South African Reserve Bank
National Payment System Department

Position paper – Cost-recovery Policy for the SARBLink Interbank Settlement Network

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This paper outlines the South African Reserve Bank's position on the charges levied for the different services associated with the interbank settlement network component of the national payment system.

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1. Background

The introduction of an online central bank settlement system in order to enable banks to submit interbank fund transfers electronically was one of the main strategies for aligning the South African national payment system, as described in the document, *South African National Payment System: Framework and Strategy,* with international best practice.

In support of these strategies, the following information technology infrastructural components were established:

- An interbank settlement system, known as the South African Multiple Option Settlement (SAMOS) system was established by the South African Reserve Bank.
- A settlement network, through which settlement instructions are routed between the South African Reserve Bank and participating institutions. It was agreed by the banking institutions that the South African Reserve Bank would establish and manage such a network component in the interest of the national payment system. This interbank settlement network component is known as SARBLink.

This document outlines the SARBLink network cost recovery approach that applies to the provision of the settlement network by the National Payment System Department of the South African Reserve Bank. Position Paper 2/2002 issued earlier by this Office us is hereby withdrawn and replaced by this document. Development of this document seeks to ensure that participants in the settlement system are certain about the administrative directives, guidelines and principles applied in the calculation of charges for use of the settlement network. The principles that will be applied in the calculation of charges for the SAMOS processing costs are, however, specifically excluded from this document.

2. Description of SARBLink

SARBLink is primarily a combination of network communication infrastructure, routing applications and security components providing for secure message exchange between participants and the SAMOS application. SARBLink consists of the following components and value-added services:

- Physical connectivity between participants and SARBLink.
- Gateways to different message carriers and conversion between the various communication protocols used by different message carriers. The term "message carriers" refers to the message-carrier service and

its associated communications protocol.

- A security solution, which provides for the authentication of participants, encryption of messages for confidentiality, the digital signing of messages for message integrity and non-repudiation, as well as user and security key administration.
- A routing application, which ensures the sequencing and queuing of messages from various sources, the secure routing of messages based on routing rules and message types, the logging and time stamping of messages, guaranteed once and once only delivery of messages and the intermediate safe storage of messages.
- A non-repudiation database which provides for the storage of signed messages for possible dispute resolution.
- System management, facilities management and daily operations management services.
- Built-in redundancy components in order to endeavour to provide for 100-per-cent availability in a 24x7 environment.
- Disaster Recovery infrastructure and associated recovery services.

Since the implementation of the SAMOS system in March 1998, participants are able to connect to the SARBLink facility directly by using IBM Web sphere (previously MQSeries) message-oriented middleware as a message carrier, or by using the SWIFT service as a message carrier, or both. Access to SARBLink through message-carrier gateways and communications protocols other than MQSeries or SWIFT has not been catered for at this stage.

The integration of gateways to different message carriers at a central point in SARBLink provides a cost effective solution in order to provide for economies of scale with regard to facilities management and daily operations management. In addition to this it allows for redundancy planning and the provisioning of Disaster Recovery infrastructure.

SARBLink accepts messages through specified message-carrier services and protocols, and routes these messages to the SAMOS application. After completing its processing, the SAMOS application passes messages back to SARBLink, which ensures that the messages are delivered to the correct destinations, through the specific message-carrier services nominated by the banking institutions involved in the settlement instruction. The only access to the SAMOS application is through the SARBLink facility, which serves to isolate the SAMOS application from communication intricacies and ensures that the transmission and routing of settlement instructions are secure, auditable and reliable. SARBLink is managed from a central, integrated point and includes all management services in order to provide 100-per-cent availability in a 24x7 environment.

2.1. Establishment and operation of SARBLink

It was agreed when SARBLink was initially implemented that, although the South African Reserve Bank would establish SARBLink in the interest of the efficient functioning of the payment system, the cost of providing the SARBLink service would be recovered from participants.

SARBLink was constructed in such a way that it can be transformed into a stand-alone service should the banking industry wish to utilise SARBLink for other payment-related services (for example, passing of payment instructions not requiring payment finality to a payment clearing house). Improved cost efficiencies will result from the fact that the sharing of payment infrastructures will be facilitated and the need to duplicate facilities between participants will be alleviated. This issue has not been pursued at this stage.

3. Principles applied in formulation of cost delivery policy

The principles that will be applied in the calculation of the service fees through which costs will be recovered for SARBLink are described below. The processing fees associated with the SAMOS system are, however, specifically excluded from this document

3.1. General principles

3.1.1 Uniform cost structures

Uniform cost structures will be applied to all participants, regardless of the size or volume of transactions, or any other distinguishing characteristic. This means that charges will be determined based on the total number of messages routed through a specific gateway by all participants.

3.1.2 Processing windows

SARBLink was designed to provide 'near-time' throughput and performance at all times. The capacity requirement of SARBLink was thus designed to provide for the maximum number of messages to be routed within any specific operating window. No provision will be made for different charges for different operating windows. Instead a standard charge across all operating windows will be applied.

3.1.3 Cost recovery

Charges for the routing of messages to the SAMOS system will be recovered as depicted in the following table:

Type of message	Initiator	Destination	For account of
Settlement instruction	Originating institution	SAMOS	Originating institution
Settlement confirmation	SAMOS	Paying banking institution	Paying banking institution
Other return messages	SAMOS	Paying banking institution	Paying banking institution
Settlement notification	SAMOS	Beneficiary banking institution	Beneficiary banking institution
Position refresh	SAMOS	Paying banking institution	Paying banking institution
Position refresh	SAMOS	Beneficiary banking institution	Beneficiary banking institution
Admin, manage and enquiry instructions	Originating institutions	SAMOS	Originating institutions
Response from SAMOS	SAMOS	Originating institution	Originating institutions

Charges for the routing of messages directly between participants (that is, non-SAMOS messages) will be recovered based on arrangements outside the provisions of this document.

3.2. Types of cost

A distinction is made between various types of cost, as described below:

3.2.1 Connectivity costs

Participants need to establish a physical communication link and provide for their own access to SARBLink. This includes the procurement, installation and management of interfaces to SARBLink, as well as the infrastructure to carry the messages from participants' premises to the SARBLink or SWIFT entry point. This infrastructure will include facilities for the authentication and encryption/decryption of messages before their transmission to or from SARBLink. The participant is responsible for the costs and there is no cost to the South African Reserve Bank.

Banking institutions that already have access to the SWIFT service are able to utilise the same interface in order to connect to SARBLink.

3.2.2. Operational costs

All operational costs associated with the provision of the SARBLink network will be recovered.

Operational costs include costs associated with
- operating software licences, rental and maintenance agreements;
- application software licences and maintenance agreements;
- hardware maintenance services;
- professional services associated with systems support (such as systems engineers, etc.);
- support services, facilities management and operations management services; and
- an appropriate portion of salaries of personnel that support the SARBLink infrastructure.

Operational costs will be recovered by means of a charge per message routed through SARBLink.

3.2.3. Capital Costs

The South African Reserve Bank's uses generally acceptable accounting principles to depreciate all capital expenditure relating to the SARBLink infrastructure.

Additional capital costs incurred by the South African Reserve Bank resulting from requirements put forward by participants will be recovered by means of a once off charge that will be determined as and when the capital expenditure is incurred. Participants will share the capital expenditure incurred and will be expected to pay their share to the South African Reserve Bank as a once off payment upon implementation of the required service.

3.3. Basis of cost recovery

All operational costs pertaining to the provision of the settlement network must be recovered within a financial year. The network charge will be reviewed annually and will remain fixed for a year. In the interest of sound budget and cost planning by participants, the South African Reserve Bank will endeavour to minimise year–to-year fluctuations in network charges. Recovery of the network fee will be done on a monthly basis.

3.3.1. Projections of message volumes

The determination of charges is entirely dependent on, and is sensitive to, the volume of messages to be processed through *SARBLink* as well as budgeted operational expenditure.

In order to facilitate the determination of the network charge per message to cover the operations expenses, the South African Reserve Bank will use the previous year's message volumes to project message volumes for the next year.

3.3.2. Message flow in SAMOS system

For settlement instructions requiring immediate finality, a settlement instruction is sent from the paying banking institution to the South African Reserve Bank. After being processed by the SAMOS application, a settlement confirmation will (optionally) be sent to the paying banking institution and a settlement notification message will (optionally) be sent to the beneficiary banking institution. In addition, a position refresh message will be sent to both banking institutions.

One settlement instruction may thus result in more than one message flowing through SARBLink.

3.3.3. Under-recovery/over-recovery

An estimated under-recovery/over-recovery amount for the next year will be determined using the SARBLink annual operational budget and the projected SARBLink revenue.

Any under-recovery/over recovery amount derived above will be apportioned to all affected participants based on their proportionate contribution of the total amount recovered.

At its own discretion, the South African Reserve Bank may in the first month of the financial year,

- repay to participants any material over-recovery of fees collected in the previous year calculated based on principles applied when the network charge was determined in that year; and

- after discussion with participants, recover once off any material under-recovery of fees for the previous year calculated based on principles applied when the network charge was determined in that year.

3.3.4. Disaster recovery facilities

SARBLink is currently based on fault-tolerant HP Non-Stop server (previously Tandem) architecture and has buildt in resilience for all connectivity and security components for both the MQSeries and SWIFT gateways.

Nevertheless, in order to endeavour to provide for 100-per-cent availability, infrastructure and facilities for disaster situations were established. For cost-recovery purposes, a distinction of the cost of establishing participant connectivity to SARBLink at the disaster recovery site from those associated with connectivity at the primary site shall not be made.

4. Swift message fees

In addition to the charge per message to recover the operational costs associated with SARBLink, a SWIFT message fee is levied by SWIFT for the transmission of messages through the SWIFT message carrier service.

The South African Reserve Bank has registered a close user group with

SWIFT to facilitate payment of SWIFT charges by the recipient participant, for messages that are generated by the SAMOS application to participants via SWIFT. This process is known as reverse billing.

5. Method and frequency of payment for charges

The total charges to recover operational costs for the routing of messages will be calculated at the end of every month. Participants will be provided with monthly statements, detailing the number of messages routed per message carrier gateway on each particular day.

Value-added tax will be levied on monthly aggregate totals and not per individual message.

Participants' share of capital expenditure shall be invoiced to participants and recovered immediately upon the implementation of the requested enhancement.