

RAPID Task Order 2.1 Activity

End of Assignment Report:
Consultant: Tsietsi Motsoela
Position: Telecommunications Advisor
Dates of Consultancy: November 2001 – November 2002

Submitted to:
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1. Introduction

In accordance with the objective of harmonizing regional policies as laid out in the Southern African Development Community (SADC) Protocol on Transport, Communications and Meteorology, the Southern African Transport and Communications Commission Technical Unit (SATCC-TU) of SADC initiated a process to develop a regional band plan for the frequency range 20 to 3100 MHz in 1997. Subsequent to the formation of the Telecommunications Regulators' Association of Southern Africa (TRASA) in 1998, SATCC-TU handed over the development of the regional frequency plan to TRASA. The plan was completed in May 2000.

In November 2001, Chemonics International/RAPID engaged a consultant to assist TRASA with the development of a regional band plan in the frequency range 3100 MHz to 100 GHz. The terms of reference for the assignment are attached to this report as Annex A. This report gives a summary of the results of the assignment. The study reviewed developments with regard to the usage of radio frequencies above 3.1 GHz regionally and internationally. The results of the research were used to produce a report and an accompanying draft regional table of frequency allocations, attached as Annexes B and C, respectively.

The consultant reviewed the usage of the spectrum at a global level as outlined by the International Telecommunications Union (ITU) in the Radio Regulations (2001 Edition), the Final Acts of the ITU World Radiocommunications Conference held in Istanbul, Turkey in 2000 (WTC-2000), SADC Regional Band plan from 20 to 3100 MHz, and other band plans from other international institutions such as the Australian Communications Commission, the European Conference of Postal and Telecommunications Administration (CEPT), the Federal Communications Commissions of the United States and national band plans from Southern African Development Community (SADC) Member States.

The consultant produced an outline of the regional band plan in March 2002 which was circulated to SADC Member States for comment. RAPID arranged a workshop for the Technical Committee (the Committee) of the Telecommunications Regulators Association of Southern Africa (TRASA) to discuss the draft outline. The workshop was held in Windhoek, Namibia from 4 – 5 April 2002. The Committee approved the draft outline with some amendments.

The consultant amended the draft plan to take account of the Committee's input and additional data that had been submitted by TRASA members. The revised draft plan was submitted to TRASA Members, who in turn circulated it to their stakeholders for comment. Subsequently, the consultant reviewed written comments received from stakeholders in the SADC Region and compiled a document composed of these comments and his response to the comments. This document was also circulated to all TRASA Members.

On 26 June 2002, TRASA organized a stakeholders' workshop in Windhoek, Namibia at which the consultant presented the draft plan, the accompanying report and a summary of comments received from stakeholders. Some stakeholders, notably, Intelsat, PanAmsat, the Southern Africa Telecommunications Administrations (SATA – the association of incumbent

operators in the SADC Region) and the Regional African Satellite Communications Organisation (RASCOM) also made presentations with regard to the draft plan. On the 27 June 2002, the Committee held a meeting to review the comments received from stakeholders and to chart a way forward. The Committee approved the consultant's report and draft plan with some amendments.

The Committee resolved to submit the draft plan to the TRASA Annual General Meeting scheduled for August 2002 in Maputo, Mozambique. The consultant amended the draft plan and accompanying report and submitted the revised documents to the Committee on 11 July 2002.

2. Summary of the consultant's report

The report focuses on the Fixed Service, particularly the Fixed Wireless Access systems, since these systems have very few frequency bands in which they can operate, yet they have the greatest potential to increase telephone penetration rates (teledensities) for basic telephony and provide broadband services in the SADC Region. The main recommendations of the consultant's report are that SADC should:

- a. Allocate the 3400 – 3600 MHz band to the Fixed Service for the exclusive by Fixed Wireless Access systems;
- b. Allocate the 3600 – 3800 MHz band to the Fixed Service (for Fixed Wireless Access applications and point-to-point fixed links) and coordinated Fixed Satellite Service applications on a shared basis;
- c. Allocate the 3800 – 4200 MHz to the Fixed Service (for point-to-point fixed links) and Fixed Satellite Service applications;
- d. Assign frequencies in the band 3600 – 3800 MHz to FWA applications only after exhaustion of the band 3400 – 3600 MHz. Similarly, Fixed Satellite Service applications should be assigned frequencies in the band 3600 – 3800 MHz only after exhaustion of the band 3800 – 4200 MHz; and
- e. Allocate the 10.5 GHz (10.15 – 10.30)/(10.50 -10.65 GHz) exclusively for Fixed Wireless Access systems.

3. Feedback from stakeholders

SATA supported the report, however they felt that the consultation process should be allowed more time to ensure that their members can reflect on the implications of the report. Satellite operators acknowledged the need to find solutions to the poor teledensities in the SADC Region but were opposed to allocation the band 3400 – 3600 MHz exclusively to FWA. Their view is that 3400 – 4200 MHz should be shared between Fixed Service (point-to-point) and Fixed Satellite Service with FWA restricted to operating in the band 3400 – 3600 on

coordinated basis with Fixed Satellite Service applications. The consultant's report points out the difficulties of sharing between FWA and Fixed Satellite Service Applications as outlined in ITU-R Recommendation SF 1486.

4. Next Steps

One of the issues that was of concern to SATA was the migration strategy. They were of the view that a migration strategy should be part of the report. However the Committee resolved that each country should produce its own migration strategy save that all SADC Member States should have fully adopted the new plan within ten years from the date of adoption by the Member States.

The development of a migration strategy is a complicated process that requires for more time than the development of the band plan; the reason being that each country's database of spectrum usage must be analyzed and a migration plan developed for each country, taking account of current and future usage. Therefore the migration plan will be country-specific. Due to the poor records of some of the Member States, this could prove to be a very difficult and time-consuming task.

The Committee resolved that all references to ITU Regions 2 and 3, and the European Common Allocation Table should be removed at the end of the consultation process so that only reference to ITU Region 1 would remain. The consultant's report and the draft band plan were approved by the TRASA Annual General Meeting (AGM) held in Mozambique from 21 – 23 August 2002.

5. Conclusions and Recommendations

The SADC Region has some of the lowest teledensities in the world. This is due, in part, to the lack of competition in the fixed service. In addition to the lack of competition, until very lately, most of the incumbent monopoly operators in the SADC Region relied on copper to provide telecommunications services. Copper is very slow to rollout and has many disadvantages which are outlined in the consultant's report.

The introduction of competition in the SADC Region will be of little value if new entrants are expected to use copper. Opening up the market to competition will only produce the desired effect if the new entrants have access to FWA spectrum. That is why the consultant's report has put more emphasis on the identification of spectrum for FWA systems.

The report also highlights the need for regulators to conserve the spectrum to ensure that when full competition is eventually introduced, new entrants will also have access to this scarce resource. Otherwise there is the danger that incumbent operators may hoard the spectrum thereby stifling competition.

While members of the Committee decided that each country should develop its own migration strategy, very few countries in the Region have the capacity to undertake such a difficult task. This is an area where further assistance might be required, unfortunately as pointed out earlier this would be a difficult and time consuming exercise.

As the value of the spectrum increases in the SADC Region, regulators will be faced with the need to apply economically efficient spectrum pricing mechanisms that will be intended to encourage efficient use of this resource. Therefore TRASA is likely to need some support in the future to develop such spectrum pricing principles.

Annex A
TERMS OF REFERENCE
For
Spectrum Planning Specialist

Introduction:

In 1998, SADC Member States signed the SADC Protocol on Transport, Communications and Meteorology. The Protocol:

- i. Was signed in pursuance of Articles 22 and 23 of the SADC Treaty, which provides for Member States to conclude a protocol to expand and deepen their co-operation in areas of infrastructure and services.
- ii. Recognizes that transport, communications and meteorology functions are a prerequisite for the promotion of economic growth and development and the improvement of the quality of life and social interaction of all citizens of Member States.
- iii. Requires Member States to develop harmonized regional model telecommunications policy and model legislation that are investor-friendly.

The consultant should refer to the SADC Protocol on Transport, Communications and Meteorology for details on the protocol and its objectives.

RAPID Activity TASK ORDER 2.1:

The Telecommunications Regulators Association of Southern Africa (TRASA) approached the Regional Centre for Southern Africa (RCSA) of the United States Agency for International Development (USAID) for support in the development of capacity to implement the objectives of the Protocol. On April 11, 2000, RCSA/USAID awarded a five-year contract to Chemonics International, Inc. to implement the “Regional Activity to Promote Integration Through Dialogue and Policy Implementation” (RAPID). The purpose of RAPID is to provide quick-response short-term technical services related to policy analysis, policy dialogue, and support for implementation of policy changes under RCSA’s development assistance program for Southern Africa. RAPID supports RCSA’s strategic objectives (SO’s) for assisting the further integration of the Southern African Development Community (SADC) member countries in the critical areas of regional market integration (SO 2), increased cooperation in the management of shared natural resources (SO 3), and expanded commercial markets for agricultural technologies and commodities (SO 4).

The Telecommunications Initiative under the RAPID Activity is specifically designed to:

- (a) Build the capacity of the region to attract investment and construct modern networks; and
- (b) Harmonize policies in the region in order to establish a regional policy framework over telecommunications issues, including issues of spectrum management.

Regional Spectrum Planning and Management Study

The Spectrum Planning Specialist will complete the following:

1. Review the current status of spectrum management in the SADC region.
2. For purposes of understanding, context, and benchmarking, review current studies and band plans applicable to the region, and individual SADC nations, including the current SADC spectrum band plan covering spectrum use above 3.1 GHz and the applicable ITU plans.
3. Establish a regional band plan consistent with ITU guidelines for the region for frequency bands above 3.1 GHz.
4. Establish an initial consultative report outlining and highlighting key issues for consideration by regulators and policy makers in the region associated with the establishment of such a plan. The initial consultative study should also include preliminary recommendations and intentions for the plan.
5. Prepare a report in collaboration with relevant members of TRASA and their representatives outlining or highlighting the following;
 - a. Key examples of best practices from other jurisdictions including international organizations;
 - b. Models or conventions that should be considered for adoption throughout the SADC region based on models from jurisdictions either inside or beyond the SADC region;
 - c. Key relevant contextual examples from within the region or within the community of developing nations;
 - d. Key principles relating to the issues to help in the establishment of guidelines or models to TRASA members;
 - e. Potential areas or specific issues to be addressed in establishing models or guidelines;
 - f. Preliminary recommendations for the band plan;
 - g. Identify proposed next steps toward implementation of the proposed guidelines by TRASA members; and
 - h. Identify key challenges to be addressed by TRASA members or the region in addressing the challenges presented through implementation.
6. Prepare an outline for the initial review or study report on the issue in consultation with TRASA, the relevant TRASA oversight committee, and RAPID Team Leader. The outline will include preliminary views on jurisdictions to focus on or discuss in the review.
7. Travel as necessary to consult with relevant TRASA members or TRASA Committee members.
8. Identify the relevant institutions, associated resource issues, staff training requirements, hardware or software systems, and other foundation requirements necessary to implement the guidelines or models proposed for TRASA members.
9. Present the findings and conclusions at relevant regional workshops.

Deliverables

- a. Consultation with relevant TRASA committee(s) as appropriate and necessary.
- b. Workshop Presentations/Participations (as required)
- c. Technical Report containing current practices and findings.
- d. Recommend next steps toward the development of a spectrum plan above the 3.2 GHz frequencies for adoption by the SADC region.