



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Attention:

Independent Communications Authority of South Africa

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Delivered by email

Response to invitation to comment on the "Draft National Radio Frequency Plan 2021"

Submitted by: Telecommunication Branch
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Response to invitation to comment on the Draft National Radio Frequency Plan 2021

Introduction

The Telecommunications Branch of the City of Cape Town offers this commentary and input to the “**Draft National Radio Frequency Plan 2021**”, in order to improve the draft by pointing out various shortcomings and omissions.

The City’s comments focus on the use of broadband spectrum for public protection and disaster response (PPDR) - as these have direct and indirect implications for the operations, service delivery functions, and management of the municipality.

Public Protection and Disaster Response (PPDR)

Municipalities and provincial governments play *the* key role in the provision of safety and security services, disaster management, and traffic and transport management, at the local level. Category A municipalities such as the City of Cape Town have responsibilities delegated from the provincial sphere.

Fulfilment of these responsibilities requires the use of dedicated communications technologies which must be secure and resilient in the event of disaster and catastrophe that would otherwise affect them. Reliable communications when such events occur are needed to respond to such events.

These technologies rely on the use of frequency spectrum, which should be dedicated for this purpose, viz. enabling communications services that will continue to be available even when commercial services have been overloaded or incapacitated by security or disaster related incidents.

ICASA should therefore allocate specific portions of the spectrum specifically for the use of municipalities for providing PPDR related communications. This is in accordance with the International Telecommunications Union (ITU) guidelines for International Mobile Telecommunications, and South Africa’s National Radio Frequency Plan.

The **Draft National Radio Frequency Plan 2021** does not recognise these needs, through the proposed stipulation for spectrum allocation. ICASA have in 2019 promised that the allocation of broadband spectrum for PPDR would be addressed by 2021. This has not happened

The result of this omission is that Public Sector bodies have to buy mobile broadband services from licensed commercial operators. This is problematic because:

- Commercial services are not designed to cater for public sector PPDR needs
- Prices will be high, because licensed commercial operators must generate profits on the portions of the spectrum allocated to them

The City therefore urges ICASA to make specific provision for spectrum to be assigned to municipalities for Public Protection and Disaster Response (PPDR) use.

This spectrum should align with the ITU Region 1 allocation, within which South Africa falls. The designated PPDR spectrum is in the IMT600-700 and IMT700-850

waveband range.

Applications for the licensing of these radio frequency bands to municipal and other public sector entities should be dealt with preferentially by ICASA. In doing so, ICASA would be following the established practice of international agencies and regulators.

Motivation for the City's position

Municipalities are increasingly focussed on becoming “smart cities” or “digital cities”. This trend is driven by security and disaster challenges of increasing frequency and scale, and by the capability of new digital technologies to improve the management of large urban systems through remote monitoring and automation. These technologies also allow field staff to be constantly in touch with head offices and other colleagues, even when mobile. Various municipal departments – including utilities, transport, and PPDR – therefore require wireless methods of communicating with vehicles, field workers, and all kinds of remote devices that either provide real-time information, or which need to be controlled at a distance. However, these initiatives are currently being hampered or prevented by the lack of licensed spectrum specifically available to municipalities for this purpose.

Municipal Safety & Security (Public Protection and Disaster Response) requirements can be categorised as follows:

- Municipalities require access to a secure, high-availability private mobile broadband network for public safety and disaster management, which can carry both voice conversations and data applications as needed for real time decision-making. The key requirements for each such network are that it must allow for mobility of the users, cover the entire metropolitan area, and be under the management control of the municipality so as to ensure the necessary security and availability. Commercial networks are no substitute because, in the event of an emergency, these are invariably swamped by public traffic, or otherwise are unavailable because the direct effects of the emergency.
- Public safety agencies need wireless communications to protect property and help save lives. Existing systems and frequency bands are only suitable for Narrow Band applications, which cannot be used for streaming video and other similar high-bandwidth applications. In today's broadband age, safety & security and other related agencies therefore have a critical need for dedicated mobile broadband communications services to succeed in their mission.
- Mobile CCTV and video surveillance for crime prevention & community safety is currently utilised by municipalities on a relatively limited basis. Deployment is restricted by the high cost of commercial mobile broadband connections. Expanded coverage using mobile broadband is needed to enable the wider deployment of such systems to include natural disaster response management, in vehicle dashcam monitoring, body cams, etc.
- The World Radio Communication Conference of 2015 (WRC-15) has, as part of its agenda (item 1.3), consideration of the broadband needs of PPDR agencies around the world. The WRC-15 resolved to harmonize 694-894 MHz as a global standard frequency range for public safety mobile broadband.
- In April 2016 the European Commission adopted an Implementing Decision on the harmonisation of the 694-790 MHz (700 MHz) frequency band for wireless

broadband, including its use for PPDR.

- The City of Cape town currently has narrowband spectrum allocated for voice based PPDR in the 410 – 430 MHz range. The Radio Plan 2021 indicates the intention to move the narrow band PPDR allocation to a lower frequency. Changing the radio configurations and re-planning the network takes time and effort and any downtime in PPDR networks can be extremely costly in terms of property lost, crimes committed and disaster responses.

As a signatory to the ITU, South Africa has aligned its *National Radio Frequency Plan* (NRFP) to comply with the international guidelines for International Mobile Telecommunications (IMT). This alignment is supposed to be enforced by ICASA through its frequency spectrum licensing process, which is supposed to allocate the various frequency bands to South African entities accordingly, including the allocation of spectrum for Public Safety.

The use of appropriate licensed radio frequency by the public sector therefore aligns the public sector and with international norms, and also ensures that spectrum is dedicated for public sector use.

Use of Commercial LTE Services for Public Protection and Disaster Response

Commercial mobile broadband LTE services are not suitable for PPDR for the following reasons:

- Reliability: PPDR network require a system availability of at least 99.99%. This level of reliability is not available from commercial network operators due to the high costs that would be incurred by them to provide such services to a relatively small user group (when compared with the general public).
- Capacity: PPDR systems need to have dedicated capacity available during emergencies, when commercial systems are normally overloaded. Commercial networks are designed to provide for average acceptable use, rather than peak use, so as to maximise financially returns.
- Priority: In an emergency, PPDR users require the highest order network priority. Commercial networks cannot offer this as it would mean moving all other users off the network during emergency situations.
- Coverage: PPDR networks require full coverage and equivalent services over the total area of operation, including remote areas. Commercial systems are often designed to scale with demand to maximise profitability, with the result that areas with low population density and low demand experience lower quality of service.
- Risk during emergencies: Municipalities are greatly at risk if they use commercial networks for PPDR during emergency events, as numerous international incidents have shown. In 2013, during an emergency triggered by a bomb blast in Boston USA, the mobile networks were shut down to prevent mobile phone triggered detonation. Under such circumstances, any PPDR service on these networks would thus be incapacitated.

Spectrum Policy Objectives

The national government's *South Africa Connect Strategy* (2013) includes the

following objectives:

- Universal access and broadband for all
- Reduction of the cost of broadband services
- Support for the social and economic goals of the country

The *Radio Frequency Spectrum Policy for South Africa* (2010) included two further objectives that address the needs of municipalities in particular, and the wider needs of the public sector in general. These are:

- Provide for the allocation of spectrum for 'safety of life' services; and
- Provide for the allocation of spectrum for government services (i.e. to support municipal service delivery)

The City's key concern with the Draft National Radio Frequency Plan 2021 spectrum allocation plans is that these objectives are not recognised by the plan.

The draft plan does not deal adequately with the issues pertinent to the public sector contained within the *Radio Frequency Spectrum Policy for South Africa* or the *National Broadband Policy*. No explanation is provided as to why these policies have been ignored or abandoned. The allocation of spectrum for government services is simply not addressed. This is counter to the intent and spirit of both the *South Africa Connect Strategy* and the 2010 spectrum policy objectives

The lack of any allocation of licensed frequency spectrum for the Public sector and especially for broadband PPDR use means that municipalities will be forced to either use commercial service providers, or apply to purchase commercial spectrum for municipal needs. This second option will inevitably be prohibitively expensive, thereby limiting its availability to most municipalities, and its consequent usefulness. The City sees no reason why one tier of government should be required to pay commercial rates to private sector operators for spectrum issued by another tier of government.

The Draft National Radio Frequency Plan 2021, therefore, fails to address the legitimate expectations of the people of the country that governments should be capable of ensuring their safety and security.

Given this, the City therefore proposes that the **Draft National Radio Frequency Plan 2021** should take state the following:

Recommendation: Current spectrum licensing for the narrowband Public Protection and Disaster Response Network (410-430MHz) be retained for the next 5 years.

Migration to the proposed lower frequencies are resource intensive and can have disastrous consequences if there is no function network to manage disasters, crime and safety and security. Current investments in the PPDR network should be considered, as rapid migration could be considered fruitless and wasteful expenditure in terms of the municipal finance management act.

Recommendation: Spectrum licensing for Public Protection and Disaster Response Network (IMT600-700 or IMT700-850 ranges)

The creation of PPDR networks should be enabled by allocation of an additional portion of spectrum set-aside specifically for Public Protection and Disaster Response in the IMT600-700, or the IMT700-850 range.

It is common cause that the spectrum in the IMT600-700 or IMT700-850 ranges can be used in LTE mode for a Public Safety Network. It is imperative therefore that ICASA allocates such broadband capable spectrum specifically to the Public Sector for these purposes.

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