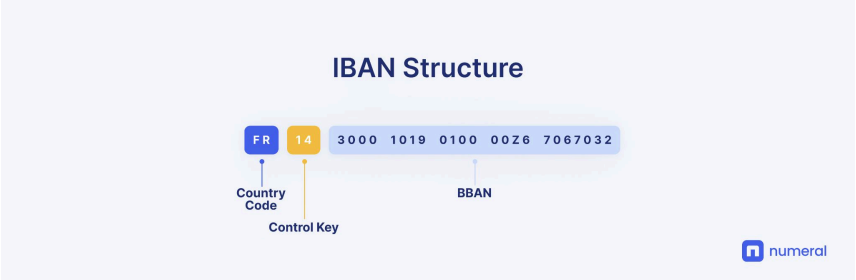
All SEPA payments are made in euro. The euro was introduced in 2002 as a single currency and is currently the official currency of 19 countries and more than 350 million citizens. It is the second most used currency in the world, after the US dollar and before the Chinese yuan.

IBANs as Account Identifiers

IBANs (for international bank account number) are used to normalise account numbers across more than 80 countries, including the 36 countries that form the SEPA zone. However, several major countries including the US, Canada, Australia, China, and Japan are yet to adopt IBANs.

SEPA payments use IBANs as the sole way to identify debtor and creditor accounts. IBANs are meant to facilitate account identification, payments, and international trade by using a common syntax and format. The IBAN format is defined by the ISO 13616 standard. IBANs always start with a two-letter country code, followed by two check digits, and end with the BBAN (basic bank account number).

Both SEPA direct and indirect participants can issue their own IBANs and open and hold accounts in the name of their customers. PSPs often see issuing their own IBANs as a way to further strengthen their brand as well as customer relationship.



The length of an IBAN depends on the country. Some countries can be chatty (such as France, with 27 characters), while others can be more straight to the point (such as Belgium, with 16 characters). IBAN formats per country can be found in the appendixes of this guide.

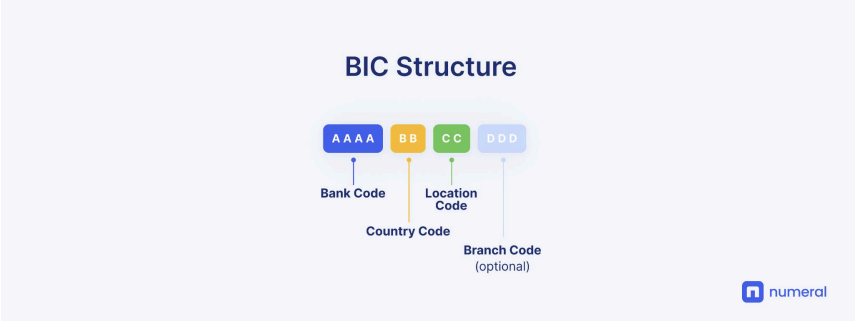
Although the syntax of an IBAN can be verified using a basic algorithm, there is no built-in mechanism in SEPA to verify that the account exists and can be used for a given payment. A SEPA payment to a valid IBAN can result in a rejection or return, for instance, if the account has been closed, does not exist, or is not compatible with the payment method used.

BICs as Bank Identifiers

Bank identifier codes (or BICs) are used to identify PSPs across the SEPA zone. BICs are registered and managed by SWIFT, a global financial messaging network.

The BIC code structure is specified by the ISO 9362 standard. BICs take the form of eight (also called BIC8) or eleven (also called BIC11) characters. A BIC8 identifies a PSP in a given country or city, while a BIC11 identifies a PSP's exact branch. The BIC usually includes the PSP shortened name in the bank code.

The IBAN already contains the BIC's information and it is unnecessary to provide the BIC separately to send or receive a SEPA payment.



Full Amount

No fees can be deducted from SEPA payments. The amount sent is always equal to the amount received. If a fee is to be applied to the payment it results in a separate fee on the creditor's account, the debtor's account, or both.

Cut-off Times

Just as any other business, banks also close their doors at certain times, whether it is during evenings and nights, weekends, or some holidays (hence the term "bank holiday"). Banks, CSMs, and central banks publicly list their opening and closing hours so that their counterparties can adapt. The moment a bank or financial institution stops processing new payments for the day is referred to as the "cut-off time". Banks use closing hours to close books and perform technical maintenance operations.

Cut-off times are usually expressed in a given timezone. For instance, the ECB's TARGET2 cut-off time is 5pm CEST. Every bank connected to a CSM enforces cut-off times with their own customers so that banks can process payments orders with other banks and CSMs, and close books for the day.

Real-time schemes and the corresponding CSMs, such as TIPS for SEPA instant credit transfer payments, usually run 24 / 7 / 365 and are not subject to cut-off times, except for punctual planned maintenance operations.

Overview of SEPA Payment Schemes

SEPA Scheme	Mode	Type	Max. amount	Maximum Credit Time	Days & Time of Operations	Repudiable
Credit Transfer	Push	One-off	No limit	2 business days	Business days / hours	Yes
Instant Credit Transfer	Push	One-off	€100,000	10 seconds	24/7/365	No
Direct Debit Core	Pull	Recurring	No limit	2 business days	Business days / hours	No
Direct Debit B2B	Pull	Recurring	No limit	1 business day	Business days / hours	No
Request-to-Pay	Push	One-off	Depends	Depends	Depends	Depends

SEPA Credit Transfer

A SEPA credit transfer (shortened to SCT) is a payment sent by the debtor (or payer) to the creditor (or payee).

It has a maximum execution time of one business day and a maximum credit time of two business days, from the moment it has been instructed by the debtor to its PSP. SEPA credit transfers are only processed during business days and business hours.

There is no minimum or maximum amount. No fees can be deducted from the payment, which means that the full amount is always credited on the creditor's account.

A SEPA credit transfer can be recalled by the originator PSP within 10 business days for technical reasons, such as duplicate sending or technical problems, and within 13 months in case of fraud.

SEPA credit transfers are used for a variety of everyday use cases, including consumer-to-consumer bank transfers, regular salary payments, and insurance disbursement payouts.

SEPA Instant Credit Transfer

SEPA instant credit transfer (shortened to SCT Inst) is the most recent SEPA payment type. It is a much faster version of a SEPA credit transfer, with a maximum time to credit of 10 seconds. SEPA instant credit transfers are processed entirely automatically, 24 / 7 / 365.

The debtor's bank is notified by the creditor's bank that the payment has been credited on the creditor's account, which enables it to notify its customer in return.

Unlike a SEPA credit transfer, a SEPA instant credit transfer cannot be repudiated. It cannot be cancelled and cannot be returned. It thus offers a much higher level of guarantee to the creditor.

SEPA instant credit transfers enable new use cases such as on-demand salary advances, real-time health insurance repayments, emergency payments, and secure online purchases. They also enable companies to reduce working capital requirements and improve cash flow by collecting payments faster.

SEPA Direct Debit Core

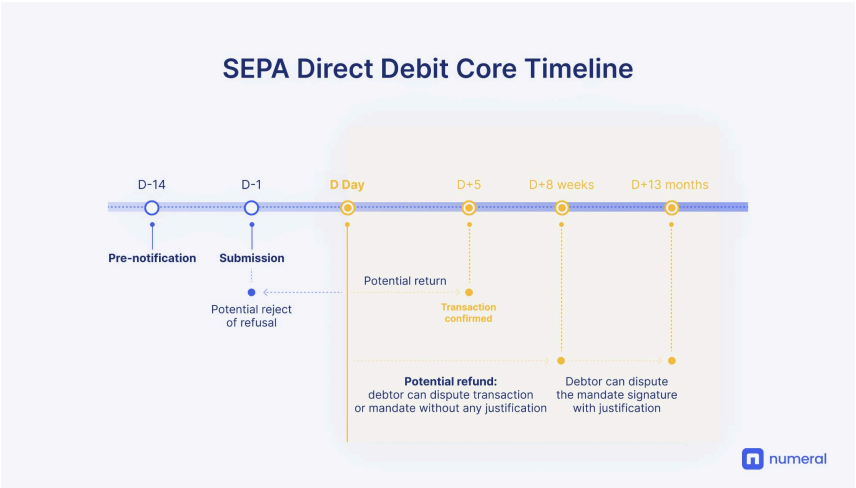
A SEPA direct debit core (shortened to SDD core) is a payment pulled and debited from the debtor's account and credited to the creditor's account. It requires a mandate from the debtor to the creditor, which authorises the creditor to debit the debtor's account under certain pre-agreed conditions.

The mandate is identified by a unique mandate reference (or UMR). The creditor is identified by a creditor identifier, which is usually assigned by the national bank of the country of the creditor.

SEPA direct debits are commonly used for recurring payments such as rent, utilities, software subscriptions, loan repayments, etc.

A SEPA direct debit core must be initiated between two weeks and two business days before its due date. It can be rejected by the debtor's bank until five days after its due date, for instance if the account has been closed. The debtor needs to be notified two weeks in advance of the settlement date unless the debtor explicitly waives the notification.

A SEPA direct debit can be refunded up to eight weeks after execution, even if there was a valid mandate and even if it had been authorised or up to 13 months after execution if there was no valid mandate or if it was not authorised.



SEPA Direct Debit B2B

A SEPA direct debit business-to-business (called SEPA direct debit B2B, shortened to SDD B2B) is similar to SEPA direct debit core, with one major difference.

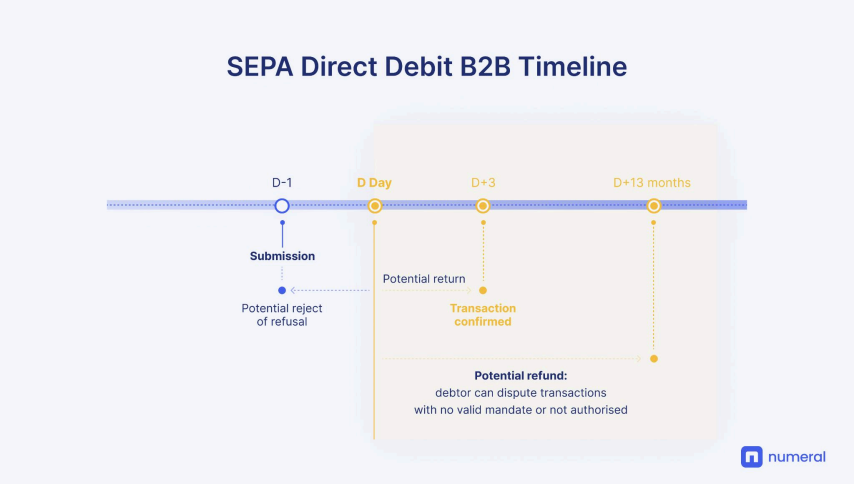
Unlike with a SEPA direct debit core, a mandate must be sent to and registered by the debtor's PSP to process a SEPA direct debit B2B. The debtor's PSP is responsible for verifying that a SEPA direct debit B2B corresponds to a valid mandate before executing the payment and debiting the debtor's account.

As a result of this extra step and security for the debtor, a SEPA direct debit B2B cannot be refunded by the payer if there was a valid mandate and if it had been authorised, unlike a SEPA direct debit core. The direct debit can be refunded up to 13 months after execution if there was no valid mandate or if it was not authorised.

A SEPA direct debit B2B must be initiated between two weeks and one business day before its due date. Unlike with a SEPA direct debit core, a pre-notification of the debtor is not required.

The debtor's PSP may still return the payment up to three days after the execution for technical reasons or because the debtor PSP is unable to accept the collection for other reasons, such as the account being closed, the customer being deceased, the account not accepting direct debit, or the debtor refusing the debit.

SEPA direct debits B2B are used between companies and with tax authorities. Common use cases include repaying loans, paying taxes, or paying for large purchases.



SEPA Request-to-Pay

Introduced in 2020, SEPA request-to-pay (SRTP) is a messaging functionality that aims at facilitating account-to-account payments. It is not a payment scheme or method in itself, but a way to request the initiation of a payment.

The payment initiation request is conducted over a secure digital channel and offers several payment options to payers, with the payee deciding the options for acceptance and initiation timelines.

Payment acceptance options are:

- ✓ Accept now: the request-to-pay must be accepted immediately
- ✓ Accept later: the request-to-pay can be accepted at a later time

Payment initiation options are:

- ✓ Pay now: the request-to-pay must be paid by the payer immediately, at the acceptance time
- ✓ Pay later: the payment is initiated at a later term than the acceptance time

Once received by the payer in a secure channel, the payment initiation can be rejected or accepted. If accepted, the payment will then be initiated at the agreed date. From a security perspective, the validation of the payment will occur in the payer's banking environment, with the payer and payee receiving a confirmation that the payment has been made.

The aim of SEPA request-to-pay is to provide beneficiaries with greater control over their payment collections and facilitate accounting reconciliations. Payment initiation requests can be linked to an invoice or any other document with exact references, such as invoice numbers, payment amounts, and customer identification.

As of July 2022, there are no active users of SEPA request-to-pay. The next rulebook on the SEPA request-to-pay is to be published by the EPC in November 2022 and will have a bearing on how fast SEPA request-to-pay will be adopted.

SEPA Payments in Numbers

Payment statistics in the SEPA are maintained by the ECB and published every year in July for the previous year. There are some limitations to this data when it comes to understanding payments executed throughout SEPA. There is no data available for SEPA direct debit B2B as well as SEPA instant credit transfer payments. Additionally, payment statistics for euro payments in non-euro countries and non-European Economic Area countries are not available.

2021 Payment Landscape

In 2021, the total number of non-cash payments in the eurozone, including all payment methods, increased to 114.2 billion, up 12.5% from 2020. The corresponding total value increased to €197.0 trillion, up 18.6% from 2020.

The number of credit transfers within the euro area increased to 25.1 billion (up 8.6%) and their total value increased to €184.2 trillion (up 19.3%). The number of direct debits within the euro area increased in 2021 to 23.2 billion (up 5.8%) and their total value increased to €7.3 trillion (up 11.1%).

Card payments accounted for 49% of the total number of payments, while credit transfers accounted for 22% and direct debits for 20% of all payments.

Credit transfers accounted for the largest value at 184 trillion and 93% of the total value sent. The next two largest payment methods are direct debit (accounting for 4% of total value) and cards (2% of total value).

Eurozone 2021	Number of Payments (in Billion)	Share of Number of Payments	Value of Payments (in Trillion Euros)	Share of Value of Payments	Value per Payments (in Euros)
Credit Transfers	25.1	22%	184.2	93%	7,350
Direct Debit	23.2	20%	7.3	4%	316
Card	54.8	49%	3.3	2%	60
E-money	5.8	5%	0.3	<1%	51
Cheque	1.3	1%	1.4	1%	1,101
Others	4.1	3%	0.4	<1%	96
Total	114.2	100%	197.0	100%	1,725

Source: European Central Bank Statistical Warehouse, 2021

SEPA Payments

In 2021, SEPA credit transfers and SEPA direct debits core accounted for respectively 96% and 99% of all transfers and debits sent in the eurozone in volume. The remaining payments are being processed on other payment schemes. While they were mostly initiated electronically (only 6% of credit transfers are initiated through paper or in-person orders), 55% of SEPA credit transfers were executed through single payments orders (including online banking), while 94% of SEPA direct debit were executed in a file and batch manner.

	Credit Transferts	Direct Debits
Total Number of Payments (in Billions)	**25.1**	**23.2**
% SEPA Payments	**96%**	**99%**
% Initiated Electronically	94%	100%
% File / Batched-based	40%	94%
% Single Payments (All)	55%	6%
% Single Payments (Online Banking)	15%	0%

Source: European Central Bank Statistical Warehouse, 2021

In 2021, SEPA payments were processed by approximately 3,900 direct and indirect participants registered with the European Payments Council. As expected given their maturity, SEPA credit transfer and SEPA direct debit core schemes have the largest numbers of registered participants.

SEPA Scheme	Number of Participants
Credit Transfer	3,872
Direct Debit Core	3,100
Instant Credit Transfer	2,360
Direct Debit B2B	2,646

Source: European Payments Council, July 2022

SEPA Credit Transfer and SEPA Direct Debit trends

The number of SEPA credit transfers grew by 5.8% per year between 2017 and 2021. Combined with a 2.1% annual growth in average payment size, the total value of SEPA credit transfers grew by 8% per year over the same period. On the contrary, SEPA direct debits saw a slower growth of 3.8% per year, while the average size of a direct debit declined by 0.8% per year, resulting in a 3% annual growth in total value of SEPA direct debits. Both payment methods grew slower than card payments over the period, at 8.8% per year.

	2017	2018	2019	2020	2021	17-21 CAGR
Credit Transfers (in Billion)	20.0	21.0	22.3	23.1	25.1	5.8%
Credit Transfers (€, in Billion)	135.7	134.0	142.3	154.5	184.2	8.0%
Value per Credit Transfer (in Euros)	6,774	6,389	6,368	6,691	7,350	2.1%
Direct Debits (in Billion)	20.0	20.4	21.0	21.9	23.2	3.8%
Direct Debits (€, in Billion)	5.9	6.1	6.4	6.0	6.6	3.0%
Value per Direct Debit (in Euros)	295	300	304	276	286	-0.8%

Source: European Central Bank Statistical Warehouse, 2017-2021

Emerging Payment Methods

To capture early trends on emerging payment methods not captured in the ECB data, we can look at the data of individual CSMs. Looking at EBA Clearing CSMs STEP1, STEP2, and RT1, which accounted for 50% of the value payments in the EU in 2020, SEPA instant credit transfer is currently the fastest growing payment method among payments processed by EBA Clearing. With the introduction of TIPS by the Eurosystem allowing for indirect participants, the growth of SEPA instant credit transfer is likely to accelerate.

H1 2021-H2 2022 Growth

EBA Clearing Payments	In Volume	In Value
SEPA Credit Transfer	7.0%	17.1%
SEPA Credit Transfer Instant	5.3%	11.1%
SEPA Direct Debit Core	6.6%	100%
SEPA Direct Debit BtoB	29.4%	50.7%
Total	**6.8%**	**17.4%**

Source: European Central Bank Statistical Warehouse, 2021

SEPA Indirect and Direct Participant Flows

In addition to regular SEPA payment flows, SEPA indirect and direct participants have access to and must be able to support additional payment flows. These flows are known as related transactions or R transactions.

Returns

A SEPA indirect or direct participant must be able to return a SEPA credit transfer that was previously received or a SEPA direct debit that was previously sent. Similarly, they must be able to receive a return related to a SEPA credit transfer previously sent or a SEPA direct debit previously debited. A return can be proactive or be sent in response to a return request, also called a recall.

A return includes a reason code that explains the cause of the return. Common reason codes include `AC01` for an incorrect account number, `AC06` for a blocked bank account, and `AM04` for insufficient funds. A return sent in response to a return request always has `FOCR` (for "following cancellation request") as a reason code.

Recalls

A SEPA direct or indirect participant must also be able to recall a SEPA credit transfer that was previously sent or a SEPA direct debit core that was previously debited. Similarly, they must be able to answer a recall received from another SEPA direct or indirect participant.

The recall includes a reference to the corresponding payment as well as a reason code. The three reason codes authorised for recalls are `DUPL` for a duplicate payment, `TECH` for a technical error, and `FRAD` for a fraudulent payment.

When receiving a recall, a SEPA direct or indirect participant can either answer positively, returning `FOCR` as a reason code, or negatively, with reason codes including `LEGL` for legal reasons, `NOOR` if no original payment was sent or received, or `ARDT` if the payment had already been returned.

Inquiries

Not answering a recall can result in an inquiry message. This message is a reminder of a recall which has remained unanswered. SEPA direct and indirect participants are expected to accept or deny the inquiry by responding to the related recall.

Reason Codes

When sending R transactions, SEPA indirect or direct participants are expected to use standard reason codes. Just like SEPA messages, SEPA reason codes rely on ISO standards and use ISO external codes.

Reason Code	Description
AC01	Incorrect account number
AC04	Account closed
AC06	Account blocked
DUPL	Duplicate payment
TECH	Technical problem
FRAD	Fraudulent origin
FOCR	Following cancellation request
NOOR	No original payment received

SEPA and ISO 20022 Messages

ISO 20022 Messages

ISO 20022 is a standard for data exchange between financial institutions such as PSPs and CSMs. It includes business processes as well as message formats. ISO 20022 messages are text files that use the XML syntax.

The European Payments Council has enforced the use of ISO 20022 messages throughout the SEPA zone to harmonise payment- and account-related data. As a result, the SEPA has led the way in terms of adoption, with major countries such as the United Kingdom, the United States, Canada, and Australia in the early stage of adopting ISO 20022 too.

Example of ISO 20022 Message

```xml
<Document xmlns="urn:iso:std:iso:20022:tech:xsd:pain.001.001.03">
 <CstmrCdtTrfInitn>
  <GrpHdr>
   <MsgId>220727014741ijWk</MsgId>
   <CreDtTm>2022-09-18$T11:21:26</CreDtTm>
   <NbOfTxs>1</NbOfTxs>
   <CtrlSum>1234.67</CtrlSum>
   <InitgPty>
    <Nm>Kepler-69c</Nm>
    <PstlAdr>
     <Ctry>FR</Ctry>
    </PstlAdr>
    <Id>
     <OrgId>
      <BICOrBEI>VNUSFRPP</BICOrBEI>
     </OrgId>
    </Id>
   </InitgPty>
  </GrpHdr>
  [...]
   <Dbtr>
    <Nm>Kepler-69c</Nm>
    <PstlAdr>
     <Ctry>FR</Ctry>
     <AdrLine>1, rue de la Lune</AdrLine>
    </PstlAdr>
   </Dbtr>
   <DbtrAcct>
    <Id>
     <IBAN>FR7712739000308574529483F84</IBAN>
    </Id>
   </DbtrAcct>
   <DbtrAgt>
    <FinInstnId>
     <BIC>VNUSFRPP</BIC>
    </FinInstnId>
   </DbtrAgt>
   <CdtTrfTxInf>
   ...
    <Amt>
     <InstdAmt Ccy="EUR">1234.56</InstdAmt>
    </Amt>
   ..
    <Cdtr>
     <Nm>Alain Turing</Nm>
     <PstlAdr>
      <Ctry>FR</Ctry>
      <AdrLine>1, rue de Londres</AdrLine>
     </PstlAdr>
    </Cdtr>
    <CdtrAcct>
     <Id>
      <IBAN>FR7712739000308574529483F84</IBAN>
     </Id>
    </CdtrAcct>
    <RmtInf>
     <Ustrd>Invoice #123</Ustrd>
    </RmtInf>
   </CdtTrfTxInf>
  </PmtInf>
 </CstmrCdtTrfInitn>
</Document>
```

numeral

Understanding ISO 20022 XML Messages Used in SEPA

The first four letters represent the message category. Combined with the following three digits, it represents the message identifier. The last five digits represent the message version.

SEPA uses 3 message categories:

Message Category Code	Message Category Name	Description
PAIN	Payment initiation	Messages used by corporate customers to send payment instructions to their banks.
PACS	Payment clearing and settlement	Messages used by SEPA direct and indirect participants to send and receive payment instructions and related operations to and from their banks and / or CSMs.
CAMT	Cash management	Messages used by banks to send account reports, including balances and transactions, to their customers. Messages also used by customers to request the cancellation of a payment by their banks.

Payments

SEPA payments are sent and received using PAIN and PACS ISO 20022 XML messages. PAIN and PACS messages include information regarding the account holder, the payment, and the beneficiary. More than 25 fields must be populated to send a single payment, including multiple technical IDs and payment scheme-specific details.

Different PAIN and PACS messages are used depending on the payment method used as well as customer type. PAIN messages are used by corporates, while PACS are used by SEPA indirect and direct participants. A pain.008.001.02 message used by a corporate customer to send a SEPA direct debit instruction will contain payment scheme-specific details, such as the creditor identifier and the unique reference mandate.

Category	Payment Method	Corporate Customer	SEPA Participant
Payments	SEPA Credit Transfer	pain.001.001.03	pacs.008.001.02
	SEPA Credit Transfer Instant	pain.001.001.03	pacs.008.001.02
	SEPA Direct Debit Core	pain.008.001.02	pacs.003.001.02
	SEPA Direct Debit B2B	pain.008.001.02	pacs.003.001.02
Related transactions	Return (SCT / SDD)	N/A	pacs.004.001.02
	Reversal (SDD)	pain.001.001.03	pacs.007.001.02
	Recall (SCT)	N/A	camt.056.001.01
	Recall request positive response	N/A	pacs.004.001.02
	Recall request negative response	N/A	camt.029.001.03
Inquiries	Payment status request	N/A	pacs.028.001.03
	Non-receipt claim	N/A	camt.027.001.03
	Resolution of investigation	N/A	camt.029.001.03

Payment Status Reports

In addition to payment files, SEPA payments rely on payment status report (or PSR) files. PSRs are generated and sent by banks to their customers to notify customers of the processing status of their payment files.

Two common types of PSRs are file status reports and payment status reports. Both types of PSRs use the pain.002.001.03 ISO 20022 message format.

PSR support and capabilities are not standardised and vary from bank to bank. Some banks only partially support PSRs or may not support PSRs at all. When this happens, customers are forced to perform indirect reconciliations to update the status of their payments. Such reconciliations can include marking a payment as:

- ✓ Executed if it has not been explicitly rejected
- ✓ Executed if it can be reconciled with a transaction posted on the account
- ✓ Rejected if it cannot be reconciled with a transaction posted on the account after a certain period

File Status Report

A file status report (FSR) indicates if the payment file could be processed or has been rejected by the bank because of an invalid format. An FSR is mostly meant for technical controls and format validations.

Payment Status Reports

A payment status report (PSR) indicates if and how the payments contained in the payment file have been processed by the bank. Common processing statuses include:

Status Code	Description
ACCP	Payments have passed technical and functional validations.
ACSP	Payments have been accepted and processed.
PNDG	Payments have been put on hold. A reason is included.
RJCT	Payments have been rejected by the bank.
ACSC	Payments have been processed and settled.
PART	At least one payment of the file is accepted and processed, and at least one payment of the file is rejected.

PSRs contain status updates at payment group and individual payment levels. Statuses can either be final or non-final. A final status means that the payment cannot be changed to another status later on. A non-final status means that the status of the payment will likely evolve later on.

If all the payments of a PSR have the same status, then the whole group can be tagged with this status. Conversely, if the group contains payments that have different statuses, the group status will be PART and every payment details will contain the individual payment status. The following table summarises the different statuses payments can have and whether the status is at a payment group or individual payment level:

Status Code	Payment Group Level	Individual Payment Level
ACCP	✅ Yes	✅ Yes
ACSP	✅ Yes	✅ Yes
PNDG	✅ Yes	✅ Yes
RJCT	✅ Yes	✅ Yes
ACSC	✅ Yes	✅ Yes
PART	✅ Yes	❌ No

Account Reports

Although not strictly in the scope of SEPA, account reports are an integral part of managing payments and bank accounts.

Account Report Types

ISO 20022 specifies three distinct types of account reports and the corresponding `CAMT` messages.

Account Report	Camt Message	Description
Bank to customer account report	`camt.052.001.10`	Intraday balances and transactions.
Bank to customer statement	`camt.053.001.10`	Prior-day balances and transactions.
Bank to customer debit / credit notification	`camt.054.001.10`	Transaction data every time a debit or credit is booked on the account.

Depending on their capabilities, banks might generate `camt.052` intraday account reports every few hours and `camt.054`, debit / credit notification account reports every few minutes, and `camt.053` prior-day account reports shortly before or after midnight.

Although they contain the same transactions, debit / credit notification, intra-day, and prior-day account reports can be difficult to reconcile, as they do not always use a common ID for a given transaction.

Account Balance Types

The ISO 20022 standard specifies the different types of balances which can be included in account reports.

Balance Code	Balance Type	Description
CLAV	**Closing available**	Closing balance of amount of money that is at the disposal of the account owner on the date specified.
CLBD	**Closing booked**	Balance of the account at the end of the pre-agreed account reporting period. It is the sum of the opening booked balance at the beginning of the period and all entries booked to the account during the pre-agreed account reporting period.
FWAV	**Forward available**	Forward available balance of money that is at the disposal of the account owner on the date specified.
INFO	**Information**	Balance for informational purposes.
ITAV	**Interim available**	Available balance calculated in the course of the account servicer's business day, at the time specified, and subject to further changes during the business day. The interim balance is calculated on the basis of booked credit and debit items during the calculation time/period specified.
ITBD	**Interim booked**	Balance calculated in the course of the account servicer's business day, at the time specified, and subject to further changes during the business day. The interim balance is calculated on the basis of booked credit and debit items during the calculation time/period specified.
OPAV	**Opening available**	Book balance of the account at the beginning of the account reporting period. It always equals the closing book balance from the previous report.
OPBD	**Opening booked**	Book balance of the account at the beginning of the account reporting period. It always equals the closing book balance from the previous report.
PRCD	**Previously closed booked**	Balance of the account at the previously closed account reporting period. The opening booked balance for the new period has to be equal to this balance. Usage: the previously booked closing balance should equal (inclusive date) the booked closing balance of the date it references and equal the actual booked opening balance of the current date.
XPCD	**Expected**	Balance, composed of booked entries and pending items known at the time of calculation, which projects the end of day balance if everything is booked on the account and no other entry is posted.

The most common types of balances are `OPAV`, `OPBD`, `CLAV`, and `CLBD`.

Transaction Data

In addition to account balances, account reports provide transaction data. A transaction entry contains the following information:

Field	Description	Mandatory
Amount	The amount of the transaction.	✅ Yes
Currency	The currency of the transaction.	✅ Yes
Value Date	The date when the funds become available or unavailable.	✅ Yes
Booking Date	The date when the transaction is posted on the account.	✅ Yes
Bank Transaction Code	A standardised set of code which defines the domain, family and sub-family of the transaction.	✅ Yes
Remittance Information	The description of the payment, as inputted by the payment originator or the bank holding the account.	❌ No
Account Holder Name	The name of the account holder.	❌ No
Account Holder Account Number	The account number of the account held by the bank.	❌ No
Counterparty Name	The name of the counterparty.	❌ No
Counterparty Account Number	The account number of the counterparty.	❌ No
End-to-end ID	The end-to-end ID of the payment, as inputted by the payment originator or generated by the payment originator's system.	❌ No

As payments go through multiple parties throughout their lifecycle, including at least two PSPs and one CSM, the payment data might be transformed or lost, depending on the PSP or CSM's capabilities. This can result in difficulties in understanding and reconciling transactions.

Bank Transaction Codes

Bank transaction codes are a harmonised set of codes defined by the ISO 20022 standard, aiming to categorise transactions by assigning them domain, family, and sub-family codes. Some bank transaction codes frequently used include:

Domain Code	Domain Name	Family Code	Family Name	Sub-family Code	Sub-family Name
PMNT	Payments	RCDT	Received Credit Transfers	ESCT	SEPA Credit Transfer
PMNT	Payments	MCRD	Merchant Card Transactions	POSC	Credit Card Payment
PMNT	Payments	RRCT	Received Real-time Credit Transfers	ESCT	SEPA Credit Transfer
PMNT	Payments	RCHQ	Received Cheques	CCHQ	Cheque
ACMT	Account Management	MDOP	Miscellane-ous Debit Operations	COMM	Commission
FORX	Foreign Exchange	SPOT	Spots	N/A	N/A

Other Payment Networks and Schemes

While SEPA now dominates euro transfers in the SEPA, there are a number of local and global payment networks and schemes that facilitate non-euro payments for European companies.

SWIFT Payments

Created in the 1970s, the Society for Worldwide Interbank Financial Telecommunication (SWIFT) is a private organisation based in Belgium that provides global financial institutions, banks, and companies with a unified messaging system to send and receive payment instructions. SWIFTNet, one of SWIFT's services, is a global payment network used by over 11,000 SWIFT members in more than 200 countries, as of June 2022.

SWIFT payments are processed in 1 to 4 days. They cost between €5 and €50, with fees being deducted by sending, correspondent, or beneficiary banks, depending on the fee mode chosen by the creditor:

- ✓ BEN: all fees charged to the beneficiary
- ✓ SHA: fees shared between the beneficiary and the debtor
- ✓ OUR: all fees charged to the debtor

In contrast to SEPA payments which are processed, cleared, and settled by CSMs, SWIFT simply forwards payment instructions between two banks. It is the responsibility of banks to clear and settle payments, usually through local settlement systems (such as TARGET2 in Europe) or using correspondent banking accounts for cross-border payments.

Correspondent banking is a practice often used by partner banks to clear and settle funds in a one-to-one relationship without relying on a CSM. It works as follows. Bank Alpha opens an account A1 at bank Beta (called nostro account from Alpha's point of view) and bank Beta opens an account B1 at bank Alpha (called vostro account also from Alpha's point of view). Each time an Alpha customer wants to send a payment to a customer that has an account at Beta, Alpha and Beta can clear and settle the payment after the order was transmitted through the SWIFT network.

In the background, payment instructions are sent and received by banks using SWIFT's proprietary MT messages, which are based on flat files. SWIFT MT messages come in various flavours. MT103 messages are used to send payment instructions, while MT940 messages contain account reports. In late 2021, SWIFT started migrating to a new MX message format based on the ISO 20022 XML standard, which will ultimately become the de-facto format used by companies, banks, and software providers.

In 2017, SWIFT launched Global Payment Innovation (GPI), a tracking feature that aims to accelerate SWIFT payments and to facilitate their tracking. Payments tracked using SWIFT GPI are processed within 30 minutes to 24 hours, far below the usual 1 to 4 days for ordinary SWIFT payments. As of 2022, GPI is used by more than 4,000 SWIFT members.

UK Local Schemes

The UK has three distinct payment schemes which are similar to the different SEPA schemes that facilitate credit transfers, direct debits, and instant credit transfers. In the UK, local participants use Bacs direct credit and direct debit, CHAPS, and the Faster Payments System.

Unlike the SEPA where there are multiple local and pan-European CSMs, the UK has several clearing houses, but only one settlement organisation, the Bank of England, the UK's central bank.

Every bank in the UK is identified by its sort code, a six-digit code that is equivalent in use to the BIC in the SEPA zone or the SWIFT code used for cross-border payments. Every bank account has a unique account number composed of eight digits.

Bacs

Bacs (for Bankers' Automated Clearing System) is the UK's leading payment scheme and is operated by Pay.uk. Bacs processes credit transfers and direct debits in approximately three days. The maximum payment size is £20M for individuals and businesses, but can be extended to £999M for banks and governments. Bacs uses the Standard 18 file format, a text-based structured format, but has started a migration to the ISO 20022 standard.

CHAPS

To complement Bacs' three-days processing, CHAPS (for Clearing House Automated Payment System) offers same-day settlement for payments sent before 3 PM. This high-priority benefit comes at a price: a CHAPS payment costs around £30. As a result, CHAPS is the go-to payment scheme for urgent, large-amount payments. CHAPS payments are processed by banks and the Bank of England using the SWIFT MT format. However, as with Bacs, CHAPS started a migration to the ISO 20022 standard.

Faster Payments Service

The Faster Payments Service (or FPS) was officially launched in 2008 to meet the need for instant payment capabilities. Similar to SEPA instant credit transfer, FPS can be used to process payments of up to £1M in under two hours, 24 / 7, for as cheap as £0.05. Its speed, cost, and high availability made FPS the second most popular payment scheme in the UK. FPS is based on the ISO 8583 text file standard, with a future move to the ISO 20022 standard.

New Payments Architecture

In 2017, Pay.uk initiated work on the New Payments Architecture (NPA), a new modern payment infrastructure that could ultimately replace both Bacs and FPS. NPA will be based on the ISO 20022 standard in order to be aligned with other modern payment systems. However, the release date for NPA is yet to be confirmed.

Numeral for SEPA Payments

Numeral is a payment operations platform abstracting the complexity of bank direct integrations and manual file management. By exposing a single API across banks and payment methods, Numeral helps companies accelerate SEPA payments and reconciliations through real-time connectivity to banks, robust automations, and built-in controls.

Numeral can be deployed in just weeks thanks to a developer-friendly API and a central dashboard. It creates value for finance and operations teams through:

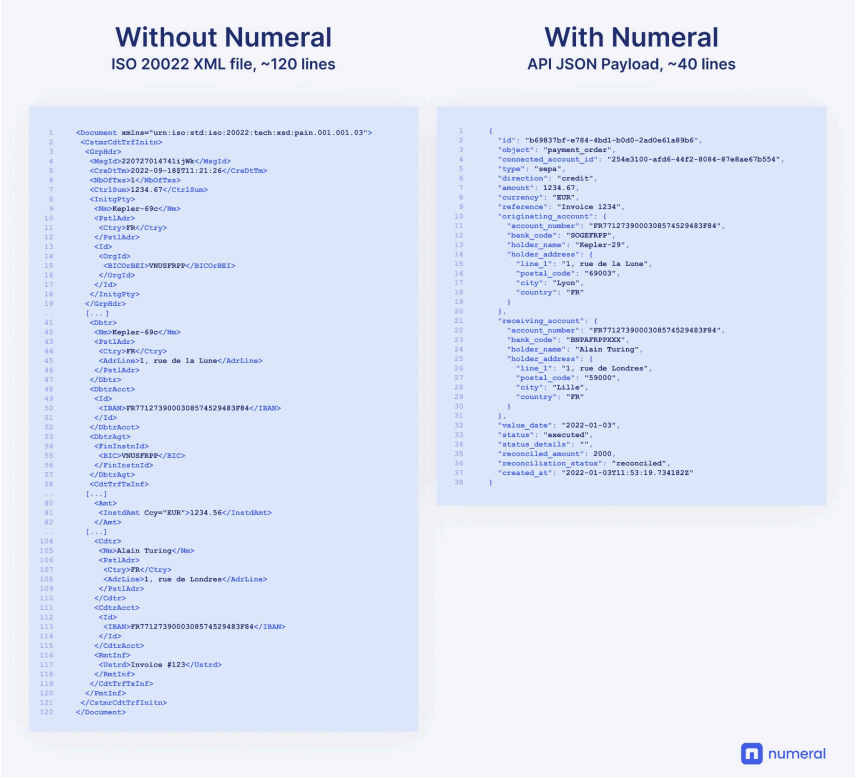
- ✓ **Faster payments** – augmenting payment operations with real-time updates and fast API integrations to all systems. With Numeral, companies can create payment flows in their products without the delay and cost created by the intermediation of a payment service provider.
- ✓ **Time saved** – removing manual payment file management and automating bank reconciliations. Due to continuous payment updates, finance and operations, teams also spend less time troubleshooting errors.
- ✓ **Improved control** – leveraging built-in permissions and approvals. The Numeral central dashboard allows the creation of custom approval rules and visibility on all payments initiated across banks.

With Numeral, companies can design workflows and automate payments throughout their entire lifecycle:

- ✓ **Payments** – Create and validate payments across multiple payment methods, such as SEPA credit transfer, SEPA instant credit transfer, SEPA direct debit, and SWIFT.
- ✓ **Reconciliations** – Automatically reconcile payments and accounts to close books faster.
- ✓ **Counterparties** – Create, onboard, verify, and assign virtual account numbers to counterparties, such as customers, vendors, or partners.
- ✓ **Ledgers** – Track all financial flows across bank accounts, internal accounts, and counterparties with double-entry accounting and immutable ledgers.

- ✓ **Real-time notifications** – Receive real-time notifications as payments are sent, received, or reconciled.

Numeral is loved by developers for its clean API documentations, making it easy to programmatically initiate payments without the steep learning curve of working with banks' systems and partial documentations.



Numeral's customers include French unicorns Spendesk (company spend solution) and Swile (employee benefit solution).

If you would like to learn more, our Payments Advisors are here to help. Email us at sales@numeral.io and you will hear back from us shortly.

Appendixes

Glossary

Term	Definition
BIC	Bank identifier code
CAMT	Cash management ISO 20022 message
CSM	Clearing and settlement mechanism
ECB	European Central Bank
EPC	European Payments Council
IBAN	International bank account number
ISO 20022	ISO standard for electronic data interchange between financial institutions
FSR	File status report
PACS	Payment clearing and settlement ISO 20022 message
PAIN	Payments initiation ISO 20022 message
PSD1 / PSD2	European Commission's payment services directives 1 and 2
PSP	Payment service provider, either bank or non-bank
PSR	Payment status report
RTP	SEPA Request-to-Pay
SCT	SEPA Credit Transfer
SCT Inst	SEPA Instant Credit Transfer
SDD Core	SEPA Direct Debit Core
SDD B2B	SEPA Direct Business-to-Business
SEPA	Single Euro Payments Area

IBAN Format per Country

Country	Country Code	Length
SEPA countries with euro as their currency		
Andorra	AD	24
Austria	AT	20
Belgium	BE	16
Cyprus	CY	28
Estonia	EE	20
Finland	FI	18
France	FR	27
Germany	DE	22
Gibraltar	GI	23
Greece	GR	27
Ireland	IE	22
Italy	IT	27
Latvia	LV	21
Lithuania	LT	20
Luxembourg	LU	20
Malta	MT	31
Monaco	MC	27
Netherlands	NL	18
Portugal	PT	25
San Marino	SM	27
Slovakia	SK	24
Slovenia	SI	19
Spain	ES	24

Country	Country Code	Length
SEPA countries where euro is not the currency		
Bulgaria	BG	22
Croatia	HR	21
Czech Republic	CZ	24
Denmark	DK	18
Gibraltar	GI	23
Hungary	HU	28
Iceland	IS	26
Liechtenstein	LI	21
Norway	NO	15
Poland	PL	28
Romania	RO	24
Sweden	SE	24
Switzerland	CH	21

IBAN Verification Algorithm

IBAN can be verified using the following steps:

1. Check that the IBAN length matches the expected length for the country
2. Move the first four characters to the end
3. Convert the IBAN to an integer by replacing each letter with two digits, where A = 10, B = 11, up to Z = 35
4. Apply a mod 97 operation to calculate the remainder

If the remainder is equal to 1, the check digit test is passed and the IBAN might be valid.

The verification algorithm only allows us to verify the syntax of the IBAN. A valid IBAN might correspond to an account that does not exist or has been closed. Services such as SEPA Mail Diamond enable payment originators to verify the existence of beneficiaries' bank accounts.

Bank Transaction Codes

Domain Code	Family Code	Sub-family Code	Description
PMNT	RCDT	ESCT	Received SEPA Credit Transfer
PMNT	ICDT	XBCT	Issued Cross-Border Credit Transfer
PMNT	RCCN	ICCT	Received Cash Concentration Transaction for Intra Company Transfer
PMNT	ICCN	COAT	Received Cash Concentration Transaction for Corporate Own Account Transfer
PMNT	RDDT	OODD	Received One-Off Direct Debit
PMNT	IDDT	PMDD	Issued Direct Debit Payment
PMNT	RCHQ	CCHQ	Received Cheque
PMNT	ICHQ	BCHQ	Issued Bank Cheque
PMNT	CCRD	POSC	Customer Credit Card Payment
PMNT	MCRD	POSC	Merchant Credit Card Payment
PMNT	RRCT	ESCT	Received Real Time SEPA Credit Transfer
PMNT	IRCT	ESCT	Issued Real Time SEPA Credit Transfer
CAMT	CAPL	CAJT	Cash Pooling Credit Adjustments
CAMT	ACCB	CHRG	Account Balancing Charges
LDAS	FTLN	PPAY	Fixed Term Loans Principal Payment
LDAS	NTLN	RNEW	Notice Loans Renewal
LDAS	FTDP	RPMNT	Fixed Term Deposit Repayment
...			

Domain Code	Family Code	Sub-family Code	Description
LDAS	NTDP	RPMT	Notice Deposits Repayment
FORX	SPOT	FEES	Foreign Exchange Spot Fees
FORX	FWRD	COMM	Foreign Exchange Forward Commission
SECU	COLL	MARG	Collateral Management Margin Payment
SECU	CORP	DRIP	Corporate Dividend Reinvestment
CMDT	FTUR	COMM	Commodities Future Commission
CDMT	OPTN	COMM	Commodities Option Commission

Further readings

- Mègue, Jean-Paul. SEPA Credit Transfer, How to Understand and Add value to your SCT Payment Project, October 2018
- European Central Bank Statistical Warehouse, https://sdw.ecb.europa.eu
- European Payments Council, https://www.europeanpaymentscouncil.eu
- Euro Banking Association, https://www.eba.europa.eu

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