

Radio Frequency Spectrum Policy 2016

The below represents a summary of Section 2 of Chapter 9 of the [National Integrated ICT Policy White Paper](#).

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Context

Radio frequency spectrum is a national resource, the right to which vests in the state. Historically spectrum for mobile services has been assigned to individual licensees who are then given exclusive rights to it for a defined period in a defined geographic area. The new spectrum management regime set out in this policy envisions sharing and cooperation between licensees for the deployment of a Wireless Open Access Network.

Challenges

Unclear roles and responsibilities

- As between the Minister and the regulator resulting in institutional inefficiencies.
- There is a need a need for greater coordination between the regulator and sector-specific agencies, such as emergency services and maritime and aeronautical services.

Gaps in the spectrum management regime

- Misalignment between national universal service objectives and the licensing of frequency spectrum resources, the setting of spectrum fees, spectrum trading, sharing, re-farming and migration;
- Positive outcomes expected from universal service obligations have not been realised by the state and society.
- There is a need to distinguish between commercial and non-commercial usage: fees for spectrum used for non-commercial applications areas are excessive and prohibitive to public sector service execution.
- Hoarding of spectrum should be discouraged at all costs.
- Regular spectrum audits are necessary to ensure effective and efficient utilisation of spectrum and weed out any 'ghost' services.
- A clear framework for market-based approaches to spectrum management such as spectrum trading and spectrum sharing is required.
- Lack of policy on refarming of spectrum and migration of spectrum licensees. including policy on compensation for the costs incurred by licensees when required to migrate.

An exclusive spectrum regime

- In a developmental state context, the highest value for the spectrum may not be measured in terms of monetary value - social and economic value are of greater importance. Furthermore, a market based approach may simply serve to perpetuate the current market structure in that those with the 'deepest pockets' and ability to pay for the spectrum are likely to be those who have derived economic benefit from their exclusive rights to the spectrum to date.

Objectives

- Ensure efficient use of spectrum so that the economic, cultural and social benefits that South Africans derive from its use are maximised;
- Support open access and the sharing of infrastructure to the greatest extent possible;
- Promote broadband coverage in rural areas and underserved areas
- Ensure that as many users and potential users as possible can benefit from its assignment;

- Promote innovation to the extent that it addresses national developmental challenges and goals.

Goals

- Promote the effective and efficient management of spectrum to ensure agility, flexibility and adaptability in spectrum administration;
- Contribute to the promotion of national interests and to development and diversity by improving sharing conditions among different radio communication services
- Reduce bureaucracy and streamline processes for spectrum assignment
- Support the attainment of the national broadband targets set out in South Africa Connect
- Provide clarity on the treatment of spectrum in instances where demand exceeds supply;
- Set aside spectrum for use on an open access basis and through joint private sector investment in infrastructure; and
- Support the provision of, emergency services, safety and security and sector-specific operations to all South Africans.

Principles

- Maximising the efficiency of spectrum used in South Africa
- Promoting openness, transparency and non-discrimination
- Promoting of infrastructure sharing
- Application of 'use it or lose it' principles to spectrum
- Predictability and certainty for policy makers, investors, users of the spectrum resource and consumers

Interventions

Roles and responsibilities

The Ministry of Telecommunications and Postal Services

- Representing South Africa at the ITU. This role includes putting forward the country's positions, frequency allocations, and international coordination of spectrum use. South Africa shall endeavour to apply the latest technical advances as soon as possible.
- South Africa will promote harmonised usage of the spectrum at international and regional levels. Government will support a unified regional band plan and will, through such band plan and regional standardisation, strive to improve economies of scale of equipment across the Southern African Development Community and Africa.
- All international, multi-lateral and bi-lateral spectrum matters pertaining to South Africa, including regional and sub-regional spectrum planning, all cases concerning international harmful interference and international frequency coordination. The Department will liaise with the regulator on such matters.
- Issuing policies and making policy directions in relation to spectrum.
- The development and approval of the National Radio Frequency Plan including the allocation of spectrum for the exclusive use by national security services.
- Coordination across other Departments and sector-specific agencies whose industries are impacted by policy related to the use of spectrum.

- Establishment of a National Radio Frequency Planning Committee with representatives from Government Departments. The Committee would ensure fairness and equitable distribution of Spectrum.
- Establishment of a Spectrum Directorate to coordinate the work of the Committee.

Regulator

- Implementing this and any other spectrum policies and policy directions issued by the Minister.
- Making radio regulations in line with the National Radio Frequency Plan, on the use of the spectrum.
- The administration, management and assignment of spectrum, and the issuing of licenses, as may be applicable
- Spectrum monitoring, evaluation and interference control within the Republic.
- Periodic spectrum audits.
- Maintaining a high quality and appropriately accessible database of frequency spectrum assignments. Assignments to security services shall, however, be excluded; and
- Advising the Ministry on areas for future research and development and planning.

Sector-specific agencies

- Ensuring availability and maintenance of quality information related to spectrum assignments, licensing and utilisation; and
- Maintaining a database of frequency spectrum users in their respective industries and ensuring that their database corresponds with that of the regulator.

The Spectrum Management regime

National radio frequency spectrum planning

- To promote sharing spectrum among services, the NRFP should follow as closely as possible the ITU frequency allocations for ITU Radio Region 1 (Africa, Europe). In cases where there are competing services in a frequency band, and where the decisions of an ITU WRC could create divergent interests nationally, the Minister will decide in the best interest of the Republic regarding the service allocation to be made in the NRFP.

Aligning national universal service objectives, transformation and spectrum licensing

- In making assignments, the regulator should ensure support of national policies and conditions of ownership that promote transformation. Assignments should be made to parties who are registered in South Africa, are compliant with the Black Economic Empowerment legislation and meet minimum black economic empowerment criteria.
- Universal service obligations associated with spectrum assignments must comply with the following principles:
 - Competitively neutral and non-discriminatory: Licensees assigned spectrum in similar bands must have similar universal service obligations (USOs). The obligations should include incentives for efficiency and should not distort the market.
 - Transparent: USOs should be imposed in a transparent manner and should be publicly available, as should annual reports on licensees' compliance with these obligations. Decisions that are taken independently by an operator cannot be considered as obligations.
 - Clear Targets: Obligations should be specific, attainable and measurable and should be evaluated on an annual basis, as a condition of renewal of the frequency spectrum licence.

- The regulator must obtain the Minister's approval on the nature and form of all universal service obligations before they are imposed on any spectrum licensees to ensure that obligations are coordinated, relevant and aligned with national policy objectives and priorities.

Spectrum Fees

- Government seeks to ensure economic efficiency in the use of the spectrum resource through application of spectrum fees for all spectrum users.
- Spectrum pricing will be administered by the Minister.
- Spectrum fees should:
 - Apply to all licensed spectrum users, unless the spectrum user is exempted from payment through policy or policy direction issued by the Minister;
 - Be set in a transparent manner and made publicly available;
 - Maximise the economic benefits to the country obtained from use of the spectrum resource;
 - Include sufficient incentives to promote efficiency;
 - Be adjusted annually in accordance with the Consumer Price Index.
- Administered Incentive Pricing (AIP) is the preferred methodology for South Africa.
- A distinction is to be drawn between the AIP-based spectrum fee for commercial use and for use for the provision of services that meet clearly defined public interest goals.
- Government may set out a special dispensation for spectrum pricing, including reducing or waiving spectrum fees for a determined period as an incentive for licensees to provide services that meet clearly defined public interest goals and meet national objectives. Any such determination will include mechanisms to ensure that the spectrum allocated to those services is used efficiently to accommodate medium and long term needs of the Republic.

Spectrum sharing

- Spectrum sharing refers to a collaborative effort which allows licensees allocated spectrum in the same or adjacent bands to harmonise their spectrum to enhance the utilisation of the radio frequency spectrum.
- Given the effective rules governing the sharing of licence-exempt spectrum, no changes are proposed to the spectrum sharing regime for licence-exempt, but regulated applications.
- Collective use of spectrum and the shared use of spectrum is to be encouraged.
- Sharing shall be based on geographical, time or frequency separation or a combination of these.
- The sharing of frequencies should not compromise the provision of emergency services and other services that meet clearly defined public interest goals.
- Sharing arrangements in licensed bands must be lodged with and approved by the regulator prior to implementation. The regulator should be concerned with:
 - The impact of sharing arrangements on competition;
 - Ensuring that spectrum sharing does not constitute spectrum trading or pooling, in terms of which primary users of a spectrum allocation rent out use of unused parts of their allocation to secondary users. If it is found that a 'sharing' arrangement will result in spectrum trading or pooling, provisions on spectrum trading set out below will apply.
- Dynamic spectrum access, which is in its early stages of development, is an advanced and opportunistic approach to spectrum management that is closely related to other management techniques such as flexible spectrum management and spectrum trading. Dynamic spectrum access is allowed on condition that it is within the guidelines provided by the regulator.

- The regulator must issue spectrum sharing guidelines, including provisions on dynamic and opportunistic spectrum access.

Spectrum trading

- Spectrum trading refers to the re-sale, leasing or sub-letting of spectrum by a licensee to a third party, whether on a stand-alone basis or as part of a business that is being purchased.
- Spectrum trading of non-high demand spectrum is permissible. The regulator must approve the trading of any spectrum to ensure that competition is not distorted by any spectrum trade or by the accumulation and hoarding of spectrum rights of use. The licensee trading the spectrum must have used the spectrum in the year prior to the sale to ensure that the trade is not used to subvert the 'use it or lose it' principle.
- Trading of high demand spectrum is not permissible. Any unused high demand spectrum must be returned to the regulator. The trading of high demand spectrum would perpetuate the current market structure which places inherent value in spectrum and its exclusive use.
- The Minister may make a determination in respect of trading in spectrum or spectrum use rights in order to fulfil specific national objectives.

Refarming

- Refarming refers to the re-use of an assigned frequency band for a different technology.
- Licensees who refarm spectrum must be transparent and report the refarming to the regulator.
- Refarming cannot be used to reduce licence fees, or entrench existing rights or associated market power. It should not be used to avoid obligations applicable to similarly situated spectrum.
- Refarmed spectrum will be treated in terms of its new use to the extent that pricing and/ or obligations are impacted.

Migration

- Migration refers to the moving of services from one spectrum band to another.
- Any migration process must be completed within 5 years once a policy decision to migrate has been taken unless there are compelling reasons otherwise.
- The Minister may determine if there is a need for cost recovery and if so how it will be addressed, considering the assigned party's licence conditions and the nature and impact of the migration.
- Migration will preferably occur at the end-of-life of equipment when costs are minimal, subject to five (5) year migration principle.

'Use it or Lose it' Principle

- Assigned spectrum shall not remain unused for a period of more than a year. If it is not used, the 'use it or lose it' principle will be applied and it must be returned to the regulator. This policy must be applied without discretion.
- Passive science services, due to the nature of their operations which do not transmit signals frequently, will be exempted from this provision. SMMEs and new entrants may be exempted from the stipulated time frame where a compelling case for this exists.

Unassigned spectrum

- Unassigned spectrum may be assigned on a short -term basis for test or research and development purposes.

Monitoring, enforcement and spectrum audits

- Licensees must file annual reports to the Ministry and the regulator on the usage of spectrum that has been assigned to them. This will be a condition for the annual renewal of the licence. This information will form the basis of regular audits to be carried out by the regulator and provided to the policy maker and made publicly available.
- Spectrum holders may be technically audited by the regulator at any time to ensure efficient spectrum utilisation.
- The regulator must maintain a database of information that enables it to monitor and assess the usage of spectrum. The database should include additional tools to analyse historical occupancy/usage and to interpret alternative propagation models.

Facilitating an open access spectrum licensing regime

Determination of high demand spectrum bands:

- "High demand spectrum" refers to spectrum where (1) demand for access exceeds supply, or (2) radio spectrum is fully assigned.
- All IMT spectrum, which is essentially mobile broadband spectrum, meets the first criteria for 'high demand spectrum,' as demand for the resource exceeds supply.
- The Minister, in consultation with the regulator, may determine any other spectrum as high-demand spectrum, from time to time.

Set Aside of High Demand bands for Wireless Open Access

- All high demand spectrum will be assigned on an open access basis.
- All currently unassigned high demand spectrum will be set aside for assignment to the Wireless Open Access Network.
- The regulator is required to conduct an industry wide public consultation process to determine the terms and conditions, as well as the time frame, under which the currently exclusively/individually assigned high demand spectrum will be returned in accordance this policy. Terms and conditions will consider:
 - Market developments
 - Projected extent of availability of open access networks
- The regulator, upon completion of this consultative process, must make recommendations for the Minister's approval on the terms and conditions which will apply to the network and currently assigned high demand spectrum.

Spectrum which is not in "high demand"

- Spectrum to continue to be issued on a non-exclusive, 'first come, first served' basis.
- Use of best-fit spectrum for intended applications is encouraged;
- The spectrum pricing framework will be applied to encourage efficiency;
- Openness and infrastructure sharing are encouraged;
- Reporting requirements are proposed to facilitate effective monitoring and enforcement; and
- The undertaking of regular audits is supported.
- To reduce turnaround times for coordination and approval processes in bands the regulator will be required to introduce an automated spectrum licensing system.

Spectrum for sector specific use and for services that meet clearly defined public interest goals

- Ministry will ensure that sufficient sector-specific spectrum and spectrum for services that meet clearly defined public interest goals is secured, coordinated and protected and, as far as it is practically possible, harmonised internationally and/or regionally.
- The regulator will be responsible for assigning spectrum to sector- specific agencies.
- Sector-specific agencies are responsible for assigning spectrum to and registering users of frequencies in their industry and accounting to the regulator for the use of this spectrum.
- Sharing of sector-specific spectrum and spectrum used for services that meet clearly defined public interest goals may be approved where practically possible and provided such sharing does not compromise the functions for which the spectrum was intended.
- The Ministry, the regulator and the sector-specific agencies should enter a Memorandum of Understanding (MoU) to enable the regulator to play its monitoring and enforcement role, while avoiding bureaucracy and improving administrative efficiency by enabling end users to register with sector-specific agencies through a simple process.
- The regulator will be required to develop a database with real-time updates.
- Priority of access to spectrum must be given to safety of life services including public safety and security communications.
- Allocation of radio frequency spectrum for the exclusive use of security services will be determined by the Minister in consultation with the security services.

Spectrum for scientific research

- Government will continue to support long-term availability of frequency bands essential to achieve the goals of Earth Exploration Satellite Services, Space Research Services, Space Operation Services, Radio Astronomy Services, Meteorological Satellite Service, Meteorological Aid Services and Radiolocation Services.

Spectrum to support broadcasting services

- There remains a need for the allocation of adequate radio frequency spectrum to enable the provision of free to air and other broadcasting activities, to be achieved through the allocation and preservation of specific bands for broadcasting and audio visual services.