

**REPORT TO THE COUNCIL OF THE
EUROPEAN MONETARY INSTITUTE**

DEVELOPMENTS IN EU PAYMENT SYSTEMS IN 1994

**by the
Working Group on EU Payment Systems**

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1. INTRODUCTION

1. In November 1993 the Committee of Governors released a report submitted by the Working Group on EC Payment Systems on "Minimum common features for domestic payment systems" (the "November 1993 Report"). This report concluded with ten principles for EU Interbank Funds Transfer Systems (IFTS), covering the six areas identified by central banks as requiring specification in terms of minimum common features: access conditions, risk management policies, legal issues, standards and infrastructures, pricing policies and business hours. The Committee of Governors also agreed that progress made in implementing the ten principles should be evaluated once a year by EU central banks in an annual report to the Governors (now to the EMI Council). This is the first of these reports.
2. The present Report was prepared by the EMI on the basis of information provided by the twelve EU central banks which committed themselves to the implementation of the principles in 1993 and by the central banks of the three new Member States (Austria, Sweden and Finland), who have now agreed to commit themselves to the implementation of the ten principles.

2. CONCLUSIONS AND POLICY RECOMMENDATIONS

3. The Working Group concluded that, at present, the EU IFTS do not yet fully comply with the minimum principles contained in the November 1993 Report, even if most of these principles are at least partially satisfied. Nevertheless, work is underway in all EU Member States and considerable progress has been made in order to ensure full compliance with them.

At the domestic level

4. The implementation of Real-Time Gross Settlement (RTGS) systems in all EU countries continues to be seen by EU central banks and the EMI as the main priority. Since these RTGS systems are intended to form the basis of the payment arrangements which EU central banks and the EMI are proposing to implement in view of Stage III, all RTGS systems should, ideally, be ready for the first possible date of Monetary Union.
5. Moreover, in accordance with the objective to minimise systemic risks, it is essential that the principles set out in the 1990 Report of the Committee on Interbank Netting Schemes of the central banks of the Group of Ten countries are applied without unnecessary delays to all large-value net settlement systems.
6. The implementation of RTGS systems and the adoption (where required) of risk control measures in net settlement systems will also require considerable resources from commercial banks. Regular contacts between central banks and their banking communities have been established in order to minimise the costs associated with these measures and to facilitate their timely implementation.

7. Further work is also required to avoid inconsistencies between domestic legal systems which increase risks in domestic payment systems. Whenever necessary, EU central banks will continue to work towards the elimination of the zero-hour clauses, at least as far as they affect payment systems. The need for other legal changes to strengthen the legal basis of cross-border payments is now being analysed in many EU countries.

At the EU level

8. The EMI and the Working Group on EU Payment Systems will deepen their analysis concerning remote access¹ to interbank funds transfer systems in the EU.
9. EU central banks will endeavour to define a common methodology to calculate costs related to their payment systems activities, with a view to facilitating the implementation of pricing policies based on the principle of full cost recovery.
10. According to Article 109f of the Treaty on European Union, the EMI is entrusted with the task of promoting the efficiency of cross-border payments in view of Stage III. In this context, the EU central banks and the EMI will continue their work which aims at the creation of an integrated funds transfer system, based on linkages between national RTGS systems (as described in the note published by the EMI on 15th November 1994, "The EMI's intentions with regard to cross-border payments in Stage III").
11. In the context of Article 109f of the EU Treaty, the EMI will also endeavour to obtain more information on the efforts currently being made by the banks to implement technical infrastructures for processing retail cross-border payments. However, no collective operational involvement is envisaged by EU central banks in this field. The EMI will also continue to follow the work of the European Committee for Banking Standards and will encourage banks to avoid the proliferation of non-compatible standards for cross-border payments.

¹ A credit institution has remote access to an interbank funds transfer system (IFTS) if its main office or one of its branches has direct access to an IFTS located in a country other than that in which the main office or the branch is located.

3. ANALYSIS

1. The assessment of the domestic funds transfer systems in the light of the ten principles of the November 1993 Report was conducted by the EMI on the basis of a questionnaire sent to EU central banks. As in the November 1993 Report, the analysis conducted primarily concerns some of the main features of the large-value interbank funds transfer systems (IFTS), which are the core elements of payment systems, but does not disregard retail systems.
2. In very general terms, most of the principles are partially satisfied in all EU countries and work is in progress, where necessary, to improve compliance with them. Yet all EU IFTS comply fully with only one of the principles laid down in the November 1993 Report, which concerns operating hours (principle 10). Indeed, this principle entailed no specific commitment on the part of central banks since a minimum overlap between the operating hours of the major EU IFTS already existed when principle 10 was formulated.
3. **Principle 1: Direct access to interbank funds transfer systems.** As a rule, only central banks and credit institutions, as defined under the Second Banking Co-ordination Directive, can be admitted as direct participants in funds transfer systems which process third-party payments. As exceptions, certain other bodies authorised to hold accounts for customers may also be, with the approval of the central bank, direct participants in such systems provided that: (a) their public nature ensures little risk of failure or (b) they are supervised by a recognised competent authority.
4. **Banks and non-banks.** In some countries, only credit institutions and the central bank are direct participants in domestic IFTS. In others, some public authorities such as the postal administration are also admitted as direct participants. In six countries, some non-bank financial institutions which comply with principle 1 are also direct participants in domestic IFTS. Most are securities dealers. As a rule, non-bank participants in domestic IFTS do not enjoy the same treatment as credit institutions. In particular, they do not have access to central bank liquidity. Finally, direct access to IFTS is still permitted to non-bank institutions not complying with principle 1 in only two countries. However, policies have been adopted with a view to gradually ending the participation of non supervised institutions and this principle will be fully met by 1996.
5. **Access to central bank accounts.** In some EU countries, some non-banks may have indirect access to IFTS through accounts held at their central banks. They are not considered as direct participants in the IFTS even if the central bank runs the system because: 1) the functioning rules of their accounts differ from those of commercial banks; and 2) they are not allowed to process third-party payments.
6. **Eligible banks.** In principle, all credit institutions are entitled to have direct access to domestic IFTS provided that they meet the participation criteria of the systems. However, there exist some IFTSs which are open only to a specific category of banks (e.g. funds transfer systems of the savings and

co-operative banks). In some countries, savings and co-operative banks are not allowed to be direct participants in the IFTSs and resort to clearing banks that they own to get indirect access to the IFTS.

7. Number of direct participants. The number of direct participants in EU IFTS differs widely from country to country, ranging from nine direct participants in the Finnish banks clearing system to 5,817 in the German EIL-ZV. In general, the number of participants in EU IFTS has increased slightly during the past year as a consequence of an increase in the number of branches of foreign banks participating in the systems.
8. **Principle 2: No discrimination in access**. **No discrimination can be made between home-based credit institutions and credit institutions licensed in other EC countries which ask to participate in local interbank funds transfer systems, either through their local branches or directly from another Member State. The applicants, however, may be required to establish that they can meet the relevant legal provisions of the host country. They also have to comply with the necessary technical requirements of the system; these requirements, however, should not be discriminatory.**
9. Compliance with the principle. This principle is complied with only partially. While, no discrimination is made between home-based credit institutions and local branches of credit institutions licensed in other EU countries (see Table 1), the implementation of remote participation² raises several issues.
10. Participation through foreign branches. At present, there are 162 branches of foreign banks which are direct participants in EU IFTS, including 104 branches of banks of other EU countries, and 55 branches of non-EU banks. Local branches of foreign banks are direct participants in at least one IFTS in all EU countries, except for Luxembourg. Systems which are most open to foreign branches are the Spanish STMD (fifty-eight out of two hundred and nineteen) and the Greek ACO (twelve out of forty-eight) (see Table 1).

² A credit institution has remote access to an interbank funds transfer system (IFTS) if its main office or one of its branches has direct access to an IFTS located in a country other than that where the main office or the branch is located.

Table 1.A

Direct participants in EU RTGS systems

	DK	D	F	I	NL	S	FIN
	DN - Inquiry	EIL-ZV	TBF (forecast)	BISS (BI-REL)	FA System	RIX	BOF System
Direct participants	108	5,817 ³	217	409	169	21	22
of which:							
<u>Credit institutions</u>	85	5,817	170	409	104	16	15
- branches of other EU banks	3	na	na	10	14	3	3
- branches of non-EC banks	0	na	na	8	11	0	1
- remote participants	0	na	na	0	0	0	0
<u>Non-banks (meeting principle 1)</u>	23	0	34	0	65	4	7
- Public authorities	3	0	1 + CB	0	10+CB	1+CB	2+CB
- Postal Administration	0	0	1	0	0	0	0
- Supervised financial institutions	20	0	31	0	15	2	4

Table 1.B

Direct participants in EU large-value net settlement systems⁴

	B	D	GR	E		F	IE	I			L	PG	UK	FIN
	CH	EAF	ACO	Madrid CH	Stmd	Sagit-taire	DIS	SIPS	ME	LC	Manual Netting	CH	CHAPS	Banks Clearing
Direct participants	71	60	48	54	219	62	30	119	299	276	13	39	16	9
of which:														
<u>Credit institutions</u>	68	60	46	54	189	61	29	119	298	273	12	38	15	9
- branches of other EU banks	7	6	12	5	27	2	5	12	12	5	0	4	2	2
- branches of non-EU banks	3	4	8	2	31	4	0	7	8	4	0	0	1	0
- remote participants	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<u>Non-banks (meeting principle 1)</u>	3	0	2	0	30	1	1	0	1	3	1	1	1	0
- Public authorities	2	0	0	0	0	CB	CB	0	CB	2	0	1	CB	0
- Postal Administration	1	0	1	0	0	0	0	0	0	1	1	0	0	0
- Supervised financial institutions	0	0	1	0	30	0	0	0	0	0	0	0	0	0

³ Number of accounts of credit institutions at the Deutsche Bundesbank.

⁴ DIS (Ireland), STMD (Spain) and Banks' clearing (Finland) are end-of-day gross settlement systems.

Table 1.C

Direct participants in other EU IFTS

	B	DK	D		E	F		IE	I	O	UK	
	CEC	DN Retail System	MAOBE	DTA	SNCE	Paris CH	SIT	Retail System	Retail System	EBK	BACS	Cheque and Credit
Direct participants	84	60	5,817 ⁵	5,817	30	38	23	15	153	90	19	12
of which												
<u>Credit institutions</u>	81	60	5,817	5,817	30	34	22	14	153	90	18	11
- branches of other EU banks	7	na	na	na	0	0	0	4	1	0	0	0
- branches of non-EU banks	3	na	na	na	0	0	0	0	1	0	0	0
- remote participants	0	na	na	na	0	0	0	0	0	0	0	0
<u>Non-banks (meeting principle 1)</u>	3	0	0	0	0	4	1	1	0	0	1	1
- Public authorities	2	0	0	0	0	3	1	CB	0	0	CB	CB
- Postal Administration	1	0	0	0	0	1	0	0	0	0	0	0
- Supervised financial institutions	0	0	0	0	0	0	0	0	0	0	0	0

11. **Remote access.** When the November 1993 Report was written, it was expected that remote access was not likely to develop rapidly since, on the one hand, larger credit institutions already have access to many EU funds transfer systems through local branches and, on the other hand, smaller credit institutions will probably consider that the additional costs related to such participation would exceed the advantages that they could reasonably expect. The situation is now evolving and some EU central banks have been informally contacted about remote access by foreign banks. The issue of remote access is now under consideration by the EMI and EU central banks. Although EU central banks accept, in principle, that access criteria may not discriminate against applicants from other Member States, neither the provisions of the Second Banking Co-ordination Directive, nor principle 2 of the November 1993 Report, state that banks have an automatic right to remote access. In fact, certain technical, legal and prudential issues could make remote participation difficult. Some EU central banks have already been working to remove these obstacles, but it may be the case that a common policy in the EU is necessary in order to avoid divergences which could distort competition between financial institutions. Aspects to be considered for minimum harmonisation are those relating to the legal framework as well as monetary policy and prudential issues, such as exchange of information, provision of central bank liquidity, collateral pledging and remote participation in domestic interbank money markets.

Technical problems. So far, the following types of technical problems have been identified: (i) telecommunication networks and standards; (ii) manual and back-up procedures and (iii) bank code numbers.

- (i) In some countries, data relating to all the automated gross and net settlement systems are conveyed through the national network, to which potential remote participants would have to be connected.

⁵ Number of accounts of credit institutions at the Deutsche Bundesbank.

- (ii) There may be practical problems that make a local presence difficult to avoid; this is perhaps most obvious in payment systems where a physical exchange of instruments takes place (e.g. cheque clearing), but it may also apply in electronic systems if one of the contingency methods in the event of a system failure is to revert to a paper-based or magnetic-tape exchange of information.
- (iii) In most EU countries, each participant must have a bank code number in order to be "recognised" by the systems. In some countries the number of available code numbers would be too small to accommodate many remote participants.

Legal difficulties. Legal difficulties may stem from some peculiarities of domestic IFTS internal rules and statutes as well as from domestic legislation.

First, internal rules and/or statutes in the domestic IFTS may, at present, be incompatible with remote access. Second, some central banks are reluctant to accept remote access by foreign banks because of the legal uncertainties in the applicant's home country. For instance, there is a legal risk that the insolvency legislation on the home country of a cross-border participant may: (i) render invalid the settlement of payments in both an RTGS and a net settlement system (because of, for instance, zero-hour rules and non-availability of multilateral set-off); (ii) undermine collateral (by privileging claims for taxes, wages, statutory mortgages,); (iii) preclude the termination of loans.

Monetary and prudential concerns. Having a settlement account with overdraft facility at the central bank is a condition for direct membership in most of the EU IFTS. In almost all EU countries the provision of liquidity and the function of lender of last resort have up to now been conceived with respect to banks established in the country and, therefore, subject to the national monetary and prudential regulations. Some problems may be caused by the fact that remote participants do not fall under these regulations.

12. Remote access to an account at a central bank. In some cases, holding an account at a specific branch of the central bank is a prerequisite for access to some form of payment system. However, existing regulations often require that correspondent accounts held at the central bank are maintained only at the main office and not at its local branches. Nevertheless, in 1994 two central banks agreed to open sub-accounts at their branches located near the borders, to allow foreign banks to effect cash operations.
13. **Principle 3: Transparency of access criteria.** Access criteria to interbank funds transfer systems should be laid down in a public document. This document should also set out procedures for removing a participant from the system. Additional criteria beyond those embodied in principles 1 and 2 may apply to direct participants. These criteria may include one or more of the following conditions:
 - adequate financial strength of the institution;
 - minimum number of transactions;
 - the payment of an entry fee;
 - the approval (on technical or creditworthiness grounds) of either the owner/manager of the system or the direct participants;

- the approval of the local central bank (when possible within the legal context of the country).

14. Compliance with the principle. Written rules are set out in a public document in all EU countries (see Table 2). The criteria adopted in the various systems differ from country to country.

Table 2.A

Access criteria in EU RTGS systems

	DK	D	F	I	NL	S	FIN
	DN - Inquiry	EIL-ZV	TBF	BISS	FA System	RIX	BOF System
Access criteria							
- Written rules	+	+	+	+	+	+	+
- Minimum level of data or ratios representative of financial strength	-	-	-	-	-	+	+
- Minimum number of transactions	-	-	-	-	-	-	-
- Payment of an entry fee	+	-	-	-	-	-	-
- Approval from the owner/manager or the direct participants	+	+	+	+	+	+	+
- Approval from the local central bank	+(1)	+(1)	+(1)	+(1)	+(1)	+(1)	+(1)
- Technical requirements	+	+	+	+	+	+	+

1. The owner/manager is the central bank.
2. Not legally binding.
3. Minimum capital of ECU 5 million.

Table 2.B

Access criteria in EU large -value net settlement systems⁶

	B	D	GR	E		F	IE	I	L	NL	PG	UK
	CH	EAF	ACO	M. CH	Stmd	Sagit-taire	DIS	SIPS ME, LC	Manual Netting	8007 Swift	Trad. CH	CHAPS
Access criteria												
- Written rules	+	+	+	+	+	+	+	+	+	+	+	+
- Minimum level of data or ratios representative of financial strength	-	-	-	+	+	-	-	-	-	-	-	-
- Minimum number of transactions	-	+	-	-	-	-	-	-	-	-	-	+
- Payment of an entry fee	+	-	-	-	-	+	-	-	-	-	-	+
- Approval from the owner/manager or the direct participants	+	+	+	+	+	+	+	+	-	+	-	+
- Approval from the local central bank	+	+(1)	+(1)	+	+(1)	+(1)	+	+(1)	+(1)	+(1)	+	+
- Technical requirements	+	+	+	+	+	+	+	+	+	+	+	+

Legenda: + = Yes - = No

- (1) The owner/manager is the central bank.

⁶ DIS (Ireland) and STMD (Spain) are end-of-day gross settlement systems.

15. Financial ratios and number of transactions. In some countries, compliance with the capital requirements set out in the Basle Capital Accord is expressly mentioned or is being introduced as a requirement for application to domestic IFTS. No other financial data or ratios seem to be used as access criteria.⁷ Some countries are considering the possibility of introducing access criteria to RTGS systems based on the number of payments exchanged via the system.
16. Technical requirements Even though they are not expressly mentioned in principle 3, technical requirements, such as connection to the domestic telecommunication network or to SWIFT or the use of specified hardware or software (e.g. for encryption purposes) are mandatory in almost all countries.
17. Removal rules In all EU countries it is assumed (or expressly prescribed) that participants are removed from the system whenever they stop meeting the access criteria. Specific rules or procedures for removing a participant from an IFTS exist only in Belgium and Germany.
18. **Principle 4: Real-time gross settlement systems. As soon as feasible, every Member State should have a real-time gross settlement system into which as many as large-value payments as possible should be channelled. Such systems should settle across accounts at the central bank and have sound legal, technical and prudential features which are compatible across EC Member States.**
19. Compliance with the principle. When the November 1993 Report was published RTGS systems were in operation in only four of the Member States, Denmark, Germany, Italy and the Netherlands, and, except in Denmark, they processed only a minority of large-value payments. By the end of 1996 RTGS systems are expected to be in operation in all the EU countries with the exception of Austria and Luxembourg, which will have RTGS systems operating at a later date.
Central banks are collaborating with domestic banking communities to implement these systems, which are intended to form the basic infrastructures of the new payment arrangements to be put in place in view of Stage III of EMU. In this connection, in November 1994 the EMI published a note entitled "The EMI's intentions with regard to cross-border payments in Stage III".
More precisely, the current situation is the following:
 - in Denmark, Sweden and Finland, RTGS systems are already in operation and no significant modifications are envisaged;
 - in Germany, a new EIL system will be implemented in several steps from 1995 on using a new data-processing infrastructures;
 - in Italy and the Netherlands, the existing RTGS systems will be completely redesigned;
 - in the United Kingdom, the most important large-value net settlement system, CHAPS, will be transformed into an RTGS system;
 - in Belgium (Clearing House) and Greece (ACO) the large-value net settlement systems will be replaced by RTGS systems;

⁷ The ECU Banking Association is currently considering whether to introduce public credit ratings as a criterion for access to the ECU Clearing and Settlement System.

- in Spain and Ireland, the end-of-day gross-settlement systems will be converted into RTGS systems;
 - in all other countries, new RTGS systems will be implemented.
20. Payments processed In Belgium, Denmark, Greece, Ireland, Italy, the Netherlands, Portugal, Sweden and the United Kingdom it is intended to process all large-value payments through RTGS systems. In the other countries, some large-value payments will continue to be processed and settled through net settlement systems.
21. **Principle 5: Large-value net settlement systems.** Provided that they settle at the central bank, large-value net settlement systems may continue to operate in parallel to real-time gross settlement systems but, in the near future, they should: (a) settle on the same-day as the exchange of the payment instruments: and (b) meet the Lamfalussy standards in full.
22. Compliance with the principle. At the moment, only the new netting system in Luxembourg fully complies with principle 5. The system will provide for immediate payment irrevocability and finality and fully collateralised multilateral net limits.
- In some EU countries large-value netting systems (Belgium (Clearing House), Greece (ACO), Portugal (Clearing House) and United Kingdom (CHAPS)), are scheduled to disappear. In France, a new system complying with the Lamfalussy standards is being studied; it could operate in parallel with TBF, the new RTGS system. In other countries (Germany, Italy, Spain and Finland) new risk control measures are being adopted to improve their systems' compliance with the Lamfalussy standards. In particular, in Germany, a new system, EAF 2, will be introduced in 1995; it is intended to fully comply with and even exceed the minimum standards laid down in the 1990 Report of the Committee on Interbank Netting Schemes of the central banks of the Group of Ten countries. The measures introduced will enable the system to reduce credit risk by reducing to a large extent the settlement lag which exists in traditional (end-of-day) net settlement systems.
23. **Principle 6: Other interbank funds transfer systems.** As a part of their oversight function, EC central banks should assess the scale and the nature of the settlement risk in all interbank funds transfer systems operating in their country. While seeking to reduce as far as possible the risks in these systems, EC central banks may adopt, for systems not covered by principles 4 and 5, a somewhat flexible approach which takes into account the costs and benefits of any envisaged solution. Over time, whenever systems are changed or redesigned, increasingly high standards of risk-reduction should be achieved.
24. Compliance with the principle. As a rule, the scale and nature of the settlement risk in other domestic IFTS do not present particular problems for EU central banks. However, some of them feel that they have not yet sufficiently investigated the "safety" standards applied in these systems, to be confident that they are appropriate in all cases.

25. Measures planned. In most countries no new measures have been introduced. The only exceptions are Belgium and France. When the Belgian RTGS system will be operational, a maximum amount for transfers that may be handled will be introduced for the CEC, which, therefore, will only handle retail operations. In France some risk control measures are currently under study in the SIT (a retail IFTS) and could be implemented in the coming years: (i) bilateral settlement through the RTGS system; and (ii) establishment of one or more intermediate accounting balances during the course of the day.
26. **Principle 7: Legal issues.** The legal basis of domestic payment systems should be sound and enforceable. Inconsistencies between domestic legal systems in the EC which increase risks in payment systems need to be analysed and, as far as possible, reduced. As a first step, where necessary, EC central banks should press for changes to certain aspects of national bankruptcy laws (e.g. "zero-hour clauses").
27. Zero-hour clauses. In November 1993 the zero-hour rule was still operating in France, Greece, Italy, Austria and the Netherlands. It has been eliminated in France under the law of 31st December 1993, which contains an exemption to the zero-hour rule for payments made through interbank payment systems. The law also defines the notion of an interbank payment system in such a way that the exemption will only apply to financial institutions. In the other four countries, amendments to the existing legislation are being studied in order to abolish the zero-hour rule, at least as far as banks participating in IFTS are concerned.
28. Other legal changes. Other legal changes may be required to enable the smooth functioning of RTGS systems. Further work could be required in the following areas: cross-border use of collateral; finality of payments and settlement; legal status of electronic payments.
29. The European Commission. After the discussions held in 1991-92 in the Payment System Technical Development Group, the European Commission concluded that a certain degree of legal harmonisation may be necessary to facilitate cross-border payments, and in particular to reduce risks and clarify responsibilities. A working group of legal experts was established consisting of lawyers from various ministries (e.g. Justice, Finance) and lawyers from EU central banks. The Commission is now assessing the possibility of preparing an EU Directive covering areas in which legal harmonisation is desirable.
30. **Principle 8: Technical issues.** Compatible banking standards and efficient channels of communication between EC payment systems are desirable and will assist the processing of cross-border payments in the context of the Single Market. They will become increasingly important in view of EMU. EC central banks will support and participate in the efforts made by banking communities in these fields.
31. Standards. In the November 1993 Report it was stated that, although standardisation was important in view of the Single Market, EU central banks were content to leave this matter to the private sector. The

EMI was invited to participate, as an observer, in the meetings of the European Committee for Banking Standards (ECBS). In the course of 1994, the ECBS approved a standard for cross-border payments.

This standard defines the data elements to be used for cross-border retail payments. It has been considered as a guideline for the future, but no time scale for full compliance with it has been established. This generic standard is independent of the underlying mechanisms used for payment transfers and compatible with most of the standards adopted in the EU systems. However, the adoption of this generic standard raises several problems. First of all, the banking systems of some Member States do not conform to all its clauses. Second, it is too "generic" and very far from the precision generally adopted at the domestic level. Finally, it applies only to credit transfers and cannot be used for other payments, in particular, direct debits.

EU central banks and the EMI share the view that standardisation is essential for the transition to Monetary Union and that, in Stage III of EMU, more precise common standards will be required. Therefore, the ECBS will be encouraged to go beyond the generic standard and move towards more specific ones. In doing so, the proliferation of non-compatible standards could also be avoided.

32. Infrastructures. In the November 1993 Report, the importance of compatible infrastructures to facilitate cross-border payments was stressed. Work on these issues is in progress, both at the retail and at the large-value payments level.

33. At the retail level, the EMI and EU central banks are aware of new payment channels being studied by the banking communities. So far, four possible solutions have been identified: (i) acquisition or establishment of banks - technically interconnected - throughout the EU; (ii) bilateral relationships between major banks; (iii) development of cross-border intra-group netting and settlement arrangements; (iv) linkages between Automated Clearing Houses.
So far, no assessment of these initiatives has been carried out by the EMI, although, according to Article 109f (3) of the Treaty on European Union, it is a statutory duty, in view of Stage III of EMU, for the EMI "to promote the efficiency of cross-border payments". The EMI and EU central banks intend to gather information in this field in 1995.

34. As far as large-value payments are concerned, EU central banks and the EMI have the intention of setting up a system for Stage III by linking the domestic RTGS facilities. The European banking communities are being consulted on the EMI's proposal in this field and a note on the "EMI's intentions with regards to cross-border payments in Stage III" was released to them in November 1994.

35. **Principle 9: Pricing policies of EC central banks**. The pricing policies of EC central banks, in respect of payment systems functions, should aim at the avoidance of any competitive distortion within the context of the Single Market and in preparation for EMU. As a general principle, such policies should aim at the full recovery by the central banks of the costs of these services.

36. Compliance with the principle. At the moment only three central banks, recover the full cost of their payment services, other central banks are actively studying their pricing policies in the light of this

principle. A gradual move towards full cost recovery is emerging mostly on the occasion of the conversion of existing systems into RTGS or of the creation of new RTGS systems.

37. Cost methodology. The full recovery by central banks of the costs of the payment systems services provided is not sufficient to avoid competitive distortions in the context of the Single Market and in the perspective of the Monetary Union if the full cost is calculated following different criteria throughout the European Union. At present, accounting systems differ from country to country. Therefore EU central banks have agreed that a study should be undertaken to establish compatible cost methodologies.
38. **Principle 10: Operating Hours.** The overlap between operating hours of the major EC interbank funds transfer systems (and in particular of the hours of RTGS systems) is necessary and could be increased in order to facilitate cross-border payments and delivery-versus-payment mechanisms. In this respect, and as a preparatory step towards EMU, EC central banks should consider closer co-ordination of the operating hours of their settlement services.
39. Compliance with the principle. The principle is substantially met. Looking at the operating hours of the major EU large-value IFTS, it may be noted that at the present there are three hours (from 9.30 a.m. to 1.00 p.m. Central European Time) of overlap throughout the European Union, during which time there is at least one large-value IFTS per country open (see Table 3).
The Deutsche Bundesbank decided to extend the operating hours of the EIL-ZV. It is envisaged for the end of 1995 that it will be possible to enter transactions into the system from 8.30 a.m. to 3 p.m. (Central European Time). In the UK, it was agreed that from January 1995, in preparation for the closure of the Town Clearing (the large-value paper clearing) at the end of February 1995, the final cut-off time for CHAPS has changed from 4.30 p.m. to 4.45 p.m. (Central European Time).

**Table 3: Operating hours of the major EC large-value IFTS
(Central European Time, for interbank payments, for same-day value)**

System	0	7	8	9	10	11	12	13	14	15	16	17	18	19	20
B: Clearing House															
DK: D.N. System															
D: EAF															
D: EIL-ZV															
E: STMD															
GR: ACO															
F: Sagittaire															
F: TBF															
FIN: BOF															
IRL: D.I.S. ¹															
I: SIPS															
I: B.I.S.S.															
I: El. Memoranda															
NL: FA System ²															
NL: 8007 system															
P: Traditional clearing															
UK: CHAPS															
S: RIX															
EUR: ECU Clearing															

- 1 = DIS is and end-of-day gross settlement system.
- 2 = time of finality: approx. 7 p.m. local time (8 p.m. central European time).
- * = time of finality.
- **** = real-time gross settlement systems.
- oooo = net settlement systems.

GLOSSARY¹

Automated Clearing House (ACH): an electronic clearing system, in which data on payment orders are exchanged by magnetic media, or via a telecommunication network, and handled by a data processing centre.

Bilateral net settlement system: a netting system in which participants' bilateral or net settlement positions are settled between every bilateral combination of participants.

Banking organisation: a credit institution or an organisation collectively owned by credit institutions.

Caps: a risk management arrangement whereby limits are placed on the positions that participants in an interbank funds transfer system can incur during the business day; they may be set by each individual participant or by the body governing the transfer system; they can be set in multilateral net, bilateral net or in gross terms and can be either a credit cap or a debit cap. Bilateral net credit caps, set by an individual participant, will constitute a limit on the credit exposure that that participant will accept vis-à-vis each other participant; in contrast, sender net debit caps may be set (by the governing body of the system based on a particular formula), which limit the aggregate value of transfers that an individual participant may send to all other participants over and above its incoming transfers.

Clearing: a set of 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 (clearing house). The procedures often also contain a mechanism for the calculation of participants' bilateral and/or multilateral net positions with a view to facilitating the settlement of their obligations on a net or net net basis.

Correspondent banking: an arrangement under which one bank provides payment and other services to another bank. Payments through correspondents are often executed through reciprocal accounts (so-called nostro and vostro accounts), to which standing credit lines may be attached.

Correspondent

banking services are primarily provided across international boundaries but are also known as agency relationships in some domestic contexts.

Credit risk (or exposure): the risk that a counter party will not settle an obligation for full value, either when due, or at any time thereafter.

¹ All definitions hereafter are taken from the Glossary of the Report on "Minimum Common Features for Domestic Payment Systems" unless otherwise specified.

Cross currency settlement risk: risk relating to the settlement of foreign exchange contracts which arises when one of the counterparties to a contract pays out one currency prior to receiving payment of the other.

Daylight credit (or intra-day credit): credit extended for a period of less than one business day; in a credit transfer system with end-of-day final settlement, daylight 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.

Delivery-versus-payment (DVP): phrase used to summarise the conditions that must hold if the counterparties to a transaction in an exchange-of-value system are not to be exposed to principal risk (the risk that one counterparty loses the full value of the transaction); DVP in its most rigorous form implies that both the asset transfer and the related funds transfer are simultaneously irrevocable and unconditional for the parties involved.

Direct participants (access) in IFTS: participants in an IFTS who are responsible to the settlement institution (or to all other direct participants) for the settlement of their own payments, those of their customers, and those of the indirect participants on whose behalf they are settling .

Final settlement: settlement of the obligations between two parties by irrevocable transfer of credit across their accounts at a defined settlement institution. Where such transfers are made by irrevocable credit to accounts on the books of a central bank, the transfer could be described as an "ultimate settlement" in the economic sense that it is effected in central bank liabilities.

Funds transfer system (FTS): a formal arrangement, based on private contract or statute law, with multiple membership, common rules and standardised arrangements, for the transmission and the settlement of money obligations arising between the members.

Indirect access (participants) to IFTS: a form a membership which exists to varying degrees in FTS; it gives to institutions some functions and responsibilities of direct participation without going as far as entrusting them with the settlement responsibilities reserved to direct participants.

Interbank funds transfer system (IFTS): funds transfer systems in which most of (or all) participants are used primarily to process cashless payments which involve the credit institutions.

Irrevocable transfer: a transfer which cannot be revoked by the transferor.

Large-value payments, large-value IFTS: payments which: (1) have an urgent nature: and/or (2) need to be irrevocable in order to ensure final settlement. The four types of payments related to one or

both these two categories: (a) incoming payments stemming from the central bank operations in the interbank money market; (b) more generally, payments linked to the functioning of the financial market in which trading involves the use of the same-day funds several times a day (e.g. domestic currency side of foreign exchange transactions, eurocurrency markets, interbank lending operations; (c) high-value or urgent payments originated by non-bank customers, mostly corporate; and (d) payments representing settlement operations for netting schemes or "delivery versus payments mechanisms", for which irrevocability and finality of settlement is a pre-requisite for risk control.

Liquidity risk: the risk from a participant's failure to settle a debit position at the time due because it does not have enough liquid assets; liquidity risk does not imply that a participant is insolvent since he might be able to settle the required obligation at some unspecified time thereafter.

Loss-sharing rule (or loss-sharing agreement): an agreement between participants in a clearing system regarding the allocation of any loss arising when one or more participants fail to fulfil their obligations; the arrangement stipulates how the loss will be shared among the parties concerned in the event the agreement is activated.

Multilateral net settlement system (multilateral NSS): a netting system in which direct participants settle only their net positions resulting from the clearing process.

Net settlement system (NSS): see bilateral and multilateral net settlement system.

Netting (or netting scheme): an agreed offsetting of positions or obligations by trading partners or participants in a system. The netting reduces a large number of individual positions or obligations to a smaller number of positions. Netting may take several forms which have varying degrees of legal enforceability in the event of default of one of the parties.

Oversight: Central bank duty, principally intended to promote systemic stability.

Payment: the satisfaction and discharge of an obligation by the debtor's irrevocable provision of an unconditional claim on a third party acceptable to the creditor (for example bank notes, deposit balance held at a financial institution or at the central bank).

Payment system: it consists of a defined group of institutions, and of a set of instruments and procedures, used to ensure the circulation of money within a geographical area, usually a country.

Real-time transmission or processing: the transmission or processing of funds and/or securities transfer instructions on an individual basis at the time they are initiated.

Real-time gross-settlement systems (RTGS): (1) a funds transfer system; (2) in which payment orders are processed one by one in real-time; and (3) which provides for the immediate settlement of all payments provided that there are enough funds or overdraft facilities on the issuer account with the settlement agent.

Remote access to IFTS: (new definition). A credit institution has remote access to an IFTS if its main office or one of its branches has direct access to an IFTS located in another country.

Retail payments, retail IFTS: all kinds of payments which are not defined as large-ones. (see para.10)

Settlement: completion of a payment or the discharge of an obligation between two or more parties. Frequently used to refer to the payment or discharge of interbank transactions or a series of prior existing transactions.

Settlement risk: a general term used to designate both credit and liquidity risks in a transfer system, i.e. the risk that a party will fail to meet one or more obligations to its counterparties or to a settlement agent or settlement institution.

Settlement agent: the institution initiating the final settlement of a clearing, on behalf of all the participants.

Systemic risk: the risk that the failure of one participant in an interbank funds transfer system or securities settlement system, as in financial markets generally, to meet his required obligations will cause other participants or financial firms to be unable to meet their obligations when due.

Zero-hour clause: provision in the bankruptcy laws which retroactively renders transactions of a closed institution ineffective after 0.00 a.m. on the date it is ordered to be closed.

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