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FINANCIAL SECTOR ASSESSMENT PROGRAM
REPUBLIC OF BELARUS

DETAILED ASSESSMENT OF OBSERVANCE OF CPSS CORE
PRINCIPLES FOR SYSTEMICALLY IMPORTANT PAYMENT
SYSTEMS

**BELARUS INTERBANK
SETTLEMENT SYSTEM - BISS:
RTGS SERVICE**

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Contents	Page
I. BISS—The RTGS Service of the Republic of Belarus	1
A. General	1
B. The Functioning of the BISS.....	3
C. Main Findings—Summary	7
D. Recommended Actions and Authorities’ Response to the Assessment.....	17
E. Authorities’ Response	20
 Tables	
1. Payments Handled in NBRB Systems in 2001	4
2. Payments Handled in NBRB Systems in 2002	4
3. Payments Handled in NBRB Systems in 2003	5
4. Detailed Assessment of Observance of CPSS Core Principles for SIPS and Central Bank Responsibilities in Applying the CPs—BISS	7
5. Summary Observance of CPSS Core Principles and Central Bank Responsibilities in Applying the CPs—BISS.....	17
6. Recommended Actions to Improve Observance of CPSS Core Principles and Central Bank Responsibilities in applying the CPs—BISS.....	18

I. BISS—THE RTGS SERVICE OF THE REPUBLIC OF BELARUS

A. General

1. This assessment was undertaken in the context of a World Bank/IMF Financial Sector Assessment Program (FSAP) exercise for the Republic of Belarus in November 2004 which covered, inter alia, the *Core Principles for Systemically Important Payment Systems*.¹ This assessment covers the Belarus Interbank Settlement System (BISS), providing real-time gross settlement facilities for transactions in Belarusian rubel (BYR).
2. The National Bank of the Republic of Belarus (NBRB) has conducted a formal self-assessment of BISS's observance of the Core Principles. This assessment was made available to the mission, together with a document entitled "Concept Document for the Development of the National Payment System of the Republic of Belarus until 2010 with an Account for Global Trends". During the mission the NBRB made available further documents (in Russian) and statistics relevant for the assessment. Extensive meetings were held with officials from the NBRB (during which oral information was received on a large range of issues), supplemented by discussions with representatives of three banks participating in BISS.
3. The G-10 Committee on Payment and Settlement Systems' (CPSS) Report on Core Principles for Systemically Important Payment Systems Part I and II and an IMF guidance note were used when assessing BISS. No obstacles were faced in the work. The authorities and others were fully cooperative.

The payment infrastructure in the Republic of Belarus

4. All interbank transfers of funds in Belarus are settled through payment systems managed by the NBRB, within the framework of the Automated System of Interbank Settlements (hereinafter ASIS). ASIS consists of two components:
 - the Belarus Interbank Settlement System (BISS), providing real-time gross settlement facilities for (credit) transactions in Belarusian rubel. BISS commenced operation in 1998 and is primarily designed for high-value payments, although there is no lower (or upper) limit on the value of individual payments. Thus, it is also used for the processing of time-sensitive payments of any size. There are currently 36 participants in BISS; and
 - the National Bank clearing system, providing for net settlement of large volumes of low-value interbank transactions. Interbank settlements in the clearing system are effected based on payment transfers formed and sent by the participating banks. The system handles both credit and debit transactions. Net balances arising in the clearing systems are settled in BISS. The clearing system has 35 participants.

¹ Prepared by Tom Kokkola (European Central Bank).

5. In addition to the two above systems, there are two other clearing systems in Belarus. First, a *clearing and settlement system for securities* (for securities trades made on the Stock Exchange) operated by the Belarusian Currency and Stock Exchange. Here, final (net) delivery of securities takes place in the NBRB Depository (for government and NBRB securities) and the Republican Depository of Securities (for equities and other corporate papers).² The latter depository is owned by the Ministry of Finance. The net funds positions of participating banks are calculated in the securities settlement system and then settled in BISS. Securities trades are settled on T+0 (using a procedure replicating DVP Model 3). Second, payments for transactions using plastic cards issued in Belarus under the *BelCard* scheme are handled within the BelCard scheme (payments for transactions using cards of international systems are processed by the processing centers of those systems). Net interbank balances arising from plastic card transactions are settled in BISS.

6. While ASIS is the overarching name of the NBRB payment system service, its two components, the BISS and the clearing system, are in principle independent systems with separate sets of soft-ware and operational procedures. Nevertheless, a part of the documentation is defined on the level of ASIS, BISS and the clearing system share a common hard-ware platform and both systems are accessed via common communication network arrangements.

7. Besides the NBRB, the following organizations are involved in the operation of the payment infrastructure:

- the unitary enterprise *Belarusian Inter-Bank Settlement Center (BISC)* which is a technical operator of ASIS and thereby BISS and the NBRB clearing system. BISC is also responsible for developing the software for the BelCard system and for providing organizational support to the telecommunication network used by BISS and the clearing system. BISC is fully owned by the NBRB;
- the republican unitary enterprise *Center for Banking Technologies (CBT)*, responsible for development and maintenance of the software of the national payment system. CBT is fully owned by the NBRB;
- the open joint-stock company *Belarusian Currency and Stock Exchange (CSE)* which is an operator of the securities clearing and settlement system. The NBRB owns more than 99 percent of the share capital in CSE. The remaining part is owned by banks and “professional participants” as only shareholders can take part in trading;
- the open joint-stock company *National Processing Center (NPC)* that provides technical, organizational, and information support to the operation and development of bank cards transactions in Belarus. Belarusbank holds slightly more than 50 percent

² Settlements for operations with securities in the OTC market are effected by means of sending a payment order for monetary transfer to BISS (if there is a need to make an interbank settlement) and an order to transfer securities to the depository where they are kept.

of the NPC capital. The NBRB has about 38 percent, BISC some 6 percent, while the remaining part is held by some major banks.

B. The Functioning of the BISS

8. In BISS, payments are processed as follows: a payment message (employing formats very similar to SWIFT message formats MT100, MT202 or MT204) is submitted to ASIS via one of the six alternative telecommunication networks available. Only a limited number of persons at participating banks have the authority to initiate payments. Each of them has a personal key (as part of a public key management scheme in ASIS), a digital signature is attached to each payment and payment messages are subject to encryption. Once received by ASIS, the system will check whether the message relates to a large-value (all payments exceeding the value threshold of BYR 5 million are considered large-value) or a time-sensitive payment (of any value), in which case it is routed to the BISS - or, if it is a non-urgent low-value payment, in which case it is routed to the clearing system. At this stage, all payment messages also pass through a validation process, for example to check for duplicate messages.

9. Once a valid payment request is submitted to BISS, the system will check whether sufficient funds are available in the correspondent (settlement) account of the ordering bank. If yes, funds are debited in the account of the ordering bank and credited to the account of the receiving bank (as from this moment, the payment is final). The payment message is then automatically released to the receiving participant.³ Confirmations of a debit (credit) of funds are forwarded to the ordering bank and receiving bank for an interbank remittance. If the payment could not be settled due to a lack of funds, it will be put in a waiting queue. Once funds become available, queued payments are processed first by priority, then by time of input to the queue.

10. Payment requests can be allocated a 'Priority' number within the range of 1-999 with Priority 1 being the highest. The Priority levels 1-499 are reserved for time-sensitive payments, the Priority levels 500-999 for large-value ones. The Priority level is assigned by the originating bank. If no Priority is allocated, the system allocates a default Priority, which is 250 for time-sensitive payments and 750 for large-value payments. The ordering bank can change the Priority of a payment request at any time provided it has not settled. Changing a Priority has the effect of moving the item in the queue.

11. BISS offers the possibility to reserve funds in view of being used for certain specific purposes. Participants are required to reserve funds for the settlement of net debit positions potentially arising in the NBRB clearing system and the securities clearing and settlement system. Reserved funds are "blocked" and cannot be used for the settlement of any other kind of transactions than those they are reserved for.

³ If the receiving bank is unable to apply the funds received to an account (e.g. because of an error in the bank account indicated in the message), the settlement finality of that payment still holds, but the bank would initiate a separate "return payment".

12. A real-time information management system allows participants, *inter alia*, to continuously monitor their account balance, payments queued (both their own outgoing payments and incoming payments from other participants), to change the priority of queued payments and to request funds to be reserved for different purposes.

Statistical information regarding volumes and values of transactions

13. In 2003, some 92 percent of all interbank payments, in value terms, were settled in BISS. However, in terms of volume, only some 8 percent of the total traffic was settled through BISS. Thus, while 92 percent of the traffic volume is handled in the clearing systems, this represents in value terms only 8 percent. This division of volume and value between the RTGS system and the net settlement system is in line with the situation in other countries. Detailed information regarding volumes and values processed in the years 2001 to 2003 are provided in Tables 1 to 3 below.⁴

Table 1. Payments Handled in NBRB Systems in 2001

<i>System</i>	<i>Name of the System</i>	<i>Number of Participants</i>	<i>Daily value of payments handled (Millions of US\$)</i>	<i>Average value per transaction (US\$)</i>	<i>Daily volume of transactions handled</i>
1.	ASIS in total: <i>of which:</i>	29	159.5	1,365.0	116,881
1.1.	BISS (RTGS system)	29	143.5	13,349.2	10,747
1.2.	Clearing (net) system	29	16.1	151.6	106,135

Table 2. Payments Handled in NBRB Systems in 2002

<i>System</i>	<i>Name of the System</i>	<i>Number of Participants</i>	<i>Daily value of payments handled (Millions of US\$)</i>	<i>Average value per transaction (US\$)</i>	<i>Daily volume of transactions handled</i>
1.	ASIS in total: <i>of which:</i>	33	197.0	1,672.2	117,827
1.1.	BISS (RTGS system)	33	177.6	17,861.6	9,943
1.2.	Clearing (net) system	32	19.4	180.1	107,884

⁴ In Tables 1 to 3, value data for the years 2001 to 2003 have been converted into US\$ using the official exchange rate between the Belarus rubel and US\$ as at 1 January 2002, 2003, and 2004 respectively.

Table 3. Payments Handled in NBRB Systems in 2003

<i>System</i>	<i>Name of the System</i>	<i>Number of Participants</i>	<i>Daily value of payments handled (Millions of US\$)</i>	<i>Average value per transaction (US\$)</i>	<i>Daily volume of transactions handled</i>
1.	ASIS in total <i>of which:</i>	35	258.6	1,930.2	133,971
1.1.	BISS (RTGS system)	35	237.0	17,645.1	13,432
1.2.	Clearing (net) system	34	21.6	179.0	120,539

14. Payments in BISS are classified in two categories: large-value payments (any payment equal to or greater than BYR 5 million), and time-sensitive payments (payments of any value can be “flagged” as time-sensitive). Time-sensitive payments represent up to 15 percent of the payments volume, but in value terms only some one percent.

15. The intraday pattern of payment flows is currently very unbalanced. Only some 50 percent of the payments value is processed by 4 p.m. (representing 60-70 percent in terms of volume). A peak in payments input can be observed between 4:00 p.m. and 5:00 p.m. The last (queued) payments are settled close to the closing time at 7:30 p.m.

16. The share of annulled (non-executed) payments in total payments traffic represents 0.10 percent in terms of volume and 0.16 percent in terms of value.

17. The last three peak volume and value days for BISS are set out in the table below.

**Three peak days within last year,
volumes (000's) and values (BYR billions):**

Volume	Value
30.12. 2003: 23.6	31.12.2003: 1,449.2
21.04.2004: 23.2	30.09.2004: 1,331.2
31.05.2004: 24.7	29.10.2004: 1,434.4

18. With regard to payments processed in BISS, payment flows are fairly concentrated, with the 6 biggest banks accounting for some 80 percent of both value and volume.

General preconditions for effective payment systems

19. Belarus has had a fairly stable macroeconomic development in recent years, albeit influenced by a substantial but decreasing inflation. Financial market activities in Belarusian rubel are still very limited, but potentially emerging. Some 82 percent of the banking capital is controlled by the public sector.

20. While the Belarus Bankers Association in principle provides a forum for co-operation between banks, in payment systems issues it currently does not play an important role.

21. Regular meetings are held between the management of the NBRB and executives of banks. Meetings are held on a quarterly basis. Discussions cover a wide range of issues, including payment systems related ones. NBRB from time to time also holds meetings with payment systems experts of banks.

22. Banks are informed in advance on upcoming changes to the system. The “Concept Document for the Development of the National Payment System of the Republic of Belarus until 2010 with an Account for Global Trends” was submitted to banks (and some authorities) for comments before final approval by the NBRB. In general, banks are normally consulted before the adoption of new documentation on technical and operational issues.

23. Within the NBRB, payment systems issues are regularly discussed by the Committee on Banking and Payment Transactions. It is chaired by the NBRB Governor and meets weekly.

Changes and reforms in process

24. In May 2004 the Board of the NBRB approved by way of a Resolution the “Concept Document for the Development of the National Payment System of the Republic of Belarus until 2010 with an Account for Global Trends”. It sets forth a large number of proposals for the further development of the payment infrastructure in Belarus.

25. The “concept document” identifies development opportunities in the payment system in general. Individual development initiatives, when addressed, are elaborated in more detail in separate documentation.

26. The most important project under way is the implementation of a new upgraded BISS system, expected to start live operations as from April 2005. In the new version of BISS, the payment flow will be divided in into two: one for large value and/or time sensitive and the other (new) for non-time sensitive payments. A mutual offset mechanism will be applied for the non-time sensitive payments queue. To facilitate the flow of payments, the system will attempt to settle queued payments by means of a frequently applied (automated) queue optimization procedure.⁵

27. In conjunction with the start of live operation by the new BISS system, as from February 1, 2006, the operational regime of the clearing system for other payments will be

⁵ In normal circumstances a queued payment (the first in the queue) is only settled once sufficient funds become available in the settlement account. In the optimization procedure, the system will search the queues for “offsetting” outgoing and incoming payments (on a bilateral or multilateral basis), i.e. whether there are payments the net value of which could be settled with the funds available. If yes, such payments will be settled as “a block”.

changed. Instead of having four daily clearing sessions (as is the case now), there will be only one single clearing session.

28. It is envisaged that, after some one year of parallel operation of the new BISS system and the NBRB clearing system, the latter would cease operation. This will, however, depend on whether the new BISS system will prove capable to process a substantially higher payments volume than the current BISS system.

C. Main Findings—Summary

29. The mission has found that BISS observes three Core Principles and one Central Bank Responsibility. The mission’s assessment therefore points to opportunities for further improvements with respect to the understanding and management of risks, security and operational reliability and contingency procedures, efficiency and practicality of the system, fair and open access, governance and three central banks responsibilities to ensure full adherence to the Core Principles. In addition, there are some other, more technical refinements at the margin in a few areas that the mission recommends be pursued (see paragraph 31).

Table 4. Detailed Assessment of Observance of CPSS Core Principles for SIPS and Central Bank Responsibilities in Applying the CPs—BISS

CP I - The system should have a well-founded legal basis under all relevant jurisdictions.	
Description	<p>The Belarusian payment system is governed by a two-tier legislative framework, complemented by contractual agreements.</p> <p>The first tier is based on laws and presidential decrees. The relevant first tier legal acts are: - Banking Code of the Republic of Belarus (October 25, 2000, No. 441-Z), and; - Law of the Republic of Belarus On Electronic Documents (January 10, 2000, No. 357-Z). The Banking Code of the Republic of Belarus provides that the main functions of the NBRB include “arranging interbank settlements and specifying and adopting procedures, forms and rules relating to non-cash settlements in the national economy and penalties for non-compliance.”</p> <p>The second tier is based on regulatory documents issued by the NBRB under the Banking Code and include: - Rules of Interbank Settlements, approved by National Bank Supervisory Board Resolution No. 24.3, September 28, 2000; - Instructions on Organizing Functional Operation of the Belarus Republic ASIS, approved by National Bank Board of Directors Resolution No. 29.6, December 22, 2000; - Non-cash settlements in the form of bank transfers are regulated by the Instructions on Bank Transfers, approved by Republic of Belarus National Bank Supervisory Board Resolution No. 66, March 29, 2001; - Non-cash settlements in the form of letters of credit and collections, and operations with bank guaranties, are regulated by the Instructions on the Procedure of Bank Documentary Operations, approved by Republic of Belarus National Bank Supervisory Board Resolution No. 67, March 29, 2001, and; - Relations arising between the National Banks and banks, between banks in interbank settlements, and between banks and clients under executed current (settlement) bank account</p>

agreements are regulated by National Bank Supervisory Board Resolution No. 15.6, June 29, 2000 "On Liability for Violation of Settlement Operations" (as amended on July 31, 2001).

In addition (as part of tier two documentation), there is a set of Guidelines on technical and operational issues:

- RD RB 07040.1404-2000 "ASIS. Automated Workstation for the Management of a Commercial Bank's Payments. General Requirements";
- RD RB 07040.1605-2003 "ASIS. Rules of Forming Electronic Documents. Part 1. Electronic Documents and Messages of the System of Settlements of Time-Sensitive and Large-Value Payments on a Gross Basis in Real Time";
- RD RB 07040.1601-2002 "ASIS. Formats of Electronic Messages. Part 1. Electronic Messages of the System of Settlements of Large-Value and Time-Sensitive Payments on a Gross Basis in Real Time";
- RD RB 07040.1606-2003 "ASIS. Rules of Forming Electronic Documents. Part 2. Electronic Documents of the Clearing Settlement System";
- RD RB 07040.1602-2002 "ASIS. Formats of Electronic Messages. Part 2. Electronic Messages of the Clearing Settlement System", and;
- RD RB 07040.1001-2002 "ASIS. General Requirements on Supporting Continuous Operation and Restoration of the Performance of ASIS Participants."

Finally (as part of tier two documentation), requirements on maintaining archives of electronic payments pertaining to interbank settlements are set forth in:

- RD RB 07040.1101-2000 "ASIS. Electronic Document Archives. General Requirements", and;
- RD RB 07040.2201-2002 "ASIS. Archives of Electronic Documents of Interbank Settlement Participants. Automation Facility. General Requirements"

The following contractual arrangements are of relevance:

- Correspondent (settlement) account agreements executed by the National Bank with banks;
- Agreement between the NBRB and the BISC on Organizing Interbank Settlements through the ASIS (setting out the tasks, functions, rights, and obligations of the parties (NBRB, banks and the BISC) concerned with organizing and supporting interbank settlements);
- Agreements between the BISC and participating banks on Rendering Services in Support of Interbank Settlements through the ASIS, and;
- Agreement on Application of Cryptographic Data Protection Resources in the ASIS.

The terms and conditions (and instruments used) for the NBRB granting credit (including intraday credit) to BISS participants are set out in monetary policy and payment systems related legal instruments (rules and contracts).

The timing of *settlement finality* is defined in the Rules of Interbank Settlements, according to which a payment is irrevocable once accepted for processing in BISS, while settlement is final once funds have been debited from the correspondent (settlement) account of the remitting bank and credited to the correspondent account of the receiving bank.

Provisions on *netting* are included in the NBRB Instruction on the organization and functioning of ASIS.

Provisions on the *enforceability of security interests provided under collateral arrangements and of repurchase agreements* are defined in Chapter 5 of the Civil Code and in legal acts specifying the implementation thereof as issued by the Committee of Securities (Securities Regulator), acting under the Council of Ministers.

All legal acts are publicly available.

	<p>The conformity of tier two legal acts (issued by the NBRB) with the provisions of tier one legislation is checked in advance by the Ministry of Justice.</p> <p>To date, there have not been any court cases which have evaluated the provisions on finality, netting and collateral security arrangements.</p> <p>There is one foreign participant in BISS, the Interstate Bank, which is a publicly owned International Institution, founded in 1994 by the CIS countries and Russia. It is registered in Russia. It was founded with the purpose of performing settlements between the countries concerned. NBRB does not grant credit to the Interstate Bank.</p>
Assessment	Observed
Comments	It is noted that the relevant legal (and also technical, operational and organizational) issues are set forth in a complex set of documents (which so far nevertheless seem to have been understandable for participants). In view of further modifications to the system, to ensure clarity, a simplification of the documentation would be welcome. In this conjunction, it is understood that the NBRB already has initiated work aiming at a consolidation of the documentation.
CP 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.	
Description	The rules and procedures as regards credit and liquidity risk management, information on the system's design, its work schedule, and the procedures of technical and operational risk management are set forth in the documentation referred to in CP I above and in monetary policy documentation (extension of credit by NBRB).
Assessment	Broadly observed
Comments	In terms of liquidity risk, it should be made explicit in the documentation that the current rules on the intraday use of reserve holdings and extension of credit by the NBRB pose clear limitations on the availability of liquidity in BISS (see CP III below). See also comment under CP I above.
CP 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.	
Description	<p>As BISS is an RTGS system with settlement in central bank money, credit risk does not arise for participants receiving payments in the system. The NBRB is subject to credit risk to the extent it provides credit to participants, however, this risk is mitigated by NBRB requiring collateral (to which haircuts are applied) for any credit provided. As a result, the main risks to which participants are exposed are legal risk, operational risk and liquidity risk.</p> <p>As to <i>legal risk</i>, the moment when a payment becomes irrevocable and the time of finality are defined in the Rules of Interbank Settlements.</p> <p>Concerning <i>operational risk</i>, procedures for management of technical and operational risks are set out to some extent in the system documentation. A list of contact persons at the NBRB and at all participating banks is maintained in view of swift communication in any problem situations.</p> <p>As regards <i>liquidity risk</i>, NBRB documentation sets out that banks can use 10 percent of their reserve holdings for transaction purposes during the day. Moreover, banks can obtain credit from the central bank by means of repo transactions. Repo transactions are originally made as overnight transactions, but in the event of repayment before the end of the day, they are considered as intraday repos. Intraday repos are not subject to an interest charge. However, the NBRB has set a limit (currently 30 billion rubel) on the amount of liquidity it is ready to extend by repos - this limit is very restrictive when compared with the value of payments</p>

	<p>processed in BISS. There are also some other instruments for providing credit at the disposal of the NBRB, but non of them are designed for intraday use. It is also noted that the money market is fairly illiquid, implying that it cab difficult for banks to raise liquidity in the market.</p> <p>The rules applying to BISS, to ensure sufficient funds are available for the settlement in BISS of net balances arising in ancillary systems (the payments clearing system and the securities clearing and settlement system), require that participants reserve funds in advance for such settlement operations. The amount of funds reserved in BISS determines the maximum net debit position a bank can have in the clearing systems. Funds reserved for the securities settlement determines also the maximum value of securities a participant is allowed to purchase in a trading session (effectively limiting trading activities and, thus, any effective price formation in the market). While on the one hand these rules ensure that net balances can always be settled in BISS without delay, on the other, the blocking of funds further limit the amount of liquidity available for ongoing settlement activities. There are no throughput rules or guidelines available that would require a balanced flow of payments throughout the day. The availability of a queuing system helps to mitigate the problems arising from the liquidity shortage currently prevailing in BISS.</p>
<p>Assessment</p>	<p>Partly observed</p>
<p>Comments</p>	<p>It is evident that there is currently a structural limitation on liquidity available in the RTGS system. Liquidity available from the central bank is limited and, as a consequence, banks have only very limited possibilities to raise (re-allocate) liquidity in the market. As an illustration, a daily payments flow of up to 1,000 billion has to be settled with a stock of liquidity of only BYR 40 billion, i.e. funds have to turn over 25 times a day. This is a very high velocity in an international comparison.</p> <p>Thus, payments tend to be delayed and payment queues progressively build up during the operating day. A clear peak in input and settlement of payments can be observed in the afternoon, between 4 p.m. and 5 p.m. Although new payments can no longer be input after 4.30 p.m., the settlement of payments queued continues until 7.30 p.m.</p> <p>The above restrictions in the availability of liquidity would disappear if banks could use a larger share of their reserve holdings for transaction purposes during the day. In general, in countries where banks are subject to a reserve requirement, banks can as a rule use intraday these reserve holdings in full for payments purposes. Potential variations in reserve holding in individual days of individual banks are not a problem, in particular when an averaging procedure is applied to the reserve requirement, as is the case in Belarus. The liquidity situation in BISS would worsen further in the event the reserve ratio was to be reduced from the current level without at the same time allowing for a greater share of the reserve holdings to be used intraday.</p> <p>As a result, it is strongly recommended to the NBRB to allow a greater share of reserve holdings to be used intraday for payments purposes, ideally in full. A free intraday use of reserve holdings would not prevent the NBRB from still maintaining a restriction, where considered necessary, on the degree to which actual daily reserve holdings, as recorded at the end of the day, may deviate from the defined average reserve requirement. For example, while allowing free intraday use, the NBRB could still require that, at the end of each day, banks maintain at least [X] percent (where X can be any percentage) of their average reserve requirement.</p> <p>Moreover, the NBRB should have available an instrument and procedures for the provision of intraday credit to participants. Intraday credit should ideally not be subject to any other restrictions than the availability of eligible collateral. Timely re-payment discipline may be maintained by appropriate penalties for any spill over from intraday to overnight credit.</p>

	<p>Finally, while limits on net positions in clearing systems set by pre-blocking of funds in the RTGS system constitutes an effective way to ensure successful settlement of such balances, the disadvantage of this risk management measure is that it restricts efficiency in terms of liquidity. This may not be a great problem in circumstances where there is ample liquidity available in the system, but in systems with limited liquidity it may delay the execution of other payments, as is the case in BISS. As a result, the NBRB may wish to consider replacing the current procedure with other (more liquidity efficient) risk management arrangements. Moreover, the rule limiting the value of securities purchased to the amount pre-blocked in the RTGS system should be abolished, as this will contribute to the development of a more active securities trading (and arbitrage) activity.</p>
<p>CP 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.</p>	
Description	Individual payments are settled on a real-time gross basis, in central bank money, in BISS.
Assessment	Observed.
Comments	
<p>CP 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.</p>	
Description	BISS is a real-time gross settlement system.
Assessment	Not applicable.
Comments	
<p>CP 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.</p>	
Description	Settlement in BISS takes place in central bank money.
Assessment	Observed
Comments	
<p>CP VII - The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.</p>	
Description	<p>BISS security framework is based on a number of policies and procedural requirements governing the levels of security demanded of the system, communication networks and participants.</p> <p>The most important documents in this regard are the NBRB Instructions on Organizing Functional Operation of the Belarus Republic ASIS (in particular chapter 5), the law of the Republic of Belarus On Electronic Documents and the General Requirements on Supporting Continuous Operation and Restoration of the Performance of ASIS Participants. Security issues are also addressed in a document entitled “Concept on ensuring information security in payment systems” and in other system documentation.</p> <p>However, it is noted that the security policy, security requirements and the procedures for their control are not always elaborated in sufficient detail yet. The system has not been subject to a comprehensive risk analysis and business continuity and contingency procedures have not been defined in detail yet.</p> <p>According to rules, participants have to inform the NBRB immediately in the event they experience major operational problems. A report explaining the reasons for the incident and measures being taken to prevent repetition have to be submitted to the NBRB within three days. Such incidents are discussed in meetings between the NBRB and banks.</p> <p>Within the NBRB, the Committee on Banking and Payment Transactions in its weekly meetings receives a reporting on the functioning of BISS. All abnormalities and incidents are</p>

	<p>being reported and related action plans and their subsequent implementation is monitored.</p> <p>BISS is subject to both internal and external audit. Internal audit is frequent, but fragmented. The last external audit (by Ernst & Young) was conducted in April 2004.</p> <p>According to current requirements, BISS should be able to resume normal operation within four hours after a local disaster, and within one hour after a technical interruption.</p> <p>In 2004, BISS availability has been 99.88 percent (in 2004, the minimum availability requirement was 97 percent). The NBRB aims to achieve an availability not lower than the new minimum requirement of 99.5 percent in 2005.</p>
Assessment	Broadly observed
Comments	<p>BISS has in recent years showed out to be a stable and reliable system with a very good track record as regards availability. Technical security has been improved over time and a secondary site established recently (July 2004). There are however opportunities for further improvement. A comprehensive risk analysis and management framework should be elaborated, documented and implemented. A risk analysis should be made regularly. Business continuity and contingency procedures should be defined, documented and subsequently, regularly tested. Moreover, change management procedures should usefully be refined and the test system upgraded to allow testing also with participants.</p> <p>As regards communication services, security and performance requirements should be further elaborated and adherence control strengthened.</p>
<p>CP VIII - The system should provide a means of making payments, which is practical for its users and efficient for the economy.</p>	
Description	<p>RTGS payments are practical for large-value and time critical payments, as settlement occurs in real time.</p> <p>There is currently a structural limitation on liquidity available in the RTGS system: a daily payments flow of up to 1,000 billion has to be settled with a stock of liquidity of only BYR 40 billion, i.e. funds have to turn over 25 times a day. This is a very high velocity in an international comparison. Payments tend to be delayed and payment queues progressively build up. Although new payments can no longer be input after 4.30 p.m., the settlement of payments queued continues until 7.30 p.m.</p> <p>Starting March 1, 2004, the tariffs in BISS are BYR 355 (+18 percent VAT) for the processing of large-value payments and BYR 1,027 (+18 percent VAT) for time-sensitive payments. Communication costs of some BYR 30 per payment are in addition (paid to the communication services provider).</p> <p>On cost and cost recovery, NBRB follows an approach according to which the running (but not investment) costs of BISS should be recovered. There is no formal NBRB decision according to which the system should be subject to a subsidy. Costs are calculated by BISC and do not include (running) costs of the NBRB (monitoring staff, overhead, etc.). While missing some costs, the cost calculation at the same time takes into account costs of the huge staff (113 persons) attributed to BISS activities at BISC. As BISC is only supposed to be the technical operator of BISS, with no monitoring or development duties, the number of staff allocated to this function is excessive. At the same time it is noted that the Center for Banking Technologies has been given the task to develop any new soft-ware needed (on the basis of requirements and guidance established by NBRB). 26 persons are directly involved in soft-ware development, however, 50 more persons with "other related duties" are attributed to this function. Again, this represents a clear overstaffing. Overall, overstaffing implies a loss in cost efficiency of BISS.</p>

	<p>As to BISS operating time, it is noted that while the cut-off time for submitting payments to the system is set at 4.30 p.m. the system nevertheless continues to process payments, closing finally only at 7.30 p.m. As there are no particular financial market activities requiring settlement at this late point of the day, there seem to be no justification for keeping the system open so late. Such late closing time is not even applied in major financial centers of the world (except in Japan, where in view of the settlement of foreign exchange transactions the system is open until 8 p.m. local time to allow an overlap in operating time with the European and North American settlement systems). A late closing constitutes a cost both to the NBRB and banks as staff have to stay at work late (and work in two shifts).</p> <p>Under current circumstances banks are required to report on all interbank transactions to the Committee for State Control. There are normally three reasons for authorities collecting information on transaction activities: general and balance of payments statistics, money laundering and the prevention of terrorist financing. For the two latter, only suspicious transactions (identified on the basis of pre-defined criteria) are reported in other countries. As regards statistics, it only requires the reporting of pre-defined aggregate data. Therefore, it is not obvious that the reporting in Belarus serves any of the above functions. If yes, it is based on an excessively heavy data collection procedure. Recording and reporting on all transactions constitutes a cost burden and, thus, affects the overall cost efficiency of the payments infrastructure. Moreover, it does not seem to be in line with internationally accepted confidentiality arrangements in banking activities.</p>
<p>Assessment</p>	<p>Partly observed</p>
<p>Comments</p>	<p>Regarding issues related to liquidity, see comments under CP III.</p> <p>Concerning pricing, the fee applied to time-sensitive payments is almost three times as high as that applied to large-value payments. At the same time, in the queuing system, time-sensitive payments have a higher priority than large-value ones. Thus, to ensure an early settlement, an urgent large-value payment must be flagged as “time-sensitive” and is thereby subject to the higher fee - although not necessarily justified. The NBRB (not BISC) should usefully further elaborate on the justification for the large difference in fees and ensure consistency in fees applied (it is understood that work on this issue is already under way).</p> <p>It is recommended to further develop the cost calculation methodology, to consider including at least some of the investment costs (e.g. soft-ware development) in the costs to be recovered, and to take action to reduce (non-NBRB) staff involved in BISS activities (possibly re-allocating them to other functions).</p> <p>Moreover, as BISS and the NBRB clearing system are operating on a shared hard-ware platform, it is unclear whether costs are appropriately allocated to the two. This should usefully be clarified.</p> <p>The needs of the Belarusian market would allow the system to close much earlier (e.g. at 5 p.m.). Where necessary, cut-off times for payments (i.e. for retail and customer payments, government payments, etc.) and the schedules for the clearing system should be adjusted accordingly (activity in the interbank market will automatically adjust to fit the new timetable). To achieve a more balanced (and disciplined) payments traffic throughout the day, the NBRB could consider introducing some throughput guidelines to banks (e.g. advising that 50 percent of the payments volume and/or value should be processed by 1 p.m.).</p> <p>For comment on the requirement to report all transactions to the Committee for State Control, see CP X below.</p>

CP IX - The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.	
Description	<p>The access criteria for BISS are set out in the Instructions on Organizing Functional Operation of the Belarus Republic ASIS, approved by National Bank Board of Directors Resolution No. 29.6, December 22, 2000. Access is granted to banks and non-bank credit and financial institutions. All current participants are classified as banks. Participants need to be licensed in Belarus and remote access of foreign institutions is not allowed.</p> <p>Access is permitted on condition that the applicant has:</p> <ul style="list-style-type: none"> - opened a correspondent account with the NBRB; - signed an agreement with BISC; - been included in the directory on bank identifier codes; - signed the agreement on encryption, and; - successfully passed the required technical tests. <p>In addition, an entry fee (currently some US \$120) has to be paid and, within one month from access, the participant has to join an automated archiving system.</p> <p>There is currently one foreign participant - Interstate Bank - in BISS. Interstate Bank is an International Institution established by agreement by the Governments of Russia and the CIS countries for the purpose of facilitating settlements among the countries concerned.</p>
Assessment	Broadly Observed
Comments	<p>Although BISS is a system owned and governed by the NBRB, access is now conditional to the signing of an agreement with BISC (which is only the technical operator of the system). It is proposed that access be subject only to agreements between participants and the NBRB as system owner (while relations between the NBRB and BISC are set out separately in agreement between the two)</p> <p>Explicit rules for (voluntary and enforced) exit should also be introduced.</p>
CP X – The system’s governance arrangements should be effective, accountable and transparent.	
Description	<p>The NBRB is the owner of, and the authority setting the rules and policies for, BISS. Settlement takes place in central bank accounts (“Correspondent Accounts”). The hard-ware and soft-ware used for the operation of BISS are the property of NBRB. The NBRB is also responsible for the management of the system, monitoring activities and the definition of requirements and guidance for the development of the system. Based on an agreement / contract, the responsibility for the technical operation of the system has been given to the Belarus Interbank Settlement Center (BISC). BISC is fully owned by the NBRB. Furthermore, according to another agreement / contract, responsibility for soft-ware development (on the basis of NBRB requirements and guidance) has been given to the Center for Banking Technologies (CBT), which is also responsible for the maintenance of such soft-ware. CBT is owned by NBRB.</p> <p>The NBRB has covered the cost for the hard-ware. It also pays the CBT for the development of new soft-ware. Cost of the CBT for the maintenance of soft-ware being used by BISS is remunerated by BISC.</p> <p>The cost calculation for BISS activities are made by BISC, who also elaborates the fees to be applied in BISS. The fee proposal prepared by BISC is submitted to the NBRB for review, but it is understood not to be subject to formal approval by the NBRB Governing Bodies. The NBRB does not remunerate BISC for the technical operation of the system. Instead, BISC covers its costs by being the one collecting the transaction fees from the BISS participants. As noted under CP VIII above, both BISC and the CBT have a very large staff allocated to BISS activities. Relations between the NBRB, BISC and CBT - in terms of administration - is</p>

	<p>understood not always to be easy. There are no detailed Service Level Agreements between the three parties involved. According to BISS access criteria, an applicant must have signed an agreement with BISC before effectively becoming a participant.</p> <p>In terms of co-operation with the banking community, the NBRB top managements meets regularly (quarterly) with the CEO's of banks. Discussions include issues related to payment systems. NBRB from time to time also holds meetings with payment systems experts of banks. Banks are informed in advance on upcoming changes to the system. The "Concept Document for the Development of the National Payment System of the Republic of Belarus until 2010 with an Account for Global Trends" was submitted to banks (and some authorities) for comments before final approval by the NBRB.</p> <p>Within the NBRB, payment system issues are regularly discussed by the Committee on Banking and Payment Transactions. It is chaired by the NBRB Governor and meets weekly.</p> <p>Reports on BISS activities are published annually. Statistics on BISS activities are available on the NBRB website and in its monthly statistical report. The main content of the above mentioned "concept document" has been published in the Banking Herald, National Economic Gazette and the Newsletter of Belarus Banks. NBRB staff have frequently contributed with payment systems related articles to, inter alia, the above mentioned publications.</p> <p>While BISS does not yet comply with all relevant Core Principles, it is the aim of the NBRB to achieve full compliance. This is also shown by the fact that the NBRB has made a self-assessment of the compliance of BISS in relation to the Core principles, and that it has requested to be subject to a formal assessment under the Financial Sector Assessment Program.</p>
Assessment	Partly observed
Comments	<p>It is recognized that BISS is a technically well functioning system, appreciated by the banks. However, it is also noted that the overall organization and governance of BISS is not very easy to understand, and not very transparent to any parties not being participants in the system (this applies even in relation to participants). Cost recovery arrangements among the NBRB, BISC and CBT are unconventional. It is therefore proposed to critically assess the governance arrangements for BISS. In the following are some of the issues to be addressed: the cost methodology and fees applied to BISS should be formally approved by the NBRB. Fees charged to banks should be formally paid to the NBRB, while BISC should receive its remuneration from the NBRB. The necessity of applicants having an agreement with BISC, as an criteria for access, should be re-assessed. The roles, duties and the controls thereof could be further clarified in detailed service level agreements with BISC and CBT. Overstaffing in BISC and CBT, and administrative overhead in general should be addressed.</p> <p>Alternatively, the NBRB could examine whether an insourcing of all functions related to BISS would provide a better route in ensuring an effective and transparent governance, including overall economic efficiency.</p> <p>The NBRB is invited, in its relations among authorities, to contribute to the abolishment of the requirement to report all transactions to the Committee for State Control (see description provided in CP VIII above).</p>
Central Bank Responsibilities in applying the CPSIPS	
<i>Responsibility A – The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.</i>	
Description	According to Article 4 of the NBRB Statute, one of the (three) main objectives of the NBRB shall be "ensuring efficient, reliable and secure functioning of the payment system". The

	<p>Statute is publicly available.</p> <p>Legal acts related to BISS are publicly available. The main content of the NBRB concept paper on the development of the payment system by 2010 has been published. Moreover, articles on payment systems issues prepared by NBRB staff have been published in various national periodicals.</p> <p>A description by the NBRB entitled “Payment and settlement systems in Belarus” (Red Book) has been published in September 2001 by the Bank for International Settlements.</p> <p>While some informal oversight-like activities have started, the NBRB has not yet formally established an oversight function. As a consequence, oversight objectives and policies are yet to be formulated.</p>
Assessment	Broadly observed
Comments	It is recommended that an oversight function be introduced, and, subsequently, that the NBRB defines and makes publicly available its main payment system oversight objectives and policies (the scope could usefully also cover aspects related to securities clearing and settlement). In this conjunction, the NBRB should formally adopt the Core Principles for Systemically Important Payment Systems, to become part of its oversight standards. The oversight function should be allocated to an organizational unit within the payment systems domain (i.e. not related to internal audit, legal services or banking supervision). The oversight function should be clearly separated from the operational function. Sufficient training should be ensured in building up competence. Note is taken of the information that a legislative proposal on the introduction of an oversight function at the NBRB has already passed a first reading in the House of Representatives of the National Assembly.
Responsibility B – The central bank should ensure that the systems it operates comply with the core principles.	
Description	While BISS does not yet comply with all Core Principles, it is noted that the NBRB has shown a clear interest in identifying any areas for improvement, by preparing a self-assessment and by requesting the system to be subject to a formal assessment.
Assessment	Partly observed
Comments	To achieve full compliance, the NBRB is invited to establish an action plan for addressing the shortcomings identified in the assessments against the Core Principles. The action plan should be accompanied by a timetable for its implementation. Implementation and continued compliance should be assessed by the oversight function, which is still to be established.
Responsibility C – The central bank should oversee observance with the core principles by systems it does not operate and it should have the ability to carry out this oversight.	
Description	<p>Besides BISS, there are yet no other SIPS in Belarus. Low-value payments are handled in the NBRB clearing system, the CSE operates a securities clearing and settlement system, and bank card payments are handled in the BelCard scheme.</p> <p>While an oversight function has not been formally established by the NBRB yet, it nevertheless already collects information and statistics from all payment systems.</p>
Assessment	Broadly observed
Comments	Again, the oversight function first needs to be introduced and defined both in terms of content and scope. Since BISS is currently the only SIPS, any other systems are, for proportionality reasons, likely to be subject to less stringent oversight requirements. While the NBRB already monitors developments in the BelCard system, some oversight attention may potentially be paid in the future to securities clearing and settlement issues.
Responsibility D – The central bank, in promoting payment system safety and efficiency through the core principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.	
Description	When preparing reforms in the payment system, besides consulting participants, relevant

	<p>other authorities are also informed about such developments.</p> <p>Co-operation with the Bank Supervision Directorate has resulted in an arrangement whereby certain payment systems related aspects are being examined in onsite inspections of banks. Regular co-operation has been established with central banks in Russia and CIS countries. Ad-hoc visits have been arranged to several major western central banks. Several features in BISS have been developed on the basis of inspiration received during such visits.</p>
Assessment	Observed
Comments	<p>Despite the current limited opportunities for close co-operation with central banks and authorities in many countries, the NBRB is encouraged to continue its efforts to collect and study material published on payment systems related issues, in particular, information available on the internet. Continued activities with Russia and other CIS countries will likely prove being most helpful.</p> <p>Oversight relations with the Committee of Securities could usefully be progressively developed.</p>

Table 5. Summary Observance of CPSS Core Principles and Central Bank Responsibilities in Applying the CPs—BISS

Assessment grade	Principles grouped by assessment grade	
	Count	List
Observed	3 + 1	CP I, IV and VI; Responsibility D
Broadly observed	3 + 2	CP II, VII and IX; Responsibilities A and C
Partly observed	3 + 1	CP III, VIII and X; Responsibility B
Non-observed	-	
Not applicable	1	CP V

D. Recommended Actions and Authorities' Response to the Assessment

Recommended actions

30. The mission conducted an assessment of BISS relative to the Core Principles for Systemically Important Payments Systems and confirmed observance of three principles and one central bank responsibility. The mission's assessment points to opportunities for further improvements in the understanding and management of risks, security and operational reliability and contingency procedures, efficiency and practicality of the system, fair and open access, governance and three central banks responsibilities to ensure full adherence to the Core Principles.

Table 6. Recommended Actions to Improve Observance of CPSS Core Principles and Central Bank Responsibilities in applying the CPs—BISS

<i>Reference principle</i>	<i>Recommended action</i>
<p>Legal foundation <i>i.e. CP I</i> <i>e.g., CP I – The system should have a well-founded legal basis under all relevant jurisdictions.</i></p>	<p>--</p>
<p>Understanding and management of risks <i>i.e. CPs II-III</i></p>	<ul style="list-style-type: none"> - Make explicit in the documentation that the current rules on the intraday use of reserve holdings and extension of credit by the NBRB pose clear limitations on the availability of liquidity in BISS; - Allow a greater share of reserve holdings to be used intraday for payments purposes, ideally in full; - Make available an instrument and procedures for the provision of intraday credit to participants. Intraday credit should ideally not be subject to any other restrictions than the availability of eligible collateral; - Consider replacing the current procedure, whereby successful settlement of net balances is ensured by a pre-blocking of funds, with other (more liquidity efficient) risk management arrangements, and; - Abolish the rule limiting the value of securities purchased to the amount pre-blocked in the RTGS system.
<p>Settlement <i>i.e. CPs IV – VI</i></p>	<p>--</p>
<p>Security and operational reliability, and contingency arrangements <i>i.e. CP VII</i></p>	<ul style="list-style-type: none"> - A comprehensive risk analysis and management framework should be elaborated, documented and implemented; - A risk analysis should be made regularly; - Business continuity and contingency procedures should be defined, documented and subsequently, regularly tested; - Change management procedures should usefully be refined; - the test system should be upgraded to allow testing also with participants, and; - As regards communication services, security and performance requirements should be further elaborated and adherence control strengthened.
<p>Efficiency and practicality of the system</p>	

Reference principle	Recommended action
<i>i.e. CP VIII</i>	<ul style="list-style-type: none"> - On issues related to liquidity, see comment under “understanding and management of risks” above; - Elaborate further on the justification for the large difference in fees and ensure consistency in fees applied; - Develop the cost calculation methodology further and consider including at least some of the investment costs (e.g. soft-ware development) in the costs to be recovered; - Assess accuracy of cost allocation between BISS and the NBRB clearing system; - Take action to reduce (non-NBRB) staff involved in BISS activities; - The daily operating time of BISS should be shortened, i.e. the system should close much earlier; - Consider introducing some throughput guidelines to banks.
Criteria for participation <i>i.e. CP IX</i>	<ul style="list-style-type: none"> - Re-assess the necessity of applicants having an agreement with BISC as an criteria for access; - Introduce explicit rules for (voluntary and enforced) exit.
Governance of the payment system <i>i.e. CP X</i>	<ul style="list-style-type: none"> - Critically assess and strengthen the governance arrangements for BISS; - The cost methodology and fees applied to BISS should be formally approved by the NBRB; - Fees charged to banks should be formally paid to the NBRB, while BISC should receive its remuneration from the NBRB; - The roles, duties and the controls thereof could be further clarified in detailed service level agreements with BISC and CBT; - Address overstaffing in BISC and CBT, and administrative overhead in general; - Alternatively, the NBRB could examine whether an insourcing of all functions related to BISS would provide a better route in ensuring an effective and transparent governance, including overall economic efficiency. - The NBRB is invited, in its relations among authorities, to contribute to the abolishment of the requirement to report all transactions to the Committee for State Control.
Central Bank Responsibilities in applying the CPs	

<i>Reference principle</i>	<i>Recommended action</i>
<i>i.e. Responsibilities A-D</i>	<ul style="list-style-type: none"> - The NBRB should formally establish an oversight function, and, subsequently, define and make publicly available the main payment system oversight objectives and policies; - Formally adopt the Core Principles for Systemically Important Payment Systems, to become part of the NBRB oversight standards; - Allocate the oversight function to an organizational unit within the payment systems domain and, in so doing, separate clearly the oversight function from the operational function; - Ensure sufficient training in building up oversight competence; - Establish an action plan, accompanied by a timetable for implementation, in addressing the shortcomings identified in the assessment of BISS against the Core Principles. Implementation and continued compliance should be assessed by the oversight function to be established.

31. In addition to the above recommendations, there are a few other, more technical, refinements that the mission believes would desirably still be pursued, to further improve existing arrangements:

- To ensure clarity and understanding, a simplification of the legal, technical, operational and organizational documentation would be welcome. This could be achieved by consolidating the documentation or, at a minimum, by establishing a comprehensive list on all relevant documents;
- The NBRB is encouraged to continue its efforts to collect and study material published on payment systems related issues, in particular, information available on the internet. As there are currently limited opportunities for close co-operation with central banks and authorities in many countries, continued activities with Russia and other CIS countries will likely prove being most helpful, and;
- Oversight relations with the Committee of Securities could usefully be progressively developed.

E. Authorities' Response

32. The authorities generally agree with the assessment. At the same time it should be noted that even though the National Bank does not have a formally defined task to supervise payment systems, it does engage in a broad set of measures associated with the fulfillment of that function.