EUROPEAN CENTRAL BANK

ASSESSMENT OF EURO RETAIL PAYMENT SYSTEMS AGAINST THE APPLICABLE CORE PRINCIPLES

AUGUST 2005

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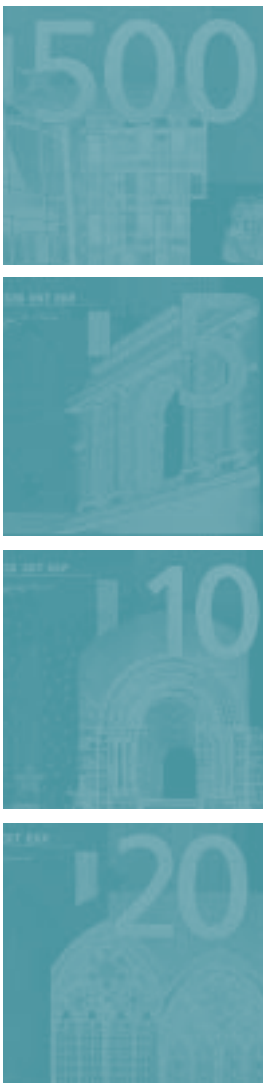

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EXECUTIVE SUMMARY

As part of the Eurosystem's oversight function, in June 2003 the Governing Council of the European Central Bank (ECB) adopted an oversight framework for retail payment systems operating in euro ("Oversight standards for euro retail payment systems").

The framework contained criteria for classifying retail payment systems as systemically important retail payment systems (SIRPS), prominently important retail payment systems (PIRPS) and other retail payment systems. This classification was based on the degree of disruption that a malfunctioning of these systems could cause in the financial markets and/or the economy in general.

It was laid down that euro retail payment systems have to comply with a harmonised set of standards, which depend on the classification of a system. SIRPS have to comply with the whole set of Core Principles for Systemically Important Payment Systems, while PIRPS have to observe a sub-set of the Core Principles, namely Core Principles I, II, and VII to X (the "Retail Standards"), as described in the oversight standards for euro retail payment systems. The oversight standards for other systems were not further harmonised. These other systems will continue to be assessed against any applicable standards determined by the relevant overseer. The Governing Council decided that structural changes will be taken into account when assessing a system. Therefore, any system that is in the process of changing is requested to fully comply with the oversight standards only in the medium term. A system in the process of being re-designed or about to reach the end of its life cycle may therefore continue to operate ("be grandfathered") until 2008.

It is important to note that this oversight framework is intended to ensure that retail payment systems cannot become vectors of systemic risks or economic malfunctioning in the euro area. This framework is not intended to contribute to the achievement of a Single Euro Payments Area in the field of retail market infrastructures. This public policy objective is being pursued by the Eurosystem with other tools.

The Eurosystem's overseers identified 15 euro retail payment systems which take the form of an automated clearing house (ACH) or a multilateral interbank agreement and therefore fall within the scope of the Eurosystem's policy on retail payment systems. On the basis of the classification methodology approved by the Governing Council, these systems were categorised as follows:

- six systems were classified as SIRPS: SIT in France, IRECC and IPCC in Ireland, LIPS-Net in Luxembourg, CSS in the Netherlands and PMJ in Finland;

- seven systems were classified as PIRPS: CEC in Belgium, ACO and DIAS in Greece, SNCE in Spain, BI-COMP in Italy, SICOI in Portugal and STEP2, which has been classified by the ECB; and

- two systems were classified as "other retail payment systems": CHB in Belgium and RPS in Germany.

While the individual assessments were performed under the sole responsibility of the relevant overseers, the Eurosystem defined a common methodology in the form of a questionnaire ("Terms of Reference") and coordinated a peer review process whereby one peer reviewer per Core Principle reviewed all the assessment reports in order to achieve a high degree of consistency and comparability among the final assessment reports of the rather heterogeneous systems.

The assessments reflect the status of the systems as at end-June 2004. A number of shortcomings identified during the assessment process were in fact immediately addressed by the respective system operators, sometimes in cooperation with the relevant overseer, and corrected. It should therefore be noted that the status upon

finalisation of the assessments, i.e. in the first quarter of 2005, had already considerably improved, which shows the usefulness of the assessments. Therefore, this report does not only list the shortcomings as at end-June 2004, but also the decisions taken and measures implemented since June 2004 and the work in progress to improve observance of the Core Principles.

As at end-June 2004, two SIRPS and one PIRPS observed all the Core Principles, namely LIPS-Net, PMJ and STEP2. The assessments of the other systems revealed shortcomings with respect to one or more Core Principles (see Subsection 3.1 for details). In general, the level of observance was better for the SIRPS than for the PIRPS.

All the SIRPS observed Core Principles IV ("settlement on the day of value"), VI ("settlement in central bank money"), VIII ("efficiency and practicality"), IX ("fair and open access") and X ("adequate governance"). The shortcomings of the SIRPS were concentrated in the areas of Core Principles I ("legal soundness"), III ("effective risk management features") and V ("settlement should take place on the day of value even in the event of failure of the largest net debtor").

For the PIRPS, the observance of the Core Principles and shortcomings were more scattered, with a certain concentration of shortcomings in the area of legal soundness (Core Principle I).

INTRODUCTION

As part of the Eurosystem's oversight function, in June 2003 the Governing Council of the ECB adopted an oversight framework for retail payment systems operating in euro ("Oversight standards for euro retail payment systems"), which take the form of ACH-type systems and multilateral arrangements. In these ACH-type systems, payment orders exchanged between financial institutions are sorted and cleared electronically by the ACH and settled by the respective settlement agent. In some countries, such infrastructural arrangements do not necessarily take the form of an ACH but of multilateral interbank agreements. Such agreements are of a formal and standardised nature, are based on private contract or statutory law, are characterised by multiple membership and consist of one set of common rules.

The framework contains criteria for classifying those retail payment systems as systemically important retail payment systems, prominently important retail payment systems and other retail payment systems.

Relevant euro retail payment systems have to comply with a harmonised set of standards, which depend on their classification. SIRPS have to comply with the whole set of Core Principles for Systemically Important Payment Systems, while PIRPS have to observe a sub-set of the Core Principles, namely Core Principles I, II, and VII to X.

This report presents the results of the assessment of systems that fall within the scope of the oversight framework for retail payment systems operating in euro. Chapter 1 describes the classification adopted for the relevant retail payment systems, Chapter 2 sets out the methodology used to conduct assessments, Chapter 3 presents the outcome of the assessments per Core Principle and Chapter 4 summarises the follow-up work that was initiated during the assessment process as well as further recommendations made for the systems.

1 CLASSIFICATION OF RETAIL PAYMENT SYSTEMS

1.1 SIRPS

When assessing the systemic importance of a retail payment system, the Eurosystem took account of the market penetration within the respective retail payments market, the financial risks pertinent to the system and the risk of domino effects, on the basis of the following three quantitative indicators:

- a market share of more than 75% of the respective retail payments market, i.e. the payments processed via interbank retail payment systems and via other payment arrangements;
- a processing of payments of more than 10% of the value of the national real-time gross settlement system (RTGS) or a processing of payments with an average daily value of more than €10 billion; and
- a concentration ratio (i.e. the market share of the five largest participants) of 80% or a netting ratio of 10% or less or a net debit position of participants of at least €1 billion.

If all of these criteria are fulfilled, there is a strong indication that a system is a SIRPS. In addition to these commonly agreed indicators[1], central banks may take into account the specific national features when classifying systems they oversee. Six systems were classified as SIRPS: SIT in France, IRECC and IPCC in Ireland, LIPS-Net in Luxembourg, CSS in the Netherlands and PMJ in Finland. However, only SIT and CSS fulfilled all of the three quantitative criteria mentioned above. The other systems fulfilled only two (i.e. a market share of more than 75% and a concentration ratio of more than 80%), but were still rated as systemically important because the responsible central banks took into account the specific national features. For example, the Central Bank and Financial Services Authority of Ireland (CBFSAI) considered the two Irish systems to be systemically important as they are of national importance and without alternatives. Another system that fulfilled these two criteria was classified as prominently important.

1.2 PIRPS

PIRPS are characterised by the fact that they play a prominent role in the processing and settlement of retail payments and that their failure could have major economic effects and undermine the confidence of the public in payment systems and in the currency in general.

In order to classify PIRPS, the focus was therefore on the concentration of the retail payments market and, in particular, the degree of market penetration of the respective system, on the basis of the following quantitative indicator: a market share of more than 25% of payments processed in the respective retail payments market, i.e. the payments processed via interbank retail payment systems and via other payment arrangements.[1]

Seven systems were classified as PIRPS: CEC in Belgium, ACO and DIAS in Greece, SNCE in Spain, BI-COMP in Italy, SICOI in Portugal and STEP2, which has been classified by the ECB. All of these systems have a market share of more than 25% of payments processed in the respective retail payments market.

1.3 OTHER SYSTEMS

Two systems were classified as "other retail payment systems": CHB in Belgium and RPS in Germany.

2 METHODOLOGY OF THE ASSESSMENTS

In order to achieve a high degree of consistency and comparability when carrying out the assessment exercise, the Eurosystem defined

1 An explanation of the indicators can be found in Annex 1.

a common methodology for the assessments. A set of questions (the "Terms of Reference") was developed to guide the overseer through the assessment and to help to identify the relevant aspects that have to be taken into consideration in order to assess compliance with each of the Core Principles.

On the basis of these Terms of Reference, the respective overseers assessed the SIRPS against the complete set of Core Principles and the PIRPS against the Retail Standards. The assigned compliance levels reflect the systems' status as at 30 June 2004. Furthermore, if a system already had an action plan in place on 30 June 2004 to remedy a major shortcoming that was detected in the assessment process, it has not been rated as not observing the respective Core Principle, but rather as partly observing this Core Principle. Other planned changes to a system (mostly improvements that were triggered by the assessment, but which were not yet firmly planned on the "snapshot date") are also mentioned in the assessment reports prepared by the overseers, but are not reflected in the compliance levels. In addition, planned changes, the implementation of which has not yet started, are likewise mentioned (see Chapter 4).

In order to further improve the consistency and comparability of the assessments, the individual reports were subject to a peer review process. For each individual Core Principle, a cross-comparison of all systems was performed. This helped to ensure that the assessments were carried out in a harmonised manner and that the conclusions reached in relation to compliance levels were consistent across the systems being assessed.

It should be mentioned that the final responsibility for the results of the assessments and the conclusions drawn lies with the respective system overseer.

3 RESULTS OF THE ASSESSMENT EXERCISE

3.1 MAJOR FINDINGS

The following sub-sections summarise the outcome of the assessments per Core Principle. The description of those weaknesses per system which led to less than full observance of a Core Principle is based on the analysis carried out by the respective peer reviewers.

The assessments reflect the status as at end-June 2004. However, the status upon finalisation of the assessments had already considerably improved compared with the status on the "snapshot date" of the assessments. Therefore, the work that has been undertaken since June 2004 to remedy shortcomings is mentioned in Sub-section 3.2. The further recommendations made for the systems in order to overcome the shortcomings are presented in Chapter 4.

3.1.1 CORE PRINCIPLE I

The system should have a well-founded legal basis under all relevant jurisdictions.

The key issues to be considered to assess observance of this Core Principle are the following:

- the legal infrastructure is clearly identified (e.g. relevant jurisdiction, laws, statutes, case law, contracts and liability, rules and procedures);
- legal risks are clearly identified (e.g. irrevocability, finality, legal risks arising from foreign participation and therefore from the application of the relevant foreign laws, Settlement Finality Directive (SFD) implementation and system designation); and
- legal risks are addressed so that system rules and procedures are enforceable (e.g. legal recognition of netting).

The following observance levels were assigned to the systems:

SIRPS	
Observed	SIT (FR), LIPS-Net (LU), PMJ (FI)
Broadly observed	IRECC (IE), IPCC (IE), CSS (NL)
PIRPS	
Observed	BI-COMP (IT), STEP2 (EU)
Broadly observed	ACO (GR), DIAS (GR), SNCE (ES), CEC (BE), SICOI (PT)

The legal basis of a payment system is critical to its overall soundness. A sound legal basis for a payment system defines, or provides the framework for the relevant parties to define, the rights and obligations of operators, participants and regulators. Most risk management mechanisms are based on assumptions about the rights and obligations of the parties to payment transactions. A sound legal basis is fundamental to risk management.

Three SIRPS and five PIRPS did not fully observe Core Principle I, most frequently because the legal framework and the recognition of netting in the country of origin of some foreign participants had not been checked. Most system operators had relied on the country opinions that had been received for the respective national TARGET component (i.e. the retail systems' settlement system), as they operate both systems, i.e. the national TARGET component and a national retail payment system. However, during the assessment process, it was clarified that country opinions are specific to a system (i.e. based on the system documentation). Therefore, having a country opinion for the respective national TARGET component does not automatically mean that in the case of a foreign participant the legal impact of foreign legislation is the same for the retail system as it is for the RTGS system. It will be further analysed which additional legal assurance for the retail systems is necessary in order to provide sufficient reassurance that foreign legislation does not hinder the systems' legal basis. Until this reassurance is provided, a system cannot be assessed as fully observant. This weakness was identified for ACO, DIAS, SICOI and CSS. The system operators of SICOI and CSS have started or are about to start the relevant investigations.

IPCC and IRECC were also considered to only broadly observe Core Principle I. This result was due to the fact that there is no clear description in the systems' documentation of what would happen in the event that one of the participants defaults. However, work is in hand to address this shortcoming.

With respect to CEC, there was some legal uncertainty with regard to the consequences of a default of a direct participant that had not yet credited its indirect participants for the amounts already received. In addition, the documentation governing CEC showed some inadequacies. Therefore, CEC was considered to broadly observe Core Principle I. Work is already under way to address both issues.

Apart from the checking of the legal framework and the recognition of netting for foreign participants mentioned above, DIAS's broad observance of Core Principle I was due to identified weaknesses in the documentation of particular sub-systems with respect to the time of entry, the time of irrevocability and the time of finality of a payment order.

The fact that the timing of irrevocability and finality have not been expressly defined led to SNCE's broad observance. Furthermore, the overseer raised the point of SNCE not being designated under the SFD as a possible risk. This was followed up and SNCE was designated under the SFD in January 2005.

3.1.2 CORE PRINCIPLE II

The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.

The key issues to be considered to assess observance of this Core Principle are the following:

- the documentation covering the management and containment of financial risk (i.e. credit and liquidity risk) is clearly identified;
- the documentation is clear, comprehensive and up to date; and
- the key rules for the management and containment of financial risk are made available to existing participants of the system and new applicants.

The following observance levels were assigned to the systems:

SIRPS	
Observed	PMJ (FI), LIPS-Net (LU), CSS (NL), SIT (FR)
Broadly observed	IPCC (IE), IRECC (IE)
PIRPS	
Observed	SNCE (ES), SICOI (PT), ACO (GR), STEP2 (EU)
Broadly observed	BI-COMP (IT), DIAS (GR)
Partly observed	CEC (BE)

Core Principle II is concerned with ensuring that all of the parties involved in a payment system, whatever their role, fully understand the financial risks that they incur through their participation. The system's rules and procedures should play a key role in this regard, by striving to be as clear and easily understandable as possible, while defining in detail the roles and responsibilities of all of the parties concerned. They should be clear, comprehensive, up to date and readily available to those requiring them, and in particular should define the rights and obligations of all parties while explaining the legal structure on which the system is founded.

Two SIRPS and three PIRPS did not fully observe Core Principle II. The main reason for less than full observance was a lack of clarity and certainty in the systems' documentation.

For IPCC and IRECC it was concluded that the systems broadly observe Core Principle II on the basis that, while the details of what would happen in the event of a default by a system participant have not yet been fully documented, all participants have agreed upon and fully understand the process that would be followed in such circumstances.

In the group of PIRPS, DIAS and BI-COMP were considered to broadly observe Core Principle II, whereas CEC was considered to partly observe this Core Principle. In each case, this resulted from weaknesses in the systems' documentation. The overseer considered CEC's documentation to be deficient to a degree that merited only a partly observed rating. Work is already under way to address this issue.

3.1.3 CORE PRINCIPLE III

The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

This Core Principle applies only to SIRPS.

The key issues to be considered to assess observance of this Core Principle are the following:

Credit exposure

- clearly defined analytical procedures (e.g. information systems for clear, full and timely monitoring, access criteria based on creditworthiness) and/or operational procedures (e.g. credit limits, collateralisation) are in place to manage and contain credit exposures of the settlement agent and between participants;

- the existing procedures for the management and containment of credit exposures clearly allocate/specify the system operator's, the settlement agent's and the participants' responsibilities for the management and containment of credit risk; and

- the existing procedures for the management and containment of credit exposures provide incentives for the management and containment of credit risk.

Liquidity exposure

- clearly defined analytical procedures (e.g. information systems for clear, full and timely monitoring) and/or operational procedures (e.g. position (sender or receiver) limits, collateralisation, queue management, committed lines of credit) are in place to manage and contain liquidity exposures of the settlement agent and between participants;

- the existing procedures for the management and containment of liquidity exposures clearly allocate/specify the settlement agent's and the participants' responsibilities for the management and containment of liquidity risk, and the system operator's responsibilities for monitoring and facilitating a smooth flow of payments through the system; and

- the existing procedures for the management and containment of liquidity exposures provide incentives for the management and containment of liquidity risk.

The following observance levels were assigned to the systems:

SIRPS	
Observed	CSS (NL), LIPS-Net (LU), PMJ (FI)
Broadly observed	IPCC (IE), IRECC (IE), SIT (FR)

Core Principle III addresses the effectiveness of the rules and procedures of the system with regard to the containment of credit and liquidity risks that arise in the system. The management of these financial risks includes information systems and monitoring procedures, as well as the incentives for the parties to contain these risks.

Three of the six SIRPS did not fully observe Core Principle III.

The main weakness within both IRECC and IPCC was the lack of a clear description of what would happen in case of failure by one participant. Work is currently in hand to address this issue.

SIT is currently not protected against the inability of a participant to settle its debit position.

3.1.4 CORE PRINCIPLE IV

The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

This Core Principle applies only to SIRPS.

The key issues to be considered to assess observance of this Core Principle are the following:

- the final settlement of a payment should take place on the day of value;

- the rules and procedures for the submission of payments should be clear; and

– the life cycle of a payment in the system until final settlement should be clearly defined and legally effective (validation, acceptance, irrevocability, finality of a payment).

The following observance levels were assigned to the systems:

SIRPS

Observed	SIT (FR), PMJ (FI), CSS (NL), IRECC (IE), IPCC (IE), LIPS-Net (LU)

A payment system should be designed to provide final settlement for all payments on the day of value under normal circumstances. A payment that is due to a receiving participant in the system and accepted by the system for settlement should be settled finally on the intended day of value. It should be clearly stated in the system rules and procedures that a payment accepted by the system for settlement cannot be removed from the settlement process. The point at which finality is achieved shall be made clear in the system rules and procedures and be understood by all participants. In all systems, cut-off times should be clearly defined and strictly followed. The rules should make clear that extensions are exceptional and require individual justification.

The rules of all SIRPS provide that settlement takes place on the day of value. Therefore, all SIRPS observe Core Principle IV.

3.1.5 CORE PRINCIPLE V

A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

This Core Principle applies only to SIRPS.

The key issues to be considered to assess observance of this Core Principle are the following:

– netting systems must be able to withstand at a minimum the failure of the largest single net debtor to the system; and

– the mechanism in place to withstand the failure of the largest single net debtor should allow for a timely completion of daily settlement.

The following observance levels were assigned to the systems:

SIRPS

Observed	LIPS-Net (LU)
Partly observed	SIT (FR), IPCC (IE), IRECC (IE)
Not applicable	CSS (NL), PMJ (FI)

The above - mentioned capabilities are necessary because the failure of one participant in a multilateral net settlement system could lead to an unwinding and recalculation of positions. This could in turn give rise to unexpected credit and liquidity risks that can trigger systemic shocks.

A possible way to address this issue is to make additional financial resources available. This is usually achieved by a combination of committed credit lines and a pool of collateral. In this regard, it should be borne in mind that credit lines do not provide sufficient assurance for a timely settlement if they are not supported by a pool of collateral. The credit lines should be structured in a way that is legally sound and adequate. They should not be provided by the participants as this could lead to risk concentration. The necessary amount should be determined in relation to the maximum individual settlement obligation. It might also take into consideration whether the system aims at fulfilling only the minimum standard or whether it aims at withstanding the failure of more than the single largest debtor.

Three SIRPS did not fully observe Core Principle V.

In order to reach such conclusions, it was first necessary to clarify to which systems this Core Principle applies. It was found that it does not apply to PMJ, because in PMJ no multilateral netting takes place. Furthermore, it was concluded that it does not apply to CSS, as CSS is considered to be a hybrid system. CSS is characterised by so-called lot settlement. A lot is similar to a clearing cycle. A credit lot contains batches of direct debits and so-called revocation orders by different banks. Banks are credited for their submissions to other banks and debited for the direct debits sent to them by other banks. As each bank's payment flows go in both directions in this lot, the relevant positions are netted and subsequently the balance for each bank is submitted to TOP (the Dutch RTGS system) for settlement. A debit lot contains batches of credit transfers and other payments submitted by one bank (all submitted items are debit items for the submitting bank). The submitting bank is debited and the different receiving banks are credited. This means that no netting takes place in this case, as payment flows go in only one direction for each bank in the lot. The positions per bank established after the sorting process in the lot are submitted to TOP. Credit lots, where netting takes place, represent on average 25% of the value of transactions. Because these credit lots are settled very frequently, i.e. at least every 30 minutes, it was concluded that this fact contributes significantly to a reduction of risk. Therefore, CSS should be treated like hybrid systems, which are designed to minimise the risks addressed in Core Principle V.

Second, it was considered whether risk mitigation features other than those explicitly mentioned in the Core Principle Report could provide an equal guarantee that settlement could be ensured on the day of value. This issue concerned LIPS-Net. LIPS-Net has risk mitigation features other than a collateral pool or credit lines to ensure settlement on the day of value. These risk mitigation features can be described as follows: The positions that are calculated in LIPS-Net are first only of an interim nature and can still be revised until it has been checked that sufficient funds are available on the accounts of participants in LIPS-Gross to cover the positions. For each participant, its multilateral net position plus a margin of 25% of its gross debit position are blocked in LIPS-Gross and only upon receipt of confirmation that funds are blocked does LIPS-Net establish the final positions of participants. The participants have no information regarding their positions nor can they monitor the status of processed payments until LIPS-Net has established the final positions. Should the check of coverage for the interim positions in LIPS-Gross show that one participant does not have sufficient funds available, LIPS-Net is informed accordingly and takes out payments made by that participant until the position is covered. The safety margin of 25% mentioned above helps to ensure that this recalculation of positions does not lead to a situation where the debit positions of other participants increase beyond the previously blocked amounts (the system only takes account of the previously blocked amounts). The safety margin was calculated by the operator based on simulations using actual system data from 2002 and has been applied since 1 January 2003. These risk mitigation features in LIPS-Net were considered to provide a guarantee that settlement can be completed on the day of value. LIPS-Net was therefore considered to observe Core Principle V.

With respect to systems' shortcomings that led to less than full observance, the following conclusions were reached.

Currently, SIT has no mechanism in place to ensure settlement in the event of the failure of the largest net debtor. To overcome this shortcoming, the French banks, at the request of the Banque de France, have defined the principles governing a built-in protection mechanism planned for SIT. The safety mechanism planned for SIT is based on the following principles: protection against the failure of the participant with the largest single debit position, the establishment of a permanent mutual fund (supplemented as necessary by individual collateral) and the setting

of upper limits on the transactions exchanged. Collateral would take the form of central bank money holdings. The system operator has provided the overseer with a clear commitment to address the non-compliance of SIT with Core Principle V by no later than 2008. Furthermore, a clear and comprehensive summary of the main features of the safety mechanism was provided. SIT is therefore deemed to partly observe Core Principle V.

With respect to both IRECC and IPCC, the overseer has for some time been involved in discussions with all interested parties with a view to reaching agreement on implementing measures to ensure completion of settlement even in the event of the failure of each system's largest net debtor.

In this regard, a decision in principle has now been taken to implement such measures, although the details of the mechanisms to be adopted have yet to be agreed. As a consequence, the focus of discussions between the overseer and system participants has now shifted to the consideration of the various possible solutions available.

It is intended to conclude these discussions within the shortest possible time frame and the responsible overseer thus expects that both IPCC and IRECC will be compliant with Core Principle V by 31 December 2005. The systems have therefore been rated as partly observing this Core Principle.

3.1.6 CORE PRINCIPLE VI

Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

This Core Principle applies only to SIRPS.

The key issues to be considered to assess observance of this Core Principle are the following:

- the settlement asset carries little or no credit/liquidity risk; and

- risk management measures are in place concerning the settlement agent if the settlement asset is not a claim on the central bank.

The following observance levels were assigned to the systems:

SIRPS

Observed	SIT (FR), PMJ (FI), CSS (NL), IRECC (IE), IPCC (IE), LIPS-Net (LU)

This Core Principle stipulates that systemically important payment systems should settle preferably in central bank money, as it carries no credit or liquidity risk. The aim is to eliminate or minimise financial risk arising from the use of a particular settlement asset.

All SIRPS settle in central bank money, which carries neither credit nor liquidity risk. Therefore, all SIRPS observed Core Principle VI.

3.1.7 CORE PRINCIPLE VII

The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

The key issues to be considered to assess observance of this Core Principle are the following:

Security:

- security objectives, policies and procedures exist and are commensurate to the importance of the payment system, and responsibilities for information security are clearly defined;

- security objectives, policies and procedures are updated when appropriate;

– the system is designed, developed and operated according to security objectives, policies and procedures;

– risk assessment is regularly performed and the results are reported to the system owner; and

– the system is subject to independent security review.

Operational reliability:

– operational and technical procedures are comprehensive, rigorous and well documented;

– changes are properly tested, authorised and documented;

– capacity requirements are incorporated in the design of the system, monitored and tightened up when necessary;

– the system is operated by an adequate number of well-trained staff; and

– operational and security incidents are reported, recorded and analysed.

Business continuity:

– business continuity arrangements and infrastructure ensure that the agreed service level is met and are commensurate to the importance of the system;

– business continuity arrangements are documented and regularly tested; and

– these arrangements include crisis management information dissemination and analysis of residual risks.

The following observance levels were assigned to the systems:

SIRPS	
Observed	PMJ (FI), CSS (NL), IRECC (IE), IPCC (IE), LIPS-Net (LU)
Broadly observed	SIT (FR)
PIRPS	
Observed	CEC (BE), STEP2 (EU), SICOI (PT), BI-COMP (IT)
Broadly observed	SNCE (ES), ACO (GR), DIAS (GR)

Systemically and prominently important systems should be designed and operated with a high degree of security and operational reliability that is appropriate to their context and the needs of their users.

One SIRPS and three PIRPS were less than fully observant of Core Principle VII.

The main reasons for the less than full observance of Core Principle VII were inadequate business continuity arrangements or inadequate documentation of these arrangements.

For SIT, while the system ensures a high degree of security and operational reliability, full observance of Core Principle VII would require that business continuity arrangements allow a recovery of operations within the day in the event of a failure of the accounting centre.

For SNCE, the major shortcomings are a lack of regular risk analysis of the system, even though the architecture of the system is decentralised (strictly speaking a regular risk analysis is not necessary for decentralised systems), and the fact that there are no periodical tests for existing participants.

ACO's broad observance of Core Principle VII is due to insufficient documentation of the established business continuity process.

DIAS's broad compliance is due to identified weaknesses in the documentation of the existing business continuity arrangements.

3.1.8 CORE PRINCIPLE VIII

The system should provide a means of making payments which is practical for its users and efficient for the economy.

The key issues to be considered to assess observance of this Core Principle are the following:

- the system meets users' needs (e.g. functionality, technical performance, business continuity) and procedures are in place to review and update the service level;
- the needs of all types of users are considered in the design of the system and its evolution;
- resources are allocated efficiently; and
- the pricing policy (cost recovery method, market-based pricing, subsidised pricing) is communicated clearly to participants.

The following observance levels were assigned to the systems:

SIRPS	
Observed	SIT (FR), PMJ (FI), CSS (NL), IRECC (IE), IPCC (IE), LIPS-Net (LU)
PIRPS	
Observed	CEC (BE), STEP2 (EU), SICOI (PT), ACO (GR), DIAS (GR)
Broadly observed	SNCE (ES), BI-COMP (IT)

Core Principle VIII addresses two issues: the practicality of a system and its efficiency. Regarding practicality, the technology and operating procedures used to provide payment services should be consistent with the types of services demanded by users, reflecting the stage of economic development of the markets served. Furthermore, systems should be designed and operated so that they can adapt to the development of the market for payment services both domestically and internationally.

Regarding efficiency, operators, users and overseers all have an interest in the efficiency of a system, wanting to avoid wasting resources. For the system to meet its objectives, such as safety, its design (including the technological choices made) should seek to economically use resources by being practical in the specific circumstances of the system and by taking account of its effects on the economy as a whole. Designers and operators of payment systems need to consider how to provide a given quality of service in terms of functionality, safety and efficiency at minimum resource costs.

Two PIRPS did not fully observe Core Principle VIII.

SNCE's broad observance of Core Principle VIII is mainly due to the lack of a clear cost methodology for the central services and the lack of full cost recovery. However, given the decentralised nature of the system and the fact that transactions are exchanged on a bilateral basis, costs have to be borne by each participating institution and consequently these shortcomings affect only those services provided to the system by the central bank (administration and general management). To some extent, it could be understood that the Banco de España is subsidising these services. These shortcomings should be remedied in the near future, as a payment systems reform in Spain will transfer SNCE to the private company SESP, S.A. The services that are now provided for free by the central bank will then be provided by a private company owned by the participating institutions. Thus, the administration and general management costs will be made explicit

and the participating institutions will have to cover them.

BI-COMP was considered to broadly observe Core Principle VIII because it did not meet the full cost recovery requirement adopted by the Banca d'Italia as a policy. The system operator is currently revising the system's pricing scheme so BI-COMP should become fully compliant in the short term.

3.1.9 CORE PRINCIPLE IX

The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

The key issues to be considered to assess observance of this Core Principle are the following:

- access/exit criteria are clearly stated and disclosed to participants and applicants;
- access/exit procedures are clear and disclosed to participants and applicants;
- access/exit criteria are objective and do not unduly restrict competition among participants; and
- criteria fulfilment is monitored on a regular basis.

The following observance levels were assigned to the systems:

SIRPS	
Observed	SIT (FR), PMJ (FI), CSS (NL), IRECC (IE), IPCC (IE), LIPS-Net (LU)
PIRPS	
Observed	STEP2 (EU), SICOI (PT), DIAS (GR), SNCE (ES), BI-COMP (IT)
Broadly observed	CEC (BE), ACO (GR)

Two PIRPS were considered to broadly observe Core Principle IX.

ACO's broad observance is due to the system's pricing structure.

CEC's broad observance is based on findings related to the access criteria for direct participants. More precisely, an annual threshold of 250,000 transactions per direct participant has been set. Participants that cannot fulfil the requirement of at least 250,000 transactions per year are not excluded from the system, but they are reclassified as indirect participants. This criterion is considered to be subjective and unfair on the grounds that it is not supported by any substantiated rationale. The criterion has been abandoned in the meantime.

3.1.10 CORE PRINCIPLE X

The system's governance arrangements should be effective, accountable and transparent.

The key issues to be considered to assess observance of this Core Principle are the following:

- governance arrangements are clearly specified;
- governance arrangements are transparent;
- management is fully accountable for its performance and lines of responsibility are clearly specified;
- major decisions are taken after consultation with at least all relevant stakeholders;
- objectives and major decisions are disclosed to owners, users and overseers; and
- management has the incentives and skills needed to achieve the system's stated objectives.

The following observance levels were assigned to the systems:

SIRPS

Observed	SIT (FR), PMJ (FI), CSS (NL), IRECC (IE), IPCC (IE), LIPS-Net (LU)

PIRPS

Observed	STEP2 (EU), SICOI (PT), DIAS (GR), SNCE (ES), BI-COMP (IT), CEC (BE)
Broadly observed	ACO (GR)

Core Principle X focuses on the system's governance arrangements. Effective fulfilment of Core Principle X does not only depend on the detailed form of the arrangements, but also on the quality of the results of such arrangements in terms of effectiveness, accountability and transparency. In addition, compliance with Core Principle X is closely linked with compliance with the rest of the Core Principles. In general terms, proper governance arrangements depend on the observance of the other Core Principles, or can be ensured by the availability of action plans to reach that compliance in a reasonable time frame.

One PIRPS, the Greek system ACO, did not reach the classification of full observance. The reason for this is the lack of a clear and documented borderline between the responsibilities of the central bank and those of the system operator regarding the daily operation of the system.

3.2 OBSERVANCE LEVELS AS AT END-JUNE 2004 AND WORK COMPLETED OR IN PROGRESS

The following table shows the assessed systems and their degree of observance of the Core Principles as at the end of June 2004.

In this context, it should be pointed out that a number of shortcomings that were identified during the assessment process were immediately addressed by the respective system operators, sometimes in cooperation with the relevant overseer. As mentioned before, the assessments reflect the status as at end-June 2004. However,

Table Observance of the systems as at the end of June 2004

Systemically important systems										
	I	II	III	IV	V	VI	VII	VIII	IX	X
CSS	Broadly	Observed	Observed	Observed	Not applicable	Observed	Observed	Observed	Observed	Observed
IPCC	Broadly	Broadly	Broadly	Observed	Partly	Observed	Observed	Observed	Observed	Observed
IRECC	Broadly	Broadly	Broadly	Observed	Partly	Observed	Observed	Observed	Observed	Observed
LIPS-Net	Observed	Observed	Observed	Observed	Observed	Observed	Observed	Observed	Observed	Observed
PMJ	Observed	Observed	Observed	Observed	Not applicable	Observed	Observed	Observed	Observed	Observed
SIT	Observed	Observed	Broadly	Observed	Partly	Observed	Broadly	Observed	Observed	Observed
Prominently important systems										
	I	II	III	IV	V	VI	VII	VIII	IX	X
ACO	Broadly	Observed	Not applicable				Broadly	Observed	Broadly	Broadly
BI-COMP	Observed	Broadly					Observed	Broadly	Observed	Observed
CEC	Broadly	Partly					Observed	Observed	Broadly	Observed
DIAS	Broadly	Broadly					Broadly	Observed	Observed	Observed
SICOI	Broadly	Observed					Observed	Observed	Observed	Observed
SNCE	Broadly	Observed					Broadly	Broadly	Observed	Observed
STEP2	Observed	Observed					Observed	Observed	Observed	Observed

the status upon finalisation of the assessments had already considerably improved compared with the status at the "snapshot date" of the assessments. Therefore, the work undertaken since June 2004 to remedy the shortcomings is presented in this sub-section.

As already mentioned, a distinction is made between systemically important and prominently important retail payment systems.

For assigning the observance levels, the following general guidance was given:

- observed: all key criteria are fulfilled;
- broadly observed: minor shortcoming(s) with a limited impact on the safety and efficiency of the system;
- partly observed: major shortcoming(s) planned to be addressed within a reasonable time frame; and
- not observed: major shortcoming(s) not (yet) planned to be addressed within a reasonable time frame.

Work in progress or completed since June 2004

Core Principle I

As regards IPCC and IRECC, work is currently in hand to overcome the lack of a clear description in the systems' documentation of what would happen in case of default of one of the participants.

For SICOI and CSS, system operators have started or are about to start relevant investigations to overcome weaknesses in the analysis of the legal framework and in the recognition of netting in the country of origin of some foreign participants.

Regarding DIAS, work is already under way to address the shortcomings in the documentation of particular sub-systems related to the time of entry, the time of irrevocability and the time of finality of a payment.

SNCE was not designated under the SFD. This was followed up and SNCE was designated under the SFD in January 2005.

The legal documentation for CEC was updated in 2004 and early 2005 to delete obsolete parts and to clarify some uncertain points in order to comply with the recommendations made during the assessment of CEC. In May 2005, the transformation of CEC into CEC III was accomplished. This technological change has had an important impact on CEC's technical functioning. In this respect, a revised "User Manual" as well as new "Terms and Conditions" were drawn up and approved by the CEC Board. In the drafting of those new documents, the system operator has taken the recommendations made during the assessment of CEC into account. A new oversight assessment has still to be undertaken.

Core Principle II

Work aimed at improving the system documentation so as to provide more detailed information on what would happen in the event of a default by a system participant is currently in progress for IRECC and IPCC.

Work is likewise already under way to improve the system documentation for DIAS. For BI-COMP it was completed in 2004. Following the launch of CEC III the system documentation was entirely reviewed in May 2005 in order to comply with Core Principle II (see also Core Principle I).

Core Principle III

The main weakness within IRECC and IPCC was the lack of legal certainty regarding default events. Work is currently in hand to address this problem. Work on the implementation of a safety mechanism is under way for SIT.

Core Principle IV

All systems observe Core Principle IV.

Core Principle V

Currently, SIT has no mechanism in place to ensure settlement in the event of the failure of the largest net debtor. The system operator, GSIT, has provided the overseer with a clear commitment to address the non-compliance of SIT with Core Principle V by no later than 2008. Furthermore, a clear and comprehensive summary of the main features of the envisaged safety mechanisms was provided.

With respect to both IRECC and IPCC, the overseer has for some time been involved in discussions with all interested parties with a view to reaching agreement on implementing measures to ensure completion of settlement even in the event of the failure of each system's largest net debtor.

In this regard, a decision in principle has now been taken to implement such measures, although the details of the mechanisms to be adopted have yet to be agreed.

It is intended to conclude these discussions within the shortest possible time frame and the CBFSAI expects both IPCC and IRECC to be compliant with Core Principle V by 31 December 2005.

Core Principle VI

All systems observe Core Principle VI.

Core Principle VII

With regard to ACO, an upgrade of the telecommunication infrastructure between the IT centre and the regional clearing offices that will offer advanced security features is currently being examined.

Regarding DIAS, an improvement of the documentation for the existing business continuity arrangements is under examination.

For SIT, work is under way to implement significant changes to the system's technical infrastructure.

Core Principle VIII

Within the framework of the reform of the Spanish payment systems, SNCE is being transferred during the first half of 2005 to the private company SESP, S.A. As a result, the administration and general management costs will become transparent and the participating institutions will have to cover them. The system will thus have to recover its costs. Furthermore, the implementation of a cost methodology will be further investigated.

With respect to BI-COMP, the operator has revised the system's pricing scheme in the meantime. BI-COMP is considered by its overseer to observe Core Principle VIII as of 1 January 2005.

Core Principle IX

A minimum number of transactions has been abandoned as an access criterion for CEC.

Core Principle X

There is currently no work in progress.

4 SUMMARY OF FURTHER RECOMMENDATIONS

This chapter summarises the further recommendations that were made for the systems in order to improve observance of the Core Principles.

Core Principle I

With respect to CEC, it was recommended that the share of foreign participants be monitored in order to determine the appropriateness of further legal investigations.

Regarding ACO and DIAS, the examination by the system operators of the legal framework in the country of origin of foreign participants, in particular with respect to the legal recognition of netting, is considered advisable.

In the documentation of SNCE, the timing of irrevocability and finality has to be clarified.

Core Principle III

The criteria for access to SIT should be reviewed in order to take into account the financial situation of prospective direct participants and there should be a clear process for the ongoing monitoring of the financial situation of direct participants.

Core Principle IX

Regarding ACO, the re-examination of the existing pricing structure by the system operator is considered advisable.

Core Principle X

With regard to ACO, the weakness that should be overcome is the lack of a clear and documented borderline between the responsibilities of the central bank and those of the system operator regarding the daily operation of the system.

ANNEX
DESCRIPTION OF QUANTITATIVE INDICATORS

The deciding factor in classifying the systems was the degree of disruption that a malfunctioning of these systems could cause in the financial markets and/or the economy in general.

SIRPS

According to Sub-sections 6.6 to 6.9 of the Core Principles Report, the distinguishing feature of a systemically important payment system is its capacity to trigger disruptions or transmit shocks across the financial system. The main determinants in this respect are the value and the nature of the payments that the system processes. A payment system is likely to be of systemic importance if at least one of the following is true: (i) it is the only payment system in the country, or the principal system in terms of the aggregate value of payments; (ii) it mainly handles payments of high individual value; and/or (iii) it is used for the settlement of financial market transactions or the settlement of other payment systems.

If the disruption of a retail payment system could threaten the stability of financial markets, the system is considered to be of systemic importance (i.e. a SIRPS). When assessing the systemic importance of a retail payment system, the ECB and the National Central Banks (NCBs) take account of the market penetration within the respective retail payments market, the financial risks pertinent to the system and the risk of domino effects. They base their assessment on the following three quantitative indicators:

- *Market penetration:* in countries where there is no alternative system available to handle retail payments, there would generally be no alternative payment channel available to the public through which to effect retail payments, should this retail system fail. The volumes processed via such a system would normally be too high to be handled via the RTGS system. This is similarly true in cases where there are several retail payment systems but one system processes the bulk of the payments. In addition, the technical standards for the retail system in question may differ from those of the RTGS and other retail systems, meaning that it would be technically impossible to effect retail payments, even if the volumes could be dealt with. The failure of a sole or heavily used retail system in a given country could thus threaten the confidence of the general public in the payment system and the currency. Thus, the fact that there is no alternative payment system or arrangement available to settle retail payments or that the respective system achieves a high degree of market penetration should warrant close attention. A high degree of market penetration is indicated by a *market share of more than 75% of the respective retail payments market*, i.e. the payments processed via interbank retail payment systems and via other payment arrangements.

- *Aggregate financial risks:* an important factor in evaluating whether a retail system is of systemic importance is the value of the payments that the system processes. The Core Principles Report therefore attaches considerable importance to the value of payments, since there is a positive correlation between the amounts processed and the degree of credit and liquidity risk: the higher the value processed in a system, the greater the systemic implications. Even if retail payment systems are not the principal systems in terms of aggregate value, they may process payments of considerable aggregate value that could be of decisive importance for the financial system. To assess the systemic implications of a retail system, it is helpful to relate the amounts processed in such a system to the amounts processed in the relevant RTGS system. All euro area RTGS systems are considered to be systemically important payment systems (SIPS). Extremely high nominal amounts

may also be an indication of systemic importance. Particular attention should therefore be paid to retail payment systems *processing more than 10% of the value of the respective RTGS system or processing payments with an average daily value of more than €10 billion*.

– *Risk of a domino effect:* the failure of a participant to meet its obligations in a retail payment system may have serious repercussions for the non-failing participants, since individual problems may be transmitted to them. In the worst case scenario, such problems would be transmitted to all participants in a system. The risk of a domino effect is most evident in a netting system, but also in a gross system where the failure of one participant to fulfil its obligations may cause a liquidity shortage in the system. Elements that can contribute to a potential domino effect are the concentration ratio in or netting effect of a system, or the size of participants' nominal net debit positions. If the participant with the largest payment obligation in a payment system fails and the values processed in the system are highly concentrated among a few participants, the financial consequences for the other participants may be substantial. *A concentration ratio (i.e. the market share of the five largest participants) of 80%* already appears to put significant strains on the remaining participants in a system. Additionally, in a netting system, the financial burden on non-failing participants will be substantial if the system has a low netting ratio[2] and participants have significant net debit positions. The financial consequences of such a failure will be particularly severe in the event of unwinding. Therefore, even if retail payment systems settle only relatively small values compared with RTGS systems, they have to be assessed carefully if they have a substantial netting effect or the net debit position of a participant reaches a significant nominal amount. If a system's *netting ratio is 10% or less or the net debit position of participants is at least €1 billion*, this would appear to warrant careful attention.

2 Net settlement balance as a percentage of gross transaction value. A low netting ratio indicates a large netting effect.

If a euro retail payment system is characterised by a high degree of market penetration, high aggregate financial risks and a high risk of a domino effect, there is a strong indication that this system is of systemic importance. In addition to these commonly agreed indicators, central banks overseeing retail payment systems may take into account characteristics that are specific to their respective payments market.

Retail payment systems of systemic importance have to comply with the whole set of Core Principles for Systemically Important Payment Systems.

– Six systems were classified as SIRPS because they fulfilled at least one of the criteria: SIT in France, IRECC and IPCC in Ireland, LIPS-Net in Luxembourg, CSS in the Netherlands and PMJ in Finland.

PIRPS

If the disruption of a retail system does not have systemic implications, but could nonetheless have a severe impact, such a system is considered to be of prominent importance for the functioning of the retail economy (i.e. a PIRPS). PIRPS are characterised by the fact that they play a prominent role in the processing and settlement of retail payments and that their failure could have major economic effects and undermine the confidence of the public in payment systems and in the currency in general.

In order to classify PIRPS, the focus was therefore on the concentration of the retail payments market and, in particular, the degree of market penetration of the respective system. The following quantitative indicator was chosen:

– a *market share of more than 25% of payments processed in the respective retail payments market*, i.e. the payments processed via interbank retail payment systems and via other payment arrangements, is an indication that a system is of prominent importance.

The degree of financial risk posed by PIRPS to the economy is different to that posed by SIRPS. Therefore, it was concluded that the Core Principles addressing financial risks (i.e. Core Principles III to VI) should not be obligatory for these systems. However, some of the Core Principles are, in the view of the Eurosystem, so fundamental that they should not only be obligatory for SIRPS but should also be observed by other payment systems of prominent importance in the euro area, even if they are not of systemic importance. For this reason, retail payment systems of prominent importance have to observe a sub-set of the Core Principles, namely Core Principles I, II, and VII to X. This limited sub-set of standards is referred to as the "Retail Standards".

– Seven systems were classified as PIRPS: CEC in Belgium, ACO and DIAS in Greece, SNCE in Spain, BI-COMP in Italy, SICOI in Portugal and STEP2, which has been classified by the ECB.

OTHER RETAIL PAYMENT SYSTEMS

There are other retail payment systems that do not belong to either of the two previous categories. These systems have a lesser impact on the financial infrastructure and the real economy and therefore do not necessarily have to comply with the Core Principles or the Retail Standards. Such systems have to comply with the relevant oversight standards, as and if defined for them. Examples in this respect are the common oversight standards for e-money schemes and the standards defined at the national level by each NCB.

– Two systems were classified as "other retail payment systems": CHB in Belgium and RPS in Germany.