

## Newsletter of the South African National Payment System (NPS) reform initiative

In the first edition of the NPS UPDATE the need for payment system reform in South Africa was sketched and the projects that had been undertaken were briefly alluded to. As outlined in the previous edition, the real-time settlement system, named SAMOS, will be at the core of the new South African National Payment System. All banks in South Africa will need to link up to the SAMOS system in order to participate in the intraday and end-of-day settlement processes. Banks will, through the SAMOS system, be able to

- transfer funds across their accounts at the Reserve Bank in real time, that is, immediately as and when required;
- raise central bank overdrafts during the day; and
- gain access to the central bank accommodation window at the end of the day.

This edition will focus on the different technological options available to banks to access the Reserve Bank system.

### How will a bank link to the SAMOS system?

Where many countries have opted for one message carrier between the banks and the central bank, South African banks decided to implement an approach which provides for two message carriers initially, with the option to expand to other carriers in future. This will allow banks the freedom to select which route to take for their applications and will enable them to use more than one carrier if so required.

A position paper describing the details of the network architecture has been made available to all banks. A brief summary of the paper is provided in this article. A copy of the position paper can be obtained from the Reserve Bank's Payment System Division (refer to back page for contact details).

The settlement network, illustrated in Figure 1, comprises four

distinct parts, namely

- a settlement message routing mechanism, called SARB LINK;
- two alternative message carriers, namely:
  - the international payment messaging service, SWIFT; and
  - the direct connectivity to SARB LINK using MQ Series;
- a security component; and
- a choice of interface approaches consisting of modules that will reside in each participating bank.

### SARB LINK

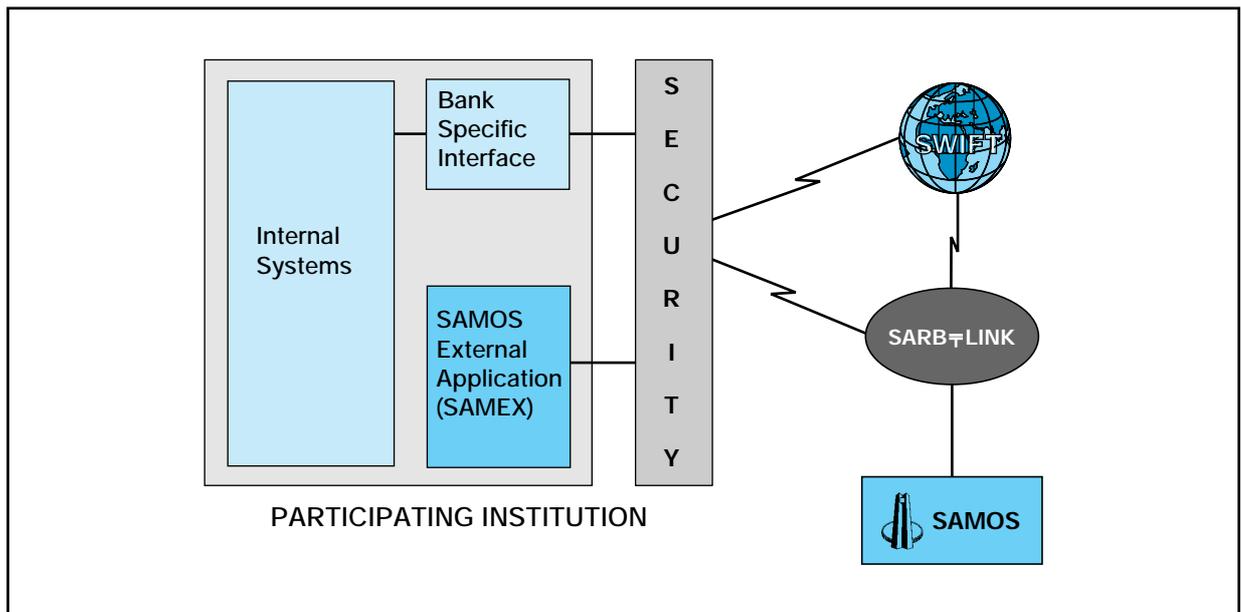
SARB LINK will be established by the Reserve Bank to enable all banks, big and small, to have affordable access to their Reserve Bank account and to use this facility to offer their customers new payment instruments. SARB LINK will not only provide access to the SAMOS system, but will also provide a number of value-added services, for example:

- Message authentication and

- security
- Auditability
- A bridge between SWIFT and non-SWIFT users
- Temporary message storage facilities should the SAMOS system or one of the banks' systems not be available for whatever reason
- Ensured delivery of all messages

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In order to access SARB LINK, banks will need to acquire one of the two message carriers. In addition to banks, interbank and financial industry utility companies, for example, payment clearing houses such as

the Automated Clearing Bureau (ACB), securities clearing houses such as the Bond Exchange (BE) and the Central Depository (CD), will link to the network.

## The settlement network message carriers

### SWIFT

**S**WIFT is a world-wide network connected to some 150 countries, through which banks send payment messages to their counterparties and correspondent banks. The service has been operational in South Africa since September 1982 and is currently used by 21 local banks for international and also domestic payment messages. Local member banks are very active in the SWIFT community and have a strong user group called the SWIFT Users of South Africa (SUSA). Banks who currently use SWIFT will thus be able to utilise SWIFT to transfer settlement messages to the SAMOS system via SARB LINK, thereby protecting their current investments in SWIFT technology and back-office systems.

Due to some technological intricacies, banks utilising SWIFT will not be able to utilise all the features provided by the SAMOS system, but will be able to perform the critical functions required to participate.

### SARB LINK direct connection

**B**anks who wish to connect directly to SARB LINK, will need to acquire certain specified hardware and software components. The solution is based on *de facto* information technology standards (IBM's MQSeries), and banks can link via the hardware platform of their choice.

The solution is scalable to the extent that banks with low volumes will be able to use a PC-based interface, whilst those banks wishing to fully automate their settlement message processes will be able to utilise midrange or mainframe platforms.

The Reserve Bank will provide banks with the necessary PC-based software to access SAMOS via this connection.

## Providing the necessary security for high-value funds transfer

**T**he important issue of defining an approach to secure the settlement messages that flow between the banks and SARB LINK has been finalised. The security architecture has been presented to and accepted by the SAMOS Technical Steering Group and will now be implemented. As far as the SWIFT carrier is concerned, the highly reputable standard SWIFT security features will apply.

## The inhouse interface for participating institutions

As mentioned above, the Reserve Bank will provide a PC-based interface to the SAMOS system which will allow banks using the direct connection SARB LINK to fully utilise all the features of SAMOS. This interface application will be known as the SAMOS External (SAMEX) system and will offer the banks the following facilities:

- message generation facilities for funds-transfer and collateral management;
- a facility to receive and process confirmations and various system notification messages received from the SAMOS system;
- a range of enquiry facilities into, for example, SAMOS transactions and account status; and
- a position monitoring service which will enable cash managers in banks to be constantly aware of the exact status of all their SAMOS accounts, for example, their settlement account, their loan account and the value of available collateral.

SWIFT users will be able to utilise their current SWIFT interfaces with minor modifications to accommodate specific features of the SAMOS system. New development will probably be required to process the SAMOS account status report that will be made available to SWIFT users who wish to build their own position monitoring systems.

## When will the settlement network be operational?

The Reserve Bank intends starting integration testing with selected banks as early as July 1997 and the objective is to have the infrastructure fully implemented by 1998.

# What's happening ...

## Establishment of the SAMOS Technical Steering Group

The Reserve Bank has initiated the establishment of co-ordination forums for the technical implementation of the SAMOS system. Two work sessions with IT representatives from the banks were held during the fourth quarter of 1996, where it was agreed to establish a technical steering group, to be known as the SAMOS Technical Steering Group.

The objective of this Steering Group, on which IT representatives from settlement participants will serve, will be to agree on technical standards and architectures, and to oversee the co-ordination and implementation of the SAMOS system.

The group had its first meeting during February 1997 and nominated members are:

ABSA Bank Limited	-	Mr Johnny Pienaar	Mercantile Bank	-	Mr Sean Colson
ACB	-	Mr Janus Prentzler	NBS Bank Limited	-	Mr Mervin Savary
Boland Bank	-	Mr Jan van Rooyen	Nedcor Bank Limited	-	Mr Andre Botha
First National Bank	-	Mr Keith White	SA Reserve Bank	-	Mr Hugo Smit (Chairman)
Investec Bank	-	Mr Dennis Daywood	Standard Bank Limited	-	Mr Richard Chard

## Changes to settlement practices and arrangements

The South African National Payment System Framework and Strategy document identified various changes required to the current settlement practices in line with the envisaged reforms of the payment system.

A discussion document, entitled **South African Multiple Option Settlement System: Account Management and Settlement**, has been forwarded to all banks for their formal written acceptance or counter proposals (cut-off date was 31 January 1997) prior to the finalisation thereof. The principles and issues contained in the discussion document have been discussed in depth with the interbank NPS Strategy Team and other interest groups.

# What's happening ...

## Certification authority workgroup for digital identification

A certification authority is an institution, trusted by all participants, to issue and maintain public key certificates for digital identification purposes.

The Reserve Bank has taken the initiative in facilitating a working group among concerned organisations in the banking and information technology fields to create the framework for a secure environment for electronic commerce, including payment systems.

The working group held its first workshop in November 1996 and is satisfied that it has successfully identified the major issues which need to be addressed.

These issues include a possible structure for certification authorities, that is, a regulatory framework, standards required and the major role players. Several task groups were established to address these issues in more detail and reported their findings to the workgroup in January 1997.

The workgroup believes that the establishment of a certification authority structure is of major importance for electronic payment systems and that such a structure should be established as soon as possible.

## Creating an NPS legal framework

The Reserve Bank has entered into negotiations and consultation with the banking industry regarding the nature and content of legislation required to support the new NPS.

An NPS act will enable the banking industry, and specifically the Reserve Bank, to give effect to the NPS strategy, by providing it with the necessary statutory powers. Issues such as finality of payment, irrevocability of interbank settlement, clearing, netting, NPS management structures and privacy will be addressed. It is envisaged that negotiations within the banking industry will be completed by the end of the second quarter of 1997.

## What does...mean?

ACB	Automated Clearing Bureau
BE	Bond Exchange
CD	Central Depository
NPS	National Payment System
SAMEX	SAMOS External (System)
SAMOS	South Africa Multiple Option Settlement (System)
SUSA	SWIFT Users of South Africa
SWIFT	Society for Worldwide Interbank Financial Telecommunication

## Delivery of the NPS business model

The first version of the NPS Business Model was completed in November 1996 and has been made available, as a discussion document, to members of the banking industry.

The business model aims, *inter alia*, to provide a tool to guide the industry towards convergence of terminology and practices over the longer term, and facilitating common understanding of shared processes, data and national infrastructure without being prescriptive in regard to method and implementation.

The business model is structured in two parts, corresponding to two levels of detail:

- A high-level NPS Business Overview Model that provides a holistic view of the broader NPS, but at a more detailed level than contained in the NPS Framework and Strategy document
- A lower level of detail that provides a comprehensive and integrated view of central bank settlement

Banks have been requested to comment on the layout and contents.

## Electronic cash

The E-Cash project team has appointed a task group to investigate the need for regulation regarding the issuing of electronic cash.

The task group, consisting of representatives from the banking industry, held a workshop in November 1996 which was facilitated by the Reserve Bank. A definition of electronic cash was formulated and the typical modes of storage and utilisation, as well as the characteristics of electronic cash were identified. The task group will make its findings available to the E-cash project team during March 1997.

## FROM THE EDITOR

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