Single Shared Platform

General Functional Specifications
Document for users

Version 2.1

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1 Management summary

1.1 Introduction

The next generation of TARGET

On 24 October 2002, the Governing Council of the ECB took a strategic decision on the direction of the next generation of TARGET (TARGET2). According to this decision, TARGET2 will be a multiple platform system based on the principles of:

- Harmonisation
- A single price structure applicable for the so-called core services
- Cost effectiveness
- No competition among its components

TARGET2 as a project, which is open to non-euro area CBs of the EU, will consist of national components and of one "shared component". However, all CBs participating in TARGET2 decided to give up their own platform and to join this shared component.

Single platform concept

As from the decision of the Governing Council, the European System of Central Banks (ESCB) has undertaken much effort to elaborate on the future concept of TARGET. During the work, it became clear that only a Single Shared Platform (SSP) will adequately respond to the needs of the European banking industry.

In the light of the aforementioned decision of the Governing Council, Banca d'Italia, Banque de France and Deutsche Bundesbank have declared their intention to co-operate on the development of the new payment system. It is a common offer for the TARGET2/SSP and will be a fully-fledged RTGS system.

The SSP will be operated by the three above-mentioned central banks under the control of all participating central banks including the European Central Bank (ECB).

1 Management summary

1.1 Introduction

Functional specification

The current document is based on the input received from the TARGET user community during the public consultation and from the European banking community after delivery of its first version.

The current version of this document is based on the version V1.13 dated June 2004 which has been updated and restructured in order to be in line with the User Detailed Functional Specifications.

Content of this document

This document aims at presenting the General Functional Specifications for the future TARGET2 system. It is complemented by a second book providing additional information for central banks.

This document is structures as follows:

- Chapter 2 Payments Module (PM) presents the functionality of the Payments Module.
- Chapter 3 Information and Control Module (ICM) presents a general overview of the Information and Control Module.
- Chapter 4 Static Data (Management) Module (SD) presents the functionality of the Static Data (Management) Module which is available to all the users.
- Chapter 5 Optional modules of TARGET2/SSP presents the functionality of the optional modules: Home Accounting Module (HAM), Reserve Management (Module) (RM) and Standing Facilities (Module) (SF).
- Chapter 6 Functional assumptions and service level requirements presents the main functional assumptions for the TARGET2 design.
- Chapter 7 SSP infrastructure, availability measures, technical aspects provides a general overview on the technical concept as well as on the important business continuity aspect.
- Chapter 8 Operational model describes the operational model.
- Chapter 9 Migration issues and test procedures gives an overview of the organisation of the migration towards TARGET2 and presents the management rules of the tests regarding the development of the SSP.

1.2 Principles of TARGET2

A set of general user requirements

The TARGET2 concept was developed in accordance with the following framework:

- The new system will fulfill the user requirements.

  It will take into consideration the ongoing developments to set up a Single Euro Payments Area (SEPA) in Europe. The new system should be geared mainly to the needs of the European banking industry and the participating CBs.The European banking sector has made considerable efforts to contribute to the TARGET2 discussion resulting in the response of the European Payments Council (April 2003) and the "TARGET2 user requirements (October 2002)" prepared by the TARGET working group (TWG). The basic assumption regarding the TARGET2 requirements is that national banking communities in Europe see themselves as part of the (entire) European banking sector.

- The new system will guarantee neutrality.

  The new TARGET2 system is intended to strengthen Europe as a financial centre. This "neutrality" aspect may be considered in different ways:

  – TARGET2 will respect the principle of "political, geographical and commercial neutrality" vis-à-vis the financial centers. No national banking community will benefit from a "preferential" treatment. The TARGET2 system will be developed and operated on behalf and under the auspices of all Eurosystem participating CBs as "owners".

  – In TARGET2 each bank as well as participating CBs will have the same rights to the service, namely neither bank nor CB will benefit from a 'preferential' treatment.

  – TARGET2 will ensure a level playing field also with regard to the settlement of ancillary systems.

The new system will preserve the decentralised framework of the Eurosystem.

In line with the current decision of the Governing Council on TARGET2, the new system must ensure that participating CBs maintain the responsibility for the business relations vis-à-vis their banks.

- TARGET2 will be highly resilient.

  Given its systemical importance as one of the biggest payment systems in the world, it must have a state-of-the-art technical infrastructure and organisation in order to ensure business continuity.

1.3 Concept of TARGET2

TARGET2

TARGET2 is the future real-time gross settlement system of the Eurosystem. It is based on a single platform infrastructure, ie the entire application is based on an integrated central technical infrastructure (so-called "Single Shared Platform" (SSP)).

In order to allow for a smooth migration it is foreseen to support the current interlinking logic also at SSP level, until the last migration window is closed, in order to allow a gradual migration of countries in several waves. After the migration period is finished the interlinking functionality will be removed.

No phased approach

From a user's perspective, TARGET2 offers a broad range of features and services to meet the full requirements of all users (European banking industry, NCBs and ECB). In addition to payment processing, the current TARGET2 includes from the outset:

- Most modern liquidity management
- An advanced standard interface for the settlement of ancillary systems
- High resilience and state-of-the-art business continuity

Core and optional services

In order to accommodate the individual needs of banks and infrastructures, TARGET2 will offer high flexibility, in particular with regard to liquidity management. Many features (eg reservation facilities and the use of limits) are designed in such a way as to allow participating banks to decide whether or not they want to use this specific feature.

1.4 Features and advantages of TARGET2

Assessment against user requirements

The following table summarises the main user requirements issued by the EPC in April 2003 and how the concept responds to it.

Topic	User requirement	Related TARGET2 functionality
Single system (Item 1)	The Banks consider TARGET2 as a single system, from both a flow management and an account management point of view, ie a harmonised and integrated system, independent from the number of platforms that in the end will coexist.	The concept is based on a "single platform" approach, ie there is only one technical platform for the provision of payment services for TARGET2. Only in the migration period, an Interlinking mechanism is still necessary regarding those CBs which have not yet been connected to TARGET2.
Time schedule and milestones (Item 3)	More visibility is needed on the project timeframe and migration plan in order to enable participants to prepare themselves.	A general project plan as well as a migration plan are provided.
	Users want the shortest convergence period possible. Banks will need to understand what changes they will need to accommodate in their own internal systems for the migration and be given adequate time to plan and effect any changes.	The migration period has been defined according to the possibilities of migration of national banking communities.
	This implies comprehensive and early information on the timing of the introduction of any change.	The general functional specifications provide a general overview of the changes to implement. These changes are detailed in the user detailed functional specification.
Availability of the core services (Item 4)	All core functionality already identified by the TWG in the User Requirement document and its appendix, should be in place right from the beginning of TARGET2. The users want the core services available as soon as possible.	According to the existing schedule, all functionality described in the general functional specifications will be available from the start of TARGET2.

Topic	User requirement	Related TARGET2 functionality
Neutrality (Item 10)	All choices made with reference to the single shareable platform must be neutral to all users, whatever their location, because each user anywhere in the same playing field should have the same rights to the service. For the choice of the location of the single shareable platform, it is essential to respect the principle of political, geographical and commercial neutrality vis-à-vis the different financial centres.	TARGET2 will be a system for the whole European banking industry. There will be no distortion in competition vis-à-vis certain countries, certain market infrastructures or CBs.
Services (Item 13)	Users wish to participate in the decision making process and welcome the statement that "the service level of TARGET2 will be defined in close co-operation with the TARGET user community".	One of the basic inputs for the concept have been the user requirements of the European Banking industry.

Topic	User requirement	Related TARGET2 functionality
Functional harmonisation and liquidity management (Item 2)	It should be mentioned that the European Banking industry focuses much on this issue. Besides chapter 2 in the response of EPC, the topic is covered in the following documents: • User requirements (prepared by the TWG, October 2002) • Appendix to the user requirements	
	The future service should be fully harmonised also from a business and functional point of view (liquidity management), on top of technical or operational harmonisation. Liquidity management is the individual responsibility of TARGET participants and always remains in their full control. Flexible system options and settings should be in place. • Real-time visibility, comprehensive queue management and gridlock resolution • TARGET 2 should offer the possibility to reserve liquidity for specific payments at the request of the participant • Tools facilitating decreases in the need for intra-day liquidity • Prioritisation of payments • Use of direct debit facilities for wholesale purposes	TARGET2 provides fully harmonised and standardised services from business and technical point of view. • TARGET2 offers state-of- the-art liquidity management services with a broad range of tools (reservation, prioritisation, active queue management). • In order to provide an efficient payment processing, TARGET2 offers tools to control the liquidity flow and will implement mechanisms which make use of mutual payment flows. • TARGET2 also offers an interbank direct debit facility.
Pooling	In the presence of a decentralised business infrastructure where business relationships are the responsibility of individual banks. Cash management facilities will be required. • Access to centralised information • Pooling facility • Netting optimisation facility • Other facilities	TARGET2 offers liquidity pooling services, relying on the so-called "group of accounts" structure.

Topic	User requirement	Related TARGET2 functionality
Information management	• Inquiries facilities on the account balances and the status of payments • Inquiries on own waiting list of outgoing and incoming payments • Push and pull information • Information on system breakdowns • Provide statistics on payment flows	Via the Information and Control Module, a comprehensive set of information can be accessed by the participants. This information comprises liquidity, payment and system status aspects. In addition, TARGET2 offers statistical services to the participants.

Topic	User requirement	Related TARGET2 functionality
Business continuity, capacity, performance (Item 12)	Our requirement is to be able to count on a service with 100% availability and full resilience in case of disaster. Furthermore the overall capacity of the system in terms of volumes and throughput must be sufficient to avoid any deadlocks within the processing of payments - even during peak-hours of the day.	The proposed concept to ensure resilience and business continuity is based on a multi-regions/multi- sites architecture. There would be three "regions". In each region, there would be two distant sites with different risk profiles. The payment and accounting services (which are the most highly time-critical) would rely on a "two regions / four sites" model. This would be combined with the principle of region rotation, in order to ensure the presence of skilled staff in both regions, while the customer-related services would rely on a "one region / two sites" model. Notwithstanding geographical diversification, TARGET2 would offer a "single face" to the users, who would not have to know on which site or which region the system module is running. Such a technical design is absolutely state-of-the-art, in line with the Core Principles and, beyond them, with the very best practices for resilience and business continuity resulting from the lessons learned from the events of September 11, 2001. The functional assumptions to size the technical platform are listed in the document.

Topic	User requirement	Related TARGET2 functionality
Technical interface (Item 14)	The European Banking Industry strongly supports the single interface to TARGET for all (domestic and cross-border) payments; it must happen with total certainty and the standards chosen must remain stable in the medium term. The harmonisation of communication standards, message formats (eg SWIFT) and internationally recognised banking technology (eg SWIFTNet) would reduce costs (see User requirements, item 1).	TARGET2 offers a set of streamlined and harmonised interfaces with users (credit institutions, market infrastructures and CBs). This will ensure the highest possible level of service, particularly in terms of speed, cost and availability. In terms of communication (tools and standards, both in terms of format of messages and network connections), the major purpose is to allow all market participants to benefit from maximum economies of scale in this framework. Therefore, SWIFT messages and a common communication infrastructure are used. In order to cope with the different needs, all SWIFTNet services (FIN, InterAct, Browse, FileAct) will be used.
Ancillary systems (Item 15)	Ancillary systems should be able to settle right from the start of TARGET2 on the single shared platform. Please refer to the Appendix to the User Requirements for more details.	From the start TARGET2 will be able to provide full services of settlement for all kind of ancillary systems. These services are provided through an interface. Its general specifications are described in this document. The number of ancillary systems in operation in Europe is relatively high. TARGET2 will offer one interface for ancillary systems, supporting a number of generic models. The Ancillary System Interface performs a number of functions (some of them are optional) that ancillary systems can choose to combine according to their preferred functioning mode. The ASI provides DVP facilities and is conceived to support various kinds of the existing settlement models.

1.5 Role of central banks (CBs) in TARGET2

Basics

The new system preserves the decentralised framework. In particular, the current role of CBs in TARGET remains, in general terms, unchanged. Thus the Single Shared Platform (SSP) in TARGET2 should be seen as a "technical" vehicle for the CBs in order to provide an improved, more harmonised and cost-efficient TARGET service to their users.

Responsibilities of CBs

Each CB remains fully responsible for the business relations vis-à-vis its participants. Therefore, the new system is, for example, designed in a "client-based" way in order to meet the administrative and monitoring requirements of the participating CBs.

Nevertheless, all the features of the system are defined with respect to the level playing field commitment of the Eurosystem. Therefore, the services offered by SSP are uniform, irrespective of the CB or banking community to which they are provided.

Tasks of CBs

In context of TARGET2, the CBs have the following responsibilities:

in general	in migration	in operation
• All contacts and provision of any kind of support to their participants (credit institutions, ancillary systems)	• Responsibility for planning and structuring the domestic migration process	• Inclusion and exclusion of participants • Monitoring the activity of its participants • Provision of intraday liquidity necessary for the smooth running of the system • Initiating payments on behalf of their own or on behalf of their participants • Billing to their participants • Handling of local contingency

CBs as participants

Each CB will also have the status of a direct participant. In practical terms, this means that each CB must be

- directly addressable in TARGET2 in order to receive payments from other participants.
- able to submit payments on its own behalf or on behalf of its customers to TARGET2 (eg state agency, supranational organisation).

1.6 Scope and framework of TARGET2

1.6.1 General overview

Specific role of TARGET

The main objectives of the TARGET system might be summarised as follows:

- To serve the needs of the Eurosystem's monetary policy
- To provide a reliable and safe mechanism for the settlement of payments on an RTGS basis
- To increase the efficiency of intra-European payments and to become one of the "core" infrastructures in the envisaged Single Euro Payments Area (SEPA)

Scope of TARGET2

TARGET2 concentrates mainly on payments processing.

In particular, the following aspects should not be considered as part of TARGET2, irrespective of the fact that these activities belong to the common monetary policy of the Eurosystem and, thus, have a close connection to TARGET2:

- Collateral management
- Execution of monetary policy
- Reserve management and standing facilities

Each CB remains fully responsible for the execution of the above-mentioned tasks.

1.6.2 Overview of core and optional services offered by the SSP

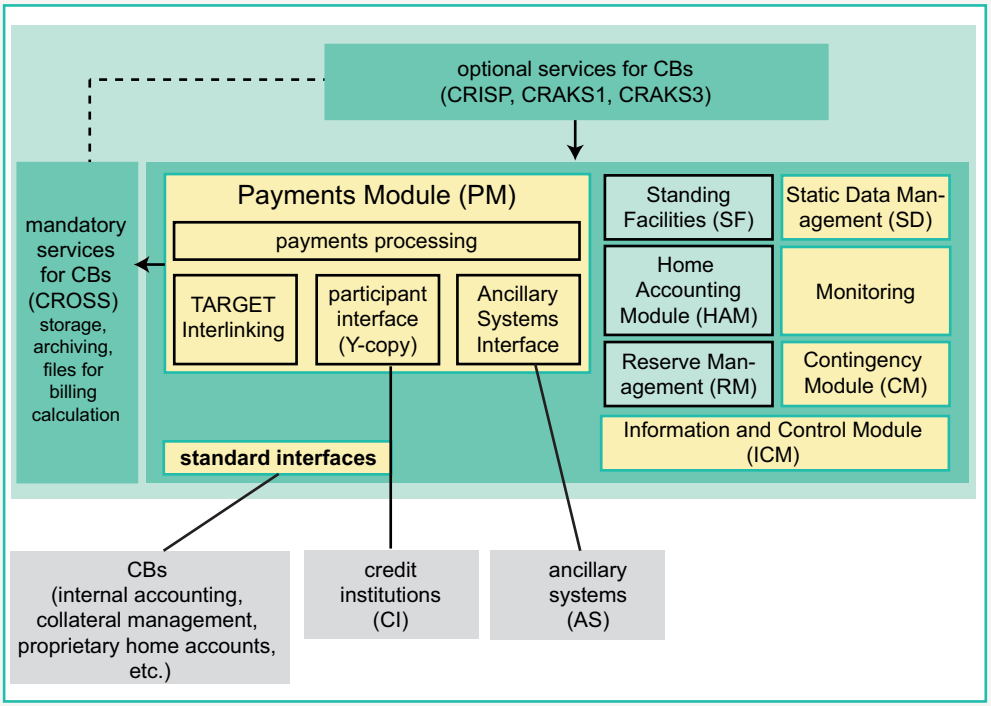
The following table gives a comprehensive overview of all services offered by the SSP:

Services provided to all users	
Mandatory	**Optional**
• Payments processing in the Payments Module (PM) • Information and Control Module (ICM) • Contingency Module (CM) • Static Data (Management) Module (SD)	• Liquidity pooling • Limits • Liquidity reservations

Services provided to all users subject that the relevant CB has opted for these services	
Mandatory	**Optional**
• Standing Facilities (Module) (SF) • Reserve Management (Module) (RM)	• Home Accounting Module (HAM)

Note: The fact that a CB does not opt for one of the services mentioned above does not mean that it will not provide it to its users, but that it will use a proprietary application to provide them instead of using the application provided by the SSP.

Services provided only to the CBs	
Mandatory	**Optional**
• Monitoring • Mandatory CRSS services (storage, archiving, files for billing calculation) • Static Data (specific consultation/ updates by the CBs)	• Billing optional services (CRISP) • Query and report optional services (CRAKS1) • Customer relationship optional services (CRAKS3)


optional services for CBs
(CRISP, CRAKS1, CRAKS3)
mandatory services for CBs (CROSS)
storage, archiving, files for billing calculation
Payments Module (PM)
payments processing
TARGET Interlinking
participant interface (Y-copy)
Ancillary Systems Interface
standard interfaces
Standing Facilities (SF)
Static Data Management (SD)
Home Accounting Module (HAM)
Monitoring
Reserve Management (RM)
Contingency Module (CM)
Information and Control Module (ICM)
CBs
(internal accounting, collateral management, proprietary home accounts, etc.)
credit institutions (CI)
ancillary systems (AS)

1.6.3 Reserve Management and Standing Facilities

Reserve management and standing facilities

CBs who opt for these standardised SSP modules, can offer the following services to their users:

Reserve Management Module (RM)	Standing Facilities Module (SF)
• Receiving end-of-day balances • Monitoring of the running average in the current reserve period • Calculation and settlement of interest to be paid by the CB (for minimum reserves) or penalties that banks have to pay (non-fulfilment of reserve requirement)	• Management of – overnight deposit accounts – marginal lending accounts • Transfer of liquidity to the overnight deposit account • Granting of overnight credit either – "on request" – automatically, if intraday credit remains at the end-of-day • Calculation and settlement of interest to be paid by the CB (overnight deposit facility) or by the banks (marginal lending facility) • Automatic repayment of the deposit or the overnight credit

1.6.4 Home Accounting Module (HAM)

Need for home accounting

Direct TARGET2 participants have to maintain an RTGS account in the Payments Module (PM).

Nevertheless, each CB is free to maintain so-called additional "home accounts". This "home accounting" functionality could be used for the following reasons:

- Some banks may not be interested to participate directly in the RTGS system, but are nevertheless subject to minimum reserve requirement. In addition, they may wish to directly manage cash withdrawals etc. Therefore, they need a CB account outside the RTGS system.
- In some cases, depending on the specific situation in each country, it may be preferable to have a second set of accounts. This could be used to settle specific operations of direct participants, which already have an RTGS account. Some ancillary systems might, for example, decide not to migrate from the start to the SSP, but maintain - for the time being - a local infrastructure.

Each CB is fully responsible for the execution of its home accounting business. In this context, each CB is also free to choose:

- Either to offer proprietary home accounting services or to rely only on TARGET2, if there is a need to offer such services.
- For what type of business the home accounting application is used.

Proprietary home accounting application

In this case, the service offered to its banks contains a limited number of well-defined transactions, but never fully-fledged payment services.

Home Accounting Module (HAM)

The SSP also offers a standardised Home Accounting Module (HAM).

This is to accommodate the needs of those central banks wishing to use commonly shared resources to a larger extent. Those CBs who opt for using this module, can offer the following standardised account services to their customers:

- Liquidity holding (eg maintaining reserve requirement either through RM or proprietary application) on a CB account
- Interbank transfers between accounts in the HAM held by the same CB
- Interbank transfers between the HAM accounts and RTGS accounts of direct participants
- Cash withdrawals with the respective CB
- Access to standing facilities either through the SF or through a proprietary application managed by the CB

This module is not intended to offer real payment services. This activity must be performed through a direct PM participant. The HAM is technically integrated in the SSP and can be accessed by customers via SWIFTNet. There exists also the possibility, that the HAM account is managed by a PM participant (the so-called co-manager). The aim of the co-management function is to allow small banks to manage directly their reserve requirement, but to delegate cash flow management to other banks.

1.6.5 Statistical information

Statistical information

The Eurosystem provides statistics on the overall TARGET2 activity.

In addition, each CB decides to what extent and in which way it offers other statistical information (eg country-related figures, participant-related profiles) to its customers.

1.6.6 The monetary policy execution

General remarks

TARGET2 is the vehicle for the smooth conduct of monetary policy. For the smooth implementation of monetary policy, the SSP ensures that:

- Technical failures occur as rarely as possible to minimise the related disturbance to the money market.
- The system allows an easy, cheap and secure handling of payments by banks to minimise the recourse to standing facilities and the building up of excess reserves in relation to failures to use the system.
- More generally, the flow of liquidity is frictionless and real-time, to support an efficient interbank market.

Way of executing monetary policy operations

In the Eurosystem, a broad variety exists in the way in which monetary policy is executed. This is mainly due to the different procedures (eg a pre-pledged (collateral) pool or repo transactions) and the different ways the collateral management of a CB is technically organised.

The following table shows some examples in the way in which refinancing operations might be executed.

Activity	Mechanism	Procedure
Liquidity injection	Via repo	• The CB collateral application/cross-CB payments would initiate a DVP transaction (settlement as ancillary system).
	Via pledge	• The CB could initiate a standard payment in favour of the participant or increase its credit line.
Liquidity withdrawal	Via repo	• The CB collateral application/cross-CB payments would initiate a DVP transaction (settlement as ancillary system).
	Via pledge	• The CB could initiate a direct debit or decrease the participant's credit line.

CBs which opt for a proprietary home accounting system may opt to execute monetary policy operations via these accounts.

1.7 Time schedule and milestones

TARGET2 milestones

The communication of the Governing Council release on the 21st of July 2006 confirmed the planned start date of the single shared platform for TARGET2 (19 November 2007) as well as the two subsequent migration waves after which all CBs and TARGET users will have migrated to TARGET2.

2 Payments Module (PM)

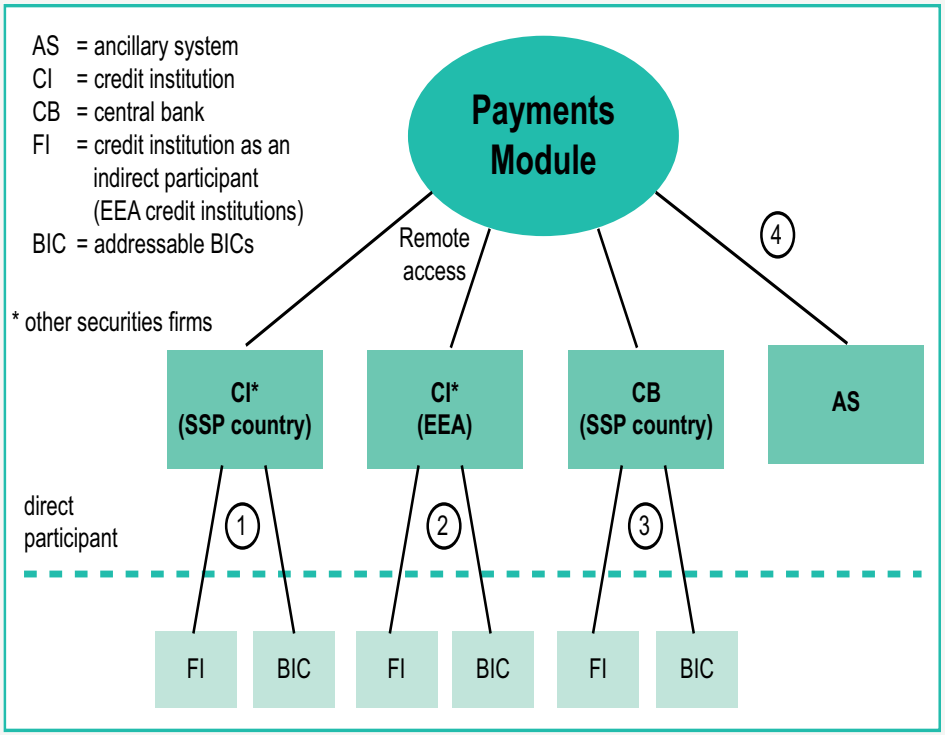
2.1 Participation

General remarks

TARGET2 offers fair and open access to its services. There are a number of ways to access the TARGET2 system. These include direct and indirect participation, access as correspondent BICs ("addressable BICs") and "multi-addressee access" ("technical BIC access"). More details can be found in the legal documentation.

Different types of access

The following diagram gives an overview of the different types of access from a business point of view. It describes the situation after all CBs have migrated to the SSP.



Number	Explanation
1	CI is a direct participant in the PM. It is located in a country taking part in the SSP. The direct participant takes part in the SSP from the country where his home CB is located. Via this participant access is provided to the PM.
2	CI is a direct participant in the PM (remote access participation). It is located in a country of the European Economic Area (EEA). The direct participant takes part in the SSP via a country where his home CB is not located. Via this participant access is provided to the PM.
3	CBs are also direct PM participants.
4	Also ASs may become direct PM participants but the ASI provides a range of services to support AS settlement.

Note: The diagram does not represent the technical connection to the PM; for multi-addressee access see chapter 2.1.3 Multi-addressee access ("technical BIC access"), page 28.

2.1.1 Direct participants

Characteristics

Direct participants have:

- direct access to the PM
- to hold an RTGS account in the PM
- access to real-time information and control measures.

They can provide indirect access to the PM for other institutions and offer them additional services. They are responsible for their own liquidity management in the PM and for monitoring the settlement process. Furthermore, they are responsible for all payments sent or received on their account by any entity registered through them in TARGET2.

Access criteria

The basic access criteria for direct participants are as follows:

- supervised credit institutions - as defined in Article I (I) of Directive 2000/12/EC of the European Parliament and of the Council of 20 March 2000 relating to the taking up and pursuit of the business of credit institutions - which are established in the European Economic Area (EEA)
- treasury departments of member states' central or regional governments active in money markets
- the public sector - as defined in Article 3 of Council Regulation 3603/93 of 13 December 1993 specifying definitions for the application of the prohibitions referred to in Articles 104 and 104 (b) (1) of the Treaty - of member states authorised to hold accounts for customers
- investment firms - as defined in Article 4 (1) (1) of Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments with the exclusion of the entities mentioned in Article 2 (1) of the Directive 2004/39/EC, provided that the investment firm in question is entitled to carry out the activities referred to under items 2, 3, 6, and 7 of Section A of Annex 1 to Directive 2004/39/EC
- organisations providing clearing or settlement services and subject to oversight by a competent authority may be eligible

- central banks (CBs) of the European System of Central Banks (ESCB) and the European Central Bank (ECB) (not separately mentioned in the TARGET Guideline)

In addition to the legal bases mentioned above, direct participants have to successfully complete a series of tests to prove their technical and operational competence before taking part in the PM.

2.1.2 Indirect participants

Characteristics

Indirect participants

- are registered in the PM through participants with direct access
- are directly linked to one direct participant only (that can be located also in another country)
- can be indirectly addressed in the PM
- have no own RTGS account within the PM

The indirect participant sends payments to/receives payments from the system via the direct participant. The booking is done on the RTGS account of the direct participant.The relevant direct participant also manages the liquidity for each of its indirect participants and has accepted to represent the respective participant. The indirect participants are recognised by the system and as such benefit from the protection of the Settlement Finality Directive (SFD) (in countries where such protection has been granted).

2.1.3 Multi-addressee access ("technical BIC access")

General remarks

Direct participants are able to authorise their branches and credit institutions belonging to their group located in the EEA countries to channel payments through the RTGS account of the direct participant without its involvement by submitting/receiving payments directly to/from the system.

The payments are settled on the RTGS account of the direct participant.

2.1.4 Access as correspondent BICs ("addressable BICs")

General remarks

Any correspondent (or branch of a correspondent) of a direct participant that holds a BIC is eligible to be listed in the TARGET2 directory irrespective of its place of establishment. It is the responsibility of the direct participant to forward the relevant information to the respective CB for inclusion in the TARGET2 directory. These BICs can only send and receive payment orders to/from the system via the direct participant. Their payments are settled in the RTGS account of the respective direct participant.

Technically there is no difference between indirect participants and access as a correspondent BICs ("addressable BICs"). However, in legal terms, the addressable BICs are not recognised by the system and therefore do not benefit from the protection of the Settlement Finality Directive (SFD) (in countries where such protection has been granted).

2.1.5 Exclusion

Criteria

The criteria for the exclusion of PM participants are defined outside the GFS.

Decision making body

The CB and/or the banking supervisory authority or any other authority in charge declares actions to

- restrain the disposal of the assets
- withdraw the licence.

The exclusion itself is under the full responsibility of the respective CB (CB where the direct participant is located or the host CB in case of remote access). The CB initiates the exclusion via the ICM.

Consequences

When excluding a direct PM participant, it becomes effective in all modules of the SSP at the same time. The procedure in PM is the following:

- The RTGS account and the sub-accounts of the direct PM participant are earmarked immediately. As a consequence no payments (debits and credits) can be settled automatically on the RTGS account and the sub-accounts.
- All payments pending in the queue after the exclusion became effective have to be confirmed by the CB before they will be settled on the RTGS account.
- Payments involved in a running settlement process (algorithm) are not affected by the exclusion. The algorithm is not abandoned. If the algorithm
  - is successful, also involved payments of the excluded participant will become final.
  - fails, the payments of the excluded participant will be returned to the queue. They have to be confirmed by the CB before they can be settled in one of the next running algorithms.

- Payments (credit transfers and direct debits) sent by the excluded direct PM participant are stored for confirmation by the CB. If the CB
  - gives its confirmation, the payments will run through the entry disposition. If they cannot be settled in the entry disposition, they will be queued and included in the process of dissolution of the payment queue.
  - disagrees, the payments will be rejected by sending an MT 019 with a unique error code to the excluded direct PM participant.
- Payments (credit transfers and direct debits) sent to the excluded direct PM participant are stored for confirmation by the CB of the excluded direct PM participant. If the CB
  - gives its confirmation, the payments will run through the entry disposition. If the payments cannot be settled in the entry disposition, they will be queued and included in the process of dissolution of the payment queue.
  - disagrees, the payments will be rejected by sending an MT 019 with a unique error code to the sender.

The participants are informed on the exclusion via a broadcast in the ICM.

Exclusion of a co-manager for HAM accounts

If the excluded direct PM participant is a co-manager for HAM accounts, it will not be possible for him anymore to act as co-manager from the time when the exclusion becomes effective.

Exclusion of an AS

If an AS has to be excluded from the PM it will be treated like a direct PM participant.

Exclusion in case of liquidity pooling funcionality

If the liquidity pooling functionality is used and the excluded participant is a group of accounts manager he will not be able to act as group of accounts manager from the time the exclusion becomes effective.

If the excluded direct participant is a member of a group of accounts, his account will be excluded from the group of accounts and if he is part of a virtual account the group of accounts will be balanced immediately, too.

2.1.6 Directories of the participants

Directories

Two directories are available to assist the addressing of payments:

- TARGET2 directory (for details see chapter 7.5 TARGET2 directory, page 124)
- BIC directory

TARGET2 directory

The TARGET2 directory contains the needed routing information for TARGET2 participants. It is set up in addition to SWIFT's BIC directory to support the specific needs of the SSP and its users (provisioning of national sorting code; BIC to be used in the SWIFT header for receiver; migration purposes; update rhythm, etc.) and because the BIC directory is currently not able to support these needs.

Note: The information in the TARGET2 directory is not used for the entry-check of incoming messages in the SSP. Therefore, it is possible to address payments to an indirect participant through another direct PM participant not mentioned in relation to this indirect participant in the TARGET2 directory.

BIC directory

The BIC directory shows all global SWIFT participants and the payment system(s) to which they are connected. For indicating direct and indirect SSP participation worldwide the respective TARGET service code (TGT or TG+) is mentioned for each SSP participant.

SWIFT maintains the BIC directory and makes it available in various formats.

2.2 Accounting

Accounts in the Payments Module (PM)

Each direct participant maintains an account in the PM (so-called RTGS account). The RTGS account of a direct participant is administered under the sole responsibility of the respective CB (CB where the direct participant is located or the host CB in case of remote access). Each RTGS account is identified by a BIC and unequivocally assigned to one direct participant.

Home accounting

Participating CBs can settle certain transactions (eg cash operations) outside the PM. In such cases, a "dual accounting" structure has to be available. This could be:

- a proprietary home accounting system (PHA) of the respective CB
- the standard Home Accounting Module (HAM - offered as optional module of the SSP)

In order to allow for a free and unlimited access to central bank liquidity independent of the specific accounting structure, liquidity transfers can be made between RTGS accounts and home accounts.

Overnight holding of liquidity

Depending on the accounting structure used by each CB, the liquidity on the RTGS accounts can be maintained:

- intraday and overnight. In this case, the liquidity on the RTGS account at the end of the day functions as "reserve holdings".
- only intraday. In this case, the liquidity is transferred back to the home accounts at the end of the business day and vice versa before the start of the next SSP business day.

Statement of RTGS accounts

Direct participants in the PM can be informed on the single items booked on and the final balance on their RTGS accounts by a SWIFT MT 940 or 950. Statements of RTGS accounts are not available during the day.

Sources of liquidity

The following sources of liquidity can be used for the execution of payments:

- balances on RTGS accounts
- provision of intraday liquidity
- offsetting payment flows (ie using algorithms to settle a number of queued payments)

Intraday liquidity in the SSP

Intraday credit can be granted to the single accounts of credit institutions by the respective CB against eligible collateral. The following procedures can be used, depending on the decision of the respective CB:

- implementing credit lines on RTGS accounts (based on a pool of pre-deposited collateral)
- implementing credit lines on the proprietary home accounts (ie an additional liquidity transfer between the proprietary home account and the RTGS account is necessary)
- processing of intraday repo transactions

If the liquidity pooling functionality (virtual account) is used, the liquidity obtained intraday will be available among the group of accounts.

Credit lines in the PM

If credit lines on RTGS accounts are used by CBs, the liquidity available for processing payments will be the sum of:

- the balance on the RTGS account and
- the credit line.

This means that the balance on the RTGS account can enter, up to the respective credit line, into an "overdraft position".

2.3 Liquidity transfers

Basics

The PM has its own liquidity holding in central bank money. Liquidity can also be held at home accounts. Therefore, it is possible to transfer liquidity between the different accounts.

Liquidity transfers between RTGS and HAM/PHA accounts

In order to execute intraday funds transfers between RTGS accounts and linked HAM accounts/PHA accounts, different options for transferring liquidity are available:

- At start of the business day, liquidity can be transferred from HAM/PHA to the RTGS account via a standing order (automatically), via the ICM functionality for a manual liquidity transfer or via submitting a payment message (when the day trade phase is open, 7.00).
- During the business day, liquidity can be transferred from HAM/PHA accounts via the ICM functionality for a manual liquidity transfer or via submitting a payment message (only during the day trade phase) in favour of the RTGS account and vice versa.

Retransfer of liquidity at the end of the business day

A CB has to decide whether the liquidity of its direct participants is kept in the PM, in the HAM or in the PHA during the night. If the CB opts for the second or third alternative, at the end of business day, the remaining positive balance (or negative balance if a credit line is used) on each RTGS account will be transferred automatically to a specified (predefined) account in the HAM (only transfer of credit position) or in the proprietary home accounting system.

Remote access participants without a HAM account or a proprietary home account, who are not allowed to keep their liquidity on their own RTGS account, have to specify an RTGS account of another participant at the hosting CB as the destination for the retransfer of liquidity at the end of the business day.

2.4 Payment types

Basics

TARGET2 offers to the participants settlement services in euro, with settlement in central bank money. Any euro payment which participants wish to process in real-time and in central bank money can be executed in TARGET2.

Payments submitted by participants

PM participants can submit the following payment types:

- credit transfers (MT 103, MT 103+, MT 202)
- direct debits (MT 204)

Specific procedures for ancillary systems (AS)

Except for the features offered to all PM participants, AS may use specific procedures for the efficient settlement of their business. The ASI (Ancillary System Interface) and the procedures of settlement are described in chapter 2.8 Settlement of ancillary systems (AS), page 59.

Priority of payments

In general, payments will be settled immediately, if sufficient liquidity is available on the RTGS account of the participant. To settle payments in the PM in a different way, considering their urgency, they can be submitted by the sender either using:

- priority class 0 (highly urgent payments)
- priority class 1 (urgent payments)
- priority class 2 (normal payments)

All priority classes have specific characteristics. Some of the priority classes can only be used by certain groups of PM participants. Within a priority class no further priorisation is possible (no sub-priorities).

Rules

- If no priority class is selected, payments will be handled as normal payments (priority class 2).
- The priority class 0 (highly urgent payments) is only available for ancillary systems settlement transactions (payments from AS through a specific interface for AS as well as direct PM participants' liquidity transfers to AS), CB transactions (eg cash withdrawals) and direct participants' CLS payments.
- Some specific CB transactions which are not a payment (eg decrease/ increase of credit lines) are treated preferential to priority class 0.
- It is possible to change the priority of queued payments from normal to urgent and vice versa. However, it is not possible to change a highly urgent priority.

Payments with an execution time

PM participants have also the possibility to determine the execution time of their transactions. The following options are available:

- Earliest Debit Time Indicator: transactions to be executed from a certain time (codeword: /FROTIME/)
- Latest Debit Time Indicator:
  - Option a: transactions to be executed up to a certain time (codeword: /REJTIME/); if the transaction cannot be settled until the indicated time, the payment will be rejected.
  - Option b: transactions which should be executed up to a certain time (codeword: /TILTIME/); if the transaction cannot be settled until the indicated time, the payment remains in the queue.

In case a payment with a Latest Debit Time Indicator is not executed 15 minutes prior the defined time, an automatic notification in the ICM is triggered.

It is possible, to combine the Earliest Debit Time Indicator with the Latest Debit Time Indicator (option a + b). In the case of option a, the transaction is meant to be executed during the indicated period.

Warehouse functionality

It is possible to submit payments up to five TARGET working days in advance. In this case, the payment message is warehoused until TARGET2 opens for that date. Warehoused payments benefit from the same functionality (via ICM) as queued payments.

Backup lump-sum and contingency payments

In case of a failure of a direct PM participant's payments application for a part or the remainder of the business day the participant can make backup lump-sum payments. The aim of backup lump-sum payments is:

- to redistribute the liquidity that has accumulated in the defaulting participant's account
- to minimise interest and damage claims on the defaulting participant

In case the defaulting PM participant is a CLS, EURO1 or STEP2 participant, settlement or pre-fund payments can be processed as backup contingency payments to meet demands for those payments arising from settlement or pre-fund payments on time.

Direct debit functionality

Direct debits in TARGET2 are intended for wholesale purposes only and are restricted to interbank transactions. The direct debit functionality, which is only available between participants in the PM, can be used by:

- credit institutions
- central banks
- ancillary systems

In particular, it might be used to offer an efficient cash management service within a group of credit institutions or between different branches of a credit institution.

In any case, the respective participants have to agree with the parties allowing debiting their accounts. The direct debit facility can also be used by central banks eg for the settlement of cash withdrawals, the repayment of monetary policy operations and collections of fees.

2.5 Liquidity management

Business case

A direct participant in the PM has the option to control the use of the supplied liquidity by means of a reservation and limit system which could be combined with each other according to its individual needs. In the case no limit or reserve is defined, the participant's liquidity is available for each payment. Additionally, a functionality of "setting aside" liquidity ("dedicated liquidity") for AS settlement can be used.

2.5.1 Reservation facilities

Types of reserves

The PM offers two different kinds of reserves:

- highly urgent reserve: reservation of liquidity for the execution of highly urgent transactions (priority class 0)
- urgent reserve: reservation of liquidity for the execution of urgent and highly urgent transactions (priority class 1 and 0)

Setting and changing of reservations

Reservation can be effected by direct PM participants using the ICM. Direct PM participants have the possibility to

- "reset" to zero the liquidity reserved
- change the amount on demand during the day with immediate effect
- establish a specific amount during the current day with immediate effect
- input a default amount for the following day(s) (valid until next change).

In case of a group of accounts (ie virtual account) the reserves can only be defined at group level by the group of accounts manager.

2.5.2 Use of limits

Types and characteristics of limits

In general, limits determine the payment amount (priority = normal) a participant is willing to pay to another participant (bilateral) or to the other participants (multilateral - towards which no bilateral limit is defined), without having received payments (that are credits) first. It is possible to set the following types of limits in the PM:

- Bilateral limit
  The bilateral position from Bank A towards Bank B is defined as the sum of payments received from Bank B (credits for Bank A), minus the sum of payments made to Bank B (debits for Bank A). This means if the result is negative, the bilateral limit will be utilised with this amount. With the bilateral limit, the direct PM participant restricts the use of liquidity when submitting normal payments for another direct PM participant.
- Multilateral limit
  The multilateral position from Bank A is defined as the sum of payments (credits for Bank A) received from all direct PM participants towards which no bilateral limit has been defined, minus the sum of payments (debits for Bank A) made to these direct PM participants. This means if the result is negative, the multilateral limit will be utilised with this amount. With the multilateral limit, the direct PM participant restricts the use of liquidity, when submitting normal payments for any other direct PM participant for which a bilateral limit has not been set.

Objectives for the use of limits

The setting of these limits enables the direct PM participant:

- To prevent unbalanced dissipation of liquidity with regard to other direct PM participants.
- To avoid free-riding on the liquidity of a direct PM participant by another participant.
- To synchronise the payment flow with other direct PM participants and to promote its early submission.

A normal payment will only be settled if it does not cause the bilateral or multilateral position to go beyond the bilateral or multilateral limit.

Setting and changing of limits

The options for setting and changing limits via the ICM are as follows:

- Setting limits
  They can be set with effect from the next business day until further notice. The minimum limit amount is one million euro.
- Changing limits
  They can be increased or decreased and reduced to zero
  - with immediate effect for the current business day
  - for future business days with effect of the next business day

  at any time during the day. If a limit is once reset to zero, it will not be possible to increase it again on the same business day. On this day the consequence is, that during the settlement of normal payments it is not checked any more whether or not the respective limit will be breached.

Initiator of limit setting and changing

Limits are exclusively set by direct PM participants. Only in the case of a technical problem on the direct PM participant's site, the CB can be authorised by him to adjust the amount of a limit with impact to the next algorithm.

2.5.3 Dedicated liquidity for AS settlement

Purpose of dedicated liquidity

For the settlement of an AS, especially night-time processing but also settlement of AS during the day, the direct PM participant can "set aside" liquidity ("dedicated liquidity") for this purpose only (see chapter 2.8.3 Dedicated liquidity, page 73). This is effective by maintaining a specific RTGS sub-account in case of the interfaced model. In case of the integrated model where the settlement occurs within the AS itself, the pertinent AS has to use a so-called mirror account to collect the liquidity set aside by its settlement banks and to transfer it in the cash position within its own system.

Process of setting aside liquidity

There are different possibilities for a direct participant to transfer liquidity to his sub-account(s) or to a mirror account:

- Standing order liquidity transfer via the ICM
- Current order liquidity transfer via ICM
- Normal payment message

2.5.4 Pooling of liquidity

Description

Banks are able to use a liquidity pooling functionality to view and use their liquidity irrespective on which RTGS account it is held in the PM. The liquidity pooling function is an optional service.

Objectives

- Avoiding liquidity fragmentation in the PM especially for multinational banks, a group of banks, banks holding a number of accounts (eg different sections)
- Simplifying liquidity disposition and usage
- Access to the overall liquidity from different locations

"Group of accounts"

The PM offers liquidity pooling services, relying on the so-called "group of accounts" structure on domestic and on cross-border level within the PM. A group of accounts consists of one or several RTGS account(s) in the books of one or several SSP CBs. The accounts can be held by one or several participant(s) in the PM.

Two variants

TARGET2 offers two variants for the pooling of liquidity

- virtual account
- consolidated information

Both options are based on the idea allowing PM participants to pool their RTGS accounts in a group of accounts. Only accounts of participants in the euro area may be included in a virtual account. The consolidated information is also available to participants from non-euro area countries.

2.5.4.1 Virtual account

Definition

For all RTGS accounts belonging to one group, a virtual account is created. The virtual account is formed with the purpose of aggregating the relevant data of the single accounts, ie the virtual account registers the global liquidity position of the group. One RTGS account inside the virtual account has to be assigned as master account (under the responsibility of a group of accounts manager). The virtual account is the reference for the liquidity management within the group. Therefore, almost all liquidity management features are only available at group level.

"Single accounts"

The single accounts continue to be the legal relevant "book" of the participant vis-à-vis its CB. Each transaction processed within a group of accounts is immediately booked on the single account. In case a negative balance occurs on a single account covered by liquidity available on other accounts belonging to the same group an appropriate legal arrangement ensures that the interests of each CB involved are respected at all times and under all circumstances. In addition, credit lines are only implemented at single account level.

Single payment queue

The liquidity management within one group refers to the "virtual account" at group level. Consequently, one of the main features of the "group of accounts" functionality is the existence of a "single payment queue". When a payment is posted to the RTGS account of the ordering bank, the possibility to debit the RTGS account is assessed against the "liquidity available" in the group of accounts to which that RTGS account belongs.

If

- the "liquidity available" (under consideration of highly urgent and urgent reserve) is bigger or equal to the value of the payment order and
- in case of a normal payment no limit (if defined) is breached

the RTGS account of the ordering bank will be debited, even if this results in a negative balance on this RTGS account. Otherwise, the payment order is queued. To resolve the queue with pending (highly) urgent and normal transactions always the aggregated amount of liquidity is taken into consideration.

Group of accounts manager

To offer, on the one side, an overall view on the liquidity status of the group, but on the other side to follow the interests of all involved single account holders, it is not useful to implement intraday liquidity management facilities at the RTGS account level. The global position can only be managed at central level by a so-called group of accounts manager.

Therefore, the group of accounts manager should be entrusted with all powers on all RTGS accounts within the group of accounts. In particular the group of accounts manager is responsible for the intraday monitoring of the "liquidity available" at the group of accounts level.

Intraday credit operations (ie provision/reimbursement) still remain at the level of each single RTGS account (ie not at the level of the group of accounts).

Possible interactions of a single account holder

Although liquidity management features are mainly available at group level, the single RTGS account holder is allowed for the following interactions of payments related to its single account: change of priorities, revocation, change of execution time, dedication of liquidity on his sub-accounts and withdrawing it.

Definition and use of limits by the group of accounts manager

As indicated above, liquidity management features are mainly available at group level. Therefore, it is, for example, not possible to set limits between accounts belonging to one group. In addition, it is only possible for the group of accounts manager to define a bilateral limit for the whole group. It is not possible to define a bilateral limit on a single account level. (Same rule concerning definition of multilateral limit.)

Definition and use of limits by other PM participants

A bilateral limit can only be defined vis-à-vis a group of accounts. It is not possible to define a bilateral limit vis-à-vis a single account holder.

Liquidity transfer

The group of accounts manager has the possibility to transfer liquidity between the single accounts belonging to his/her group (inclusive sub-accounts) via the ICM. The liquidity transfer is processed immediately.

Information access

The manager of the group of accounts has access to the virtual account and to detailed information on all accounts (except payment details) in the group (inclusive sub-accounts). The single account holders have access to detailed information (including payment details) of their respective accounts and to consolidated information of the group of accounts.

End-of-day procedure

Liquidity pooling is available intraday. Therefore, the group of accounts manager has to level out the accounts belonging to the group till 18.00. As a contingency measure, an automatic end-of-day procedure assures that if the available liquidity (= balance + credit line) is negative on one or more account(s) belonging to the group of accounts, these debit positions will be levelled out against the available liquidity within the group of accounts. This process also ensures that the available liquidity of each account - if any - does not exceed the credit line (where available). After this end-of-day procedure, there exists no possibility for the group of accounts manager to change the liquidity within the group.

2.5.4.2 Consolidated information

Definition

For all accounts belonging to one group, consolidated information is provided in the ICM. The service consists of:

- provision of information (eg sum of credit lines, sum of balances)
- possibilities to transfer liquidity between the accounts belonging to one group by the group of accounts manager

Disposition/group of accounts manager

The group of accounts manager has the possibility to debit and credit all the accounts belonging to the group (inclusive sub-accounts). The liquidity can be transferred using a special functionality offered to the group of accounts manager in the ICM.

Information access

The manager of the group of accounts has access to consolidated and detailed information (except payment details) of all accounts in the group (inclusive sub-accounts). The single account holders have access to detailed information (including payment details) of its respective account and to consolidated information of the group of accounts.

2.6 Flow of payments

2.6.1 Payment interface

Basic principle

The interface between the PM and its participants is SWIFT-based in order to follow a "single window" access for the direct PM participants. The PM uses the SWIFT FIN Y-copy service for the processing of all payments and a dedicated SWIFT Closed User Group (CUG).

PKI

The SSP will use the core PKI provided by SWIFT. All information needed is available in the documentation provided by SWIFT.

Billing

All costs for the message exchange have to be borne by the participants.

Addressing of the receiving party

The use of the SWIFTNet FIN Y-copy service enables the participants to address their payment messages as in correspondent banking. The addressing of payments is supported by the TARGET2 directory (comprehensive list of all PM participants with the BIC of the respective PM addressee).

2.6.2 Payment flow

Basics

The accounts to be debited and credited are identified by the respective fields in the basic header (sender) and the application header (receiver) of the payment message. In case of a direct PM participant, a payment can be sent to/received from

- another direct PM participant
- a participant with indirect access/a participant as an "addressable BIC"
- a HAM account holder
- a CB customer (with an account in HAM)
- an account holder with a PHA
- a participant of another RTGS outside the SSP (for migration period only)

After the simultaneous booking on the RTGS accounts of the sender and receiver, the payment is final and irrevocable.

Note: In case of multi-addressee access, the payments are sent/received directly by/to the multi-addressee access BIC. The settlement of the payments, however, takes place on the RTGS account of the related direct participant.

Other SWIFT FIN messages - cash flow management messages

Messages received by PM participants are not always payment messages such as for confirmation of debit or credit (MT 900/910).

Liquidity transfer between RTGS and HAM/PHA accounts

In order to execute intraday funds transfers between RTGS accounts and linked HAM accounts / PHA accounts, different options for transferring liquidity are available.

Validation

All payments submitted by PM participants are subjected to the following high level validations:

- Syntax validation:
  SWIFT is responsible to validate the syntax of messages. Only syntactically correct messages will be delivered to the SSP.
- Security validations:
  SWIFT and the PM ensures that only authorised participants issue requests.
- Business validation:
  The SSP validates payment messages from a business point of view, namely value date, participants and duplication of requests, and for direct debits, the existence of valid pre-agreements between the parties involved.

If the underlying rules are not followed, the payment will automatically be rejected.

Rejection of payments

A payment is rejected and returned to the sender in case of:

- an incorrect payment
- a participant has been excluded from the PM and the related CB does not confirm the payments submitted by the excluded participant
- a participant has been excluded from the PM and the related CB does not confirm the payments sent in favour of the excluded participant
- a lack of liquidity and/or limit position(s) at the end of the payment processing
- reject time is reached (Latest Debit Time Indicator - option a)
- a direct debit for which the special conditions are not fulfilled

Revocation

Payment orders submitted by the PM participants and not yet settled can be revoked via the ICM.

2.7 Processing of payments

2.7.1 Payment processing - entry disposition

Objective for settlement of transactions

The aim of the processing in the PM is the fast and liquidity-saving gross settlement of transactions with the following characteristics:

- Cover for single payments or the balance of a group of payments
- Settlement in central bank money
- Immediate, irrevocable booking of payments

Influencing factors

The payment processing in the PM is influenced by the following factors:

- Liquidity available on the RTGS account
- Setting limits
- Used priority
- Order of payments submitted
- Opposing transactions and synchronisation of payments submitted
- Set execution time

Basic principles

The following principles apply to the entire payment processing in the PM:

- Every payment should be marked as normal or urgent or highly urgent. If no priority class is selected, payments will be handled as normal payments.
- Attempt to settle single or group of transactions immediately after their submission, with the exception of payments with an Earliest Debit Time Indicator. These payments are included in the settlement process from the pre-set time.
- Offsetting payments are used to save liquidity (bilateral optimisation mechanism).
- Payments that are finally executed are immediately posted to the RTGS account of the sender and the receiver.

- Queuing of transactions, which cannot be settled immediately, according to their priority in different queues (highly urgent queue, urgent queue, normal queue).
- Continuous attempt to settle transactions in the queues.
- The entry disposition and the optimisation procedures for queues can run at the same time.

Principles of the entry disposition

- For highly urgent payments the FIFO-principle applies. Urgent and normal payments are not settled in the case that highly urgent payments are queued. The only exception is that payments with lower priority can be executed before if - and only if - this will allow an offsetting transaction to be settled and the overall effect of this offsetting will be a liquidity increase for that participant.
- For urgent payments the FIFO-principle applies, too. Normal payments will not be settled if urgent payments are queued. The only exception is that payments with a lower priority can be executed before if - and only if - this will allow an offsetting transaction to be settled and the overall effect of this offsetting will be a liquidity increase for that participant.
- In order to save as much liquidity as possible, normal payments are processed according to the "FIFO by-passing" principle, ie normal payments submitted may be executed even if other normal payments are still in the queue (provided that the balance on the RTGS account is sufficient).

Offsetting transactions

The entry disposition takes offsetting transactions into account. In case a single payment is submitted by a sender all offsetting highly urgent/urgent and normal transactions in the queues of the receiver are taken into account. The liquidity of the PM participant is used to cover balances. In addition, in the case of normal payments the defined limits are considered.

Unsuccessful entry disposition

If the submitted transaction cannot be settled in the entry disposition, it will be placed into the highly urgent, urgent or normal queue, depending on the payment type.

2.7.2 Comprehensive queue management

Interventions on queued payments

As long as a payment is not settled, the sending participant (exception see below) has the ability to change the relevant parameters of this payment. Four different control options for intervention at transaction level are offered by the PM:

- Ability to change the payment type of a queued transaction (= change of priority; exception MT 204: the receiving participant (debtor) has the ability to change priority and exception for highly urgent payments)
- Re-ordering of queued transactions (exception MT 204: the receiving participant (debtor) has the ability to re-order)
- Changing the set execution time (if defined before sending to the SSP)
- Revocation of a queued transaction (not yet settled payments may be revoked via ICM at any time during the day trade phase)

Those features are necessary to enable direct PM participants to react to changing liquidity conditions during the day.

Basics

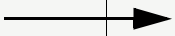
The following rules apply in principle:

- Interventions must be made in the ICM.
- Individual or several payment orders together can be modified at the same time.
- The ICM shows receipt and execution or non-execution of a modified order or a revocation.

In case of intervention at transaction level by a direct PM participant, processes are started to resolve the queues.

Changing the payment type (priority)

The following table shows the options for changing the payment types and those participants in the PM allowed to use the different possibilities:

Payment type (priority)			Participants allowed to use the option
Highly urgent transactions	Urgent transactions	Normal transactions	
			• Credit institutions • Ancillary systems • Central banks
			

It is not possible to change a highly urgent priority. The payment type can be changed at any time during the business day. The sender and the receiver can see the changed payment type in the ICM.

Re-ordering the queued transactions

The sender (except MT 204: receiver = debtor) can change the queue position for an individual or for a sequence of payments. The selected payment or the sequence of payments can be placed:

- to the top of the queued payments with the same payment type
- to the end of the queued payments with the same payment type

The re-ordering can be done at any time during the business day. The sender and the receiver can see the changed order in the queue in the ICM.

Changing the execution time of payments

The execution time may be changed in the ICM. The change has no impact on the payment processing, but on the queue management as the time indication only supports the direct PM participant's queue management. The ICM shows the changed execution time.

Revocation of a queued transaction

Highly urgent, urgent and normal payments not yet settled may be revoked at any time during the day trade phase.

Transactions are revoked via the ICM.

2.7.3 Dissolution of payment queue

2.7.3.1 Settlement of queued (highly) urgent payments

Event-oriented resolving

The (highly) urgent queue is resolved in an event-oriented way starting with the transaction at the top.

The following table describes the origin of possible events:

Events	by...
Liquidity increase	• Incoming transactions • Liquidity transfer from PHA at CB/from HAM • Increase of credit line (if applicable)
Intervention on queue level	• If the transaction on the top of the (highly) urgent queue is changed (change of order, change of priority, revocation)

Resolving the (highly) urgent queue and entry disposition is handled in the same way. If a single highly urgent or urgent payment cannot be settled, it will remain in the queue (at maximum till the end of the business day). The (highly) urgent queue is continuously resolved by the sequentially run of algorithms for the resolving of queued normal payments.

2.7.3.2 Settlement of queued normal payments

Principles

The normal queue is continuously resolved by including highly urgent and urgent payments not yet settled. There are four different algorithms available:

- All-or-nothing optimisation (algorithm 1)
- Partial optimisation (algorithm 2)
- Multiple optimisation (algorithm 3)
- Partial optimisation with ancillary system (algorithm 4)

Algorithms 1, 2, 3 or 4 can run in parallel to the "entry disposition" of PM. Contrarily, two algorithms cannot run in parallel to each other.

During a running algorithm a payment is "blocked". That means it cannot be re-ordered, revoked, etc. If the payment becomes final during the run of the algorithm the instruction will be cancelled. If the payment is still pending after the end of the algorithm, the instruction of the participant will be taken immediately into account.

Optimisation on sub-accounts

Furthermore, for the optimisation on sub-accounts an algorithm 5 is available.

Algorithm 1: All-or-nothing optimisation

Algorithm 1 determines for each participant those payments which can be executed in compliance with the participant's bilateral and multilateral limit position.

The algorithm calculates the potential changes in the balances that would occur if those payments were executed. Those changes are separately calculated for each relationship for which the participant has set a bilateral limit and for the total sum of relationships for which a multilateral limit is set.

The algorithm 1 functions as follows:

- For each direct PM participant, the total position is calculated. It consists of the sum of actual balance, incoming payments are added and outgoing payments are deducted.
- If all total positions are covered and the settlement criteria are fulfilled (ie bilateral or multilateral limits and liquidity reservations are not breached; time indicator is fulfilled), all transactions will be settled.
- If merely one position is not covered, or if one settlement criteria is not fulfilled (ie bilateral or multilateral limits or liquidity reservations to be breached; time indicator not fulfilled) no transaction will be settled and algorithm 2 will be triggered.

Algorithm 2: Partial optimisation

In addition to algorithm 1 this algorithm removes individual payments in order to avoid insufficient cover. This earmarking of payments for removal (that is maintaining in the payment queue) is limited to participants for which an uncovered position was calculated as result out of the calculation of the total liquidity position.

The algorithm 2 functions as follows:

- For each direct PM participant, the total position is calculated according to algorithm 1. All total positions are checked for cover.
- If all total positions are covered, all transactions will be settled.
- If merely one total position of a direct PM participant is not covered, single transactions will be retained till the liquidity of the participant is sufficient for covering its total position. Retained transactions are included in the next clearing process. The executable transactions are settled.

If run of algorithm 2 does not succeed, algorithm 3 will be activated.

Algorithm 3: Multiple optimisation

The aim of algorithm 3 is resolving of the queues with the highest possible settlement volume and low liquidity demand. This optimisation process consists of two parts following one after another. It starts with resolving of bilateral relationships and ends with resolving of the multilateral payments.

Part 1

Transactions which should be processed bilaterally (ie between two participants of which at least one has defined a bilateral limit towards the other) are cleared as follows:

- In a first step, the objective sequence is determined of how the bilateral queue should be worked through: first the pairs of transactions with the best offsetting, then the other pairs of transactions.
- In a second step the bilateral positions are checked regarding coverage. If the settlement of a transaction is not possible due to a lack of liquidity or breached limits, single transactions will be retained in the queue.
- In a third step, the identified covered transactions are immediately settled before the algorithm continues with the next pairs of transactions.

Part 2

The check of bilateral relations is followed by the check of multilateral relations (between one participant and others towards which a multilateral limit is defined): how the remaining transactions influence the balance of each participant. Uncovered transactions or transactions which breach defined limits are retained (in the same manner as in algorithm 2).

Transactions which should be processed multilaterally are cleared as follows (step 1 - 3 are repeated until each uncovered multilateral position is checked):

- In a first step the multilateral position are checked regarding coverage.
- In a second step if the settlement of a transaction is not possible due to a lack of liquidity or breached limits, single transactions will be retained in the queue.
- In third step the identified executable transactions are settled.

Algorithm 4: Partial optimisation with ancillary system

Algorithm 4 is developed to support the simultaneous multilateral settlement of AS. It ensures an efficient and fast processing of the related AS transactions. To smooth the settlement and to reduce liquidity needed, other highly urgent payments as well as urgent and normal ones are included.

- Algorithm 4 calculates the position of each direct PM participant including all pending payments. For debit positions it is checked whether sufficient liquidity is available.
- If at least one participant does not have sufficient liquidity, algorithm 4 selects the participant with the largest debit position; then it retains payments of this participant for optimisation till its position is covered. (Same retaining rules as algorithm 2).
- If the payment selected is an AS payment using simultaneous multilateral settlement also all other payments of the related AS will be retained from the optimisation process.
- As long as there are still payments stemming from other AS using procedure 5, algorithm 4 continues running (= a further loop within the same run will start). In this further loop also those payments are included that were retained before, with exception of retained AS payments following procedure 5.

- Algorithm 4 will end:

  a) if there are no procedure 5 AS payments included in the settlement process any more.

  b) or the time defined as maximum for a run of algorithm 4 has elapsed.

  c) or all debit positions are covered.

  In case a) and b) all payments included in the optimisation return to their state previous to the running of algorithm 4. In case c) all payments that are not retained are settled.

Algorithm 5: Optimisation on sub-accounts

The functioning of algorithm 5 is partially comparable to the optimisation of algorithm 1 but with some specialities/exceptions. It aims at resolving AS payments using dedicated liquidity on sub-accounts. The algorithm only checks the sub-accounts instead of RTGS accounts. Only covered payments are settled. In case of uncovered payments, these payments are put back in the queue of the single sub-account. It runs only once a time until the next start by ASI. Furthermore, algorithm 5 does not have to consider any limits or reservations.

The algorithm functions as follows:

- For each direct PM participant (ie the settlement bank), the total position is calculated. It consists of the sum of actual balance on one sub-account, incoming payments are added and outgoing payments for this sub-account are deducted.
- If all total positions are covered, all transactions will be settled, provided they meet the other settlement criteria (ie time indicator is fulfilled).
- Payments which are not covered are put back in the queue.

2.8 Settlement of ancillary systems (AS)

2.8.1 Ancillary System Interface (ASI)

Integration into SSP

From market and oversight perspective, there are strong requirements to settle the cash leg of securities transactions and other comparable transactions (from retail or large value payment systems, money market systems, clearing houses, etc.) in central bank money. Today this is done very often by normal payment procedures (eg EBA EURO1, CLS) or with special functionality within the local national home accounting system or the national RTGS systems.

In the interest of credit institutions and ASs, the needed functionality is also offered by the SSP.

Advantages

Advantages for ASs are:

- Broader accessibility of participants (also in a cross-border context provided all parties concerned belong to migrated banking communities)
- Broad range of streamlined functionality

Advantages for credit institutions as participants of ancillary systems using the Ancillary System Interface (ASI):

- Possibility to use only one RTGS account for several ancillary systems
- Cross-border usage - an RTGS account held with one CB can be used for settling transactions stemming from ancillary systems from other countries
- Integration with normal payment business
- Highest priority for AS transactions

Users

The ASI can be used by CBs, for their own purposes (eg cash withdrawals) or on behalf of ASs, and by ASs themselves.

ASs are:

- Retail payment systems
- Large value payment systems
- Foreign exchange systems
- Money market systems
- Clearing houses (CCP)
- Securities settlement systems (SSS)

When referring to interface with SSSs in the SSP, the SSSs are qualified as ancillary systems. However SSSs have a peculiar feature in comparison to other ancillary systems: they are both users of the SSP and service providers for TARGET2 (and the Eurosystem in general). On the one hand the SSSs need TARGET2 to settle in central bank money the cash leg of securities transactions on a DVP basis. On the other hand, TARGET2 participants, or in general, Eurosystem counterparts will mobilise collateral in view of getting liquidity from the Eurosystem through SSSs.

In the long run all ASs will settle all their positions in the SSP. Nevertheless, to allow a smooth transition to SSP, the settlement on proprietary home accounts will be permitted even after the end of the migration period, ie during the pre-defined transition period.

Standardisation

The ASI is a standardised interface to the PM. Standardisation will take place for:

- Messages (SWIFTNet standard messages)
- Network and services (SWIFTNet services)
- Settlement processing (generic settlement procedures - see below)

Nevertheless, by using optional mechanisms (see below), it is possible to fine-tune the ASI to the already existing AS procedures.

General features

In order not to impose a change of the settlement model implemented in existing SSSs which would not be easy considering the specific domestic laws and the impact on the systems' users, the PM allows the settlement through the two major models:

- Integrated model:
  The final settlement of the cash leg takes place in the SSS itself; cash accounts' management is outsourced by the CB to the SSS.
- Interfaced model:
  The final settlement of the cash leg takes place in the PM.

As these two models have been developed in line with the existing national laws, for SSSs which operate night-time cycles, the difference between integrated and interfaced is mainly a matter of legal and contractual relationship between the SSS and the CB and not a technical matter.

To support both the integrated and interfaced model, the SSP will provide:

- Payment messages: by means of the ASI, ASs may initiate credit transfers, direct debits and mandated payments
- Information messages: "Dedicated liquidity" (ie blocking of cash, both acquisition and notification) and auto collateralisation for increasing the cash balance on RTGS accounts
- Technical cash account in the name of the SSS, ie for net DVP settlement

Usage of "standard" payment procedures

As today, standard payment procedures of the SSP can be used for both models:

- In the integrated model, participants are allowed to transfer liquidity from their RTGS account to a Mirror account associated with the AS. This liquidity must be mirrored to accounts in the name of the participants held within the AS.
- In the interfaced model participants have to "pay" their balances resulting from the AS.

The major disadvantage for ASs is that the kick-off for the payment must come from the participant.

Usage of the Ancillary System Interface

By using the ASI, an AS can control the initiation of liquidity flows. In addition, the transactions generated will benefit from the highest priority. Nevertheless, it is the responsibility of each AS participant to provide the needed liquidity (on the RTGS account).

Generic settlement procedures

To support different business cases related to the various types of ASs as mentioned above (SSSs and ASs other than SSS), six generic settlement procedures are provided by the PM via the ASI.

All BIS models (1, 2 and 3) are covered by the PM. Nevertheless, the linkage of a generic settlement procedure to a BIS model very often depends on the national habit.

Settlement model	PM generic settlement procedure	Interaction (Batch/real-time)	Description
Integrated model	Liquidity transfer	Real-time link	Transfer between the cash position of a participant in the ancillary system and in the PM through a mirror account. Settlement occurs in the ancillary system itself.
Interfaced model	Real-time settlement	Real-time link	Transfer between the accounts of two PM participants, aiming at finalising a transaction already able to settle in the ancillary system.
	Bilateral settlement	Batch	Debits and credits are posted simultaneously in the PM but each debit/credit is processed independently from the others.
	Standard multilateral settlement	Batch	Debits and credits are posted simultaneously in the PM but all debits have to be settled before credits are made.
	Simultaneous multilateral settlement	Batch	Debits and credits are posted simultaneously in the PM but all debits and credits are simultaneously checked for settlement and can only be settled on an all-or-nothing basis.

Settlement model	PM generic settlement procedure	Interaction (Batch/real-time)	Description
Integrated/ Interfaced model	Dedicated liquidity	Batch	PM participants dedicate liquidity for the settlement of the AS transactions, either on specific sub-accounts (interfaced model) or on the mirror account (integrated model). Settlement occurs either on the sub-accounts (interfaced model) or in the AS itself (integrated model). Such a settlement procedure can be used especially for night-time business, but also in daylight.

Note: Batch means simultaneous sending of all the debit and credit transactions involved in the settlement and not necessarily that the transactions are settled at the same time.

Regarding ASs "other than SSS", many of the above indicated generic settlement procedures could be used. For example: retail clearing payment systems might use (at least) the "standard multilateral" or the "simultaneous multilateral" procedures to settle their multilateral balances; money market systems might use either the "real-time payment" or the "bilateral settlement". Clearing houses (CCPs) might use (at least) "bilateral settlement" or "standard multilateral settlement" procedure to settle margins of its participants.

Details of each generic settlement procedure are given in chapter 2.8.2 Work flow of generic settlement procedures, page 66.

Optional mechanisms

In addition to a mandatory settlement procedure, which must be chosen from the above-mentioned generic settlement procedures, the following pre- and post-connected mechanisms can be used to adjust the ASI to specific needs of each AS:

Mechanism	Related interaction	Description
Information period	Batch	Balances in the AS are pre-announced, settlement banks may express disagreement through their central bank: the pertaining transaction(s) are then revoked and may be posted afterwards, once they were re-calculated by the AS.
Settlement period (“till“)	Batch and Real-time link	A limited period of time is allocated to the settlement of the AS, so as to not prevent the settlement of other operations. If the AS transactions are not settled at the end of this period, either the respective balances will be rejected or a guarantee mechanism will be activated (see below).
Guarantee fund mechanism	Batch	In case AS transactions cannot be settled using the sole liquidity of participants, this mechanism provides the complementary liquidity needed.
Scheduled time ("from")	Real-time link	If an AS transaction is posted before the scheduled settlement time, it is stored until the scheduled settlement time is reached.

Auto collateralisation

As explained earlier, SSSs have a double role in PM (user and liquidity provider), which is in more and more countries combined during the settlement process through so-called auto collateralisation.

According to ECSDA, auto collateralisation can exist in the form of:

- "firm" collateralisation (collateralisation on stock: participants determine the eligible securities that could be used)
- "self" collateralisation (collateralisation on flows: with securities deriving from the settlement process itself)

Therefore, the PM will provide CBs and ASs with a standardised simplified procedure to change credit lines in the PM.

Information rules

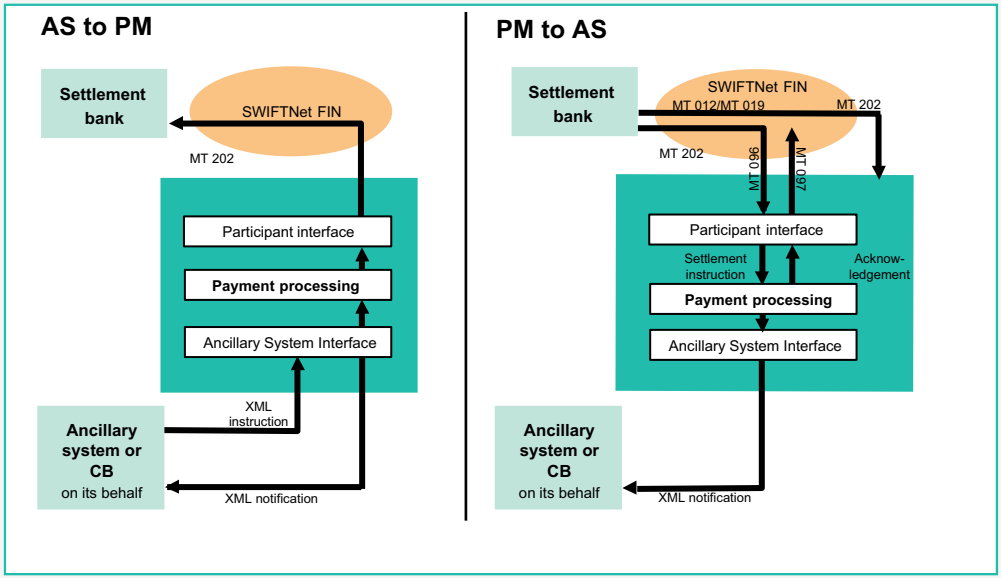
AS operators and settlement banks benefit from full visibility on the status of payments/net balances issued at any time via ICM during the entire process.

In addition to the information on individual payments/net balances, CBs (either acting or not on behalf of AS) and credit institutions also have access to comprehensive information on the course of AS settlements.

As regards credit institutions, the information is provided to the settlement banks: since direct participants in an AS will not necessarily be, at the same time, PM participants (and vice versa), some participants in ASs have to rely on designated PM participants ("settlement banks") which settle for these ASs' participants any obligations in the PM arising from their participation in the AS.

2.8.2 Work flow of generic settlement procedures

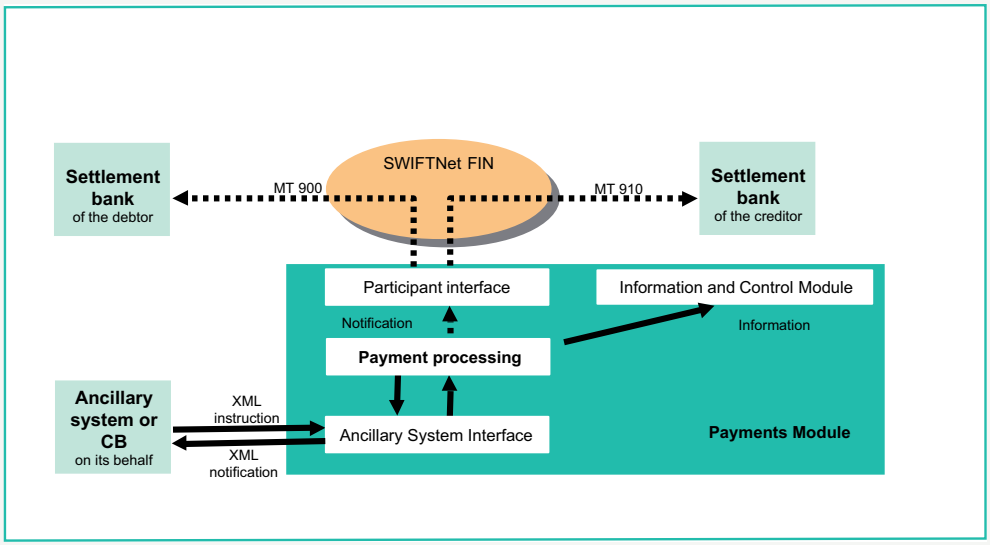
2.8.2.1 Liquidity transfer



Step	Description
AS to PM	The message sent by the AS via the Ancillary System Interface is sent out by the PM as an MT 202 to the settlement bank.
PM to AS	• MT 202 sent by the settlement bank with a specific BIC of the PM • forwarded leg of the Y-copy not used • Notification is sent out by PM via the ASI to AS

2.8.2.2 Real-time settlement

Transfer between the accounts of two PM participants:



- When a transaction - eg securities purchase - has been concluded, the AS or the CB on its behalf issues an instruction to debit the "buyer's" settlement bank and to credit the "seller's" settlement bank. A technical account of the AS can be used as intermediary account to perform this transaction, which is then split into two ("buyer's" settlement bank to technical account, and technical account to "seller's" settlement bank).
- The PM attempts to settle this transaction. If liquidity is not sufficient, the AS transaction will be posted in the waiting queue and the settlement bank will be informed by a broadcast message delivered via the ICM.
- Upon settlement, a notification message is sent to the AS or CB. On an optional basis, the settlement banks are notified via MT 900/910.

- If the operation cannot be settled at the end of the time limit (if such limit exists), it will be rejected and a notification will be sent to the AS or CB.
- At each stage, information is available for settlement banks and AS through the ICM.

2.8.2.3 Batch settlement without dedicated liquidity

Basics

The three settlement procedures described below operate in batch mode, ie several transactions contained in one single message sent by the AS are posted together for settlement.

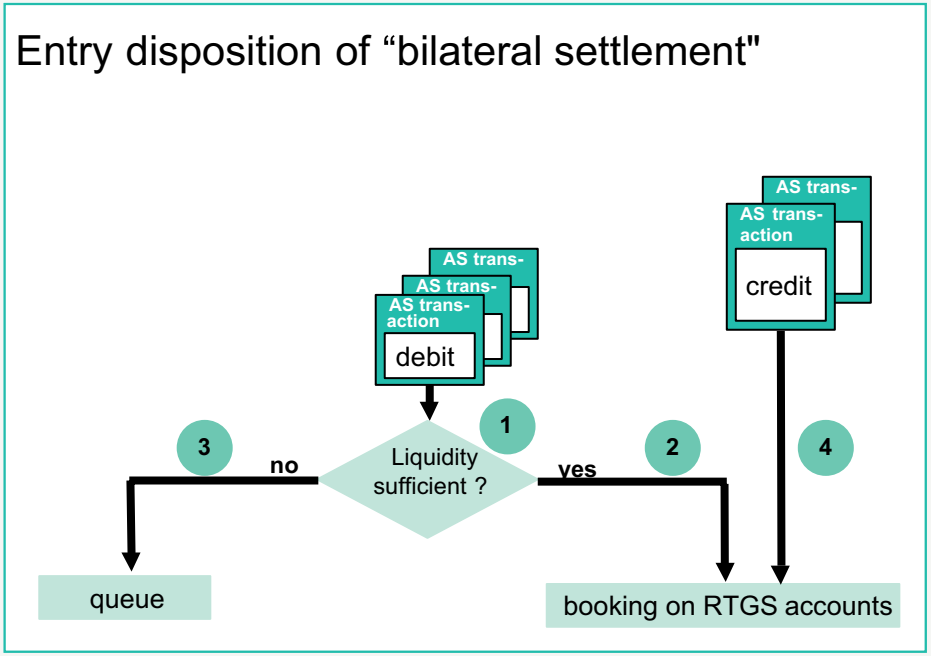
The optional mechanisms information period and settlement period can be applied to each of the procedures described below.

Bilateral settlement

This settlement procedure differs from the real-time settlement as far as the interaction mode is concerned. The transactions are sent in a batch (instead of real-time) mode. As in real-time settlement, transactions may be debited/credited directly on the settlement banks' accounts, or involve a technical account. In addition, transactions may also debit/credit a mirror account against a settlement bank's account.

If the information period mechanism is used, a settlement bank may "disagree" on one or more transactions. The relevant CB then revokes the pertaining transactions via the ICM. These transactions then are rejected without affecting the other transactions contained in the message.

The settlement takes place as described below:



Step	Description
1	Each debit transaction of a settlement bank is checked against the liquidity available in the account/group of accounts.
2	If the liquidity is sufficient, the transaction will be settled.
3	If no, the transaction will be posted in the waiting queue. The settlement bank is informed by a broadcast delivered by the ICM.
4	Credit transactions are settled immediately. After booking all transactions, the ASI sends a positive acknowledgement to the AS.

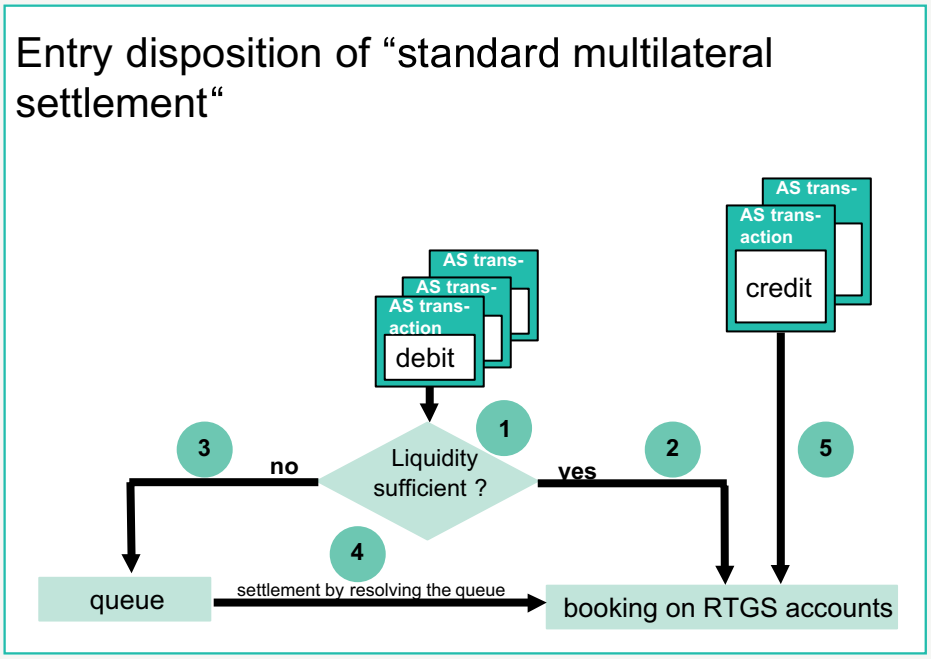
Standard multi-lateral settlement

In this procedure, debits are posted first (ASs direct debits on the settlement banks' accounts in return of the AS technical account). When they are all settled, credits are posted (credit transfers from the AS technical account to the settlement banks' accounts).

If the information period is used and a settlement bank disagrees, the revocation made by the CB will result in the rejection of the entire batch.

The guarantee mechanism may be used in this procedure.

The settlement of transactions under this procedure is described below:



Step	Description
1	Each debit transaction of a settlement bank is checked against the liquidity available in the account/group of accounts.
2	If the liquidity is sufficient, the transaction will be settled.
3	If no, the transaction will be posted in the waiting queue. The settlement banks are informed by a broadcast delivered by the ICM. Immediately after putting the group of debit transactions in the queue the optimisation process starts.
4	Pending transactions are settled by resolving the queue.
5	After all debit transactions are covered and settled, the credit transactions are processed and booked. After booking all transactions, the ASI sends a positive acknowledgement to the AS.

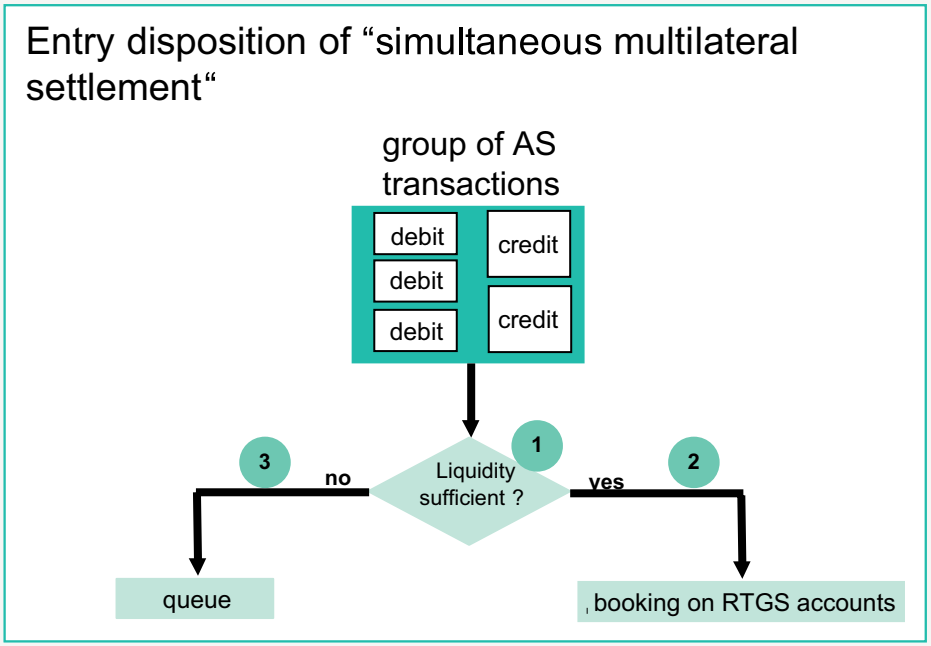
Simultaneous multilateral settlement

Debits and credits are posted simultaneously but they are settled only if all settlement banks with a debit position have enough funds available. The difference to the standard multilateral settlement model is that credits from the AS are considered in the optimisation mechanism. The settlement of debits takes place in the form of ASs direct debits on the settlement banks' accounts in return of the AS technical account. The credits are settled as credit transfers from the AS technical account to the settlement banks' accounts.

If the information period is used and a settlement bank disagrees, the revocation made by the CB will result in the rejection of the entire file.

The guarantee mechanism may be used in this procedure.

The settlement of transactions under this procedure is described below:



Step	Description
1	Each debit transaction of a settlement bank is checked against the liquidity available in the account/group of accounts. Potential liquidity deriving from credit positions are taken into consideration.
2	If the liquidity is sufficient, all debit and credit transactions will be settled and a positive acknowledgement is sent to the ASI.
3	If not, the group of transactions will be posted in the waiting queue. The settlement banks are informed by a broadcast delivered by the ICM. Algorithm 4 starts after the latest of those two times: the time when the group of transactions is posted in the queue, and the time when the current optimisation mechanism has finished running.

2.8.3 Dedicated liquidity

General remarks

- By setting aside dedicated liquidity on a sub-account of a settlement bank within the SSP, which is directly related to one AS, liquidity is exclusively reserved for this AS. The funds set aside on dedicated sub-accounts are not consolidated by the liquidity pooling functionality.
- Only direct PM participants can have this kind of sub-accounts to be identified by the BIC of the RTGS main account and the sub-account number.
- During settlement cycles the dedicated liquidity is blocked and can therefore be used for DVP processing in the SSS.
- Between two settlement cycles, the (remaining) dedicated liquidity is released but kept in the sub-account to be available for possible further cycles.
- Manual orders for increase/decrease can either be posted by the settlement bank via ICM or by the AS via the ASI. In the last case, the order is set by the participant in the infrastructure of the AS.
- Increase of dedicated liquidity can also be initiated by transactions to be credited to the participant by the AS (coupons and redemption of securities) and by auto-collateral transactions (see below).
- In case of integrated models, where the settlement occurs within the AS itself, the dedicated liquidity mechanism can also be used. In this case, instead of sub-accounts, the AS mirror account is used to collect the liquidity set aside by the settlement banks and to transfer it to the cash positions within the AS itself.

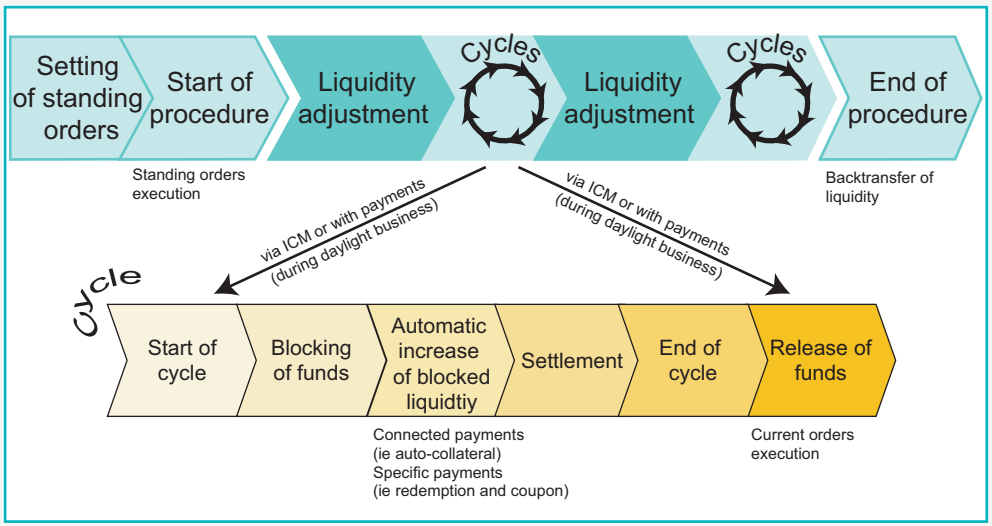
Night batch

A particularity of several ASs is night-time operations (usually night batch securities settlement procedures of SSSs). The settlement of night-time batches normally requires to perform the transfers for value next business day without an impact on minimum reserve requirements.

An initial reservation of liquidity is performed through standing orders (instructions pre-defined by the settlement banks to transfer funds to the sub-accounts in the case of interfaced AS, and to the mirror account in case of integrated AS) at the "Start of procedure" (which marks the beginning of the night-time processing). Then, the processing is as follows:

- Reservation of liquidity on the sub-accounts (interfaced model) or transfer of liquidity to the mirror account (integrated model) by means of current orders.
- For each interfaced AS, firstly settlement in the RTGS sub-account and then unblocking of (residual) liquidity; for integrated AS, internal settlement.

This sequence may be repeated thanks to the recourse to several cycles during the night:



- Each cycle is started by the AS through a specific message.
- During the settlement cycle the dedicated liquidity is blocked. Possible current orders received during the cycle are stored within ASI and they are executed immediately after the end of cycle message.
- The liquidity deposited on a dedicated account can be further increased via automatic treatment of specific payment orders.
- Settlement instructions are processed while optimisation mechanism is running.
- The AS requests the end of cycle through a specific message.
- At the end of the settlement process, the (remaining) dedicated liquidity is released but kept in the sub-account to be available for possible further cycles.

When the settlement business of the AS is completed, the AS can send an end-of-procedure message: the liquidity remaining on sub-accounts is transferred back to the settlement banks' RTGS accounts.

Daylight batch

The processing of a daylight batch is comparable with a night batch. The main differences between daylight and night-time batches are:

- For each participant, standing orders are executed in decreasing order of their value, and not covered ones are rejected, whereas standing orders are executed in a pro-rata mode during night-time processing.
- No cycles can be run in case of the integrated model.
- Payments (ie MT 202) can be used to transfer liquidity from the RTGS account to the mirror account (integrated model) or to a specific sub-account (interfaced model). In this latter case, if they are received during a cycle, they will be immediately executed but the AS is not notified.

3 Information and Control Module (ICM)

3.1 Business approach ICM

Basics

The Information and Control Module (ICM) equips SSP participants (credit institutions, ancillary systems, other participants and CBs) with comprehensive online information tools and easy-to-use control measures appropriate to their different business needs.

Specifically, the ICM will offer the different groups of participants "single window access" to the

- Payments Module (PM)
- Static Data (Management) Module (SD)

and depending on whether the CB in question decides to use the optional services available in the SSP, participants will also have access via the ICM to the

- Home Accounting Module (HAM)
- Reserve Management (Module) (RM)
- Standing Facilities (Module) (SF)

Access to several PHA data is also possible via the ICM.

Through the ICM only data of the current business day are available, except for

- information on warehoused payments that have been delivered to SSP up to five business days in advance.
- static data information which can be entered for future dates. Static data information which have been modified or deleted are also available as "Archived" records.

The screens are offered only in English.

In general, each SSP participant has to ask for information to be supplied (pull technology). This gives each user the flexibility to decide what information should be updated at what time. Information is displayed automatically in pop-up windows (push technology) only in exceptional circumstances (eg system broadcasts, warnings concerning payments with a debit time indicator).

ICM access modes

There are two different technical modes for using the ICM.

- Application-to-application mode (A2A)
  Information and messages are transferred between the SSP and the individual participant's internal application. Therefore, the participant must
  - develop his own application,
  - adapt an existing application or
  - purchase an appropriate solution

  in order to exchange XML messages (requests and responses) with the ICM via a standardised interface.
- User-to-application mode (U2A)
  The objective is to permit direct communication between a participant's users and the ICM. The information is displayed in a browser running on a PC system (SWIFT Alliance WebStation). Consequently, participants do not need to develop a special application.

Both modes offer almost the same range of functionality.

Each direct PM participant needs at least one SWIFT Alliance WebStation to have access to the ICM via U2A.

Communication network and services

SWIFT's Secure IP Network (SIPN) is the underlying technical communication network used to exchange information and to run control measures.

The following SWIFTNet services are used for the different ICM access modes.

Application-to-application mode	User-to-application mode
• SWIFTNet InterAct • SWIFTNet FileAct	• SWIFTNet InterAct • SWIFTNet Browse • (SWIFTNet FileAct)

Security aspects

The ICM can be used to initiate sensitive interventions by the different user groups. The ICM must therefore ensure an appropriate level of security.

This is achieved by:

- the use of security features provided by SWIFT as part of the SWIFTNet services.
- defining different roles for the users in each group of participants (credit institutions, ancillary systems, other participants and CBs).
- offering the "four eyes" principle as an option. Each participant can decide to which of the roles available to his users the "four eyes" principle has to apply. For security reasons, the "four eyes" principle is compulsory for some activities (eg setting up backup payments).

For the security reasons only registered users have access to

- the information provided via the ICM.
- the management functions (control measures), that can be executed via the ICM.

User administration

For the user administration the service “Role Based Access Control“ (RBAC) offered by SWIFT is used.

Each participant is responsible for managing his users, meaning that he is responsible for:

- designating the users
- assigning specific roles to each user

The activities related to user management have to be executed by "Security Officers".

3.2 Information and control measures in the ICM

3.2.1 ICM access to PM

Basics

Access to the PM via the ICM is mandatory for all direct participants in the PM. This functionality is not available to indirect PM participants.

Functions available in the ICM

The following non-exhaustive list gives an overview of the different functions available in the ICM:

Business case	Functions
Managing the payment queue	• View payments delivered for the current business day – All payments – Subset of the payments according to criteria defined • View payments delivered in advance – All payments – Subset of the payments according to criteria defined by the user • Queue management – Revoking a non-final payment (normally not yet debited) – Changing the payment type from normal to urgent and vice versa – Moving a payment to the top or the end of the queue – Changing the time of payments with debit time indicator (Latest Debit Time Indicator, Earliest Debit Time Indicator)
Liquidity management	• View the current liquidity position – in RTGS account/Group of accounts – in HAM – in PHA if the CB has opted to continue using its proprietary home accounting system and if the CB opts for an ICM/PHA connection • Liquidity management – Transfer liquidity between the RTGS account and the home account kept either in the HAM or PHA – Separation of dedicated liquidity for AS • Management of standing orders for liquidity transfers from the home account kept either in HAM or PHA to the *RTGS account*

Business case	Functions
Management of reservation and limits	• Management of the reserves and limits for the current business day – Highly urgent reserves – Urgent reserves – Bilateral limits – Multilateral limits • Management of the standing order reserves and limits for the next business days – Highly urgent reserves – Urgent reserves – Bilateral limits – Multilateral limits
Information management	• View the system broadcasts sent by the CBs during a business day • View the system status – Availability of the other RTGS systems linked to TARGET2 – Cut-off times in the PM – Status of AS • Access to directory services – View the TARGET2 directory
Emergency tool	Creating backup payments in favour of • PM participants • CLS • EURO1 • STEP2 • TARGET1 participants (during migration period only)

3.2.2 ICM access to SD

Basics

The following table summarises which functions are available to users to access static data information in application-to-application mode and user-to-application mode. Some of these functions are only available in case the optional modules are used.

Functions available in the ICM

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Data	Function	U2A	A2A
Legal entities	Select Legal Entities	X	X
	Display Legal Entity	X	X
Participants	Select Participant	X	X
	Display Participant	X	X
	Display TARGET2 WildCard	X	X
	List of Ancillary System used	X	
	Display RTGS Account	X	X
	Display Direct Debit	X	X
	Select Sub-Account	X	X
	Display Sub-Account	X	X
	Select Co-Managed Accounts	X	X
	Display HAM Account	X	X
	Display SF Account	X	X
Ancillary system	Select Ancillary System	X	X
	Display Ancillary System	X	X
	Select Ancillary System Settlement Banks	X	X
Central banks	Select Central Bank	X	X
	Display Central Bank	X	X
Contact Item	Select Contact Item	X	X
	Display Contact Item	X	X
TARGET2 dir	Select TARGET2-Dir	X	
	Display TARGET2-Dir	X	
Calendar	Display Calendar	X	X
Events	Select Events	X	X

Data	Function	U2A	A2A
Error codes	Select Error Codes	X	X
Rates	Select Rates	X	
Group of accounts	Select Group of Accounts	X	X
	Display Group of Accounts	X	X
Matching table DN-BIC	Select DN	X	

Note: For provisioning the TARGET2 directory, the generic functionality of the SWIFTNet FileAct service is used.

3.2.3 ICM access to HAM

Functions

Through the ICM credit institutions/central bank's customers have real-time access to all the functions listed in the following table.

Type of information	Content (only related to HAM)	HAM account	CB customer's account
Liquidity position	• Account balance • Reserved funds for cash withdrawals • Funds above a pre-defined threshold	X X	X X
Transaction processing	• Transaction details • Status of transactions • Content of the outgoing queue • Content of the incoming queue • View of transactions delivered in advance	X X X X X	X X X X X
Status of the system	• TARGET2 directory • System availability • Operating day cut-off times • System broadcast • System status	X X X X X	X X X X X
Parameters	• Management of the reservation function for cash withdrawals • Management of the standing order liquidity from the HAM account to the RTGS account	X X	
Liquidity transfers	• Transfers from/by the RTGS account of the same participant • Transfer of liquidity with the Standing Facilities (Module)	X X	
Regular transactions	• Interbank transfers within HAM or from/ to an RTGS account of another participant	X	

Note: HAM account holders are not present in the TARGET2 directory as account holders in HAM but they can be included as indirect participants in PM.

3.2.4 ICM access to SF

Information

Through the ICM credit institutions have access to the information listed in the following table.

Type of information	Content
Balances	• Current balance of the overnight deposit account • Current balance and available liquidity of the marginal lending account
Transactions processing	• Transaction details
Liquidity transfers	• Transfers with the HAM/PM

3.2.5 ICM access to RM

Information

Through the ICM credit institutions have access to the information listed in the following table.

Type of information	Content
Minimum reserve	• Amount of required reserve
Balances	• End-of-day balances of the previous business day • Running average up to the previous business day
Adjustment balance	• Balance necessary to fulfil the minimum reserve

3.2.6 ICM access to PHA

Interface

The ICM offers a standardised interface for proprietary home accounts kept at the level of central banks. Then it is up to each central bank to decide whether to support this interface.

Via the interface it is possible to

- receive aggregated information on the liquidity available
  - account balance,
  - available credit line,
  - blocked amounts.
- define a standing order
  - A standing order is an automated functionality in the PHA to provide a predefined liquidity injection for the RTGS account prior to the payment processing in PM. The exact point of time to initiate such a standing order depends on the PHA.
  - If the standing order has been executed for a PM business day, a change of the predefined amount would become effective as of the following business day.
- transfer liquidity to/from RTGS account
  - BIC of the RTGS account holder
  - name of the RTGS account holder
  - RTGS account number
  - balance of the RTGS account
  - BIC of the PHA account holder
  - name of the PHA account holder
  - balance of the PHA account
  - direction of the liquidity transfer

4 Static Data (Management) Module (SD)

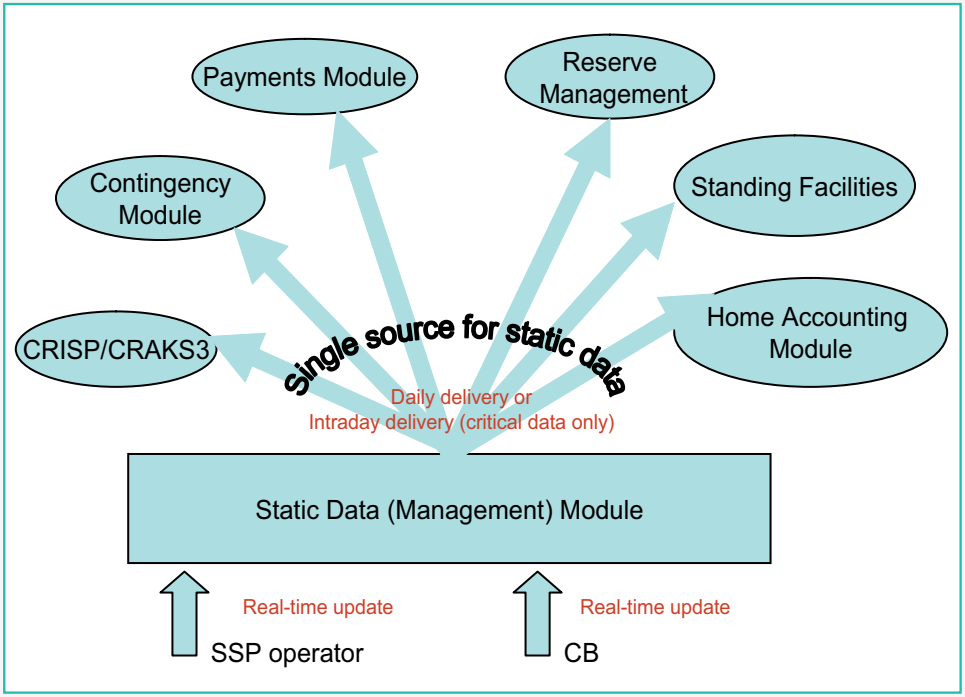
Overview

Especially in an SSP environment which is used by a number of European CBs and comprised of various modules for different functions, it is indispensable to have a full set of features available to ensure a proper and reliable management of static data. The Static Data Management tool (repository) caters for the data consistency between all modules of the SSP. All static data actually used are stored in the repository and available at the same time for each module.

Main features

The SD provides the SSP modules with a homogeneous set of data thanks to:

- a unique point for the creation, modification and deletion of static data. These modification are made according to rules which ensure that the static data is consistent with all the requirements of each module.
- daily data transmission to all the SSP modules including the provision of a coherent procedure according to which the data is made available for other modules at the same time
- possibility to enter changes that becomes effective at a future date, including versioning facilities
- exceptional procedures for intraday data update of all the modules in case of emergency
- full transparency of the data modification cycle:
  For audit trail purpose the central repository transmits the "tracking" for all data exchanges (date and reference) to the legal archiving.



Controls and responsibilities for data

The entity in charge of data modifications is the one which is responsible for the data (ie CBs for all data related to "their" credit institutions and market infrastructures, the SSP operator for production data such as opening/closing time, calendar…).

This respective entity is also responsible for the manual controls to be carried out in context with possible changes. Controls consist of both automated and manual procedures. Automated controls on the data format have to be strictly applied to the data before it is used in the production environment. When information has to be checked against "subjective" elements, manual controls are carried out. In order to safeguard the integrity of data, manual controls and changes cannot bypass automated controls.

Access to static data either in display or update mode is limited depending on its nature or of its responsible entity.

The four eyes principle is available for all static data in user-to-application as well as in application-to-application mode. The responsible entity of data is able to decide whether it should be enforced or not for each kind of data it manages.

Response to queries and file extracts for external entities

Static data is made available to users through the ICM. This includes the possibility to extract files from the available ICM transactions.

5 Optional modules of TARGET2/SSP

5.1 Home Accounting Module (HAM)

Overview

The Home Accounting Module (HAM) is a common standardised optional module with basic functions offered to central banks in order to give them the possibility to avoid maintaining local home accounts that could be expensive to manage and to efficiently administer all CB's customer relationships.

The choice to adopt HAM or to maintain the local home accounts is made for each country by the respective CB.

HAM manages accounts that can be held by two different kinds of users:

- Credit institutions and other entities according to the rules defined by the respective CB (in the following "HAM accounts" holders)
- CB's customers (correspondent and others) not allowed according to the TARGET2 Guideline to open accounts in the PM (in the following "CB's customers accounts" holders).

The reasons behind the opening of "HAM accounts" may differ, according to the specific situation of each individual country, for example:

- Some credit institutions may not be interested in participating directly in the RTGS system, but nevertheless are subject to minimum reserve requirements and wish to directly manage cash withdrawals, deposits, etc. (HAM accounts are held only by some credit institutions)
- There could be a need to have a second set of accounts to be used to settle specific operations (eg cash withdrawals) of direct RTGS participants, which already have an RTGS account (HAM accounts for all credit institutions)

The reasons behind the opening of "CB's customers accounts" are to allow CB's customers to settle, through the relevant CB, transactions with all TARGET2 participants.

Functional architecture

HAM is accessible exclusively through a SWIFTNet interface based on a V-Shape model and, from a technical point of view, it is fully integrated in the SSP operational environment.

All operations settled in the "HAM accounts" can be initiated via:

- "Simplified" MT 202 with a limitation in the format (only the fields needed for the execution of transfers of liquidity are allowed; it is not possible to specify a final beneficiary different from the receiver)
- Information and Control Module (ICM) at the initiative of the account holder or at initiative of the CB on behalf of the account holder (backup transactions)

Operations settled through "CB's customers accounts" can be triggered via:

- MT 202
- MT 103/MT 103+
- ICM at the initiative of the CB on behalf of the account holder (backup transactions)

General features

"HAM accounts" can be opened by:

- Direct PM participant (with an RTGS account)
- Indirect PM participants (also SWIFT limited member with a SWIFT-BIC)
- Credit institutions and other entities not participating in PM (neither directly nor indirectly)

Credit institutions holding a "HAM account" and an account in the PM have access to an automatic transfer function for start-of-day (either for the whole balance or for a specific amount) as well as end-of-day transfers from/to their RTGS accounts. In this case it is needed to have the same BIC-11 for the accounts held in PM and HAM.

"HAM accounts" do not have payment system purposes. Only a limited number of operations can be settled on them (transactions with the CB and basic interbank transfers for the management of minimum reserve).

Customer payments, cross-border payments and balances stemming from ancillary systems have to be settled in the RTGS account:

- through another participant (the selected direct participant) for credit institutions holding only an HAM account (indirect PM participants)
- directly for credit institutions holding accounts both in the HAM and in the PM (direct PM participants)

"CB's customers accounts" can be used to settle domestic and cross-border payments (MT 202 and MT 103/MT 103+) within "CB's customers account" and towards PM. Furthermore, they can be used in order to settle payments with RTGS systems not yet migrated to TARGET2.

For both "HAM account" and "CB's customers accounts" a storing function for future value date payments is provided (up to five TARGET working days in advance).

All the transactions settled through the HAM are immediately final.

Transaction Processing

The following operations can be settled on the "HAM accounts":

- Interbank transfers among HAM accounts held at the same CB
- Interbank transfers with RTGS accounts in the PM (including cross-border transactions)
- Operations with the own CB including debit and credit transactions (eg cash withdrawals and deposits, etc.)
- Transfers with the Standing Facilities Module in order to have access to the standing facilities (only possible via ICM)
- Transactions stemming from the Reserve Management Module (remuneration and penalties)
- Automatic transactions related to billing (not available from the start of TARGET2)

Transfers between HAM accounts held at different CBs ("cross-CB") are not possible.

"CB's customers accounts" can process:

- Payments from CB's customers to RTGS account holders (including cross-border traffic)
- Payments to CB's customers from RTGS account holders (including cross-border traffic)
- Payments between CB's customers

Transfers between HAM accounts and "CB's customers accounts" are not allowed.

Cash reservation function

A cash reservation function is offered to "HAM accounts" holders. Thanks to this function it is possible to:

- reserve a certain amount for cash withdrawals, in order to avoid unavailability of cash when credit institutions need to withdraw it
- manage in real-time the parameters in order to set and change the amount reserved for cash withdrawals (through the ICM)

The cash reservation function can be activated for the current business day or for future dates (on the basis of a daily value or a default value). In the latter case, the liquidity is reserved for cash withdrawals at the start of the relevant business day. In any case, if the balance is lower than the amount reserved for cash withdrawals, the liquidity available on the account will be reserved and the rest of the amount reserved for cash withdrawals will be blocked when the account is credited until the total amount reserved reaches the level of the reservation request.

At the cut-off time for the cash reservation function the liquidity reserved becomes available for any kind of payment.

Other forms of reservation (eg for urgent payments) are not possible. Furthermore, no liquidity saving features are available.

Account management

As regards the account management:

- One institution is allowed to open several accounts in the HAM. However, each account is identified by a different BIC-11. As an exception, for CB customers it is possible to identify with the same BIC-11 accounts opened at different CBs. The group of accounts function is not available.
- A co-management function between the RTGS account held by the direct participant (the co-manager) and the HAM account of another credit institution (co-managed account) is possible. The co-manager is able to manage the account of the co-managed, having also the possibility of debiting the HAM account. In this case, the co-management function is available also on a cross-border basis.

The aim of the co-management function is to allow credit institutions (with "HAM account") to manage directly minimum reserve but to delegate cash-flow management to other credit institutions.

No co-management function is available for "CB's customers accounts". For "CB's customers accounts" a specific function is provided to CBs in order to manage a liquidity threshold and to enable them to invest possible excess funds on behalf of their customers.

Queue management

HAM provides a centralised queuing mechanism for transactions temporarily without cover. The main features of the queuing system are as follows:

- queued transactions are settled according to a first-in-first-out (FIFO) principle whenever an increase in the liquidity available on the accounts occurs
- all transactions have the same priority except for cash withdrawals, which benefit from a pre-defined higher priority in the queuing mechanism in order to avoid to be blocked by "normal" transactions in presence of funds reserved for them
- cancellation of transactions is carried out, only in case of errors, by each CB on behalf of its credit institutions/customers; the latter are not authorised to cancel transactions pending in the queue

- "CB's customers account" holders can ask to their CB to change, via ICM, the order of queued transactions

No gridlock resolution mechanism is available (only queue scanning).

Operational day management

HAM operating days are the same as for the PM.

HAM follows also the same opening and closing time of the operating days of the PM, both under normal and exceptional circumstances; other few cut-off times are common to HAM and PM (eg cut-off for customer payments).

Furthermore, specific cut-off times can be added by each CB for internal reasons.

An automatic and flexible agenda is available (events, triggers, dependencies). The agenda can be changed on request; for example it is possible to postpone automatically all the events starting from a certain point in time.

Interaction with HAM and reporting

Through the ICM credit institutions/CB's customers have real-time access to certain information and functionality (see chapter 3.2.3 ICM access to HAM, page 83).

In general, participants have access to real-time information through the ICM (pull mode); optionally real-time notifications (MT 900/MT 910) can be sent via push mode.

Furthermore, end-of-day statements (MT 940 or MT 950) are sent in push mode.

End-of-day transfers of all relevant data to the CRSS platform are provided for the production of statistical reports.

Administration

As regards the administration of the system, for the CBs the following functions are provided:

- Different authorisation profiles (ie reading vs updating)
- Audit logs of all critical events and interventions (ie cancellation of queued payments, modification of daily time schedule, etc.)

CBs have access to all the functions available for "HAM account"/"CB's customers accounts" holders; furthermore, they are able to:

- Open/close accounts in the HAM
- Manage the TARGET2 directory
- Manage the co-management directory
- Manage the threshold for "CB's customer accounts"
- Exclude participants
- Create/modify daily time schedule
- Execute transactions on behalf of the account holder in contingency situations
- Produce reports
- Make inquiries on message received/sent
- Manage queued transactions on behalf of their customers
- Cancel queued transactions on behalf of their credit institutions/ customers
- Send broadcasts
- Use monitoring tools (operational, liquidity and technical monitoring) in order to verify the smooth functioning of the system with reference to the respective credit institutions

Obviously each CB will be able to manage only the accounts of its own credit institutions/customers.

Exclusion of a HAM participant

In HAM the exclusion becomes effective immediately and payments to be booked on the HAM account of the excluded participant can only be executed under the control of the related CB.

Nevertheless, due to the low number of transactions that are expected to be processed in the HAM, the operations pending in the waiting queue will be rejected. If they are deemed valid, they have to be re-entered by the CB on behalf of the excluded participant as well as on behalf of other participants in the SSP.

5.2 Reserve Management (Module) (RM)

General features

The Reserve Management Module (RM) is a common standardised optional module which enables the CBs to perform certain functionality for the management of reserve requirements.

Although the functions associated with minimum reserves are not core services of the SSP, they can be offered in line with the request of some countries.

The choice to adopt RM or to manage locally minimum reserve is up to the individual CB. For the local management specific external application have to be developed by CBs.

The RM is accessible exclusively through a SWIFTNet interface and, from a technical point of view, is fully integrated with the other SSP modules in order to ensure a seamless "connection".

The RM can interact with PM, HAM and PHA.

The RM does not manage any kind of accounts; it only receives - automatically at the end of day - from PM, HAM and proprietary home accounts, the end of day accounts' balances in order to manage minimum reserves.

Commercial banks can, normally just before the end of the day, transfer excess funds to the overnight deposit or have access to the marginal lending "on request". At the end of the day the RM receives the end-of-day account's balance only after the cut-off time related to the overnight deposit and the marginal lending.

The RM mainly:

- verifies the minimum reserve fulfilment
- calculates the interest to be paid to credit institutions for minimum reserves
- calculates the penalties related to the reserve requirements infringement to be submitted to the relevant CB’s validation process

- notify the CBs on the minimum reserve fulfilment, due interest and possible penalties for the pertaining credit institutions
- create automatically the related credit and debit instructions (the latter only after the CB validation process) and send them to PM or HAM (at the end of the maintenance period). No credit and debit instructions will be sent to PHA.

A credit institution using RM can maintain its reserves either on a PM account or on an HAM/PHA account, but not on both.

Interaction with RM

Through the ICM credit institutions have access to their respective information (for further information, see chapter 3.2.5 ICM access to RM, page 85).

Administration

The same information is available for CBs. In addition, the respective CBs, via the ICM, are able to:

- Manage the list of the credit institutions subject to reserve requirements (including the MFI grouping and indirect relationships)
- Enter the value of the minimum reserve (both application-to-application and user-to-application mode)
- Manage the validation process for the calculation of the penalties related to the reserve requirements infringement
- Enter the minimum reserve remuneration and penalties rates (common parameters for all CBs that can be inserted by a single point that could be the SSP Operational Team)
- Use monitoring tools to have access to summarised information concerning minimum reserves (eg Minimum reserve, Running average and End-of-day balances at the system level)

Indirect reserve

The RM also offers the possibility of managing indirectly the reserve requirement (the minimum reserve of a credit institution is deposited by another credit institution) according to the "General Documentation on Eurosystem monetary policy instruments and procedures". The information needed for the management of this function, available within the RM, is:

- the list of credit institutions that decide to fulfil indirectly minimum reserves
- the indication of the credit institution selected for its management

On the basis of this information the RM is able to verify the fulfilment of minimum reserves.

Pool of reserve accounts of a MFI

Another possibility envisaged within the RM is the so-called "pool of reserve accounts of a Monetary Financial Institution (MFI)" which envisages the fulfilment of reserve requirements for a group of participants (which are part of the same MFI).

In this case, the fulfilment is evaluated on the basis of the sum of balances of all the participant accounts (either in PM, HAM or in PHA) belonging to the MFI, even if the minimum reserve is associated only to one account. In order to be able to consolidate the balances when receiving the end-of-day balance from the HAM or the PM, the RM only needs to know the list of participants accounts which are part of the same MFI. The consolidation can be done also for MFI holding accounts both in PM and HAM. No consolidation is possible on a cross-border basis.

At the end of the maintenance period the accrued interest are credited on the account associated to the minimum reserve indicated by the MFI. The same account is debited in case of infringement penalty, once validated by the relevant CB.

It is not possible for the single participants to have access to both functions "pool of reserve accounts of a MFI" and indirect reserve management. As a consequence participants belonging to the same MFI and availing themselves of the minimum reserve "pooling" functionality cannot make use of the indirect reserve management.

5.3 Standing Facilities (Module) (SF)

General features

The Standing Facilities Module (SF) is a common standardised optional module which enables the CBs to manage standing facilities (overnight deposit and marginal lending).

The choice to adopt this module or to manage locally standing facilities is done for each country by the respective CB.

The SF is accessible exclusively through a SWIFTNet interface (only via ICM) and, from a technical point of view, is fully integrated with the other SSP modules in order to ensure a seamless "connection".

The SF can interact with both PM and HAM. No interaction with proprietary home account is possible.

The SF is able to manage:

- overnight deposit accounts
- marginal lending accounts for marginal lending "on request" (in general needed for the fulfilment of minimum reserve) and automatic marginal lending (automatic transformation of intraday credit in overnight credit at the end of the day)

The collateral management function is managed outside the SSP and under the responsibility of the relevant CB.

Overnight deposit

As to the overnight deposit:

- Credit institutions can transfer, via ICM, liquidity from HAM or PM to the SF. It is also possible to activate the reverse transaction in order to reduce the amount deposited in the overnight account.
- The SF calculates the interest to be paid on the overnight deposit and creates the related credit instructions for interest and capital.
- At the start of the following business day, the SF sends automatically the capital amount and the interest to PM or HAM.

Overnight deposit for outs

The overnight deposit function is available also for out countries. The process for the setting up and the refunding is the same as described above but interest is paid on a monthly basis instead that on a daily basis.

Considering that interest can be credited not the first business day of the following month but some days later, they are inserted within warehoused payments, with settlement date five business days later. The respective out CB has the possibility to check the interest calculated and to cancel them from the warehoused payments if the calculation is not correct.

As regards the liquidity transfer from PM/HAM to SF, a control is in place in order to verify that the total amount envisaged for each country is not exceeded. Each CB decides whether the access to the function is allowed only for CB on behalf of the credit institution or directly to the credit institution.

Marginal lending "on request"

As regards the marginal lending "on request“:

- Credit institutions deposit collateral to the relevant CB's collateral manager that, after the collateral evaluation procedures, transfers to the SF, via ICM, the information on the granted liquidity.
- The SF transfers the liquidity to HAM or PM.
- The SF calculates the interest to be paid by the credit institution on the marginal lending and creates the related debit instructions for interest and capital.
- At the start of the following business day, the SF sends automatically the debit instructions to PM or HAM.
- After the settlement the PM or HAM notifies the relevant collateral manager that releases the collateral.

In case of errors the SSP operator is able, on behalf of the Collateral Manager, to operate a reverse transaction from PM/HAM to SF.

Automatic marginal lending

As regards the automatic marginal lending facility:

- At the end of the business day, a specific PM function singles out the amount of intraday credit not returned by each credit institution and communicates it to SF.
- The SF verifies, on the basis of the list of participants eligible to make use of standing facilities, whether the credit institution is allowed to access the automatic marginal lending facility; if not, it notifies the spillover to the relevant CB responsible for applying the penalty procedure through an InterAct message.
- If the credit institution is allowed to access the automatic marginal lending facility SF sends a connected payment to PM to transfer the liquidity and simultaneously decreases the respective intraday credit line.
- The SF notifies the transaction to the relevant collateral manager who attributes the collateral already posted as an intraday liquidity guarantee to the marginal lending facility guarantee.
- The SF calculates the interest to be paid by the credit institutions on the marginal lending and creates the related debit instructions for interest and capital amount.
- At the start of the following business day the SF will send automatically to PM:
  - a debit instruction for the interest and
  - a connected payment for the refunding of the capital (debit of the RTGS account and increase of the intraday credit line)
- After the settlement of the capital the PM notifies relevant collateral manager, who attributes the collateral already posted as an overnight guarantee to the intraday credit guarantee.

Interaction with SF

Through the ICM credit institutions and CBs get the necessary information (see chapter 3.2.4 ICM access to SF, page 84).

Furthermore, CBs, via ICM, are able to update a register of participants eligible to make use of standing facilities.

The monitoring tools provided by the SSP allow CBs to have access to summarised information concerning the use of standing facilities (eg balances at system level of overnight deposit, marginal lending "on request" and automatic marginal lending).

6 Functional assumptions and service level requirements

General features

TARGET2 aims to significantly increase performance, resilience and capacity processing, compared to the present situation.

The most important achievements are:

- processing times: 95% of the payments within 5 minutes and the remaining ones within 15 minutes
- availability rate higher than 99.7%
- Recovery Point Objective (RPO) equal 0 and Recovery Time Objective (RTO) less than 1 hour for major failure or disaster (relocation to the sencondary site of the same region)
- RPO less than 2 minutes and RTO less than 2 hours for regional disaster

In addition to the above mentioned general requirements for the design of the system architecture and for the budget estimation the definition of other critical parameters is needed.

Summary of the functional assumptions

In the following table the complete list of these parameters is reported:

Requirements	Value	Remarks
Average number of payments per day	380,000	HAM traffic included
Peak number of payments per day	500,000	HAM traffic included
Peak number of payments per hour	105,000	-
Estimated yearly growth	5 %	-
Number of banks (direct participant)	1,000	-

Requirements	Value	Remarks
Operational hours	01.00 - 22.00	The platform is open for: • normal day trade phase 07.00 - 18.00 • end-of-day activities between 18.00 and 18.45 • settlement of the overnight cycle of AS 18.45 - 06.45 with a technical window between 22.00 and 01.00 when the SSP is closed for daily maintenance • business window to prepare daylight operations between 06.45 - 07.00
Processing time	max. 5 min - 95 % max. 15 min - 100 %	Payments queued for legitimate reasons are excluded
Availability	> 99.7 %	Allowed unavailability (yearly total)

7 SSP infrastructure, availability measures, technical aspects

7.1 General infrastructure

7.1.1 General architecture

Overview

The SSP is based on a centralised architecture, with a high level of redundancy, with the following main components:

- a central processing system (mainframe), for payment and accounting services
- Unix and Windows servers for SSP CRSS services
- a secure wide area network to connect credit institutions, market infrastructures and CBs (SWIFTNet)
- a dedicated network to connect the different processing sites
- system and application software
- front-end systems to interface SWIFTNet Network and the related services
- security systems (firewall, etc.)

Environments

The SSP needs multiple independent processing environments to support development, test & training and live operations. The number of environments fits the application development life cycle. A customer test environment should always have the same software configuration as the live environment.

To ensure the maximum availability of these environments, IT resources are dedicated to the SSP (ie storage, processing power, etc.) without any dependencies on other resources or service not belonging to the SSP.

As the SSP concentrates workload coming from the current distributed TARGET system, the infrastructure guarantees high performance and adequate throughput thanks to a fully scalable architecture. In fact each component mentioned above can increase its capacity in a modular way.

Technical operation

The SSP technical operation is based on an high degree of automation to reduce human operator errors and simplify the manageability of the infrastructure. In addition, the SSP has a good level of controllability and audibility (confidentiality, integrity, identification/authentication and access rights permission).

Rotation

The mainframe based operations is running alternatively in two different regions. In each region two sites are operative: the primary site and the secondary or recovery site.

It should be noted that the SSP offers a single interface to its users, ie they do not recognise in which region a certain module is running.

Moreover, rotation is fully invisible for CBs, users and market infrastructures, ie no configuration changes in SSP users systems are envisaged.

Workload is distributed between the two regions: while region 1 hosts the live environment, region 2 manages the test & training environments and the contingency environment. Periodical swaps between the two regions ("rotation") keep technical and operational staffs always skilled in each region.

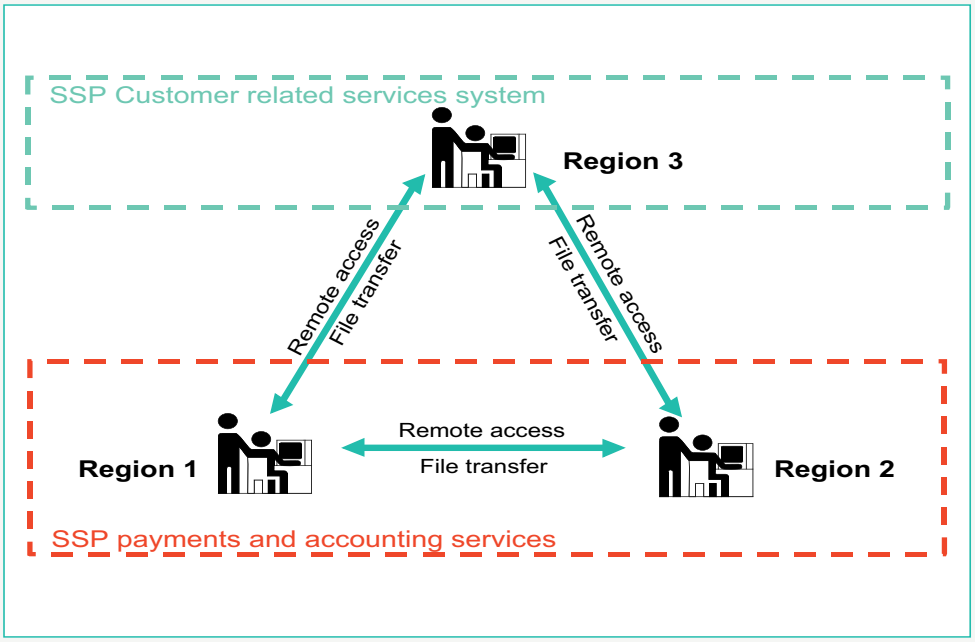
The system and the application software are kept updated in the two regions by means of hardware feature (asynchronous remote copy), so that after the rotation the system will restart with the same customisation (ie naming convention, security policies, management rules, etc.).

A third region is dedicated to the provision of services reserved for CBs, which are hosted on the CRSS platform.

The three regions are connected by a dedicated network with adequate bandwidth that guarantees file transfer services and remote copy of data from one region to the other.

SSP architecture - dedicated network

The architecture of the dedicated network illustrates the following slide:



Security

The SSP will be fully compliant with the TARGET Security Requirements and Controls (TSRC) established at the Eurosystem level. In particular security is managed at the host and network interface level.

The SSP perimeter defence is built by using network firewall systems to filter the communication and log the network access.

7.1.2 The SWIFT Interface

Overview

The SWIFT Interface includes the SWIFTNet network and the hardware and software front-end infrastructures acceding SWIFT services.

SWIFTNet is a TCP/IP network with the following characteristics:

- high performance and availability
- high security (at the transport level (VPN) and session level)
- Public Key Infrastructure and certificates management for user identification and strong authentication
- data confidentiality (by means of cryptography)
- store/forward services required to retrieve eventually lost messages
- scalability

For the payments information exchange, the SSP uses the SWIFTNet FIN service as the current TARGET system. For the information and control services, the SSP uses the SWIFTNet services ("InterAct", "Browse" and "FileAct"), expected to become standard in world-wide financial markets. In case of the ASI, the SWIFTNet services InterAct and FileAct are used.

7.2 Business continuity

Overview

Business continuity paradigm has influenced the SSP infrastructure design greatly. This is particularly the result of the lessons learned from the tragic events of 11 September 2001. In particular, the SSP is able to perform tasks under abnormal circumstances and manage the failures that require on-site recovery, alternate site recovery, and alternate region recovery.

Also the TARGET users have strongly requested the enhancement of the availability measures, proposing three major areas of intervention - availability, backup capabilities and contingency processing - in which the performances of TARGET have to be improved compared to the current situation.

The requirements for service continuity, performance, availability, resilience and security of the SSP are higher compared to those of the current distributed systems since a service interruption would affect a large number of users and institutions.

TSRC

As stated in the TARGET Security Requirements and Controls (TSRC), business continuity measures in the SSP will ensure that:

- critical payments (as commonly defined by the ad hoc TMWG/TWG sub-group) are processed within 30 minutes and all other payments are processed with the same value date
- the operational day ends with a maximum delay of 2 hours
- the sites have different risk profiles
- the secondary region has to re-start within two hours (without considering the decision-making time the duration of which will be defined at a later stage)

As a result, the infrastructure of the SSP will be based on cutting-edge technology for business continuity measures. In any case, the SSP will be able to process the abnormal peak workload due to a temporary stop without delay.

As regards to "logical" disaster due to cyber attacks (viruses infection, denial of services, etc.), the SSP approach is based on incident prevention and management. This is addressed by technical (firewall) and organisational measures (security policies).

The resumption of critical activities in the aftermath of a disaster may be hampered by the unavailability of key staff. Therefore, adequately skilled staff must be available in all circumstances.

Recovery classification

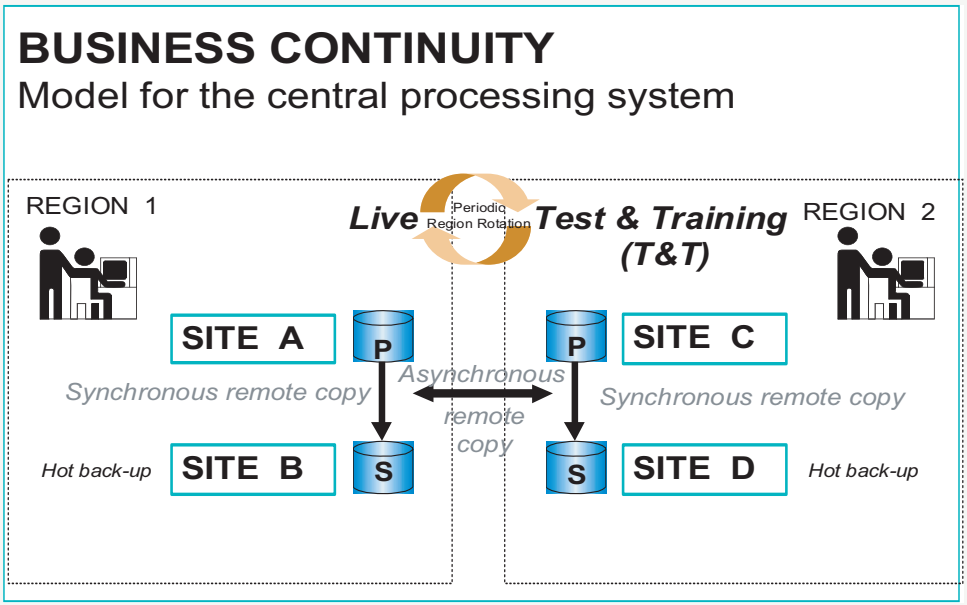
In terms of recovery classification, three types of interruption are defined:

Type	Explanation
Short continuity failure	Short service interruption (eg generally the cause may be component failures, a system reboot, or a line failure; these problems may typically be solved at the primary site). According to the TSRC, the maximum acceptable occurrence of short failures is one hour six times a year. In order to bridge this time, very critical payments have to be processed via contingency measures within 30 minutes upon arrival.
Major failure or disaster	A serious service interruption (eg disruptions caused by fire, flood, terrorist attack or major hardware/telecommunication faults). Those events require the activation of an alternative site.
Regional disaster	A "wide scale regional disruption" that causes severe permanent interruption of transportation, telecommunication, power or other critical infrastructure components across a metropolitan or a geographical area and its adjacent communities that are economically integrated with it; or that results in a wide-scale evacuation or inaccessibility of the population within the normal commuting range of the disruption's origin.

The business continuity model proposed for the SSP payments and accounting processing services should be able to face short continuity failure, major failure and regional disaster.

Recovery of the central processing system

The proposed model for the PAPSS based on two regions/four sites (two sites for each region):



Intra-region recovery

In each region the two sites are located at a distance of some kilometres and connected by means of fibre optical channel. The two sites are fully equivalent; the same technological resources are installed in each centre: ie CPU, storage, network interface, software, etc.; differences could be acceptable in the basic logistic like UPS, air conditioning, plants, etc. The recovery within a region is assured by synchronous remote copy (SRC) activated on the whole SSP environment between the two sites of the same region. The SRC guarantees real-time data updates in both sites; it means that each write operation is completed only when both sites are updated.

Note: Performances are delayed due to data transmission and remote updates.

Intra-regional recovery can last at the most 1 hour (without taking into account decision-making time) with no loss of data updates.

During normal operation, SSP live environment is running in one site, while the other site is ready to start. To guarantee the hardware functionality, saving cost and speed up the recovery restart phase, the secondary site could normally host resources for other processing activities. Furthermore, at the secondary site backup locations for the staff will be available. Besides, it will be possible to operate in both SSP sites on a remote basis.

Inter-region recovery

Recovery of a regional disaster is based on region sites located at long distances from each other (hundreds of kilometres) having a different risk profile. As in the intra-region recovery, the sites of the two regions must be fully equivalent, but differences in logistics could be acceptable. In particular recovery of activities and processes during a wide-scale regional disruption calls for the establishment of out-of-region arrangements for operations and the related personnel and necessary data to support such an activity. The objective of establishing out-of-region arrangements is to minimise the risk that primary and secondary sites and their respective labour pools could be impaired by an individual wide-scale regional disruption. Out-of-region sites should not be dependent on the same labour pool or infrastructure components used by the primary region and should not be affected by a wide-scale evacuation or the inaccessibility of the region's population. As consequence, it could be necessary to operate from the second region for quite a long time, therefore a high level of system availability should be guaranteed in the second region, too.

Inter-region recovery will last less than 2 hours (without taking into account decision-making time).

Asynchronous remote copy

Due to the long distance, the recovery from one region to the other is possible only by asynchronous remote copy (ARC), activated on the whole SSP environment. The ARC cannot guarantee real-time data updates in both regions, as each write operation can be completed in the active region while the same update is still in progress within the other region, therefore, at the same time, data in the two regions may be not identical.

As write operations in the remote region are asynchronous, it is possible that some data updates are lost in the remote region if a regional disaster occurs. The amount of lost updating data depends on the network bandwidth, the workload and the disk technology used. In order to restart the service, with consistent and updated data, adequate procedures to retrieve and process missing FIN messages from SWIFT are available.

Staffing

The availability of skilled personnel with technical and operational background is mandatory. In order to face regional disaster recovery, it is necessary to have adequately trained staff located at both regions to meet recovery objectives. Periodical live environment exchanges between the two regions (eg every six months) are necessary to maintain skilled personnel in both regions (region rotation). This is a powerful way to guarantee the alignment between infrastructures of both regions and to maintain skilled and prepared staff in each region. Considering the operational risks associated with the region rotation, the organisational and procedural arrangements of the rotation process will be investigated in-depth.

Recovery of CRSS

The CRSS as supportive element of the PAPSS is less time critical than the PAPSS components, business continuity model should be able to face short continuity failure and major failure; so it is based only on intra-region recovery. This procedure uses a daily batch data transfer from primary to secondary site. In the case of a regional disaster that will cause an unavailability of the CRSS, the time-critical components of SSP are able to operate fully without them.

Test

Periodic tests are planned to verify the accuracy of recovery procedures. Testing of internal systems alone is no longer sufficient. It is also mandatory to test backup facilities with respect to markets, core clearing and settlement organisations and service providers with a view to ensuring connectivity, capacity and integrity of the whole system.

7.3 Contingency measures

Overview

The recovery procedures set up in the SSP are based on the experience of the Eurosystem's central banks in managing their own systems.

The SSP is built on the principle of "no single point of failure", ie the multiplication of technological components to guarantee business continuity even in case of a major disaster like the events of 11 September 2001 (two region four sites approach).

The general principle is: the priority is "business continuity" rather than "contingency".

The idea is to keep service interruptions shorter than the time needed to activate contingency measures, limiting in this way the need to resort to them. The SSP thus elects to take business continuity functions as its main solution to system malfunctioning.

Nevertheless, the SSP developed contingency procedures since:

- The redundancy of technological components may not always be the solution, as in the case of software problems, which could also occur in the alternate site (or the alternate region).
- They are needed to cover the time required for the activation of the alternate site (or the alternate region) in order to process very critical payments (CLS payments, EURO1 settlement payments and CCP margin calls).

Scenarios

The different scenarios have to cope with the unavailability of:

- a credit institution system
- an ancillary system
- one or more CBs
- the whole SSP

In each scenario different sub-scenarios can be considered. For each of them as a first step standard measures can be activated and only as second step (if standard measures are not available or not sufficient) contingency procedure have to be used.

Unavailability of a credit institution

The system of a direct PM participant could break down due to a failure and could be unavailable for the rest of the business day.

As a consequence, the participant could accumulate liquidity on its RTGS account due to the fact that other SSP participants continue to send him payments while the participant fails to comply with its payment obligations.

The direct PM participant should be able to settle, at least, (very) critical payments in order to:

- distribute the liquidity accumulated on its account
- minimise interest payments due and claims for damages against the other participants

In this scenario two different sub-scenarios are possible:

- a breakdown of the PM participant's system
- a failure in the SWIFTNet connection

As a first step, the following measures can be activated in the two sub-scenarios:

- a backup system in case of a breakdown (in line with the business continuity requirements for major players)
- a multiple access to SWIFTNet in case of a failure in the SWIFTNet connection

As regards the contingency measures:

- in case of a breakdown, the possibility for the participant to use the backup payments function through the Information and Control Module (SWIFTNet Browse, SWIFTNet InterAct) has been envisaged

- in case of a failure in the SWIFTNet connection the participant can ask the respective CB, according to the national practices, to input systemic important payments on its behalf using the backup payments functions on the SSP.

Furthermore, the co-operation among credit institutions (mutual backup with another participant) is encouraged.

Unavailability of an AS

For the AS the same sub-scenarios foreseen for credit institutions are envisaged (system breakdown, failure in SWIFTNet connection).

The measures to be activated are also the same (backup system, multiple access to SWIFTNet).

As regards the contingency measures, bilateral agreements between the ancillary system and the involved CBs have to be reached (eg between ECB and CLS and between ECB and EBA) according to a set of standard procedures to be defined.

Furthermore, special agreements should be reached for the ancillary system settling in more than one jurisdiction.

Unavailability of one or more CBs

The unavailability of a CB has to be considered in relation to the different roles played:

- as a normal participant
- as a liquidity provider

In both cases, manual functions are available in the ICM in order to:

- input the CB critical payments
- provide the liquidity needed for the smooth functioning of the system

Should the access to the ICM be unavailable, all the above mentioned transactions (payments and liquidity injection) can be typed in by the SSP Operational Team on behalf of the affected CBs.

In case of SWIFT unavailability at country level, the first option is to activate SWIFT alternative links, according to the arrangements established at national level.

If this solution is not possible the contingency solution envisages the manual input (through the ICM) of (very) critical payments by the SSP Operational Team on behalf of the affected CBs.

Unavailability of the whole SSP

Also the unavailability of the whole SSP envisages two different sub-scenarios:

- Unavailability of the central component of the SSP
- General unavailability of SWIFT

In case of unavailability of the central component of the SSP (the SSP is not running and there is no visibility of the account balances), the business continuity approach adopted within the SSP envisage the activation of the alternate site (intra-region recovery) or of the alternate region (inter-region recovery).

During the time needed for the activation of the alternate site/region the Contingency Module (CM) can be used in order to settle (very) critical payments (eg CLS).

It is important to underline that only in this scenario - when the whole European banking community is not able to settle payments in TARGET2 - the use of the Contingency Module is envisaged.

In case of general unavailability of SWIFT, the potential impact goes beyond the scope of the contingency solution that can be provided by the SSP. Appropriate communications channels will be established with SWIFT, in order to follow the resumption activities and to inform the SSP participants accordingly.

The Contingency Module (CM): overview

The Contingency Module (CM) is a common mandatory tool for each CB joining the SSP and it is operated at CB level.

The CM runs in the region not active when the incident occurs. It is an independent module which includes all the functions needed to access the SWIFTNet services.

Considering the high level of resilience provided by the SSP, the use of the CM is only envisaged for the processing of (very) critical payments in specific situations (unavailability or inaccessibility of the SSP components, time needed for the activation of the alternate site/region lasts too long).

The CM ensures the processing of a limited number of (very) critical payments. The concept of (very) critical payments in TARGET2 defines payments which if processed with a delay could cause systemic risk.

The Contingency Module (CM): main features

The main features of the CM are:

- The presence of separate accounts in the CM (outside the SSP) (static data are updated every day from repository) in order to avoid time-consuming procedures in the acquisition by the PM of the transactions settled in contingency mode.
- No liquidity transfers from the PM to the CM will take place.
- Starting balances are equal to zero; fresh liquidity is injected in the CM accounts by the CBs using SWIFTNet Browse/InterAct.
- Payment instructions are received by the CBs using local procedures (eg fax).
- The CBs are responsible for selecting, receiving and inserting in the CM the (very) critical payments via a transaction using SWIFTNet Browse/ InterAct.
- After the restart of the PM, in order to set at zero CM's accounts and to transfer the respective liquidity to the PM, the amount of the balances of the payments settled in the CM's accounts are automatically sent to the PM. It is up to the CBs to inform credit institutions after the restart of PM services, that the balances of the CM's accounts are booked in the PM.
- Information on the current balances, transaction status and status of contingency is available to the CBs using SWIFTNet Browse/InterAct

The CM is operated by each CB for its own credit institutions; under exceptional circumstances, eg in the event of a contemporary unavailability of a CB (SWIFT unavailability at country level), it can be operated by the SSP Operational Team.

Accounts of CM are normally blocked and it is not possible to settle any transactions. The CM is activated by the SSP Operational Team on request of the TARGET2 crisis management body.

Contingency measures summary

Unavailability of a credit institution		
Event	**Standard measures**	**Contingency measures**
System breakdown	Activation of backup systems	Mutual backup Backup payments function through ICM (SWIFTNet Browse, SWIFTNet InterAct)
No access to SWIFTNet	Multiple access	Mutual backup Backup payments function through the respective CB (SWIFTNet Browse, SWIFTNet InterAct)

Unavailability of an AS		
Event	**Standard measures**	**Contingency measures**
System breakdown	Activation of backup systems	Special agreements have to be reached
No access to SWIFTNet	Multiple access	Special agreements have to be reached

Unavailability of SWIFT at country level		
Event	**Standard measures**	**Contingency measures**
Unavailability of SWIFT at country level	Redundant network, activation of SWIFT alternative links	Manual input of (very) critical payments by the SSP Operational Team on behalf of the affected CBs

Unavailability of the whole SSP		
Event	**Standard measures**	**Contingency measures**
General unavailability of SWIFT	Redundant network	None
Unavailability of the central component of the SSP	Activation of alternative sites (intra-region or inter-region)	Use of the CM

7.4 SWIFT related issue

Basic features

The TARGET2 system provides to the users a single window approach using the SWIFT network and services.

For the payments information exchange, the SSP uses the SWIFTNet FIN service.

For information and control services, the SSP uses the SWIFTNet services:

- SWIFTNet Browse
- SWIFTNet InterAct
- SWIFTNet FileAct

FIN and FIN Copy

The TARGET2 participant uses for payment purpose the MT 103 and MT 103+, MT 202 and optionally MT 204. On optional basis the participant can receive the FIN reporting messages MT 900/910.

The FIN Copy service is used for settlement purposes. The SSP receives a full copy of the FIN payment messages, and, after the settlement process, authorises the delivery to the receiver of the original FIN message.

SWIFTNet Browse

The ICM module allows the users real-time access to all information on the accounts in a single browser window. The SWIFTNet Browse service enables secure access to the SSP web server.

SWIFTNet InterAct

SWIFTNet InterAct is used in the SSP to provide real-time exchange of instructions with the direct participants and with the ASs.

SWIFTNet FileAct

SSP uses SWIFTNet FileAct when there is the need to exchange a large volume of data (eg distribution of the TARGET2 directory, settlement instruction from AS).

Security

For the access to the TARGET2 services the SSP relies on the security features provided by SWIFT based on Bilateral Key Exchange (BKE) and SWIFTNet Public Key Infrastructure (PKI).

With SWIFTNet Phase 2, Relationship Management Application (RMA) replaces the BKE. Inside the TARGET2 FIN Copy Closed User Groups, the RMA is not compulsory between the users, but it is mandatory for the communication between the participants and SSP.

During the migration period to SWIFTNet Phase 2, in order to avoid for the users the obligation to perform BKE between themselves, a pre-agreed MAC mechanism has been implemented in all the FIN interfaces. The users must be sure that the CBT has been upgrade with such features. Also in this case the BKE exchange is mandatory with the SSP BICs.

The Role-Based Access Control (RBAC) mechanism controls the end user's access to the ICM functions. It is responsibility of the Security Officers of each participant to assign the available roles to the internal users.

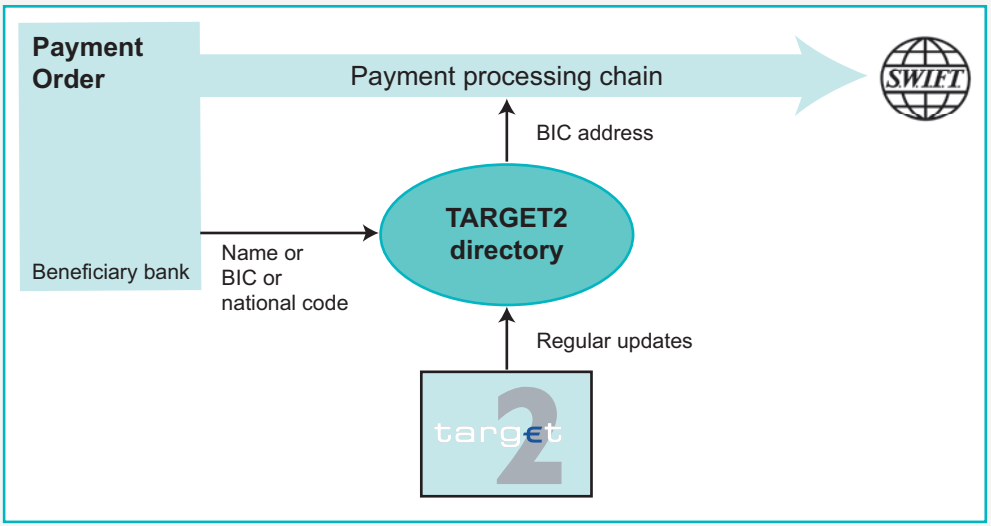
Services Subscribing

Each TARGET2 participant has to subscribe to the relevant SWIFT service according to its own participation profile. Documentation on the registration process to the TARGET2 SWIFT services is available on the SWIFT website.

7.5 TARGET2 directory

Purpose

To support the routing of payments in TARGET2, the needed routing information will be provided electronically in a structured TARGET2 directory. Knowing the beneficiary's BIC, name or national sorting code, the TARGET2 directory delivers the related BIC of the direct participant to be used in the header of a SWIFT message as receiver.



During the migration phase, the TARGET2 directory will also contain the needed information on non-migrated participants (hereafter TARGET1 participants).

Basics

The following rules apply to the TARGET2 directory:

- PM participants (direct and indirect) with a SWIFT BIC or Non-SWIFT-BIC will be issued. However, publication in the TARGET2 directory is not mandatory. Non-publication is subject to an additional fee.

- Direct PM participant's correspondents can be listed in the TARGET2 directory. However, only one relationship direct participant-correspondent can be registered for a correspondent.
- Central bank customers having an account in the HAM of the SSP or in a proprietary home accounting application (PHA) of the central banks can be registered in TARGET2 directory and addressed through the central bank where the preferred HAM or PHA account is kept.
- It is possible for a participant to technically communicate with the SSP from different locations including the use of BICs different from the BIC linked with the RTGS account.
- Every participant's SWIFT BIC/Non-SWIFT-BIC is only listed once, while addressee's and account holder's ones may occur several times with reference to different participants.
- The publication of an indirect-direct or correspondent banking relations does not prevent to route payments to another direct participant as mentioned in the TARGET2 directory when a different routing is known (ie from Standard Settlement Instructions).
- During the migration process also TARGET1 participants (ie which are linked to an RTGS system not yet migrated to TARGET2) are published like indirect participants of the SSP structure.

The TARGET2 directory contains the following data:

- **BIC:** Participant's BIC
- **Addressee:** BIC to be used in the header of the SWIFT-CUG message
- **Account Holder:** BIC identifying the settlement bank
- **Institution Name:** Participant's company name
- **City Heading:** Participant's establishment
- **National Sorting Code:** Participant's national sorting code
- **Participation Type:** Type of participation of the participant to TARGET2 (eg direct, indirect ...)

Distribution: weekly update

The timely distribution of the directory updates is a crucial issue in order to allow each participant to be able to properly send and receive payments. Taking into account the substantial lack of concrete business cases demanding an immediate update of the directory, a weekly update cycle with a four day step approach has been envisaged. On Wednesday the SSP automatically set-up the new version overnight taking into account, once a month, the changes coming from the update of the BIC directory. During Thursday the pre-release is available to CBs for the final changes and validation by CBs till 18.00. Overnight the final version is broadcast via SWIFT FileAct to registered members (changes only). Finally on Friday the new version is available to CBs, credit institutions and ASs.

Delivery

The SSP provides the TARGET2 directory as an ASCII file in two ways:

- Push mode:
  Each Thursday after the closing of the operating day the SSP sends to all registered users a file that contains only the changes in respect of the previous version of the directory. This is the preferred way to get an automated TARGET2 directory loading process for routing purpose.
- Pull mode:
  At any time during the service hours a participant can request to download either a file that contains only the changes with respect to the previous version of the directory or the full content of the latest version available of the directory. The use of the full download is appropriate only for the initial loading of the directory or in case there is a need to rebuild it. The download can be done by using the generic functionality of the SWIFTNet FileAct service.

8 Operational model

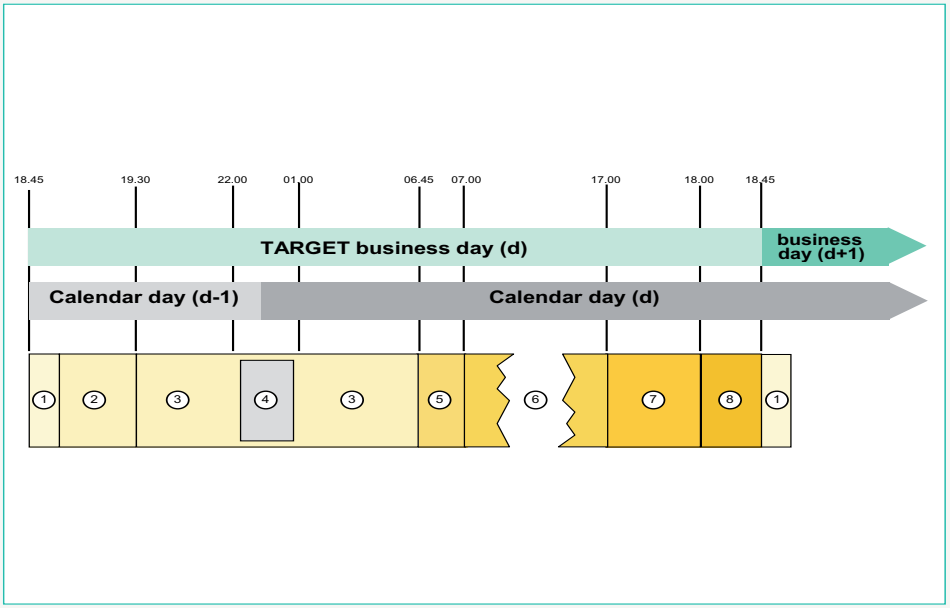
8.1 Operating times

Operating times

The SSP complies with the general rules defined at the Eurosystem level for the TARGET calendar and operating times.

All the cut-off times are defined in the system as parameters, in order to cope with abnormal situations and future changes in the business environment.

The chart below describes the major stages of the business day in the SSP:



A business day

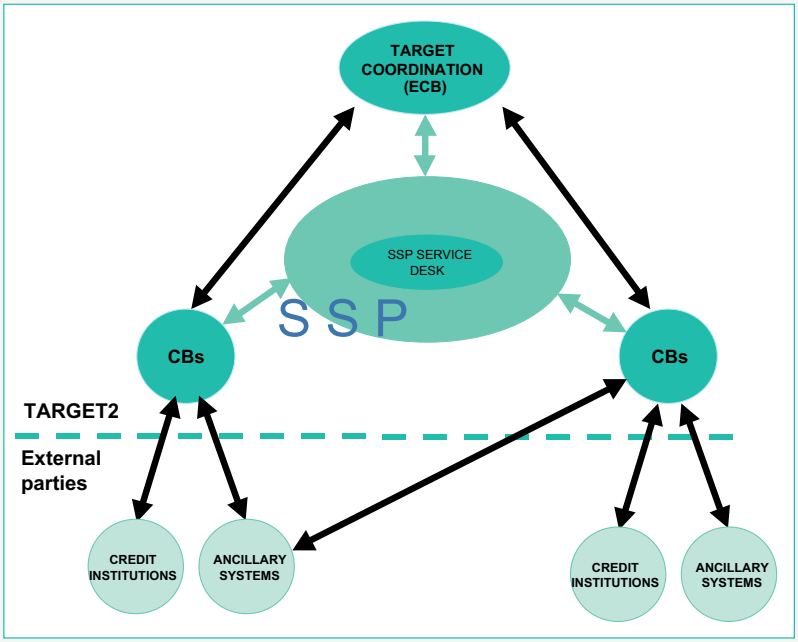
Business day	TARGET working day	Phase	Description
d	d-1	**1** 18.45 - 19.00	Start-of-day processing (This period starts fifteen minutes later on the last day of the minimum reserve period.)
		2 19.00 - 19.30	Provisioning of liquidity (This period starts fifteen minutes later on the last day of a minimum reserve period.)
		3 & 4 19.30 - 06.45 (interrupted by a technical maintenance phase from 22.00 till 1.00)	Setting aside liquidity and settlement of AS night-time processing (AS settlement procedure 6 only).
	d	**5** 06.45 - 07.00	Business window to prepare daylight operations • activation of standing orders for "highly urgent" and "urgent" reservations
		6 & 7 07.00 - 18.00	Day trade phase (payment business and AS settlement procedures 1 - 6)
		8 18.00 - 18.45	End-of-day processing

8.2 Customer contacts

Appointment of duties within the TARGET2 environment

Smooth and stable operations require efficient technology as well as swift and effective communication between the parties involved.

The following diagram shows the communication relationships within the TARGET2 environment:



Term	Explanation
CBs operational team	Entry points for the SSP users
SSP Service Desk	CBs second level of support regarding day-to-day operation
TARGET2 co-ordination	General co-ordination

Contact through the TARGET2 participants

The CBs are responsible for the Customer Relationship Management as well as day-to-day operations.

The most important duties are:

- Help desk functions
- Management of the emergency procedures
- Basic questions
- Contacts with users
- Follow-up consultation
- Test co-ordination
- Training co-ordination
- Application procedures
- National documentation

In the ICM, a function to view the broadcasts sent by the CBs during the business day is available.

TARGET2 status information

The TARGET2 status information function provides the users with information on whether TARGET2 is fully functioning. If this is not the case it is indicated which component is facing what type of service disruption and the expected time to resume normal operations.

For availability purposes, TARGET2 status information is spread to the participants via different channels in a synchronised way:

- ICM
- wire services such as Reuters

Adequate backup and manual contingency procedures ensure that information can be disseminated at all times.

9 Migration issues and test procedures

General remarks

In December 2004, the Governing Council of the ECB opted for a country window approach, allowing TARGET users to migrate to the SSP in different windows and on different pre-defined dates. Each window consists of a group of CBs and their respective national banking communities.

General migration scenario

The changeover to the SSP can only take place as a country big bang. It means: a CB, the future direct participants of the country in question (the respective remote participants included) and the ancillary systems that wish to settle in the SSP from the outset must switch to the SSP at the same time.

Responsibilities of the CBs

Each individual CB is responsible for supporting and monitoring the migration of its customers.

Country migration windows

In order to limit the migration risk it was decided to group countries participating in three different migration windows. The number of migration groups is limited to four. TARGET users are only be allocated to the first three groups, while the fourth one is reserved as a contingency measure.

The composition of the migration groups and the change over dates are shown in the table below:

Group 1	Group 2	Group 3	Group 4
19 November 2007	**18 February 2008**	**19 May 2008**	**15 September 2008**
Austria	Belgium	Denmark	Reserved for contingency
Cyprus	Finland	Estonia	
Germany	France	ECB	
Latvia	Ireland	Greece	
Lithuania	Netherlands	Italy	
Luxembourg	Portugal	Poland	
Malta	Spain		
Slovenia			

Country migration model

The SSP offers two options for the national migration to a CB and its banking community: the "Phased Approach" and the "National Big Bang".

- "Phased Approach"
  Some pieces of the current infrastructure co-exist with the SSP for a period of time, in order to allow for a smoother migration. Some RTGS transactions are settled in the SSP from day one, while the rest of the business continues to be settled on proprietary home accounts for an interim period lasting a maximum of four years (the "transition period").
- "National Big Bang"
  All current systems are dismantled the moment the central bank migrates to the TARGET2 single shared platform (SSP). All payment transactions are included in the SSP from day one, meaning that all migration actors have to be prepared to settle directly in the SSP from the very beginning.

Scope of test procedures

Test procedures make a distinction between:

- Procedure applicable at the occasion of the migration from TARGET1 to TARGET2
- Procedures applicable at country level when a whole national banking community joins TARGET2, outside of the migration period
- Procedures applicable at participant level when a new participant joins the TARGET2 outside of any country connection or when an existing participant wants to change any of its major components
- Procedures applicable to changes to the SSP

User test environment

For test and training purposes a separate SSP user test environment will be available, with the same functionality as the production environment.

Glossary and Abbreviations

Note: Terms and abbreviations are listed in alphabetical order. In the case only the abbreviation is used in the General Functional Specifications the term is explained afterwards, otherwise a reference is made.

3CB

Banca d'Italia, Banque de France, Deutsche Bundesbank

A

A2A

Application-to-application

In this approach, communication is directly between applications customer's back office and the ICM of the SSP. Information and messages can be transferred to in-house applications and used further. Control activities are also automated.

Adjustment Balance

End of day balance of the current day which is necessary to fulfil minimum reserve under the condition that all following end of day balances are exactly the minimum reserve.

Algorithm

An algorithm is a mathematical method to provide a smooth, fast and liquidity saving resolution of the payment queue, for example by taking offsetting payment flows into account.

Glossary and Abbreviations

Ancillary system	Ancillary systems are: • retail payment systems (RS) • large value payment systems (LVPS) • foreign exchange (FX) systems • money market systems • clearing houses • securities settlement systems (SSS)
Ancillary System Interface	The Ancillary System Interface (ASI) is a standardised interface to the Payments Module (PM) which can be used by ancillary systems (ASs) to perform the cash clearing of their business.
ARC	Asynchronous Remote Copy
AS	See ancillary system
AS Technical Account	Account offered in TARGET2 for specific use of ancillary systems.
ASI	See Ancillary System Interface
Authentication	The methods used to verify the origin of a message or to verify the identity of a participant connected to a system and to confirm that a message has not been modified or replaced in transit.

Auto collateralisation

The auto collateralisation is a specific mechanism used to provide additional liquidity to the SSS settlement process.

This technique is based on the automatic interaction between the collateral manager, the SSS and the SSP to perform collateralisation functions (eg eligibility checks, valuation of collateral) and the related increase of liquidity.

The auto collateralisation is activated during the SSS settlement process to cope with liquidity shortage of a participant: the collateral to be transferred is automatically selected by the SSS on behalf of the participant based on a specific pre-authorisation.

Two distinct auto collateralisation techniques are currently used by the SSSs:

- firm collateralisation (collateralisation on stock: participants single out the eligible securities that could be used)
- self collateralisation (collateralisation on flows: with securities deriving from the settlement process itself)

Available liquidity

Credit balance on the account plus collateralised credit line for overdraft (if available).

B

Backup payments

Owing to a breakdown a direct PM participant's system may be unavailable for the rest of the business day. In order to avoid liquidity concentration on his account or rather to enable him to fulfil his payment obligations against CLS, EURO1 or STEP2, the respective PM participant has the possibility to make backup payments. Backup payments are initiated via ICM. Two kinds of backup payments are available:

- Backup lump-sum payments are used to redistribute the liquidity that has accumulated on the defaulting participant's account. As soon as the defaulting PM participant is once again able to do so, the original single payments belonging to the backup lump-sum payments previously made are submitted to the PM and the recipients of such backup lump-sum payments have to return the backup lump-sum payments.
- Backup contingency payments are used to fulfil obligations arising from settlement or pre-fund payments on time. The backup contingency payment replaces the original payment.

Batch

A group of orders (payment orders and/or securities transfer orders) to be processed as a set.

BIC

Bank Identifier Code

BIC-8

The first 8 characters of the BIC, when used for addressing purposes, are called destination.

BIC-11

In addition to the first 8 characters of the BIC, an optional branch code of 3 characters is used to identify any branch or reference of an institution.

BIC directory	Directory published by SWIFT. It contains the Bank Identifier Codes (BIC) of the credit institutions.
Bilateral Key Exchange	A SWIFT service for the exchange of bilateral keys between correspondents over the SWIFT network, using enciphered data carried with dedicated messages.
BIS	Bank for International Settlements
BKE	See Bilateral Key Exchange
Blocked amount	In PHA certain amounts may be blocked for future debits, eg in the context of bulk payments. A blocked amount also refers to funds on a sub-account notified to an AS for settlement of the respective AS.
Broadcast	Information message simultaneously available to all or a selected group of SSP participants.
Business case	Any kind of order of a participant (eg liquidity transfer, payment etc.) and all the associated messages (eg MT 096, MT 097, ACK from SWIFT, …).
Business continuity	Payment system's arrangements which aim to ensure that it meets agreed service levels even if one or more components of the system fail or if it is affected by an abnormal external event. Include both preventative measures and arrangements to deal with contingencies.

Business day	The business day in PAPSS starts at 18.45 (d-1) with the Start-of-day processing and ends at 18.45 (d) with the completion of the end-of-day processing.
C	
Cash clearing	A method for clearing futures contracts in which positions are periodically marked to market and resulting obligations are satisfied by cash payments, known as variation margin.
CB	Central bank
CB customer	Entity that is not allowed to open accounts in PM according to TARGET Guideline (eg correspondent bank not located in EEA).
CB customer's account	Account with a CB in the Home Accounting Module, belonging to an entity that is not authorised, according to TARGET Guideline, to have an RTGS account.
CBT	SWIFT Computer Based Terminal
CCP	Central Counter Party An entity that interposes itself between the counterparties to the contracts traded in one or more financial markets, becoming buyer to every seller and the seller to every buyer.
CI	See credit institution

Clearing	The process of calculating the mutual obligations of market participants for the exchange of securities and money. It may include the process of transmitting, reconciling and, in some cases, confirming payment or securities orders.
Clearing house	An entity hosting a clearing system, which consists of a set of rules and procedures whereby financial institutions present and exchange data and/or documents relating to funds or securities transfers to other financial institutions at a single location. The procedures often also include a mechanism for the calculation of participants' mutual positions, possibly on a net basis, with a view to facilitating the settlement of their obligations in the settlement system.
Closed User Group	A subset of customers grouped for the purpose of their use of the relevant SWIFT services and products when accessing the Payments Module.
CLS	Continuous Linked Settlement Global settlement system for foreign exchange transactions, providing participants with simultaneous processing of both sides of the transaction and thereby eliminating the settlement risk.
CM	See Contingency Module
Co-Management function	The aim is to allow small banks to manage directly their reserve requirements, but delegate cash flow management to another bank. Such a bank has to be a direct participant in the SSP and is the so-called co-manager.

Collateral	An asset or a third party commitment that is accepted by the collateral taker to secure an obligation to the collateral provider vis-à-vis the collateral taker. Collateral arrangements may take different legal forms; collateral may be obtained using the method of title transfer or pledge.
Collateral manager	A system managed by the central bank or by a third party (on behalf of the central bank) that interacts with the SSP in order to manage the intraday credit line in PM and the access to the marginal lending function in the Standing Facilities (Module).
Collateral pool	Assets owned by members of a transfer system that are collectively available to the systems collateral to enable it to obtain funds in circumstances specified in its rules.
Confidentiality	The quality of being protected against unauthorised disclosure.
Connected payment	Payments by a CB or AS to a participant that trigger a change in the credit line of this participant and an immediate debit/credit of its account to compensate the change in this credit line.
Contingency Module	Common mandatory tool for the CBs for the management of the emergency situations in order to process systemically important payments.
Country Code	Two letter code to identify the country where the respective entity is located; eg a country code is used in the SWIFT BIC (digits 5 and 6) of the 8-digit or 11-digit BIC.

CRAKS	Customer Relationship And Knowledge of System. It gathers all services needed to support customer relationship and knowledge of payment systems by the central banks.
CRAKS1	SSP block of services dedicated to CBs and to be used on an optional basis by them, which provides services of queries and reports on historical data.
CRAKS3	SSP service dedicated to CBs and to be used on an optional basis by them which provides support to the CBs in their business relationship with their customers. It consists of the customer support and of the Events & Comments services.
Credit institution	The definition given to a "bank" in the European Union. The First EC Banking Directive defines it as an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account.
Credit line	Maximum collateralised overdraft position of the balance on a RTGS account in PM or on the PHA. The respective participants are informed about changes regarding their credit lines via the ICM. Changes of credit lines will be executed immediately. In case of a reduction of a credit line this change has a "pending" status if the reduction would lead to an uncovered overdraft position. The change will be executed when the overdraft position is covered by the reduced credit line.
Credit transfer	A transfer of funds made on the basis of a payment order or sometimes a sequence of payment orders made for the purpose of placing funds at the disposal of the payee. The payment order may be processed via several intermediaries and/or via one or more funds transfer system.

CRISP	SSP block of services dedicated to CBs and to be used on an optional basis by them which provides billing services.
CRM	See Customer Relationship Management
CROSS	SSP service dedicated to CBs and to be used on a mandatory basis by them which comprises archiving and storage services, files for billing calculation, files for statistics on intraday credit and profiling information. The CROSS is offered on the CRSS platform.
Cross-CB payments	Payments between participants of different CB on the SSP.
Cross-PM payments	Payments between one participant of a CB on the SSP and another participant of an external CB which will migrate later on (use of the interlinking).
CRSS	Customer Related Services System The CRSS is one of the two technical configurations of the SSP (the other is the PAPSS). On this technical configuration the core and optional services reserved to central banks only are totally or partly implemented, ie archiving and other CRSS mandatory services (CROSS), billing optional services (CRISP), query and report optional services (CRAKS1), customer relationship optional services (CRAKS3).
Cryptography	The application of mathematical theory to develop techniques and algorithms that can be applied to data to ensure goals such as confidentiality, data integrity and/or authentication.
CUG	See Closed User Group

Customer	Entity which is not a participant (direct or indirect) and which uses the service of a participant to exchange transactions in the system. The CBs as participants can also have customers.
Customer Relationship Management	Term referring to the management by CBs of customer-oriented information related to participants and customers (CIs, AS, other customers eg CB customers in HAM). The SSP provides in particular two optional modules for customer relationship management: billing optional services (CRISP) and customer relationship optional services (CRAKS3) which are partly implemented on the CRSS platform.
D	
Daylight processing	See Day Trade Phase.
Day Trade Phase	Period of time in PAPSS between 7.00 and 18.00.
DCTN	Delay Closing Time Notification TARGET1 message used as the answer to the DCTR.
DCTR	Delay Closing Time Request TARGET1 message (normally used by the ECB) to delay the TARGET end of day procedure.

Dedicated account	Account in the PM on which dedicated liquidity for ancillary system settlement is held. This can be either a sub-account (interfaced model) or a mirror account (integrated model).
Dedicated liquidity	Liquidity held on a PM sub-account or mirror account to allow the settlement of an ancillary system.
Delivery	Conditional or unconditional transfer of financial instruments by book entry of physical exchange.
Delivery versus payment	A link between securities transfers and funds transfers system that ensures that delivery occurs if, and only if, payment occurs.
Deposit facility	A standing facility of the Eurosystem which counterparties may use to make overnight deposits at a national central bank which are remunerated at a pre-specified interest rate.
Depository	An agent with the primary role of recording securities either physically or electronically and may keep records of the ownership of these securities.
Direct debit	An authorised debit on the payer's bank account initiated by the payee.
Direct participant	A participant in a system that directly carries out transactions with other participants in the system. He can perform all activities allowed in the system without intermediary. In some systems direct participants also carry out transactions on behalf of indirect participants.
DN	Distinguished Name

DVP	See delivery versus payment
E	
EBA	Euro Banking Association
ECB	European Central Bank
ECB Account	See NCB's ECB account
ECB Mirror Account	Account held by the ECB for each CB in the PM on which the bookings done on the NCBs' ECB accounts will be "mirrored".
ECMN	End of Day Check Message Notification TARGET1 message used as the answer to the ECMR (send by the ECB).
ECMR	End of Day Check Message Request TARGET1 message to initiate the TARGET end of day procedure with the ECB.
ECSDA	European Central Securities Depositories Association
EEA	European Economic Area

Encryption	The use of cryptographic algorithms to encode clear text data (plaintext) into ciphertext to prevent unauthorised observation.
EPC	European Payments Council
ESCB	European System of Central Banks
EU	European Union

F

FIFO	First In, First Out: processing sequence in which the payment orders are treated in the same sequence as they arrived (ie: the first payment arrived is treated first, the latest one is treated at the end). The relevant timestamp of each payment is arrival in the SWIFT interface of the SSP.
FIFO by-passing	The system tries to process the first transfer in the queue, but if that cannot be executed owing to lack of funds it then tries to settle the next transfer instead; also called bypass FiFo.
Final settlement	The discharge of an obligation by a transfer of funds and a transfer of securities that have become irrevocable, irreversible, or not annullable.
Firewall	A hardware- and/or software-based system that is used as an interface between the internet and a computer system to monitor and filter incoming and outgoing communication.

G

GARI MT	Component of the SWIFT Interface. Communication software for the exchange of SWIFT FIN messages.
GARI NT	Component of the SWIFT Interface. Communication software for the exchange of XML messages.
General ledger	The general ledger sometimes known as nominal ledger, is the main accounting record of a business which uses double-entry bookkeeping.
Gridlock	A situation that can arise in a funds or securities transfer system in which the failure of some transfer orders to be executed (because the necessary funds or securities are unavailable) prevents a substantial number of other orders from other participants from being executed.
Gross settlement system	A transfer system in which the settlement of funds or securities transfer orders occurs individually (on an order by order basis).
Group of accounts	See Liquidity pooling functionality.
Guarantee fund mechanism	Mechanism to provide the complementary liquidity needed according to pre-defined rules in case an AS cannot settle using the settlement banks liquidity only.
Guarantee funds account	Account held on the SSP for maintaining or collecting funds allocated to the settlement of balances of an ancillary system in case of failure of settlement banks.

H

HAM

See Home Accounting Module

Home account

Account held by CBs outside of the PM, eg

- for entities that cannot have the status of a direct participant in PM
- for entities allowed to open RTGS accounts that are indirect PM participants (or do not participate in PM neither as direct nor as indirect)
- for RTGS account holders for the settlement of operations which are not processed in the PM

The home accounts are managed by the HAM or by a proprietary accounting system.

Home Accounting Module

The Home Accounting Module (HAM) is an optional module. In the case, a CB opts for the use of this module different standardised account services are offered for the CB and its customers.

Home CB

CB where the direct participant is located.

Host CB

CB via which a direct participant uses the possibility of remote access.

I

ICM	See Information and Control Module
IFFM	See Interlinking Free Format Message
IIR	See Interlinking Internal Reference Number
Indirect participant	Indirect participants are distinguished from direct participant by their inability to perform some of the system activities performed by direct participants, in particular they do not hold RTGS accounts. Indirect participants require the services of direct participants to perform those activities on their behalf (settling the payments input to the transfer system).
Information and Control Module	Mandatory and unique functional interface between the direct participants and the Payments Module (PM) and the other optional modules like • Home Accounting Module (HAM) • Reserve Management (Module) (RM) • Standing Facilities (Module) (SF) • Static Data (Management) Module (SD)
Integrity	The quality of being protected against accidental or fraudulent alteration of transmission and of storage, or the quality of indicating whether or not alteration has occurred.

Interlinking	Interlinking provides the common procedures and infrastructure which allow payment orders from one national RTGS system and to another or between one national RTGS system and the SSP (during the migration period).
Interlinking Free Format Message	Free format message (TARGET1 message) sent between migrated and non migrated Central Banks.
Interlinking Internal Reference Number	A sequence number for Interlinking Messages (TARGET1 messages)
Intra-CB payment	Payment between participants of the same CB on the SSP.
Intraday credit	Credit extended and reimbursed within a period of less than one business day; in a credit transfer system with end-of-day final settlement, intraday credit is tacitly extended by a receiving institution if it accepts and acts on a payment order even though it will not receive final funds until the end of the business day. It can take the form of: • a collateralised overdraft or • a lending operation against a pledge or in a repurchase agreement
Intraday liquidity	Funds which can be accessed during the business day, usually to enable financial institutions to make payments on a intraday basis.
ISIM	Interlinking Statistical Information on TARGET Payment Volume and Value TARGET1 message to provide the ECB with statistical data.

L

Legal entity

Credit institution directly participating in the SSP through (also AS when participating as a direct participant) one or more participants/accounts in the PM and/or HAM is called a legal entity. This allows to group general information about this credit institution in the Static Data (Management) Module.

Limit

Amount for normal payments a direct PM participant is willing to pay to another participant (bilateral limit) or to the other participants (multilateral - limit towards whom no bilateral limit is defined), without having received payments (that are credits) first. For a direct participant it is possible to establish standing orders or current bilateral (respectively multilateral) limits.

A normal payment can only be settled if it does not breach the respective limit. Setting limits is only possible vis-à-vis RTGS account holders (in case of a group of accounts: only possible vis-à-vis the virtual account) in the SSP. It is not possible to use limits vis-à-vis participating CBs. Incoming urgent payments from a participant towards whom a bilateral/multilateral limit is defined also affect the bilateral/multilateral position.

Liquidity pooling functionality

A facility based on the idea of allowing TARGET2 participants to pool their RTGS accounts in an account group. Such an account group consists of one or more account(s) held by a direct PM participant(s) which has a capital and/or management link. The following two options are offered: virtual accounts (only for euro area participants) and consolidated information (available also to participants from non-euro area countries).

Liquidity transfer

Transfer of funds between accounts of the same participant or between two accounts of a group of accounts.

It is also a generic settlement procedure (procedure 1), where liquidity is transferred from/to a mirror account to/from a settlement bank's RTGS account.

There are two kinds of liquidity transfers available:

- current:

  transfers executed immediately after entry if sufficient liquidity is available

- standing order:

  transfers of fixed amounts executed regularly at certain points of time, eg liquidity injections from HAM accounts to RTGS accounts at the start of the business day. Changes of standing orders become effective on the following business day.

M

MAC

Message Authentication Code

Mandated payment

Payment initiated by an entity that is not party to the transaction (typically by a CB or an AS in connection with ancillary system settlement) on behalf of another entity. A CB sends a credit transfer (with specific message structure) on behalf of the failed direct participant (only in case of contingency situations).

Marginal lending facility	A standing facility of the Eurosystem which counterparties may use to receive overnight credit from a CB at a pre-specified interest rate against eligible assets. In general possible options: • Marginal lending on request Use on request of the participant in general needed for the fulfilment of reserve requirement. • Automatic marginal lending Automatic transformation of intraday credit in overnight credit at the end of the day
Message type	A specific type of SWIFT messages as identified by a three-digit number. The first digit defines the message category, indicating the general use of the message, the second digit defines the message group and the third digit defines particular message function.
MFI	See Monetary Financial Institution
Mirror account	In fact specific RTGS accounts opened to CBs for the specific use of AS. Mirror accounts are mirrored by another account opened in the SSS. It is debited or credited in case of liquidity transfer between a participant's RTGS account in PM and its account in an ancillary system.
Monetary Financial institution	A Monetary Financial Institution (MFI) comprise resident credit institutions as defined in Common law, and other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than MFIs, and for their own account (at least in economic terms), to grant credits and/or make investment in securities.
MT	See Message type

N

NCB	National Central Bank
NCB's ECB account	Account which is necessary to record the CB's asset/liability position vis-à-vis the ECB in respect of cross-border transactions.
Netting	An agreed offsetting of positions or obligations by participants in a clearing or settlement system. The netting reduces large number of individual positions or obligations to a smaller number of obligations or positions. Netting may take several forms which have varying degrees of legal enforceability in the event of default of one of the parties.
Netting by novation	An agreement where obligations from individual transfer orders are netted and replaced by new obligations. The parties to the new obligations may be the same as those to the existing obligations, or, in the context of some clearing house arrangements; there may be additionally substitution of parties.
Night time processing	Period of time for settlement of AS transactions (settlement procedure 6) between 19.30 h and 6.45 h (interruption for technical maintenance between 22.00 h and 1.00 h).
Non-SWIFT-BIC	The bank identifier code of a financial institution not connected to the SWIFT network. Non-SWIFT-BICs are identified by a 1 as the eighth character.

O

Offsetting

Offsetting in TARGET2 aims to increase the capacity of the system to settle payments, thereby reducing queues, speeding up the settlement process and reducing the need of intraday liquidity. A bilateral or multilateral offsetting mechanism considers payments in the queues of participants and tries to settle them simultaneously on a gross basis within one legal and logical second.

Overnight credit

See marginal lending facility

Overnight deposit

Deposits with next-day maturity.

P

PAPSS

Payment and Accounting Processing Services Systems

One of the two technical configurations of the SSP (the other one is the CRSS). The following modules of the SSP are implemented on the PAPSS:

- Contingency Module (CM)
- Home Accounting Module (HAM)
- Information and Control Module (ICM)
- Payments Module (PM, including the interface for ancillary systems)
- Reserve Management (Module) (RM)
- Standing Facilities (Module) (SF)
- Static Data (Management) Module (SD)

	Parts of the following services are also implemented on the PAPSS: • CRISP • CRAKS3
Participant	An entity which is identified/recognised by the system, is bound by rules of the system and is allowed to send and capable to receive transfer orders, either directly (as a direct participant) or indirectly (as an indirect participant).
Payment	In the SSP two general kinds of payments are possible for direct participants: • customer payments (MT 103, MT 103+) • bank-to-bank payments (MT 202, MT 204)
Payment message/ instruction	An order or message to transfer funds (in the form of a monetary claim on a party) to the order of the beneficiary. In TARGET2 the order may relate either to a credit transfer or a direct debit.
Payments Module	Mandatory module which allows the settlement of payments in the RTGS account, held by all direct participants. In addition, it offers advanced services for liquidity management, for the communication with participants and ancillary systems.
Payment Settlement Message Notification	Term for the confirmation to a PSMR (MT110IL) - TARGET1 message. It is a response to a PSMR which can be either positive or negative. A PSMN is normally positive (indicating that the beneficiary's settlement account in the receiving NCB/the ECB's books has been successfully credited).

Payment Settlement Message Request	Term for the TARGET1 payments (MT103(+)IL/MT202IL). The sender of the PSMR requests the receiver to process a payment; this message requires a positive or negative response from the receiver.
PHA	See proprietary home account
PKI	Public Key Infrastructure
Pledge	A delivery of assets to secure the performance of an obligation owed by one party (debtor) to another (secured party). A pledge creates a security interest (lien) in the assets delivered, while leaving ownership with the debtor.
PM	See Payments Module
Priority	In general payments are settled immediately, if sufficient liquidity is available on the RTGS account of the participant. Considering their urgency, they can be submitted by the sender either using priorities: • highly urgent payments (priority class 0) • urgent payments (priority class 1) • normal payments (priority class 2). Payments which cannot be settled immediately are queued according to their priority (highly urgent queue, urgent queue, normal queue). Priorities can be changed via the ICM.
Profiling information	Information delivered to CBs on the past behaviour of a participant or a group of participants, aggregated over a past period, and aimed at being comparable with current business day information.

Proprietary home account

Account held by CBs outside of the SSP eg

- for entities that cannot have the status of direct participants in PM
- for entities allowed to open RTGS accounts that are indirect PM participant (or do not participate in PM neither as direct nor as indirect)
- for RTGS account holders for the settlement of operations which are not processed in the PM

The proprietary home accounts are not implemented in the SSP but within every CB.

Proxy

Component of the SWIFT Interface

PSMN

See Payment Settlement Message Notification

PSMR

See Payment Settlement Message Request

Q

Queuing

An arrangement whereby transfer orders are held pending by the sending participant or by the system until it can be processed according the rules of the system.

R

Raw data file

The raw data file

- serves as check file for the verification of the positions of the general ledger
- can be used for archiving purposes of CBs not using CRAKS1 services
- can be used for own reports of the CBs

RBAC

Role Based Access Control.

An optional SWIFTNet facility for controlling end users' and applications access to service functions.

Real-time gross settlement

The continuous (real-time) settlement of funds or securities transfers individually on an order by order basis (without netting).

Real-time gross settlement (RTGS) system

A settlement system in which processing and settlement take place in real-time on a gross basis. An RTGS system may provide centralised queues for orders which cannot be settled at the time of the submission due to insufficient funds or quantitative limits on the funds.

Remote participant

A direct participant in the SSP which does not have any representation in the SSP country via he takes part in the SSP.

Repo

See repurchase agreement

Repurchase agreement

A contract to sell and subsequently repurchase securities at a specified date and price.

Reservation	With the usage of the reservation facility liquidity can be reserved by RTGS account holders for the execution of special transactions with a certain priority class. HAM account holders can use the reservation facility to reserve liquidity for the execution of cash withdrawals. Reservations can be effected and adjusted using the ICM.
Reserve holdings	Liquidity intraday and overnight maintained on the RTGS account at the end-of-day.
Reserve Management (Module)	Module enabling CBs to perform some functionalities for the reserve requirements management, eg verify the minimum reserves fulfilment or calculate the interest to be paid to credit institutions for minimum reserves.
Reserve requirement	The obligation of euro area credit institutions to hold minimum reserves on reserve accounts with their home NCBs. The reserve requirement is determined in relation to certain elements of the credit institutions' balance sheet. Institutions' holding of required reserves are remunerated at the rate of the Eurosystem's main refinancing operations.
RM	See Reserve Management (Module)
RTGS	See real-time gross settlement
RTGS account	Account managed within the PM and maintained by a direct participant to settle all transactions submitted to and processed by the PM (except for transactions of the AS settlement procedure 6 which are settled on sub accounts).

S

SAA

SWIFT Alliance Access

SWIFT Alliance Access is a messaging interface that allows the user to connect in-house applications with SWIFTNet FIN (MT) and MX-based SWIFTSolutions.

SAG

SWIFT Alliance Gateway

SWIFT Alliance Gateway is the single window to all SWIFTNet communications. All SWIFTNet message flows can be concentrated through one interface. This includes applications connected via WebSphere MQ, and also those designed for linking to SWIFTNet Link or based on SWIFTAlliance WebStation.

SB

See settlement bank

SD

See Static Data (Management) Module

Securities settlement system

The full set of institutional arrangements for confirmation, clearing, settlement, custody and registration of securities.

Self collateralisation

see auto collateralisation

SEPA

See Single Euro Payments Area

Settlement bank	Direct participant which pertains to one or more AS and manages the AS settlement process (eg the determination of settlement positions, monitoring of the exchange of payments, etc.) not only for own purposes but also for other AS participants on its RTGS account (main/sub-accounts).
SF	See Standing Facilities (Module)
Single Euro Payments Area	Term to describe a status where the euro area has achieved the same degree of integration of payment systems, payment instruments and payment infrastructure as that which is usually in a single-country currency area.
Single Shared Platform	TARGET2 is based on a single technical platform, known as the Single Shared Platform which includes the PAPSS (Payment and Accounting Processing Services Systems) and the CRSS (Customer Related Services System).
SIPN	Secure Internet Protocol Network Secure, high-availability and worldwide virtual private network by SWIFT based on the International Protocol (IP) and related technologies and provides transfer services required by SWIFTNet services.
SLA	Service Level Agreement
SSP	See Single Shared Platform
SSP OT	SSP Operational Team

SSS	See securities settlement system
Standing Facilities (Module)	The Standing Facilities (Module) is an optional module and enables to manage the overnight standing facilities (deposit facility, marginal lending facility).
Standing facility	A central bank facility available to counterparties on their own initiative. The Eurosystem offers two overnight standing facilities: • the marginal lending facility and • the deposit facility.
Standing order	Instruction of a direct participant to transfer regularly a fixed amount from his home account to an RTGS account (PM) and also from the RTGS (main) account to the sub-accounts (interfaced model) or to a mirror account (integrated model).
Static Data (Management) Module	This module ensures a proper and reliable management of static data by storing all statistic data actually used. It caters for data consistency between all modules of the SSP. Inter alia the Static Data (Management) Module is used to generate the TARGET2 directory.
Static Data Module	See Static Data (Management) Module
Sub-account	Specific account, belonging to an RTGS account, holding dedicated liquidity to allow the settlement of an ancillary system.

SWIFT	Society for Worldwide Interbank Financial Telecommunication
SWIFT payment message	An instruction to transfer funds; the exchange of funds (settlement) subsequently takes place over a payment system or through correspondent banking relationships; used for all payments and the related transactions on the SSP.
SWIFT-BIC	A bank identifier code of a financial institution connected to the SWIFT network.
SWIFTNet Browse	SWIFT service based on the "https" internet standard protocol, enabling users to browse remote web servers. In SSP the use of the Browse service provides access to the Information and Control Module (ICM) via the Secure IP Network (SIPN) of SWIFT.
SWIFTNet FileAct	File transfer service provided by SWIFT, typically used to exchange batches of structured financial messages and large reports. In the SSP, eg the TARGET2 directory is transferred via the Secure IP Network (SIPN) by SWIFT using the FileAct service.
SWIFTNet InterAct	SWIFT interactive messaging service supporting the exchange of messages between two parties. On the SSP the InterAct service is used for the transfer of XML requests via the Secure IP Network (SIPN) by SWIFT to the ICM.

T

TARGET	Trans-European Automated Real-time Gross settlement Express Transfer
TARGET working day	The TARGET working day (d) equals the calendar day with the exception of the days when the TARGET system is not operated.
TARGET2 directory	Directory used by participants to find out where a payment has to be addressed by SWIFTNet Y-Copy mode. On a domestic level, it could be used to find the relation between the national sorting codes and the related BICs.
Transaction Reference Number	An alphanumeric reference of up to 16 characters assigned by the sender to messages sent over the SWIFT network.
Transfer	Operationally, the sending (or movement) of funds or securities or of a right relating to funds or securities from one party to another party by • conveyance of physical instruments/money, • accounting entries on the books of a financial intermediary or • accounting entries processed through a funds and/or securities transfer system. The act of transfer affects the legal rights of the transferor, transferee and possibly third parties in relation to the money balance, security or other financial instrument being transferred.
TRN	See Transaction Reference Number

TSRC	TARGET Security Requirements and Controls
U	
U2A	User-to-application The objective is to permit direct communication between a participants' users and the ICM. The information are displayed in a browser running on a PC system. Control activities are performed manually by the user.
User	Each participant (direct and indirect).
V	
V- Shape	Type of transmission of SWIFT messages on the SSP which is mostly used in the context of payments processed via HAM.
Virtual account	Method for aggregating data among accounts within a group of accounts that are held on the books of euro area CBs. Payments made by holders of an account within a virtual account are checked against the global liquidity of the virtual account which is the sum of the balances of all accounts composing it.

W

Warehoused Payment

Payments submitted up to five TARGET working days in advance. In this case, the payment message will be warehoused until the day trade phase of SSP with the respective date starts.

Wildcards

In Select Criteria screens and Select screens of the ICM it is possible to search with the following wildcards:

- "*" = one or more characters are missing
- "?" = one character is missing.

WOM

Write Once Medium

Medium (eg digital disk) used to archive data. Data cannot be deleted from such medium once written.

X

XML

Acronym for Extensible Markup Language

Subset of Standard Generalized Markup Language (SGML - ISO 8879) designed especially for use on the Web and in Web-based applications.

Y

Y-Copy

Standard type of transmission of SWIFT messages on the SSP which is used in the context of payments processed via PM.