INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

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ICASA PUBLISHES A DISCUSSION DOCUMENT REGARDING "THE USE AND LICENSING OF THE BAND 57-66 GHZ (V BAND) AND THE BAND 71-76 GHZ PAIRED WITH THE BAND 81-86 GHZ (E BAND)" FOR CONSULTATION. CLOSING DATE IS 16H00 ON 27 NOVEMBER 2015

A Submission by

The South African Communications Forum

27th NOVEMBER 2015

DRAFT SACF SUBMISSION TO ICASA`S DISCUSSION DOCUMENT REGARDING "THE USE AND LICENSING OF THE BAND 57-66 GHZ (V BAND) AND THE BAND 71-76 GHZ PAIRED WITH THE BAND 81-86 GHZ (E BAND)" FOR CONSULTATION.

1. BACKGROUND

The South African Communications Forum (SACF) is an industry representative body and represents a cross-section of members of the broadcasting and electronic communications industries, including operators and manufacturers. The SACF and its members are of the view that the universality of communications is essential in the modern economy to enable active participation and socio-economic development. Mobile broadband, made accessible by spectrum has the potential to achieve universal access to broadband and thereby stimulate economic growth and social development.

The South African Communications Forum ("SACF") thanks the Independent Communications Authority of South Africa ("ICASA") for the opportunity to participate in the ICASA Draft Discussion Document regarding "the use and licensing of the band 57-66 GHz (V band) and the band 71-76 GHz paired with the band 81-86 GHz (E band) for consultation.

The SACF recognises the important role that these bands will play in furthering the development of the ICT sector which will further the development of the South African economy as a whole.

This submission provides SACF's views on the discussion document regarding "the use and licensing of the band 57-66 GHz (v band) and the band 71-76 GHz paired with the band 81-86 GHz (e band)" for consultation as published in Government Gazette 39180, General Notice 859 of 08 September 2015 (the "Discussion Document") .

INTRODUCTION

ICASA states in the Discussion Document that they have been inundated with enquiries and requests from telecommunication network operators and equipment suppliers for access to the following radio frequency bands:

- V-band (the band 57-66 GHz) and
- E band (the band 71-76 GHz paired with the band 81-86 GHz).

There has also not been a suitable, technical, regulatory framework for the use of these bands. According to ICASA, this has necessitated the Authority to investigate the possibility of putting in place an appropriate regulatory framework, i.e. a framework covering the technical requirements, licence exemption and light licensing.

2. THE E BAND

ICASA states in the Discussion Document that the frequency bands 71-76 GHz and 81-86 GHz (widely known as the E band) is allocated, in the ITU Radio Regulations, to the Fixed Service on an international basis (all three ITU Regions). These bands are most useful for short links providing a high data transmission rate. They are normally used in a paired fashion on the same link, for FDD-based transmission.

2.1 Interference considerations and implications for licensing: E-band transmission requires line-of-sight transmission. Due to the very short wavelength, the first Fresnel zone – which effectively defines the active propagation volume – requires that the antenna maim be significantly narrower than that of lower, traditionally-used, microwave frequencies

Questions

1. Do you think light licensing would be an appropriate approach for the E band in South Africa?

SACF strongly favours a light licensing approach for the E-Band in South Africa, as this will promote rapid innovation in this valuable yet comparatively underused spectrum band. New innovative entrepreneurial entrants to the national ICT industry are likely to be encouraged by this approach, a process which will greatly improve South Africa's realization of the ambitious SA Connect targets, and their consequential contribution to South Africa's development.

2. Are there any other licensing approaches that should be considered by the Authority for the E band?

SACF notes and applauds the Authority's readiness to adopt a light licensing approach to this band, and whilst acknowledging that alternatives do exist, prefers the adoption of the light licensing approach exclusively so as to simplify the regulatory process and reduce future regulatory costs.

SACF is aware of alternate methods such as exclusive assignment through market based techniques. However, members donot favour these alternate methods

2.2 E-band deployment scenarios: ICASA states in the Discussion Document that The equipment currently available with large data transmission rates, using large radio-frequency (RF) bandwidth in the E band (sometimes using up to 5 GHz of RF bandwidth), allows for data applications with very high capacity. Many point-to-point links are operated in this band elsewhere in the world, with ranges of typically a few hundred metres to a few kilometres. Commercial deployments of communications technology in the 71-86 GHz band include, but are not limited to, the following applications:

- *Mobile backhaul:* Backhaul and aggregation for mobile networks including for 2G and 3G, as well as 4G next-generation mobile service;
- *Fixed Networks:* High-capacity business services, including cellular, Wi-Fi and Imax backhauling, fibre backbone extensions, redundancy fibre overlays, municipality mesh backbones and temporary connections;
- *Healthcare:* Secure campus connectivity, off-site medical offices and lab network access, real-time connectivity for imaging applications, redundancy fibre overlays and disaster recovery; and
- *Education:* High-performance campus and off-site location connectivity, Wi-Fi hotspot and security camera backhauling and connectivity to service providers' fibre-optic networks.

Question

3. What other applications for E-band spectrum should the Authority consider as part of this process, and should such applications impact either the licensing approach?

SACF members believe that the application scenarios described are sufficient for the immediate needs in the market, and do not recommend any of the other licensing approaches at this point. Some SACF members expressed their concern over possible interference immunity and quality of service deterioration that go beyond the natural capability of this spectrum band, and the growing quantity of equipment and equipment control and management systems such as SDN, NFV and dynamic spectrum selection and use, then the authority can consider variations to the selected licensing approach in specific and clearly defined geographic and/or applications environments.

2.3 The E-band channel arrangements. The ITU published Recommendation ITU-R F.2006 that defines the arrangement of specific radiofrequency (RF) channels for channel size ranging from 250 MHz to 4500 MHz. The arrangements are flexible, permitting time-division duplex (TDD) and frequency-division duplex (FDD) applications with 10 GHz as well as 2.5 GHz duplex separation. Recommendation ITU-R F.2006 specifies the channel/block arrangement as multiples of 250 MHz with 125 MHz of guard band on each side. That makes 2 × 19 basic 250 MHz channels within the bands 71-76 GHz and 81-86 GHz available (see figure 6).

The Authority understands that there is a range of different demands for the spectrum, with some users demanding carrier-grade, quality (i.e. very high availability) links (e.g. for microcells). These users are concerned about the risks of the self-coordinated approach from the point of view of link availability. Government security agencies also require exclusive channels to cater for their safety-of-life operations. To cater for all these requirements, the Authority may consider band segmentation, similar to what has been implemented by Ofcom in the United Kingdom.

Question

4. Do you think a self-coordinated approach is appropriate under certain circumstances in the E band?

Yes, self coordination is both a consequence and an objective of light touch regulation

5. Are there any other potential approaches apart from band segmentation to accommodate the different spectrum demands in the E band?

SACF members generally support the Authority's preferred licensing arrangements as stated in the discussion document, with some members expressing a preference to retain some band segmentation where needed to ensure carrier grade quality links.

3. THE V BAND

The use of frequencies in the V band dates back to the 1990s, when the FCC adopted rules for licence exempt (termed 'unlicensed' in the USA) operations in the band 57-64 GHz (a 7-GHz wide band). This is a very wide RF bandwidth, making this spectrum very desirable for high-capacity uses, both for networking equipment indoors and for short-range, outside links. Applications include:

- streaming lag-free high-definition (HD) video from a Blu-ray video player or tablet to a television set;
- peer-to-peer (P2P) fixed operations outdoors;
- providing broadband access to adjacent structures in commercial facilities; and
- extending the reach of fibre-optic networks.

3.1 V-band deployment scenarios. Two services normally using this spectrum are Intelligent Transport Systems (ITS) and Multi-Gigabit Wireless Systems (MGWS). MGWS was an initiative from the European Telecommunications Standards Institute (ETSI) for a system specification for wireless local area networks (WLANs) and wireless personal area networks (WPANs) with a very high data rate whereby several gigabits per second apply.

MGWS encompasses applications for wireless digital video, audio and control applications, as well as multiple gigabit WLANs operating in the 57-66 GHz band on a licence-exempt ('unlicensed') basis. ECC REPORT 114 concludes that indoor WLAN and WPAN applications of MGWS may be deployed in 57-59 GHz and 64-66 GHz bands without significant risk of interference to point-to-point Fixed Service (HDFS) links – even links deployed at relatively high geographic density.

Both of the abovementioned services are normally used in a mobile/nomadic way. There are usually also other competing services in some, or all, of the V-band spectrum. Some of these are short links for the provision of relatively high-transmission-rate connectivity.

Question

6. What other applications for V-band spectrum should the Authority consider as part of this process?

SACF is of the opinion that once having adopted a light licensing approach which favours unlicensed utilization of this spectrum band, and its consequential support for innovative new applications that will arise out of the rapid technological advances occurring on a global basis, providing a list of applications as per the question is of limited value. Most of the new future applications will in any event, be components or consequences of the broad application scenarios such as ITS and MGWS already recognised by the Authority.

All scenarios' mentioned are therefore supported at this point in time.

3.2 Interference considerations

The question arises as to whether mutual interference is of major concern. Compatibility studies carried out by the ECC – results of which can be found in ECC REPORT 113 – conclude that, if unwanted emissions from ITS are limited to -29 dBm in the lower 200 MHz of the FS band, no interference problems are to be expected. It is therefore not necessary to try and frequency-coordinate systems in this band. For this reason, the band can be used licence-exempt, as long as certain technical criteria are adhered to. The V band is regulated as licence-exempt ("unlicensed") in the majority of regulatory jurisdictions across the globe.

One factor for users to consider is that this spectrum is not allocated solely to the Fixed Service by the ITU. Regulators that have implemented a regime for the band usually allow the other services allocated by the ITU as well. The perceptions about mutual interference of some users, especially large operators, would sometimes cause them to refrain from using the V band for high-reliability links. Despite the fact that the likelihood of interference is low, operators, because of the mere theoretical risk of mutual interference, are sometimes reluctant to use the band for backhaul links that have to be highly reliable. They would demand spectrum that allows spectrum use in a more secure way. For these operators, the E band, if regulated appropriately, is potentially a solution.

Question

7. What technical sharing criteria should apply in a licence-exempt environment?

SACF members generally support the arguments and principles outlined in the preamble to this question provided by the Authority, with the proviso that refinement of existing regulatory controls that govern the use of the license exempt spectrum bands, e.g. Annexure B of the Radio Frequency Spectrum Regulations 2015, may need to be reviewed and strengthened to fit the extension of the license exempt principles into the V-Band.

8. What principles should guide the allocation of spectrum for V band services?

The basic principles that should guide general regulation of the V-band spectrum and all applications and service derived from it, including spectrum allocation and management, should be full flexibility with minimal regulatory intervention, so as to encourage rapid deployment of services, and equally rapid adoption of new innovative products and services, in a vibrant competitive environment that is typical of a licence-exempt ICT ecosystem. Some SACF members expressed their preference for non-restrictive technology deployment within clearly defined technical and service parameters, while other SACF members pointed out that self-coordination of RF channels with SDN and NFV, and other features of Cognitive Radio Systems (CRS or SDR), which effectively mitigate against interference, are already being embedded into new equipment in the V- and other spectrum bands.

9. As a general principle with, should the Authority relax the transmit power restrictions on case by case basis e.g. rural areas where interference risk is lower than in urban/densely populated areas.

SACF view is YES – the Authority should endeavour to allow the maximum radiated power levels in all domains, not just restricted to rural areas, as direct encouragement for operators to deliver against the SA Connect targets. Any regulation should aim directly at breaches of public safety and related competitive issues, thus allowing unfettered growth of this sector, especially in the direction of full national coverage of the full range of

modern broadband services. As license exempt and self co-ordination is applicable we do not see a need for this at all.

4. SUGGESTIONS FOR REGULATORY FRAMEWORKS FOR E BAND AND V BAND

4.1 Need for regulatory frameworks. Wireless links in the 60-GHz band (V band) and the 71-86 GHz band (E band) have emerged internationally as the preferred solutions to provide linking over short distances; links in these bands provide speeds of several gigabits per second. They are often used to connect sites that would otherwise need to be connected by means of fibre-optic networks. V-band technologies have emerged as ones convenient for high-data, transmission-rate, indoor use and short-range outdoor links of typically not more than a few hundred metres. E-band is mainly used for outdoor links up to a few kilometres long. The introduction of regulatory arrangements supporting the use of both the V band and E band would facilitate the use of a range of new, high-bandwidth, short range services.

In view of practices followed elsewhere, there are four possible approaches that the Authority has been considering for regulating the E band and V band. These are:

- a self-coordination approach (coordination done by the user);
- a regulator-coordinated approach;
- an approach of regulator-coordinated with fixed channel assignments; and
- A licence-exempt approach.

Question

10. Is there another approach that should be considered by the Authority?

SACF supports the four possible approaches that the Authority has been considering for regulating the E band and V band. SACF stresses the importance of intelligently mixing each specific approach in a lightly regulated environment, which should suffice without the distraction of seeking even more alternatives or components of the mix.

4.2 The proposed E-band framework

4.2.1 Unsuitability of conventional licensing

Lower frequency, licensed microwave radio links typically require a licensing process that can take weeks to complete and is also expensive. Following a licensing regime similar to that used for these bands for the V band and the whole of the E band is expected to impede rollout. It is against this backdrop that the framework described in the next sections is suggested.

Question

11. Should the Authority consider conventional licensing? If so, please provide reasons.

SACF is of the view that ICASA should not consider conventional licensing at these specific spectrum bands. The technical attributes of the E and V bands, the growing quantity of equipment for these bands, and the vast information capacity improvements demands

that a wholly new and flexible approach to regulation as suggested in the preceding discussions, is mandatory.

A small number of SACF members retained the preference for segmentation of, in particular the E-Band, with conventional licensing within the appropriate segments to retain the service level guarantees that led to such conventional licensing in the first place. These members also acknowledged the coexistence of conventional and light-licensing regimes in some Region 1 countries.

4.2.2 The need for band segmentation

The Authority proposes that the E band should be segmented into two parts, one for a conventional, regulator-coordinated approach and the other for a self-coordination, light-licensing approach. It is proposed that the band is segmented as indicated in figure 8. This means that the band 73.375–75.875 GHz, paired with 83.375-85.875 GHz, is set aside for self-coordination and the band 71.125-73.125 GHz, paired with 81.125-83.125 GHz, is set aside for conventional frequency coordination, frequency assignment and spectrum licensing. We term the former approach a light-licensing approach and the latter approach a full-licensing approach.

Question

12. Do you agree with the concept of segmentation for the purposes of providing both a light-licensing and a full -licensing approach? Please provide reasons for your position.

Yes, since there are ample channels available within the band plan. Some SACF members did however express their concern over perceived contradictions between the light-licensing approach and conventional licensing even with band segmentation, but they nevertheless acknowledged that such coexistence is being applied in some Region 1 countries.

13. Do you agree with the segmentation as proposed?

SACF agrees with the segmentation as proposed, with the proviso that such segmentation should be viewed as an entry point for the regulation of this spectrum band, given that the exponential growth of new applications and services demands great flexibility, which can best be realised by extending the concept of light-licensing regulation even to this segmentation. As recognised by the Authority in its discussion of especially the MGWS environment which includes the emerging 5G standards and IoTs, any long term rigidity in segmentation, even as depicted in Figure 8 of the Authority's discussion paper, could very soon become counter-productive.

4.2.3 The light-licensing (self-coordination) portion of the band

4.2.3.1 Registration on an online database

For light-licensing to work, use has to be made of an automated, online database maintained by the Authority. Links authorised in terms of this framework must be registered on the database. Users must plan their own links taking cognisance of existing, registered links in the band. The user of the new system needs to respond to an interference complaint from an existing user, without the Authority having to intervene. In the event of interference, priority is given to the link with the earliest registration date.

While E-band links – in the range 71-86 GHz – lack the extra interference protection provided by oxygen attenuation at 60 GHz (V band), these links achieve their interference protection from their narrow antenna beam widths. However, provision has to be made for users to analyse how interference may be occurring, should another user's link in the vicinity be causing such interference. There is therefore a need for the details of links deployed to be recorded in a database. For this reason, and also for the purpose of allowing the Authority to bill the user for the licence fee, it would be compulsory for the user to register his or her link on the database. This has to be done within a certain time period after deploying it. A period of 14 days is viewed as being reasonable. The parameters required in the online database will be those given in Annexure 1. Once the user has the data at hand, it should typically take less than fifteen minutes to register the details on the database.

The Authority is considering putting in place a publicly available, web-based registration database, with the parameters on how to be registered given in Annexure 1. The database will be similar to that used by other regulators, for instance, the one used by the FCC in the United States.

Question

14. Will online registration be feasible?

SACF view is YES

15. Will a 14 day registration requirement be effective and practical?

SACF view is YES

16. Is there another approach that should be considered by the Authority?

SACF members are not aware of another viable approach.

4.2.3.3 Benefits of this approach

This approach affords a great deal of flexibility to users with regard to the very rapid deployment of links, including temporary links. It eliminates delays caused by a licensing process. The Authority's burden will also not increase due to frequency coordination and the rest of the licensing process.

Question

17. Are there any other factors that the Authority should consider?

In general, SACF members agreed with the summary provided by the Authority, and believed this to suffice, with the exception of one member who expressed the following view for consideration by the Authority:

The Authority should also consider establishing a framework which outlines a methodology for interference assessment, link planning and link coordination. The establishment of this methodology will ensure that licensees adopt a unified approach towards assessment and planning of links in the E-Band. - The aforementioned methodology should be developed under the auspices of the South African Bureau of Standards and subsequently incorporated into the official list of regulated national standards

4.2.4 Regulator-coordinated spectrum portion of the band

4.2.4.1 Per-link application, coordination, assignment and licensing

This approach will involve the Authority coordinating, assigning and authorising each link in the part of the E band designated for that. The link is authorised by means of a spectrum licence, prior to its operation, in the regular manner applying to links in the lower, licensed frequency bands.

Coordination is done with all deployed links in the area of concern in that part of the band allocated for this type of licensing, so as to avoid mutual interference. This is similar to the practice currently followed by the Authority with applications for links in the lower frequency bands.

Question

18. Is this type of regulation (for at least a portion of the E band) really necessary in view of light-licensing looking fairly attractive?

SACF view is that such coordination of the selected spectrum portions may be necessary in the short term, however the Authority should consider new and innovative approaches to applying the desired light—licensing philosophy so that demand and technologically driven adjustments can be made in relatively short timeframes.

The Authority has taken note that, although the majority of regulatory authorities that have already implemented a regulatory regime for E band (originally adopted for a self-coordination approach), some are in the process of reviewing their approach. A different approach is now being considered that favours dedicated, fully coordinated spectrum for at least part of the E band. The reason is that some users (mainly large network operators) prefer a regulator-controlled approach (a licensed approach) to safeguard their mission-critical services. To that end, the United Kingdom regulator Ofcom, for instance, is currently reviewing its originally adopted self-coordination approach to make provision for operators who require a guaranteed availability of links. Hence, there is a need to have part of the E-band for licensing for exclusive, dedicated frequency spectrum. Ofcom, as a result, is

planning to segment the E band into both a component for self-coordination and a component for coordinating spectrum use in a dedicated, licensed manner.

The Authority proposes that an annual licence fee per point-to-point link will apply in the case of providing the user with a licence for the exclusive use of spectrum.

Question

19. Do you have any views as to whether the self-coordination approach or the regulator-coordinated approach is preferable?

SACF recommends that either one or both approaches be applied on case by case basis.

20. Do you think an annual licence fee per point-to-point link is an appropriate approach whereby the licensee has exclusive, protected spectrum?

SACF agrees with the basic principles, but proposes that the Authority considers seriously, and in further consultation with the industry, the levels of the license fees to be applied, given that even these fully coordinated spectrum portions will be functioning in a largely license-exempt environment with a very large number of competing operators, and therefore the license fee principles used at lower frequency spectrum bands in the traditional mobile networks should not apply.

4.2.5 Regulator-coordinated spectrum with national pre-assigned channel(s)

4.2.5.1 Pre-assignment followed by notification of links

A variation of the approach in 4.2.4.1 is for a frequency channel, or perhaps more than one frequency channel, to be pre-assigned to the user on a countrywide basis. The channel could be assigned in that portion of the E band earmarked for regulator-coordinated use. This arrangement is meant for users who have large countrywide networks and who will make intensive use of E-band links.

In this case, the user, who may deploy links without first having to apply for a frequency channel, will be required to inform the Authority, on a regular basis, of all the links deployed. Details will have to be provided, as per annexure 1, for each link deployed.

Question

21. Do you think this is a sensible approach? Please provide alternative suggestions if you disagree.

YES

4.2.5.3 Non-exclusivity of the frequency channel

The use of the pre-assigned frequency channel will not be exclusive to the user of the channel, especially in the longer term. As it becomes evident that the spectrum in other parts of the regulator-coordinated E band may have become congested in the areas of concern, the Authority may authorise other users' links on the pre-assigned channel. Such use will be frequency-coordinated, by the Authority, with the already-deployed links; there will therefore not be the threat of possible mutual interference. So, as a condition of pre-assignment of one or more RF channels to a user, the user will have to accept that use in the longer term might not be exclusive to him or her. There may be a point whereby, especially in congested areas, the Authority will have to assign spectrum in the user's pre- assigned channel/s on a first-come, first-served basis.

Question

22. Do you think it is a reasonable approach to do away with the exclusivity of a frequency channel to a specific user if there is a need for spectrum by other users who cannot be accommodated in alternative channels, because of congestion? Please provide alternative suggestions if you disagree?

No, the probability of this happening is very unlikely.

4.2.6 Technical requirements

The technical requirements proposed for the E-band is as given in the CEPT band plan [ECC REC/ (05)07]. The key parameters are:

- maximum transmitter output power: 30 dB;
- maximum e.i.r.p.: 55 dBW; and
- minimum antenna gain: 38 dBi.

These parameters are given in table 2, for each of the two segments of the band.

4.2.7 Channel arrangements

Although much of what is presented in terms of managing the E-band spectrum is based on channelisation, the Authority does not yet have a final view on channel arrangements.

Question

The Authority would appreciate comments on:

23. Whether the Authority should specify channels;

No, not for "light licensing" or "license exempt" purposes.

24. If the Authority should specify channels, whether they should be for FDD or TDD or both;

No, due to short distances this should not be a concern.

25. How the channels should be specified, also considering RF bandwidth.

No, due to short distances this should not be a concern, however some SACF members expressed a preference for the adoption of CEPT ECC REC (05) 07.

4.2.8 Protection of the Square Kilometre Array (SKA).

The Authority should be especially cautious in its consideration of the light- licensing approach with regard to radio astronomy and passive services making use of radio waves. The following aspects are relevant:

- According to the ITU Radio Regulations footnote No 149, it is advised that steps be taken to protect radio astronomy observations from harmful interference when planning the allocation of other services in the 76-86 GHz band;
- The band 86-92 GHz is allocated to passive services and, in particular, to the Earth Exploration Satellite Service. For the protection of this service, as required by footnote 5.340 of the ITU Radio Regulations, the unwanted emissions of Fixed Service systems shall respect the limit mask specified in the European standard EN 302 217-3.

As South Africa is one of the prime hosts of the Square Kilometre Array (SKA) – the international radio astronomy telescope to be built in the Karoo and its South African forerunner – the Authority should ensure that control measures are in place to protect radio astronomy; the same applies to passive services.

The necessary control can normally be exercised through a licensing process, as frequency coordination has to be effected for licensing. By not licensing systems too close to the SKA core area, interference can be prevented. However, in the case of light-licensing the Authority will have to specify an exclusion zone. In this zone users will not be allowed to deploy an E-band system. Such an exclusive zone may form part of the final regulations the Authority publishes for implementing a regulatory regime for the E band.

4.3 The proposed V-band framework

There is a great need to put a regulatory framework in place for this band (57-64 GHz) on the basis of the need for certain technologies, such as ITS, MWGS and short-range, high-capacity links. The Authority's view is: To make the band licence exempt would best satisfy the needs of users. There would therefore be no need for users to apply to the Authority for a spectrum licence, in this instance.

In practice, the Authority would require certain technical requirements to be adhered to. Equipment would need to be type-approved and used according to these requirements. The approach that the Authority favours for this band is similar to the approach followed for the currently used 2.4-GHz and 5.8-GHz bands.

The Authority does not view any of the other three approaches mentioned above as feasible options for the V band.

Question

26. Please indicate if you agree with the Authority's view.

SACF strongly shares and supports the Authority's views on this question, as expressed in sub-paragraph 4.3, that the V-band must be fully licence exempt in order to promote technologies and services such as ITS and MWGS, in a manner similar to the approach used for the present South African license-exempt environment in the 2.4GHz and 5.8GHz bands. Continuation of equipment standards control through type approval is also supported.

27. What other considerations should guide the Authority's decision in this regard?

SACF is of the view that the Authority should not expand the scope of these already far-reaching and reasonable regulations for the E and V bands, and should not therefore consider other alternatives until future imperatives demand such reconsideration.

4.3.1 Exemption from licensing

In line with common practice followed elsewhere, the Authority's view is that the V band should be made licence-exempt, on the basis of the need to deploy technologies such as ITS, MWGS and short range, high-capacity links, without unnecessary financial burdens and delays caused by licensing. The Authority has already proposed the use of MWGS to be licence-exempt, in the draft Radio Frequency Spectrum Regulations published in Government Gazette 38300 on 08/12/2014. The Authority proposes that there should be no need for link registration in this band.

Question

28. Do you think there are any risks or other factors that the Authority should consider before making the decision that a licence-exempt approach is appropriate for the V band?

SACF's view is that the Authority has effectively mitigated all other risk factors through its in-depth research of the related issues, and the approaches adopted by South Africa's peers. The authority should not delay decisions any further through consideration of other risks beyond those already identified.

29. Do you think there may be benefits to requiring link registration in this band and that this should be considered?

SACF view is that link registrations in a license-exempt environment are unnecessary and serve only to delay service provision, and therefore agrees with the Authority that there is no need for link registrations in the V band.

30. If you think that links should be registered, would you consider that to be compatible with MWGS to be licence-exempt?

SACF view is that link registrations in a license-exempt environment are unnecessary and serve only to delay service provision

4.3.2 Technical requirements

For the V band, the Authority proposes that the following parameters, as in ECC/REC/ (09)01, be compulsory:

- Maximum transmitter output power: 10 dBm;
- Maximum e.i.r.p.: 55 dBm; and
- Minimum antenna gain: 30 dBi.

Question

31. Do you agree with the parameters set out above? Please substantiate your response.

SACF view is YES, we agree with this since much of the emerging technology conforms to the criteria indicated.

4.3.3 Method of implementing the framework

The Authority proposes that the above requirements be implemented by modifying the Radio Frequency Spectrum Regulations so as to include the V band in the table of licence-exempt frequency bands. The technical requirements could be specified by means of referencing ECC/REC(09)(01).

5. CONCLUSION

The Authority has attempted to, in this discussion paper, voice its views on the use and licensing of the V band and E band. It is requesting feedback on its proposals. The Authority aims to regulate the E band and V band in a manner which is effective and also spectrum-efficient. The Authority aims to keep licensing delays to the bare minimum, by proposing licence exemption where feasible and light- licensing where full exemption is not feasible. The V band is proposed to be licence-exempt. Light licensing and full-licensing is proposed for the E band.

The Authority is looking forward to receiving views on its proposals and views and wishes to clarify that the proposals and views given are not final.

List of abbreviations

1. CEPT European Conference of Postal and Telecommunications Administration
2. ECC Electronic Communications Commission
3. ETSI European Standards Institute
4. FDD Frequency Division Duplex
5. FS Fixed Services
6. GHz gigahertz
7. HDFS High Density Fixed Service
8. ITS Intelligent Transport Systems
9. ITU-R International Telecommunications Union Radio communications Sector
10. LTE Long Term Evolution
11. MGWS Multi Gigabit Wireless Systems
12. MHz megahertz
13. TDD Time Division Duplex
14. WLAN Wireless Local Area Networks

15. WPAN Wireless Personal Area Networks

SACF CONCLUSION

As the Republic of South Africa's stakeholders deliberate on the Authority's Spectrum Policy and Regulatory Issues. SACF strongly requests the Authority to focus on concerns raised by Policy Makers and Stakeholders so that they can urgently conclude all outstanding activities needed to allocate the invaluable radio frequency spectrum. Assignment of such spectrum is requisite to build the modern ICT Infrastructures and deliver the services that will fuel South Africa's growth in all key national development domains as outlined and specified in all South Africa's development plans, including the overriding NDP and the subordinate ICT related policies and regulatory provisions.

SACF views in conclusion are that the Backhaul spectrum is complementary to access spectrum. Government revenues, quality of service and efficient utilization of access spectrum can be better ensured if backhaul spectrum is allocated timely and adequately to cater to the voice and data needs and is priced properly.

Based on the study of international trends, the usefulness of the bands in accelerating the growth of wireless data segment, and overall growth in ICT and in view of the fact that it is almost a greenfield area for short distance backhaul, the SACF has reached the conclusion that the price of carriers in E-band and V-band should be kept low so as to leverage technology. Light licensing will facilitate the speedy entry of new operators and expansion by existing operators, and low pricing would enable operators to roll out the technology faster with lower CAPEX and OPEX. The efficiency of the access spectrum can be improved if sufficient high capacity backhaul network is available at an affordable price so that South Africa can harness the fruits of the latest technologies which support high bandwidth applications.

SACF would welcome the opportunity to participate in any public hearings on the finalisation of this draft discussion document for E-Band and V-Band Spectrum Regulation.
END