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CORRECTION NOTICE

This notice (No. 740) substitutes General Notice No. 740 which will carry the same publication date and Gazette number.

GENERAL NOTICE

NOTICE 740 OF 1998



NOTICE OF THE INTENTION TO DEVELOP A NEW BAND PLAN (3 GHz TO 70 GHz)

By virtue of the powers conferred upon the South African Telecommunications Regulatory Authority ("the Authority"), in terms of section 29 of the Telecommunication Act, No. 103 of 1996 ("the Act"), the Authority hereby—

- (a) gives notice that it intends developing and formalising a 3 GHz to 70 GHz frequency band plan and migration strategy. This exercise as a whole, including the issues raised in (b) below, will in general be referred to as the South African Band Re-planning Exercise Number 2 (SABRE-2);

- (b) gives notice that it intends to finalise certain urgent sub-bands/associated services mainly in the area of 3 to 70 GHz, but also concerning areas of spectrum raised for further development by the original SABRE. These include, but are not limited to—
- TDMA/MMDS;
 - Low Power Video Surveillance;
 - 38 GHz;
 - HDFS;
- (c) invites written representations from members of the public with regard to the issues in (a) and (b) above to be lodged with the Authority not later than 10:00 on 29 May 1998, for the attention of Mothibi Ramusi, Head of Division: Frequency Planning, SATRA, Private Bag X1, MARLBORO, 2063, or telefax to (011) 321-8564. Hand delivery may be made to Frequency Planning Division, SATRA, Block A, Pin Mill Farm, 164 Katherine Street, SANDTON.
- (d) further gives notice of the intention to hold public hearings covering the issues raised in paragraph (b) above, on 6 July 1998. The hearings will be conducted at SATRA, Auditorium, Block B, Pin Mill Farm, 164 Katherine Street, SANDTON, between 10:00 and 14:00. Interested parties should confirm their attendance with Portia Molope, Secretary: Frequency Planning Division, by not later than 16:30 on 26 June 1998 by calling her at (011) 321-8245 or in writing at facsimile (011) 321-8564;
- (e) further gives notice that the final decision on 38 GHz, TDMA, MMDS, Low Power Video Surveillance issues will be announced at 10:00 on 17 July 1998 at the Auditorium, Block B, Pin Mill Farm, 164 Katherine Street, SANDTON. Members of the public are invited to attend the announcement. The final decision will also be published in the *Government Gazette* as soon possible after this date.
- (f) It is intended that this process of developing and formalising a new bandplan will begin immediately and extend over a period that will culminate in a final decision during the first quarter of the year 2000. Throughout this process various issues will be identified for rapid finalisation.

DISCUSSION PAPER WITH RESPECT TO THE GENERAL NOTICE

1. Introduction

It must be borne in mind that the frequency spectrum is a scarce national resource, which must be utilised in the most effective and orderly manner in order to best provide for the needs of the South African telecommunications industry as a whole and to serve the public interest in particular. The final bandplan must, therefore, be structured in a manner that will not only eliminate possible interference, but at the same time minimising the co-ordination requirements between the various users involved.

It must also be flexible enough to cater for the small or individual user as well as the possible development of future/new technologies within this portion of spectrum.

The final frequency plan must be economically viable for both new or potential and limited requirement.

The principal aims of the projects are as follows:

- To create a bandplan and migration strategy to implement 3 GHz to 70 GHz frequency bandplan.
- To produce amongst others TDMA, MMDS, Low Power Video Surveillance and 38 GHz sub-bandplan as matter of urgency.
- To produce a bandplan for the future use of the spectrum, which is both agreed nationally in South Africa and consistent with international trends.

It is recommended that submissions should in general cover the following aspects:

- Current spectrum usage in South Africa in the 3 GHz to 70 GHz.
- Requirements—identify future use of spectrum.
- Examine relevant international trends both on technology and services and in the use of spectrum in other countries.

- Social impact to the most disadvantaged community members of South Africa by introducing high-tech technologies.
- Co-ordination issues with neighbouring countries.

In the first such input dealing with the issues raised in (b), the above approach should in general be taken, although with reference to the applicable bands only.

2. This section of the document is intended to illustrate discussions on issues raised in (b) by dividing these into two categories.

2.1 PROPOSAL 1—ISSUES PERTAINING TO THE FREQUENCY BANDPLAN BETWEEN 3 GHz TO 70 GHz

2.1.1 38 GHz BAND FREQUENCY PLAN

Government Gazette No. 17581 of 15 November 1996 primarily focuses on the actual channel arrangement to be adopted to serve the needs and/or frequency requirements of all concerned, therefore, the establishment or development of a 38 GHz frequency bandplan for the Republic of South Africa is eminent.

There is a need for the deployment and planning of a new 38 GHz frequency bandplan for the purpose of providing microwave linking facilities for PCN networks and data services to business customers. Hop or pathlength at these frequencies are typically in the order of less than 5 km while dry weather conditions may probably increase the interference potential significantly. Deployment will mainly be in rural areas with urban utilisation for the replacement of cable between adjacent buildings. Channel bandwidth may possibly vary between 3.5 and 5.6 MHz.

2.1.2 LOW POWER VIDEO SURVEILLANCE

Various members of industry have expressed an urgent need for the formalisation of appropriate technical standards and suitable frequency allocations for these types of services. Utilisation of these services mainly revolve around the video monitoring of activity indoors or within buildings (shopping centres, malls, office complexes, etc.) and strategic security related networking by means of controlling and connecting the various points to/from a base or control unit. In general, the main requirement seems to be centred around the prevention or combating of crime as well as the protection of strategically or economically important assets.

Deployment will be in both urban and rural areas of the country while the pathlengths will be in the order of less than 5 km in urban area and approximately 20 km in rural environments. Channel bandwidth may possibly vary between 7 and 14 MHz.

2.1.2.1 Possible considerations

- (i) Type approval of equipment operating in the band 31.00 to 31.056 GHz according to MPT 1349.
- (ii) The frequency band 31.00 to 31.056 GHz be utilised by these type of services for the purpose of radio linking equipment in urban areas only on a licensed, shared and radio co-ordinated basis.
- (iii) The equivalent isotropical radiated (eirp) power shall not exceed 100 mW in the case of equipment utilised for indoor purposes.
- (iv) The transmitter output power of radio links operating within the band 31.00 to 31.056 GHz i.e. urban areas, be limited to 1.0 mW (−30 dB/W) maximum.
- (v) The use of high quality antennae be made compulsory.

2.1.3 HIGH DENSITY FIXED SERVICE (HDFS)

There is a dramatically increasing demand for high-density applications in the fixed service resulting from the deployment of new mobile networks and from the rapid world-wide deregulation in the provision of local broadband services, including multimedia. The need of other services to which the relevant frequency bands are already allocated must be taken into account.

There is a need for global harmonisation of new and existing allocations of radio frequency bands to facilitate co-ordination between administrators, encourage development of competitive products through economies of scale, the world-wide introduction of new telecommunication services, including the provision of reliable global information infrastructure (GII) access at an affordable cost.

2.1.3.1 Possible considerations

- (i) The band 37 to 37.5 GHz be planned for use by the space research service (space-to-Earth) to provide moon-to-Earth and planetary communication links.
- (ii) The band 37 to 38 GHz be planned for use by the space research service to provide space based very long baseline interferometry.

Resolution 726 (WRC-97) states that: 31.8 to 33.4 GHz, 51.4 to 52.6 GHz, 55.78 to 59 GHz and 64 to 66 GHz are already available for high-density applications in relation to these bands.

It must be noted that 38 GHz is already heavily used by many administrators for high-density applications in the fixed service.

2.2 PROPOSAL 2—ISSUES PERTAINING TO MATTERS ARISING FROM SABRE 1

2.2.1 TDMA/MMDS

Government Gazette No. 17983 of 6 May 1997, note 3.10.13, states the TDMA/MMDS requirement of re-organising the MultiPoint Microwave Distribution System band (MMDS) 2.5 to 2.7 GHz. Since the TDMA is planned in the same frequency band as MMDS, it is logical to try and solve both matters.

SATRA has established the requirement of a new TDMA band for the following purposes:

- To provide backbone facilities for WLL applications.
- To meet the essential operational requirements of users in industry.
- To open up opportunities for new technologies that will attain universal access.

TDMA system has proved to be extremely cost-effective way to provide service to a number of scattered or dispersed communities in rural and peri-urban areas. The system is being widely deployed in the 2.3 to 2.5 GHz band. The band is at the moment heavily congested with the ISM band causing interference and constraints caused by the OB's and Aeronautical mobile surveillance. The current international trend is that 1.5 GHz is being phased out. Equipment in the 2.8 GHz will be available in the second half of 1998.

The CEPT T/R 13-01 has been adopted in the SA bandplan (see *Government Gazette* No. 17983, note 3.10.13). The European common allocation for point to MultiPoint systems is in the band 2520 to 2670 MHz with the channel plan of T/R 13-01 Annex D. The TDMA mostly used for WLL backhaul has a 120 circuit capacity, thus a 3.5 MHz wide channel is envisaged. There will be 20X3.5 MHz channels if the above-mentioned plan is adopted.

2.2.1.1 Possible consideration

The following may be considered in the development of a new national TDMA band:

- The band 2500 to 2690 MHz be referred as 2.6 GHz.
- Adopting the plan in CEPT Recommendation T/R 13-01 as it is stated in *Government Gazette* No. 17983, note 3.10.13.
- The sharing criteria between MMDS and TDMA in the band 2500 to 2690 MHz.
- The concentration of the MMDS in a smaller portion of 2500 to 2690 MHz and the exact amount of spectrum needed for MMDS.
- The use of satellite news gathering (SNG) by present MMDS applications instead of Terrestrial Microwave frequencies.

3. BASIC REPRESENTATION REQUIREMENTS

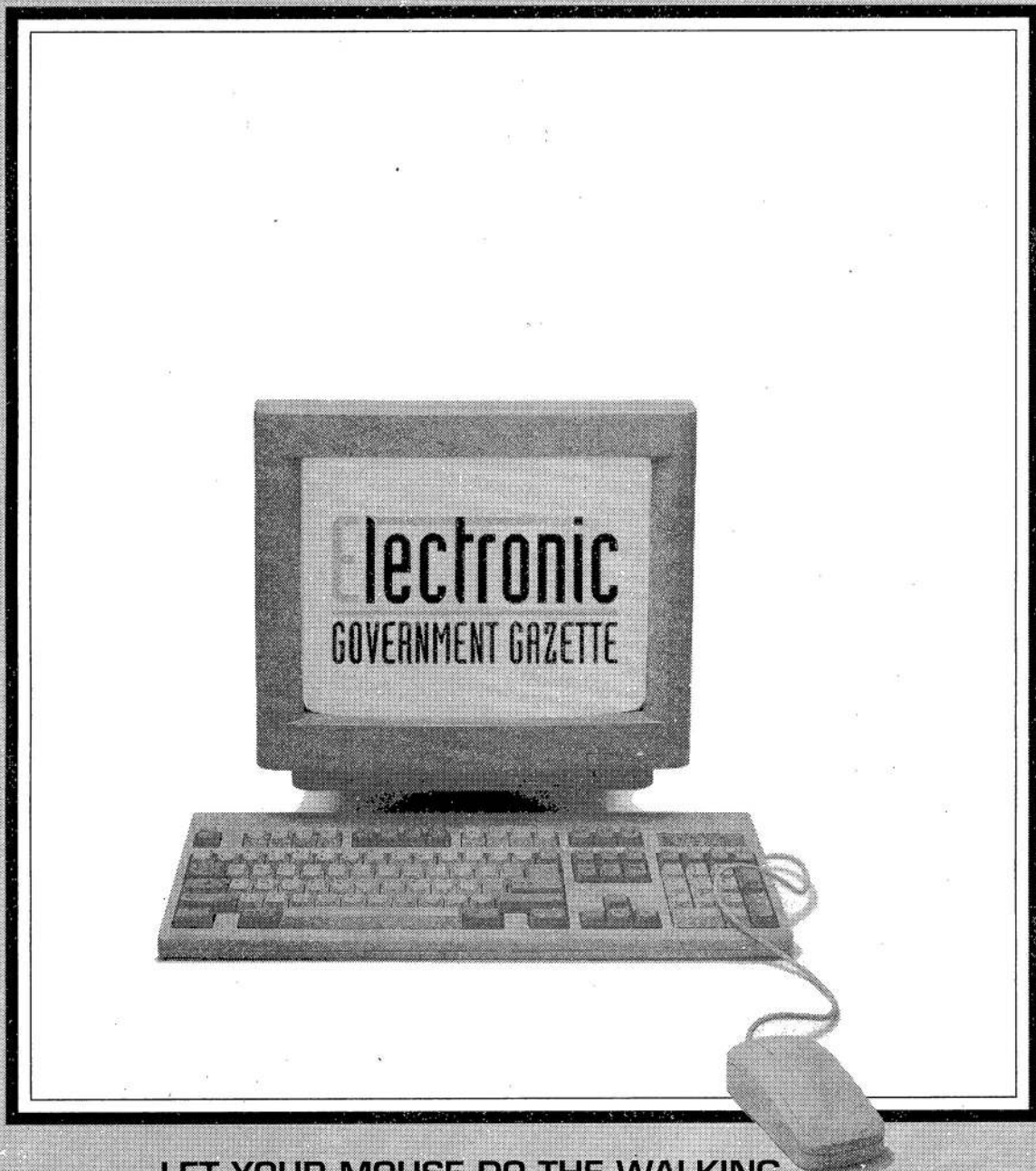
Based on the aforementioned, it is suggested that the following aspects be included in the representations as requested by this document.

- (i) Proposed frequency allocation and/or channel arrangements envisaged.
- (ii) Examples/diagrams of typical service deployed.
- (iii) Frequency re-use possibilities.
- (iv) Typical power levels and antenna gains envisaged.
- (v) Typical bandwidth requirements.
- (vi) Number of channels required in the short term.
- (vii) Number of channels required in the long term.
- (viii) International trends.
- (ix) Alternative Technical Standards to be adopted for Type Approval purposes.

4. CONCLUSIONS

It is noted that due to the nature of services manifesting themselves in this area of the band, it has sometimes been the practice to allocate sub-bands exclusively to certain services. Additionally it has sometimes led to exclusive assignments to specific users. This provides for more freedom in respect of individual frequency planning exercises, eliminates the need for comprehensive frequency co-ordination amongst the various users utilising the band and therefore alleviates the task of the Authority. While this may continue in certain instances SATRA recognises that this and other practises within bands concerned must be implemented and managed in a responsible, harmonised and Spectrum efficient manner.

With this in mind SATRA wishes to update itself as to the current availability and technical details of all the equipment presently in the marketplace. This will facilitate the deployment of these types of telecommunications services within South Africa in the context of utilising the frequency spectrum in the most effective and efficient manner which will be to the benefit of all concerned.



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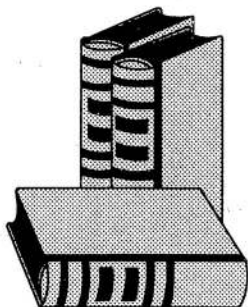
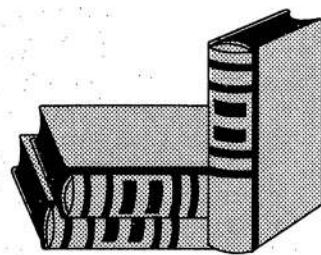
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