

## South African NPS moves towards immediate finality

On 5 October 1998, immediate settlement finality was introduced in the South African National Payment System (NPS), followed soon thereafter by the promulgation of the National Payment System Act. These were important steps in bringing the South African payment system in line with international best practice. The banking industry once again demonstrated its ability to collaborate effectively in order to improve the National Payment System.

This edition of the NPS Update will focus on progress made in introducing the immediate-finality facility that became available on 5 October 1998 and the National Payment System Act.

## Implementation of SAMOS Version 2

The second version of the SAMOS system was successfully implemented on 5 October 1998. The additional functionality of SAMOS Version 2 is limited mainly to the Scheduled List facility. The impact of this implementation was, however, enormous, since a number of banks implemented various internal payment-processing systems at the same time, resulting in a substantial increase in settlement instructions processed through the SAMOS system. Various back-office systems of banks are linked to the SAMOS system, thereby facilitating

straight-through processing (STP) and the management of liquidity.

The implementation of Version 2 on 5 October 1998 was not only successful but a major milestone in the NPS reform initiative. The total amount settled by way of single settlement instructions increased to more than 64% of the total interbank settlements, thus greatly reducing the potential for systemic risk in the South African National Payment System.

## New functionality added to the SAMOS system on 5 October 1998

### Scheduled List

The Scheduled List option in the SAMOS system provides users with the facility to specify a date on which and time at which they require settlement instructions (SIs) to be executed. A brief explanation of these options follows:

SCD = Settlement Cycle Date  
SI = Settlement Instruction  
RTL = Real-Time Line

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- **Calendar date and time option**  
When using the calendar-date option, the originator has to determine the valid settlement cycle date (SCD) on which the SI is to be triggered and also has to ensure the correct SCD when submitting the SI. SAMOS will determine whether the calendar date and/or time does in fact fall into the specified SCD and, if it does not, the SI will be deemed to be invalid and will be rejected. Since an authorised SI on the system cannot be edited or modified by the sender, the bank will have to remove the SI from the Scheduled List and resubmit the SI if any of the fields, including the fields for the scheduled list, are not correct.
- **Calendar-date option with no specified time**  
The processing of these SIs needs to be activated by the originator of the SI at any time on the specified calendar date. On that date and at that time, the SI will be routed to the Real-Time Line (RTL) settlement option.
- **Trigger for the start/end of a specific window**  
When using this option, a SI can be scheduled to be processed at either the end or start of a specific window. The SI will be routed on the specified SCD, at the start/end of the selected processing window.

## Immediate finality - what does it mean and how does it work?

The first version of the SAMOS system, implemented on 9 March 1998, provided South African banks with a new mechanism of electronically exchanging funds. Although this version had the capability to provide settlement finality during the day, it was decided to effect final settlement only at the end of the settlement cycle day. The reason was to give banks time to monitor the implications of the system on their liquidity requirements and to assess the implications of intraday finality on their back-office systems and customer services.

Immediate finality provides banks with irrevocable settlement. This implies that, once a transaction has been successfully processed by the SAMOS system, it becomes irrevocable within the South African legal framework.

In order to enable a smooth transition from end-of-day settlement to immediate settlement of individual transactions, it was decided not to remove the practice of settling these transactions at end-of-day settlement in one step, but to phase in immediate settlement over an extended period. This was enabled by the introduction of an immediate-finality window for a limited period, and by then extending this facility to include the second window as banks became accustomed to the new business practices. Initially, the immediate-finality window was opened for four hours per day for Window 1 (see figure 1), whereafter Window 2 was phased in over a three-month period.

The SAMOS system therefore offers banks the choice to obtain final settlement either immediately or at the end of the settlement day.

## Immediate-finality windows (fully collateralised settlement)

All settlement instructions received by SAMOS between the start of the day and the end of Window 2 (immediate-finality windows) will be deemed to be settled finally and irrevocably following successful processing by SAMOS. During these windows, settlement accounts need to be prefunded sufficiently to cover each settlement instruction.

Table 1:

The following payment settlements are affected in the immediate-finality windows:

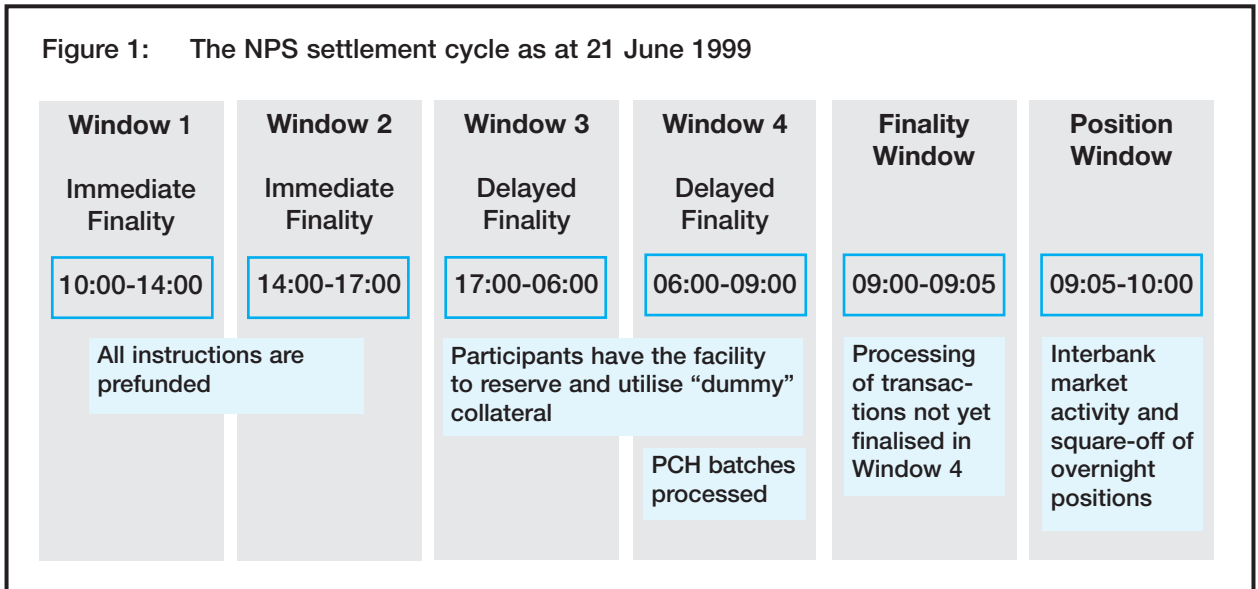
- Settlements of money-market transactions between the SA Reserve Bank and banks, including fund transfers relating to repurchase transactions (REPOs).
- Settlements relating to cash deposited and withdrawn by banks.
- Payments relating to maturing Treasury and Land Bank bills.
- Payments relating to the purchase of Treasury bills.
- Payments relating to capital and interest payments on behalf of the Central Depository (CD).
- Interest payments resulting from loan accounts under the marginal lending facility.
- Rand settlements relating to foreign-exchange transactions.
- Settlements relating to interbank money-market transactions.
- Other settlements relating to interbank transfers as determined by the relevant PSA (for instance nostro/vostro transfers).
- Banks can also utilise this window to process payments on behalf of their customers when there is a bilateral arrangement between the paying and beneficiary banks.

Banks have agreed that the bulk of the single settlement instruction types listed in Table 1 above, be settled in the immediate-finality windows. The Reserve Bank monitors the progress of participating banks with moving settlements from the delayed-finality windows to the immediate-finality windows.

## Delayed-finality windows

Settlement instructions received in Window 3 and Window 4 (17:00 to 09:00) are settled only at the end of the position window. This implies that settlement instructions received between the closure of the immediate-finality windows and the start of the Position Window on the following day are processed on receipt, but are not deemed to be final and irrevocable. Participants can reserve and utilise “dummy” collateral from the start of Window 3 through to the close of Window 4. Settlement finality is achieved only once the Position Window closes.

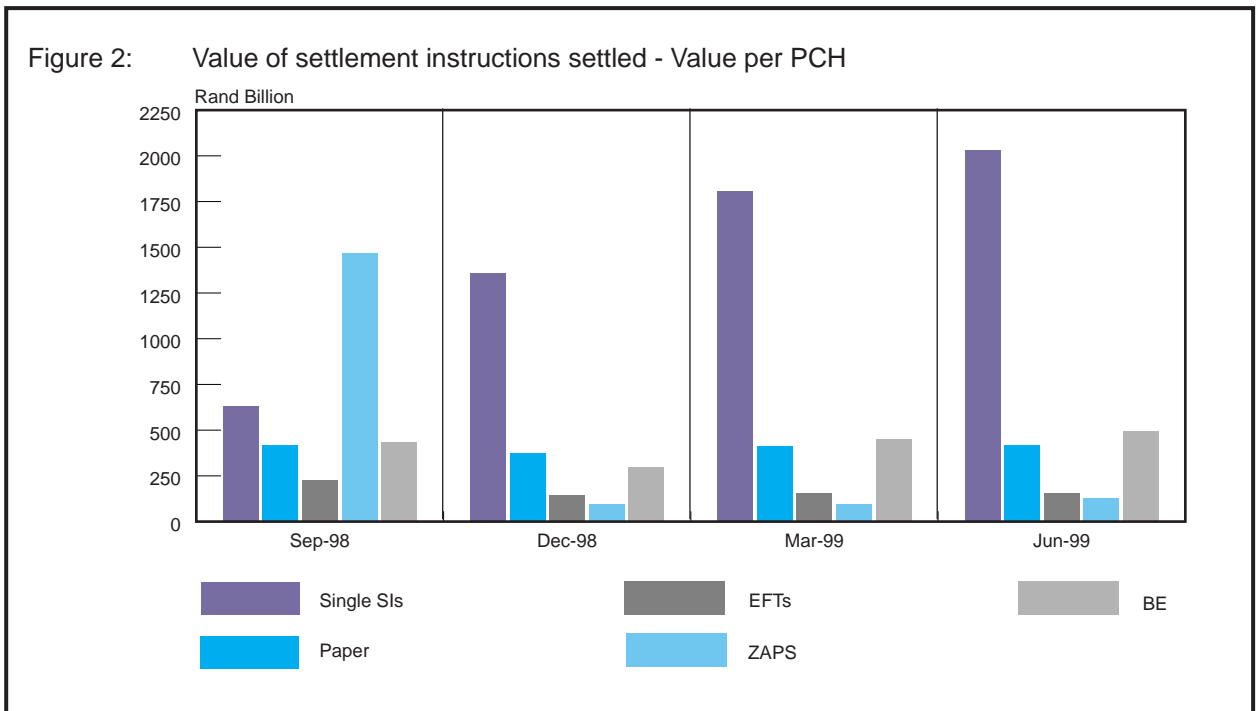
Figure 1: The NPS settlement cycle as at 21 June 1999



## Monitoring

Figure 2 depicts the values of settlement instructions processed under each Payment Clearing House (PCH) agreement from September 1998 to June 1999. During the period under review, the value of single settlement

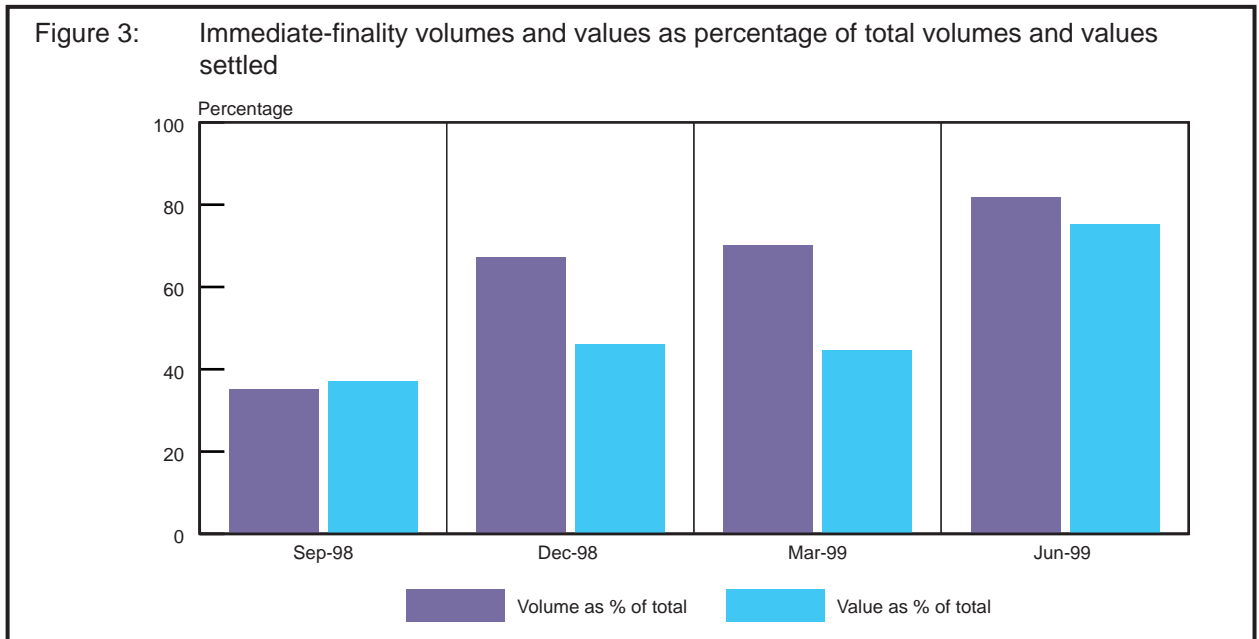
Figure 2: Value of settlement instructions settled - Value per PCH



instructions has increased at a steady rate. The value of South African Payments (ZAPS) decreased dramatically following the introduction of the immediate-finality window on 5 October 1998. Since then the values of the ZAPS, Paper, Electronic Funds Transfer (EFT) and Bond Exchange (BE) PCH's have remained relatively constant.

## Immediate finality versus total SAMOS settlements

Although the increase in the volume of single settlement instructions, (from 3 372 in September 1998 to 41 054 in June 1999), has been impressive, the percentage of transactions processed within the immediate-finality window (Figure 3) has been even more so. In June 1999 the immediate-finality window accounted for 81,8 % of all transactions processed. The total value of the instructions settled within the immediate-finality window has



increased from R235 billion in September 1998 to R2 392 billion in June 1999, accounting for 76,5 % of the total value settled through the system. These figures are indicative of a strong move towards the achievement of same-day finality, thereby reducing settlement risk substantially.

## NPS Act

The NPS framework and strategy document states, as one of its objectives, that the NPS should be supported by a sound legal foundation. In order to address the legal issues adequately, it was necessary to establish an interbank working group to draft new legislation. This process was concluded by the promulgation of the National Payment System Act, 1998 (Act No. 78 of 1998 "the NPS Act"), on 28 October 1998.

The purpose of the NPS Act is to "provide for the management, administration, operation, regulation and supervision of payment, clearing and settlement systems in the Republic of South Africa". The Act provides, *inter alia*, for finality of settlement, legal certainty regarding netting arrangements, clearing to remain the exclusive domain of system participants, control of payment intermediation, recognition of a payment-system management body and the Reserve Bank's powers to oversee the payment system.

The NPS Act deals mainly with the following aspects, *inter alia*:

- **Finality and irrevocability**  
The attainment of finality and irrevocability of settlement is vital within the payment system in order to avert a systemic crisis. A real-time gross settlement (RTGS) system, such as the SAMOS system, facilitates the circulation of large amounts of money throughout the day and, if settlement cannot be assured, it could pose a major risk to the system as a whole. Since the inability of a bank to settle its interbank indebtedness is indicative of that bank's insolvency, the provisions of the Companies Act, read together with the provisions of the Insolvency Act, had to be taken into consideration. The NPS Act overrides certain provisions of the Companies Act in order to ensure that settlement is final and irrevocable.

- **Netting**  
“Netting” traditionally refers to a payment system practice and is generally not a legal term. The NPS Act now defines the practice of “netting “ and provides legal certainty with regard to the enforceability of netting arrangements and rules in insolvency situations.
- **Clearing and settlement**  
The NPS framework and strategy document clearly states that clearing and settlement of interbank obligations are the exclusive domain of banks. In order to ensure that this right is protected adequately, the terms “clearing” and “settlement” are defined by the NPS Act and the practice of “clearing” by any person other than a system participant is prohibited.
- **NPS management body**  
The NPS framework and strategy document also requires that a payment-system management body, membership of which would be open to all banks wishing to participate within the payment system, be established. The NPS Act provides for the Reserve Bank to recognise such a body. In this regard, the Payment Association of South Africa (“PASA”) had already been established by the banking industry during 1996. PASA is the only payment-system management body recognised by the Reserve Bank in terms of the NPS Act.
- **Payment intermediation**  
Payment intermediation can be described as the practice in terms of which funds are entrusted by a payer to a middleman, who is required to pay those funds to a third person, on behalf of such payer. When the middleman is a system participant, its activities will be regulated and supervised by the provisions of the Banks Act or the Mutual Banks Act. When, however, the middleman is a non-bank, performing third-party payment services on behalf of members of the public, as a regular feature of its business, the NPS Act provides for such activities to be regulated.
- **Overseer of the NPS**  
According to the NPS framework and strategy document, the Reserve Bank, as neutral agent, is best suited to oversee and supervise the payment system. Although the Reserve Bank, as lender-of-last resort and ultimate settlement agent of participants within the payment system, has always had the right to oversee the payment system, its powers and duties were not clearly defined. The NPS Act affords the Reserve Bank the powers to oversee the NPS effectively.

## What’s happening ...

### Year 2000

- **SAMOS compliance**

The Reserve Bank will ensure and certify that the SAMEX (SAMOS external application), SAMOS and SARB<sup>+</sup>Link components of the NPS are Year 2000 (Y2K) compliant individually, and as an integrated solution. Y2K certification can be provided only once the integrated solution has been tested in a controlled environment. The establishment of such an environment was completed by February 1999, enabling the commencement of Y2K testing.

The following precautions have already been taken:

- Y2K compliancy certification has been obtained from all suppliers of hardware and software products used to establish the SARB<sup>+</sup>Link and SAMOS (including SAMEX) systems.
- All applications have been designed to be Y2K compliant.
- The Reserve Bank has complied to SWIFT Y2K standards.
- The Y2K certification provided by the Reserve Bank specifically excludes certification for products that are not supplied by the Reserve Bank, but which are required by SAMOS participants.

## SAMOS Y2K Test Plan - Version 2

Phase 1 Internal Reserve Bank Testing (Nov 1998 to Feb 1999)	Phase 2 Internal Reserve Bank Testing (Mar 1999)	Phase 3 External Participant Testing (Apr 1999)
<p>Isolated component testing was completed by end January 1999. All hardware and system software components were tested individually for Y2K compliance that is, all hardware, third-party and base products, such as operating and database systems.</p> <p>Integrated component testing was successfully completed on 1999-02-28. An entire SAMOS Y2K environment was established and utilised to perform full integrated component testing during this period.</p>	<p>Full integrated component and application testing was performed during March 1999. The SAMOS application, message carrier applications (SARB Link), security encryption solution, as well as the SAMEX application were tested and certified as Y2K compliant by the Reserve Bank.</p>	<p>The April 1999 testing period provided all participants with interfaces to the SAMOS application in order to enable them to test their interfaces for Y2K compliance.</p> <p>Full integrated component and application testing was performed during April 1999 between the Reserve Bank and several participants utilising SAMEX, as well as proprietary interfaces (that is, SWIFT and MQSeries).</p>

## SAMOS Y2K Test Plan - Version 3

Phase 4a Internal Reserve Bank Testing (Jun 1999)	Phase 4b Internal Reserve Bank Testing (Aug 1999 to Sep1999)	Phase 5 External Participant Testing (Oct 1999 to Nov 1999)
<p>The objective of this test phase was to successfully complete the mandatory test scripts, as prescribed by the SWIFT network provider. The objective of SWIFT testing on the SAMOS Y2K infrastructure is to ensure that all SAMOS Version 3 messages are Y2K compliant through SWIFT.</p>	<p>The objective of this test phase is to certify the entire SAMOS Version 3 solution as being Y2K compliant. The integrated SAMOS solution will be tested on the Y2K infrastructure. Y2K testing of SAMOS Version 3 will commence only once Version 3 has been implemented and stabilised in the production environment. This phase will therefore commence on 23 August 1999 and last until 30 September 1999. The integrated SAMOS Version 3 solution (all hardware and software components) will be certified as Y2K compliant by the Reserve Bank after the successful completion of this phase.</p>	<p>The objective of this test phase is to provide a test facility to all SAMOS participants in order to enable them to test the Y2K compliance of their interfaces to SAMOS. SAMOS Y2K testing is mandatory for all participants that have developed proprietary systems interfacing to SAMOS. It is imperative that all SAMOS messages be generated by normal business and application processes and that they are not captured on a SWIFT front end. Testing will take place on the SAMOS Y2K infrastructure. This phase will commence on 5 October 1999 and last until 15 November 1999 in order to coincide with the SWIFT Y2K schedule.</p>

## National Payment System Y2K contingency plan

A Y2K contingency plan has been drafted in collaboration with the banking industry, in line with guidelines received from the Bank for International Settlements, and includes settlement arrangements and practices for the period 30 December 1999 to 4 January 2000. This document will be made available on the Reserve Bank's Internet site at "www.resbank.co.za".

## What's next ...

### SAMOS Version 3: Continuous-Processing Line (CPL)

The development of the CPL functionality has been completed, and the CPL is scheduled for implementation on 25 July 1999. The CPL is a delayed settlement option, providing gross settlement that requires net funding. This facility will enable, *inter alia*, the electronic settlement of equity transactions as part of the STRATE project. The next NPS Update will elaborate on this feature.

### *SAMOS' First Anniversary Cocktail Party 22 April 1999*



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### What does... mean?

<b>ACB</b>	Automated Clearing Bureau
<b>CD</b>	Central Depository
<b>CPL</b>	Continuous-Processing Line
<b>CSC</b>	Customer Support Centre
<b>EFT</b>	Electronic Funds Transfers
<b>FIR</b>	Financial Instrument Register
<b>MICR</b>	Magnetic Ink Character Recognition
<b>PCH</b>	Payment Clearing House
<b>REPOs</b>	Repurchase Agreements
<b>RTL</b>	Real-Time Line
<b>RTGS</b>	Real-Time Gross Settlement (system)
<b>SAMEX</b>	The external interface supplied to banks by the Reserve Bank in order to enable banks to access the SAMOS system
<b>SAMOS</b>	South African Multiple Option Settlement (system)
<b>SARB LINK</b>	Settlement message-exchange service
<b>SCD</b>	Settlement Cycle Date
<b>SI</b>	Settlement Instruction
<b>STP</b>	Straight-Through Processing
<b>STRATE</b>	Share Transactions Totally Electronic

### From the editor

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