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**GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS**

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**DEPARTMENT OF SCIENCE AND TECHNOLOGY**

NO. 1166

23 NOVEMBER 2015

**NOTICE OF INTENTION TO MAKE REGULATIONS ON THE PROTECTION OF THE KAROO CENTRAL ASTRONOMY ADVANTAGE AREAS IN TERMS OF THE ASTRONOMY GEOGRAPHIC ADVANTAGE ACT, 2007.**

This notice applies to the Karoo Central Astronomy Advantage Areas declared for the purpose of radio astronomy and related scientific endeavours in terms of section 9(1) and (2) of the Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007) (hereinafter referred to as "the Act").

I, Grace Naledi Mandisa Pandor, Minister of Science and Technology, in accordance with sections 22, 23, 42 and 50 to 52 of the Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007) (hereinafter referred to as the "the Act") and having obtained the concurrence of the Independent Communications Authority of South Africa and of the Minister of Finance (to the extent that these Regulations have financial implications), hereby give notice of my intention to make Regulations, as set out in the Schedules hereto and as listed hereunder.

Schedule A: Regulations to prohibit and restrict the use of certain radio frequency spectrum and certain activities in the Karoo Central Astronomy Advantage Areas declared for radio astronomy purposes.

Schedule B: Regulations on administrative matters for Central Astronomy Advantage Areas declared for radio astronomy purposes.

Schedule C: Regulations on financial compensation procedures for Central Astronomy Advantage Areas.

Schedule D: Regulations restricting electromagnetic interference within the Karoo Central Astronomy Advantage Area 1.

The draft regulations apply to the Karoo Central Astronomy Advantage Areas declared for the purpose of radio astronomy and related scientific endeavours in terms of section 9(1) and (2) of the Act. The document pack with the regulations will be made available in the Northern Cape.

Interested or affected persons and members of the public are invited to submit written representations on or objections to the regulations contained in the Schedules within sixty (60) days from the publication of this notice to:

Mr Mere Kgampe  
Dept of Science and Technology  
Building 53, CSIR Campus  
Meiring Naude Road  
Brummeria  
Pretoria  
0184

Or Dept of Science and Technology  
Private Bag X894  
Pretoria  
0001

Or

E-mail address [mere.kgampe@dst.gov.za](mailto:mere.kgampe@dst.gov.za)

Enquiries can be made at telephone number 012 843 6644

Attention is drawn to the matters described hereunder –

- The previous written and oral representations made during the public participation process for the declaration of the Karoo Central Astronomy Advantage Areas will be considered together with any new submissions to be made in response to this Notice in so far as they relate to aspects included in the draft regulations. A person who has already made a written and/or an oral representation may submit further representations.
- Please note that any written representations which are received after the closing date may be disregarded.
- Any person submitting written representations who wishes to also make an oral representation at a public hearing must indicate this in their written representations.
- Attention is drawn to Notice 649 of 2010 published in the Government Gazette No. 33328 on 2 July 2010 in which interested and affected parties in the proposed core, central and co-ordinated astronomy advantage areas as indicated in the schedule to that notice, were invited to register their details with the Department. Any person who may not have registered yet, and who wishes to do so, may contact the Department to request that they be registered. Contact details that may have changed for persons who have registered, should be updated.



**MRS GNM PANDOR, MP**  
**MINISTER OF SCIENCE AND TECHNOLOGY**

**SCHEDULE A****REGULATIONS TO PROHIBIT AND RESTRICT THE USE OF CERTAIN  
RADIO FREQUENCY SPECTRUM AND CERTAIN ACTIVITIES IN THE  
KAROO CENTRAL ASTRONOMY ADVANTAGE AREAS DECLARED FOR  
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## 1. Definitions

In these regulations unless the context indicates otherwise –

“**Act**” means the Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007);

“**assessment point**” means the SKA Virtual Centre or another geographical location or point defined in terms of these regulations, which location is used as the assessment point for the applicable protection measures as prescribed in these regulations;

“**co-management entity**” means an organ of state, a local community, an individual or other party with whom the relevant management authority has entered into a co-management agreement in terms of section 18 of the Act;

“**dBm**” means the radio frequency power level expressed in decibels relative to one milliwatt;

“**effective radiated power**” means the product of the power level supplied to the antenna and the antenna gain relative to a half-wave dipole in the relevant direction;

“**essential service**” means a radio communications service used in a central astronomy advantage area that is classified as an essential service in terms of the criteria and procedures prescribed in regulation 7 of the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015;

“**Karoo central astronomy advantage areas**” means the Karoo central astronomy advantage areas declared by Notice No. 198 published in *Government Gazette* No. 37434 on 12 March 2014;

“**Karoo core astronomy advantage area**” means the Karoo core astronomy advantage area declared by Notice No. 723 published in *Government Gazette* No. 33462 on 20 August 2010;

**“licence exempt operator”** means a person who provides a service pursuant to an exemption granted by the Independent Communications Authority of South Africa (ICASA) in terms of section 6 of the Electronic Communications Act, 2005 or uses radio frequency spectrum which is exempt from requiring a radio frequency spectrum licence by virtue of section 31(6) of the Electronic Communications Act, 2005 and regulations made in terms thereof;

**“licensee”** as defined in the Electronic Communications Act, 2005 means a person issued with a licence to provide services in terms of Chapter 3 or to use the radio frequency spectrum in terms of Chapter 5 of the Electronic Communications Act, 2005;

**“protection corridors”** mean strips of land, alongside a radio astronomical spiral arms configuration, within which SKA stations in the Karoo Central Astronomy Advantage Area 1 are to be positioned, within a width of 5 km on either side of each spiral arm, as depicted and described in Annexure A;

**“radio apparatus”** means an electronic communications facility which is capable of transmitting or receiving any signal by radio;

**“Radio Astronomy Protection Levels Regulations”** means the regulations made to define the radio astronomy observation protection levels for the astronomy advantage areas declared for purposes of radio astronomy, published under Notice No. R.90 in the *Government Gazette* No. 35007 on 10 February 2012;

**“radio astronomy station”** means one or more receiving systems at a location, including accessory equipment, for receiving radio waves of cosmic origin for the purposes of radio astronomy;

**“radio communication”** means the emission, transmission or reception of information, including, without limitation, voice, sound, data, text, video, animation, visual images, moving images and pictures, signals or a



combination thereof by means of radio or other electromagnetic waves without the aid of a tangible conductor;

**“radio frequency interference”** means the detrimental effect of received radio signals that exceed the protection levels prescribed in the Radio Astronomy Protection Levels Regulations, 2012, for more than 5% of the time over a 24 hour period;

**“Radio Frequency Spectrum Regulations 2015”** means the regulations made by ICASA as published by Notice 279 of 2015, in Government Gazette No. 38641 on 30 March 2015;

**“radio station”** as defined in the Electronic Communications Act, 2005, means one or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying an electronic communications service, broadcasting service or any electronic communications authorised by ICASA, and any radio apparatus used at a specific geographical location;

**“Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015”** means the regulations published by Notice No. xxx in Government Gazette No. xxx on xxx;

**“Regulations on Financial Compensation Procedures for central astronomy advantage areas, 2015”** means the regulations published by Notice No. xxx in Government Gazette No. xxx on xxx;

**“saturation level”** means a received power level of (minus) -100 dBm, or higher, for a radio frequency interference signal at which the saturation phenomenon occurs at a radio astronomy station or at a specified assessment point or points, or within a specified area;

**“SKA”** means the Square Kilometre Array radio telescope consisting of an array of radio astronomy stations to be located within the Republic of South Africa and in participating African countries in accordance with the

decision of the SKA Organisation, a private company (limited by guarantee) incorporated in the United Kingdom; and

**“SKA Virtual Centre”** means the geographical point located at geographical co-ordinates 30.71292 degrees south and 21.44380 degrees East that relates to the SKA array of radio astronomy stations within the Karoo Astronomy Advantage Areas and is specified as the centre Assessment Point for the application of the protection levels as defined in the Radio Astronomy Protection Levels Regulations.

## **2. Scope of the regulations**

- (1) These regulations apply to the relevant Karoo Central Astronomy Advantage Areas in relation to the frequency spectrum specified in the Notice declaring the Karoo Central Astronomy Advantage Areas.
- (2) If there are differences between the English and the Afrikaans versions of these regulations, the English version will take precedence.

## **3. Prohibition and restrictions on the use of radio frequency spectrum from 100 MHz to 25.5 GHz**

- (1) One (1) year from the date that these regulations come into operation no licensee, licence exempt operator or any other person may use the radio frequency spectrum from 100 MHz to 25.5 GHz for transmissions within the Karoo Central Astronomy Advantage Areas unless –
  - (a) this use is required for the purposes of radio astronomy and related scientific endeavours declared to be so in terms of section 28(1) of the Act; or
  - (b) the use of specific spectrum within the restricted spectrum has been exempt from this prohibition in terms of the relevant provisions of the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015; or
  - (c) the spectrum use has been exempted in terms of regulation 6 of these regulations; and
  - (d) in the case of paragraph 3(1)(b), the relevant management authority has issued to that person a permit in terms of regulation 4 in the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015 in relation to the use of that spectrum.

- (2) (a) The prohibition in sub-regulation 3(1) does not apply to the use of radio frequency spectrum from 100 MHz to 200 MHz which was lawfully used immediately before the date of promulgation of these regulations;
- (b) Any licensee or licence exempt operator using any of the radio frequency spectrum referred to in sub-regulation 3(2)(a) within the Karoo Central Astronomy Advantage Areas may only do so if the relevant management authority has issued to that person a permit in terms of sub-regulation 3(1)(d) in relation to the use of that spectrum.
- (3) One (1) year from the date that these regulations come into operation, no television broadcasting service licensee or broadcasting signal distribution licensee may transmit a television broadcasting service in analogue format from a terrestrial transmitting station within the Karoo Central Astronomy Advantage Areas.
- (4) One (1) year from the date that these regulations come into operation no licensee or licence exempt operator or any person may engage in any radio communication with the use of radio frequency spectrum from 100 MHz to 25.5 GHz within the Karoo Central Astronomy Advantage Areas unless –
- (a) this activity is required for the purposes of radio astronomy and related scientific endeavours declared to be so in terms of section 28 (1) of the Act;
- (b) this activity has been exempted from the possession of a permit in terms of regulation 6; or
- (b) possible radio frequency interference has been considered and dealt with by the relevant management authority or co-management entity when considering the licensee or licence exempt operator's application for a permit in terms of the Regulations on Administrative

Matters for central astronomy advantage areas declared for radio astronomy, 2015.

- (5) Any use contemplated in sub-regulation (4) must comply with regulation 4 of these regulations.

**4. Conditions on the use of radio frequency spectrum from 100 MHz to 25.5 GHz**

- (1) One (1) year from the date that these regulations come into operation, no licensee or licence exempt operator or any person may use radio frequency spectrum from 100 MHz to 25.5 GHz and engage in any radio communication within the Karoo Central Astronomy Advantage Areas unless such use and transmission activity comply with the following conditions –
- (a) does not exceed an effective radiated power of 40 dBm;
  - (b) does not exceed the saturation level within the protection corridors in the Karoo Central Astronomy Advantage Areas, as defined in Annexure A or within a radius of 20 kilometres from the SKA Virtual Centre; and
  - (c) does not exceed the protection levels prescribed in the Radio Astronomy Protection Levels Regulations as applied at the SKA Virtual Centre, unless the use or activity is for an essential service for which a specified interference level in excess of the prescribed protection level has been specified in a permit issued in terms of regulation 4 in the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015 to the person using that spectrum and conducting that activity.
- (2) Sub-regulation 4(1) also applies to the construction, upgrade, expansion or use of any radio station as contemplated in regulation 5 and in relation to which a permit has been issued.
- (3) Sub-regulation 4(1), except for sub-regulation 4(1)(b), does not apply to any licensee or licence exempt operator who, immediately prior to the date of promulgation of these regulations,

was lawfully permitted to use radio frequency spectrum between 100 MHz to 200 MHz.

**5. Conditions on construction, upgrade, expansion or use of radio stations or radio apparatus**

- (1) From the date that these regulations come into operation, and unless required for the purposes of radio astronomy and related scientific endeavours, no licensee or licence exempt operator or any other person may construct, upgrade or expand any radio station within the Karoo Central Astronomy Advantage Areas with the use of the radio frequency spectrum from 100 MHz to 25.5 GHz unless such person has applied for, and been granted, a permit for such upgrade or expansion by the relevant management authority in terms of regulation 4 in the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015.
- (2) One (1) year from the date that these regulations come into operation, no licensee or licence exempt operator or any person may use any radio station or any radio apparatus or any appliance within the Karoo Central Astronomy Advantage Areas that causes radio frequency interference at the SKA Virtual Centre, or saturation level radio frequency interference within the protection corridors in the Karoo Central Astronomy Advantage Areas described in Annexure A, or within 20 km of the SKA Virtual Centre.
- (3) Compliance assessment must be carried out by the licensee or licence exempt operator prior to the issuing of any permit in terms of regulation 4 in the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015 and must include the following aspects to the extent that they are applicable –
  - (a) The determination of the radio frequency interference level at the SKA Virtual Centre and the saturation level radio frequency interference within the protection corridors in the Karoo Central

- Astronomy Advantage Areas described in Annexure A, or within a radius of 20 km from the SKA Virtual Centre;
- (b) The determination of radio frequency interference referred to in sub-regulation 5(3)(a) must firstly be carried out on the base (fixed) radio stations or radio apparatus or appliances located at a fixed geographical location;
  - (c) If radio frequency interference or saturation level interference may also be caused by mobile or portable radio stations or radio apparatus used in conjunction with the base station or radio apparatus at a fixed location, the determination of radio frequency interference levels must also be carried out with respect to the mobile or portable radio apparatus; and
  - (d) The determination and assessment of radio frequency interference may also be applied to any radio apparatus for which radio frequency spectrum licence exemptions have been prescribed by ICASA in Part III, section (4) of the Radio Frequency Spectrum Regulations 2015 that produces a radiated power level of greater than 250 milliwatt.
- (4) Additional conditions, which may include limitations on the geographical area in which the mobile and portable radio stations may be used or any other method that will restrict the interference to the protection level, will be prescribed for any permit already granted in the event that-
- (a) mobile or portable radio stations used with a base radio station for which a permit had been granted cause radio frequency interference at the SKA Virtual Centre; or
  - (b) there exists saturation level radio frequency interference within the protection corridors in the Karoo Central Astronomy Advantage Areas described in Annexure A, or within 20 km of the SKA Virtual Centre.

**6. Exempted radio apparatus**

- (1) Radio apparatus, for which radio frequency spectrum licence exemptions have been prescribed by ICASA in Part III, regulation (4) of the Radio Frequency Spectrum Regulations, 2015, is exempted from the requirement prescribed in these regulations for the possession of a permit, provided that -
  - (a) Radio apparatus that produces a radiated power level of greater than 250 milliwatt is excluded from the exemption;
  - (b) Radio frequency interference exceeding the relevant protection level, as prescribed in the Radio Astronomy Protection Levels Regulations, is not caused by the exempted radio apparatus at the SKA Virtual Centre or saturation level interference is not caused within the protection corridors or within a 20 km radius from the SKA Virtual Centre; and
  - (c) The exempted apparatus is only used as prescribed by ICASA and not when the apparatus transmission characteristics are enhanced or multiple units are linked into networks.
- (2) Should any of the radio apparatus contemplated in sub-regulation 6(1) cause radio frequency interference, the use of such apparatus will be subject to protection measures being applied by –
  - (a) the Minister declaring core astronomy advantage areas within which all the exempted radio apparatus may not be used; or
  - (b) the relevant management authority determining permit conditions for the use of that category of radio apparatus.
- (3) The granting or amendment of a permit contemplated in sub-regulation 6(2)(b) will be subject to the procedures and criteria prescribed in the Regulations on Administrative Matters for central astronomy advantage areas declared for radio astronomy, 2015.
- (4) The radio apparatus for which radio frequency spectrum licence exemptions have been prescribed by ICASA, in Part III, section (4) of the Radio Frequency Spectrum Regulations, 2015, should not be operational or be used within 50 km of the SKA Virtual Centre.



## **7. Location of the SKA Virtual Centre and protection corridors**

(1) The geographical location of the SKA Virtual Centre is subject to review and finalisation within twelve (12) months of the promulgation of these regulations.

(2) The protection corridors within the Karoo Central Astronomy Advantage Area 1 are subject to annual review in accordance with progression in the development of the SKA with the intention to phase them out and to require only the protection of the radio astronomy stations located within the corridors.

## **8. Extension of the one year period**

The Minister may, by notice in the *Gazette*, extend the one year period contemplated in sub-regulations 3(1), 3(3), 3(4), 4(1) and 5(2) up to a maximum period of three (3) years.

## **9. Financial compensation**

Any financial compensation contemplated in terms of section 23(3)(a) of the Act with respect to a restriction on radio communication transmissions that were lawfully conducted within the Karoo Central Astronomy Advantage Areas before the promulgation of these regulations will be subject to the Regulations on Financial Compensation Procedures for central astronomy advantage areas, 2015.

## **10. Offences and penalties**

Any person who contravenes these regulations is guilty of an offence and liable on conviction to a fine not exceeding R1 000 000 (one million rand) or to imprisonment or to both a fine and imprisonment.

## **11. Short title and commencement**

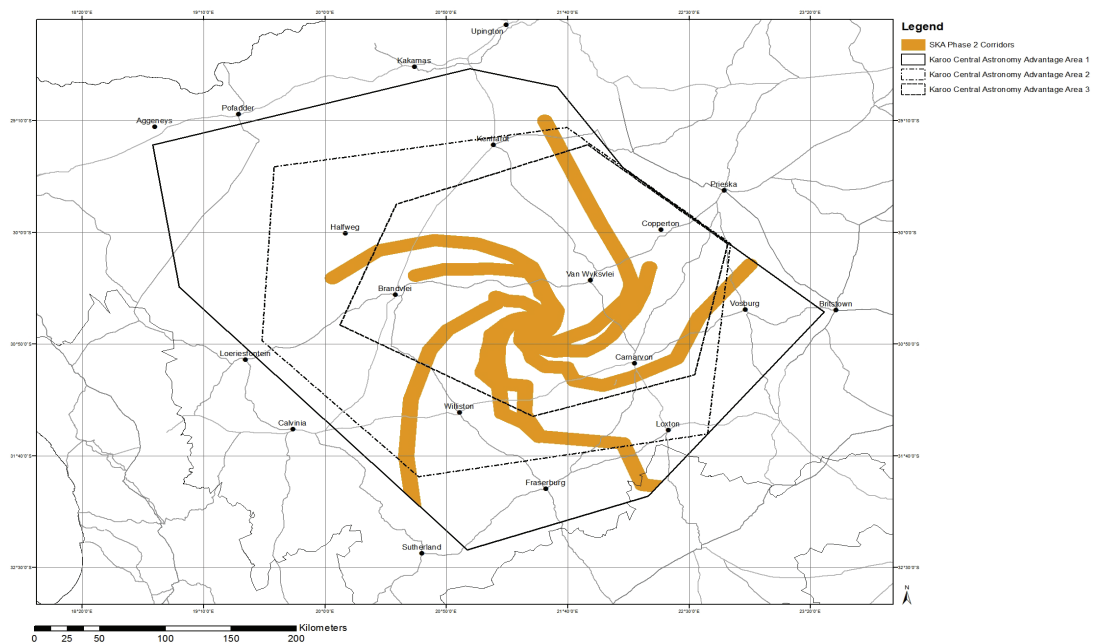
These regulations are called the Karoo Central Astronomy Advantage Areas Spectrum Regulations, 2015 and will come into operation on a date to be determined by the Minister by notice in the *Gazette*.

## ANNEXURE A

### Map of protection corridors containing the SKA radio astronomy stations within the Karoo Central Astronomy Advantage Area 1

The map below depicts the protection corridors required for approximately 54 SKA radio astronomy stations located within the Karoo Central Astronomy Advantage Area 1 but which fall outside the 20 km radius around the SKA Virtual Centre. The protection corridors are required in the development process for the SKA configuration over time.

A smaller scale version of the map below and/or a GIS-shape file is available on request from the management authority or co-management entity. The perimeters of the corridors are 5 km distant on either side of the spiral arms along which the SKA stations are to be positioned.



**SCHEDULE B****REGULATIONS ON ADMINISTRATIVE MATTERS FOR CENTRAL ASTRONOMY  
ADVANTAGE AREAS DECLARED FOR RADIO ASTRONOMY PURPOSES****ARRANGEMENT OF REGULATIONS**

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## 1. Definitions

In these regulations, unless the context indicates otherwise –

**"Act"** means the Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007);

**"affected person"** means a person who –

- (a) lawfully conducted an activity in a central astronomy advantage area prior to the restriction of that activity by virtue of regulations made by the Minister in terms of section 23 of the Act; and
- (b) is required by the Minister in terms of section 23(3) (a) of the Act to cease that activity or to comply with conditions prescribed in terms of section 23(3) (b) of the Act;

**"assessment point"** means the geographical location or any relevant point within an area defined in the relevant central astronomy advantage area Spectrum Regulations, which location or point is used as the assessment point for the applicable protection measures prescribed in the relevant Spectrum Regulations;

**"co-management entity"** means an organ of state, a local community, an individual or other party with whom the management authority has entered into a co-management agreement in terms of section 18 of the Act;

**"competent person"** means a person who meets each of the criteria prescribed in regulation 8 of these regulations;

**"compliance assessment"** means:

- (a) the comparison of radio frequency interference levels at the applicable assessment points according to the protection measures as prescribed in the relevant Spectrum Regulations with the applicable protection levels determined in accordance with the Radio Astronomy Protection Levels Regulations;
- (b) the comparison of radio frequency interference levels at the applicable assessment points according to the protection measures as prescribed in the applicable Spectrum Regulations, with the Saturation Level; and

(c) the determination whether there is compliance with all applicable regulations made in terms of the Act;  
to be carried out by the Competent Person designated by the applicant for a permit in terms of regulation 8 of these regulations.

**"dBm"** means the radio frequency power level expressed in decibels relative to one milliwatt;

**"effective radiated power"** means the product of the power level supplied to the antenna and the antenna gain relative to a half-wave dipole in the relevant direction;

**"essential service"** means a radio communications service used in a central astronomy advantage area that is classified as an essential service in terms of the criteria and procedures prescribed in regulation 7 of these regulations;

**"ITU"** means the International Telecommunications Union;

**"licence exempt operator"** means a person who provides a service pursuant to an exemption granted by ICASA in terms of section 6 of the Electronic Communications Act, 2005, or uses radio frequency spectrum which is exempt from requiring a radio frequency spectrum licence by virtue of section 31(6) of the Electronic Communications Act, 2005, and regulations made in terms thereof;

**"licensee"** as defined in the Electronic Communications Act, 2005 (Act No. 36 of 2005) means a person issued with a licence to provide services in terms of Chapter 3 or to use the radio frequency spectrum in terms of Chapter 5 of the Electronic Communications Act, 2005;

**"radio apparatus"** means an electronic communications facility which is capable of transmitting or receiving any signal by radio;

**"Radio Astronomy Protection Levels Regulations"** means the regulations made to define the radio astronomy observation protection levels for the astronomy advantage areas declared for purposes of radio astronomy, published

under Notice No. R.90 in the Government Gazette No. 35007 on 10 February 2012;

**“radio astronomy station”** means one or more receiving systems at a location, including accessory equipment, for receiving radio waves of cosmic origin for the purposes of radio astronomy;

**“radio communication”** means the emission, transmission or reception of information, including without limitation, voice, sound, data, text, video, animation, visual images, moving images and pictures, signals or a combination thereof by means of radio or other electromagnetic waves without the aid of a tangible conductor;

**“radio communications network service licensee”** means a person to whom ICASA has issued an electronic communications network service licence in terms of Chapter 3 of the Electronic Communications Act, 2005;

**“radio communications service”** means any service provided to the public, sections of the public, the State, or the subscribers to such service, which consists wholly or mainly of the conveyance by any means of radio communications over a radio communications network;

**“radio frequency interference”** means the detrimental effect of received radio signals that exceed the protection levels prescribed in the Radio Astronomy Protection Levels Regulations, 2012, for more than 5% of the time over a 24 hour period;

**“Radio Frequency Spectrum Regulations 2015”** means the regulations made by ICASA as published by Notice 279 of 2015, in Government Gazette No. 38641 on 30 March 2015;

**“radio station”** as defined in the Electronic Communications Act, 2005 means one or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying an electronic communications service, broadcasting service or any

electronic communications authorised by ICASA, and any radio apparatus used at a specific geographical location;

**"restricted radio frequency spectrum"** means radio frequency spectrum the use of which is prohibited or restricted by the Minister in terms of section 22 of the Act;

**"saturation level"** means a received power level of (minus) -100 dBm, or higher, for a radio frequency interference signal at which the saturation phenomenon occurs at a radio astronomy station or at a specified assessment point or points, or within a specified area; and

**"Spectrum Regulations"** means the regulations to prohibit and restrict the use of certain radio frequency spectrum in terms of section 22 of the Act and certain declared activities in terms of section 23 of the Act, within the relevant central astronomy advantage area declared for radio astronomy purposes.

## 2. Scope of the regulations

- (1) These regulations apply to any central astronomy advantage areas declared for radio astronomy purposes as contemplated in section 9 of the Act.
- (2) If there are differences between the English and the Afrikaans versions of these regulations, the English version will take precedence.

## 3. Exemption from prohibition or restrictions on radio frequency spectrum use

- (1) In order to determine which radio frequency spectrum may be exempt from a prohibition or restrictions imposed in the relevant Spectrum Regulations on its use for transmissions located within a central astronomy advantage area, the relevant management authority or co-management entity must give notice in the *Gazette*, as soon as reasonably practical after the Spectrum Regulations for that area have been promulgated, of a list of the radio frequency spectrum to be considered for exemption from a prohibition or restrictions on its use for transmissions located within that area.
- (2) The notice contemplated in sub-regulation (1) –
  - (a) may also propose the consolidation of radio frequency spectrum already being used in that central astronomy advantage area; and
  - (b) must invite interested or affected parties to submit written representations on the notice within sixty (60) days from the date of the notice.
- (3) Before gazetting the notice contemplated in sub regulation (1), the relevant management authority or co-management entity must –
  - (a) consult ICASA on the radio frequency spectrum to be considered for exemption; and
  - (b) in the manner contemplated in section 22(4) of the Act, notify all existing licensees and licence exempt operators who operate radio stations in that central astronomy advantage area and who are listed in the permanent register of interested and affected parties for that area, of the notice to be gazetted.



- (4) The relevant management authority or co-management entity must consider the representations received and may request additional information from any person who made written representations.
- (5) After considering the representations and any additional information received, the relevant management authority or co-management entity must make recommendations to the Minister regarding the radio frequency spectrum to be exempted.
- (6) The Minister may, by notice in the *Gazette*, publish the list of exempted radio frequency spectrum at least six (6) months prior to the date when the prohibition or restrictions on the use of spectrum within that area will come into operation.
- (7) The relevant management authority or co-management entity, in response to a request from ICASA, may consider the exemption of additional radio frequency spectrum for use within a central astronomy advantage area.

#### **4. Requirements for a permit and compliance assessment**

- (1) A licensee or licence exempt operator or any person who transmitted signals from a radio station within a central astronomy advantage area using radio frequency spectrum immediately before the Spectrum Regulations for that area were promulgated, may only continue transmitting those signals for a period of one (1) year after the coming into operation of those regulations unless the relevant management authority has issued to that licensee or operator a permit for the transmission of those signals beyond such period.
- (2) The Minister may, by notice in the *Gazette*, extend the one (1) year period contemplated in sub-regulation 4(1) to a maximum period of three (3) years.
- (3) A licensee or licence exempt operator or any person may not commence transmitting signals from a radio station within a central astronomy advantage area using radio frequency spectrum after the Spectrum Regulations for that area have been promulgated unless the relevant

management authority has issued to that licensee or operator a permit for the transmission of those signals.

- (4) Radio apparatus, exempted by ICASA in Part III, section (4) of the Radio Frequency Spectrum Regulations, 2015, from the requirement to have a radio frequency spectrum licence do not require a permit to continue or to commence transmitting signals within a central astronomy advantage area after the Spectrum Regulations have been published, provided that -
- (a) the radio apparatus with a radio frequency power output level of greater than 250 milliwatt are excluded from this exemption;
  - (b) the radio apparatus with a radio frequency power output level of less than 250 milliwatt comply fully with the relevant requirements and conditions that are stated in Annexure B of the Radio Frequency Spectrum Regulations 2015,
  - (c) the radio frequency interference described in the relevant Spectrum Regulations is not caused;
  - (d) if radio frequency interference is caused, the geographical use of the apparatus may be restricted as prescribed in the relevant Spectrum Regulations; and
  - (e) The exemption from the requirement for a permit only applies to apparatus used individually as specified in the Radio Frequency Spectrum Regulations 2015 and not when multiple units are linked into networks or the apparatus is enhanced in any way.
- (5) If radio frequency interference is caused by the radio apparatus referred to in regulation 4(4), or if the radio apparatus is not used according to the requirements and conditions prescribed in the Radio Frequency Spectrum Regulations 2015 or if multiple units are linked or the units are enhanced, then a compliance assessment, as contemplated in sub-regulation 4(6) and 4(7), must be carried out to determine the extent of the radio frequency interference and an application for a permit must be made.
- (6) Prior to the issuing of any permit for the transmission of a signal from a radio station within a central astronomy advantage area using radio

frequency spectrum, a compliance assessment must be carried out by the licensee or licence exempt operator on each such signal.

- (7) A compliance assessment may only be carried out by a competent person, as contemplated in regulation 8 of these regulations, who is employed by the licensee or the licence exempt operator transmitting or intending to transmit the signal, or by a competent person contracted by the licensee or operator for this purpose.
- (8) Radio frequency interference levels that are produced by a signal transmitted from any radio station within a central astronomy advantage area must be determined by using the radio station data to be stated in the compliance assessment report and according to the technical criteria prescribed in regulation 6 of these regulations.
- (9) The compliance assessment report applicable to computer modelling must conform with the framework provided in Annexure A to these regulations and include all the information and data required therein.
- (10) For measurements, contemplated in sub-regulation 5(6), an appropriate detailed assessment report must be provided that includes a description of the measurement process and standards used, the list of measuring and ancillary equipment used with calibration certificates, full information on measurement parameters (location, height, date, time, weather, etc.) and the measurement results.
- (11) An application for a permit must conform with the framework provided in Annexure B to these regulations and include all the information and data required therein.
- (12) The completed application form and the compliance assessment report must be submitted by the licensee or licence exempt operator to the relevant management authority for evaluation.
- (13) The radio station data must be submitted in an electronic format, preferably ascii, which must be capable of being captured or converted for use in a computer programme.

- (14) If a substantial number of transmissions and compliance assessments are dealt with in a single application and report, the information and data required in Annexures A and B may be provided in a Microsoft Excel spreadsheet, or any other electronic tabulated data format.
- (15) If a licensee or licence exempt operator is transmitting or intends to transmit signals from a radio station within a central astronomy advantage area using restricted radio frequency spectrum, and would like to continue to use that spectrum after the date when the prohibition or restrictions take effect, that licensee or operator may request an exemption from that prohibition or those restrictions, which request together with the motivation for the request must accompany the permit application and the compliance assessment report submitted to that authority or entity.

#### **5. Evaluation of compliance assessment and the application for a permit**

- (1) The relevant management authority or the co-management entity must evaluate each compliance assessment report and application for a permit submitted to it.
- (2) If an incomplete compliance assessment report or permit application is received –
- (a), the applicant will be notified thereof in writing within fourteen (14) days of receiving the application;
  - (b) the incomplete report and/or application may be replaced with a complete version; and
  - (c) The evaluation process will only start when the complete versions of the report and the application are available.
- (3) If the radio frequency spectrum used -
- (a) is not restricted radio frequency spectrum;
  - (b) the determined radio frequency interference levels do not exceed the applicable prescribed protection levels; and
  - (c) the transmission complies with all the applicable restrictions and regulations made in terms of the Act,

the relevant management authority, must within thirty (30) days of the date the permit application and assessment report was submitted to it, excluding the time taken for mandatory external consultations or responses to requests for information to the applicant, issue the permit and notify the licensee or operator in writing.

- (4) If a licensee or licence exempt operator has submitted a request to the relevant management authority for an exemption relating to restricted radio frequency spectrum, that authority, must within sixty (60) days of the date the application was submitted to it, excluding the time taken for mandatory external consultations or responses to requests for information to the applicant, advise the licensee or licence exempt operator in writing of its decision concerning the request for exemption.
- (5) If the determined radio frequency interference levels exceed the applicable prescribed protection levels or the transmission does not comply with any applicable restrictions or regulations, the relevant management authority must, within thirty (30) days of the date that the compliance assessment report was submitted to it, advise the licensee or licence exempt operator of this in writing.
- (6) In the event of a dispute between the applicant and the relevant management authority and co-management entity on the other hand, about:
  - (a) the validity of the radio frequency interference levels determined by means of computer calculations, or
  - (b) the accuracy of the determined radio frequency interference levels that are considered to be unacceptable by the management authority and co-management entity,then appropriate and feasible measurements of the actual interference level at the prescribed assessment point must be carried out in accordance with the relevant provisions in regulation 6 of these regulations.
- (7) A licensee or licence exempt operator who receives a written notification as contemplated in sub regulation 5(5) may investigate and consider methods to reduce the interference levels to the prescribed protection levels and to

comply with the applicable restrictions and regulations, and submit those proposed methods in writing to the relevant management authority within thirty (30) days from the date on which the notice in sub-regulation 5(5) was received.

- (8) The relevant management authority or the co-management entity must evaluate those proposed methods and, within thirty (30) days of the date of receipt thereof, excluding time taken for mandatory external consultations or responses to requests for information to the applicant, advise the licensee or operator in writing whether the proposed method to limit radio frequency interference is acceptable.
- (9) If the relevant management authority or co-management entity accepts the proposals, then the licensee or operator must implement those proposals within ninety (90) days of the date of receipt of the decision, whereupon that authority must, subject to the successful implementation of the proposals, issue and deliver a permit to the licensee or operator.
- (10) If the relevant management authority requires more time than the time specified within which to make a decision in terms of sub-regulations 5(3), 5(4), 5(5) or 5(8) or it is found that an extensive technical evaluation and/or measurements is required, it may, within the specified period of time, including any valid additional time, advise the licensee or operator that additional time, up to a maximum of one hundred and eighty (180) days is required and provide reasons why it is required.
- (11) If the relevant management authority fails to act within the periods specified in sub-regulations 5(3), 5(4), 5(5) or 5(8) or where the authority, in terms of sub-regulation 5(10) has extended the period by a certain amount of time and fails to act within the extended period, it will be deemed to be a refusal of the application.
- (12) A permit issued to a licensee or a licence exempt operator by the relevant management authority must specify the frequencies or frequency band that may be used, together with the transmission characteristics and the conditions with which the licensee or licence exempt operator must comply.

- (13) If it is reported after a permit has been issued that radio frequency interference to radio astronomy is higher than the level specified in the permit, the compliance assessment report must be verified by applicant for the permit and the relevant management authority.
- (14) The compliance assessment related to the verification referred to in sub-regulation 5(13) and carried out in terms of these regulations, must be reviewed by the applicant and the relevant management authority to determine its correctness taking into account the accuracy of the computer modelling applied or measurements carried out.
- (15) If considered necessary by the relevant management authority or co-management entity, measurements of the radio frequency interference must be carried out. The results of the review will determine whether the transmission characteristics specified in the permit issued must be adjusted in order to avoid that the applicable protection level is exceeded.
- (16) If a licensee or licence exempt operator to whom a permit has been issued seeks to amend the frequencies or frequency band that may be used, the transmission characteristics or the conditions specified in its permit, then it must apply to the relevant management authority for such amendment.
- (17) Regulations 4(6) to 4(16), read with the necessary changes, apply to such application for an amendment of a permit issued.
- (18) If the relevant management authority finds, thirty (30) days after the issuing of a permit, that the conditions specified in the permit are not complied with, then the permit will be immediately withdrawn by the relevant management authority. The holder of such permit must immediately cease any activity conducted under such permit.

## **6. Technical criteria for the determination of radio frequency interference levels**

- (1) The compliance assessment, contemplated in sub-regulation 4(6), must include the following:
  - (a) The determination of the radio frequency interference levels related to the protection measures prescribed in the relevant Spectrum

- Regulations with respect to the relevant protection levels prescribed in the Radio Astronomy Protection Levels Regulations;
- (b) The determination of the radio frequency interference levels related to the protection measures prescribed in the relevant Spectrum Regulations with respect to the Saturation Level; and
  - (c) The determination of whether there is compliance with all applicable regulations made in terms of the Act.
- (2) The determination of the radio frequency interference levels should in the first instance be carried out by means of computer modelling which uses scientific methods recommended by the ITU and which calculates the radio frequency interference levels related to the protection measures prescribed in the relevant Spectrum Regulations and the criteria specified in sub-regulation 6(7).
  - (3) If computer modelling is not feasible or appropriate, or if greater accuracy is required than computer modelling can provide, then, the radio frequency interference levels must be determined by means of measurements.
  - (4) The measurement standards and techniques to be used must be agreed upon between the relevant management authority or co-management entity and the competent person, as contemplated in regulation 8 of these regulations, who is conducting the compliance assessment.
  - (5) If agreement cannot be reached, the relevant management authority or co-management entity must determine the appropriate standard and techniques to be used.
  - (6) The reference height for measurements or signal predictions is 10 meters above ground level at the assessment points for the protection measures prescribed in the relevant Spectrum Regulations.
  - (7) The calculation of radio frequency interference levels must be based on the following criteria –
    - (a) the application of the relevant ITU Recommendation on propagation;
    - (b) signal levels that will not be exceeded for more than 5% of the time over a twenty four (24) hour period;



- (c) an isotropic antenna condition with 0dB gain at the assessment points for the protection measures prescribed in the relevant Spectrum Regulations;
  - (d) the use of the best available digital terrain model; and
  - (e) transmitting station data provided by the licensed or licence exempt electronic communication network operator or radio frequency spectrum licensee according to the stated details in Annexure A to these regulations.
- (8) The competent person conducting the compliance assessment must carry out –
- (a) A point-to-point calculation on the propagation paths between the radio station or location of the radio apparatus and the specified assessment points of the radio frequency interference level at the assessment points for the protection measures prescribed in the relevant Spectrum Regulations;.
  - (b) the calculation of the signal path losses over the propagation paths referred to in (a), in dB; and
  - (c) The comparison of the radio frequency interference levels, at the applicable assessment points referred to in (a), to determine whether it exceeds the applicable protection level or not, with:
    - (i) the relevant protection level prescribed in the Radio Astronomy Protection Levels Regulations, or
    - (ii) the saturation level.

The results from (a), (b) and (c) above must be stated in the compliance assessment report prescribed in sub-regulation 4(8).

## **7. Criteria, procedures and conditions that apply to an essential service**

- (1) Radio communication services that provide the applications listed below may be considered by the relevant management authority for classification as essential services –

- (a) broadcasting signal distribution via geostationary satellites for distribution to terrestrial broadcasting transmitters and for direct-to-home reception;
  - (b) electronic communications network services of provincial and national scope licensed by ICASA in terms of section 5(3) of the Electronic Communications Act;
  - (c) electronic communications for the operation and maintenance of electricity transmission and distribution power systems;
  - (d) electronic communications for the operation and maintenance of rail transport;
  - (e) electronic communications for security services and their objects as defined in Chapter 11 of the Constitution of the Republic of South Africa 1996, local government and their objects as defined in Chapter 7 of the Constitution, health services and emergency services;
  - (f) electronic communications for aeronautical and maritime services in frequency spectrum allocations relating to the safety and regularity of flight and sea vessels, including communications, radio navigation and surveillance systems; and
  - (g) geostationary satellite communications.
- (2) In the determination by the relevant management authority of whether a radio communication service included in sub-regulation 7(1) should be classified as an essential service, or not, consideration must be given to –
- (a) the existence of a functionally suitable and economically feasible alternative which complies with or better meets the restrictions, conditions and standards prescribed in these regulations for the protection of radio astronomy; and
  - (b) the possible use of an alternative frequency band and/or an alternative technology that has a lesser radio frequency interference impact on the protection of radio astronomy.
- (3) An applicant for a permit required in accordance with regulation 4 in connection with a radio communication service that may qualify to be

classified as an essential service in terms of sub-regulation 7(1), must indicate this in such application.

- (4) The classification for each different type of radio communication service, operating in a different frequency band or using a different technology, in particular for licensees providing multiple types of services, must be determined separately and so indicated in the permit to be issued.
- (5) The relevant management authority or co-management entity must, before the evaluation process for the compliance assessment and the application for a permit prescribed in regulation 5 commences, determine whether the radio communication service involved will be classified as an essential service.
- (6) If a radio frequency interference level relating to an essential service exceeds the applicable prescribed protection level in terms of the Radio Astronomy Protection Levels Regulations at the prescribed assessment points and cannot be reduced without significantly affecting that service, the provider of that service must include an explanation in the application submitted to the management authority or co-management entity as to the reasons why the interference level cannot be reduced and request that a radio frequency interference level in excess of the prescribed value be permitted.
- (7) A classification as an essential service may be cancelled by the relevant management authority when another electronic communication system that is functionally suitable and economically feasible becomes available which complies with or better meets the restrictions, conditions and standards prescribed in the relevant Spectrum Regulations for the protection of radio astronomy.
- (8) No relief may be granted by the relevant management authority where radio frequency interference may exceed the saturation level at any applicable reference point prescribed in the relevant Spectrum Regulations.

#### **8. Criteria to be met by a person carrying out compliance assessment**

- (1) A person who carries out a compliance assessment and compiles the report, must:

- (a) possess a tertiary academic qualification in electronic or radio frequency engineering at least at the level that would qualify that person to be registered as a professional engineering technologist in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);
  - (b) have access to or be able to obtain access to a computerised frequency spectrum planning system that is usable to carry out the computer modelling for the radio frequency signal level calculations based on the relevant ITU Recommendations on propagation and uses the best available digital terrain model; and
  - (c) be able to provide at least two references for work carried out successfully within the last five (5) years which involves the determination of radio wave propagation and signal levels.
- (2) Alternative to sub-regulation 8(1), the relevant management authority or the co-management entity must carry out an assessment of the skills and experience of a person wishing to carry out the compliance assessment and the compilation of the report to determine whether the person possesses the required ability and capacity.
  - (3) The required information as stipulated in Annexure A, item 1, must be provided by the applicant for a permit for consideration and assessment by the management authority or co-management entity.

#### **9. Permit register**

- (1) The transmission characteristics and the conditions specified in each permit issued in terms of regulation 5 must be entered, by the relevant management authority, into a permit register for the applicable central astronomy advantage area.
- (2) The detailed information to be entered in the permit register must include the data used for the compliance assessment and the assessment results as reflected in Annexure A, items 2 to 6, for each assessment point involved.
- (3) The assessment information in the register may only be made available to the relevant management authority or co-management entity and the permit holder.

**10. Offences and penalties**

Any person who contravenes these regulations is guilty of an offence and liable on conviction to a fine not exceeding R1 000 000 (one million rand) or to imprisonment or to both a fine and imprisonment.

**11. Short title and commencement**

These regulations are called the Regulations on Administrative Matters for the Central Astronomy Advantage Areas (Radio Astronomy), 2015, and will come into operation on a date to be determined by the Minister by notice in the Gazette.

## **ANNEXURE A: Framework for compliance assessment report**

### **1. Competent person who carried out the investigation**

- 1.1. Name of the competent person: .....
- 1.2. Proof that the competent person meets each of the requirements prescribed in Regulation 8:
- 1.2.1. Academic qualification:  
.....
- 1.2.2. Access to computerised frequency planning system  
.....
- 1.2.3. Two references for frequency spectrum planning work carried out in last five years:
- 1.2.3.1. ....
- 1.2.3.2. ....
- 1.3. Alternative to 1.2, request that an assessment of the person is carried out  
.....

### **2. Radio station data for a particular transmission**

The items below apply to a fixed radio station. If another situation is involved in the assessment, then only the applicable items must be completed and sufficient information provided to properly characterise and identify the transmission source.

A tabulated schedule must be used for multiple transmissions from a station at a particular location or from stations at different locations

- 2.1. Carrier frequency (in MHz to 4 decimals):  
.....
- 2.2. Unique reference number (not more than ten characters/numerals):  
.....
- 2.3. Name of licensee or licence exempt operator:  
.....
- 2.4. Radio station name:  
.....
- 2.5. Geographical coordinates (in degrees up to four decimals)  
.....

2.6. Ground level height above sea level (in metres):

.....

2.7. Height above ground level of the transmitting antenna centre (in metres):

.....

2.8. EIRP in the direction of the Assessment Point (AP) (in dBm):

.....

2.9. Polarisation of the transmitted signal:

.....

2.10. Bandwidth of the transmitted signal (in MHz):

.....

**3. Technical criteria applied to signal level calculation**

3.1. Computerised frequency planning system used:

.....

3.2. The ITU Recommendation applied in propagation calculations:

.....

3.3. Option chosen (if any) in the ITU Recommendation applied:

.....

3.4. Digital topographical terrain model used:

.....

**4. Results of the radio frequency interference (RFI) compliance assessment at the applicable AP with respect to the radio astronomy protection level**

4.1. Applicable AP: Geographical coordinates (in degrees up to four decimals):

.....

4.2. RFI level (in dBm/Hz) at the AP:

.....

4.3. Propagation path loss (in dB) between the radio station and the AP:

.....

4.4. Protection level (PL)(in dBm/Hz) as determined in terms of the Radio Astronomy Protection Levels Regulations:.....

4.5. Result of the RFI and PL levels comparison:

.....

**5. Results of the RFI compliance assessment at the applicable AP with respect to the saturation level**

5.1. Location of the applicable AP: Geographical coordinates (in degrees up to four decimals)

.....

5.2. RFI levels at the applicable AP

.....

.....

5.3. Result of the comparison with the saturation level

.....

**6. Assessment of compliance with all applicable regulations made in terms of the Act**

6.1. All applicable regulations are complied with: Yes.....or No.....

6.2. Provide references to applicable regulations that are not complied with, with the reasons for non-compliance

.....

.....

**7. Compliance Assessment Report signed by:**

In signing this Compliance Assessment Report, I declare that the information and results provided in this report are to the best of my knowledge truthful and correct.

\_\_\_\_\_  
Name of person

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Place



**ANNEXURE B: Framework for an application for a permit****1. Applicant**

1.1. Name of person or entity.....

1.2. ID or registration number.....

1.3. If an entity, name of contact person and her/his  
position.....

1.4. Postal address.....

1.5. Email address.....

1.6. Telephone numbers.....

**2. Details of transmissions for which permits are required (if more than three transmissions are involved, use a tabulated schedule)**

Details	Transmission 1	Transmission 2	Transmission 3
Site name			
Geographical coordinate (latitude)			
Geographical coordinate (longitude)			
Type of radio communications			
Carrier/centre frequency (MHz)			
Transmit power at antenna input (dBm)			
Antenna type & gain (dB)			
ICASA radio frequency spectrum licence number			

Frequency spectrum in use (Restricted/Exempted)			
Compliance assessment done (Yes/No)			
Radio frequency interference exceeds protection level (Yes/No)			
Radio frequency interference exceeds saturation level (Yes/No)			
Compliance with applicable restrictions in Spectrum Regulations (Yes/No)			
Considered to qualify for classification as an essential service (yes/no)			

**3 Application for a permit or permits signed by:**

In signing this Application, I declare that the information provided is to the best of my knowledge truthful and correct.

\_\_\_\_\_  
Name of person

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Place

**SCHEDULE C**  
**REGULATIONS ON FINANCIAL COMPENSATION PROCEDURES FOR**  
**CENTRAL ASTRONOMY ADVANTAGE AREAS**

**ARRANGEMENT OF REGULATIONS**

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## 1. Definitions

In these regulations unless the context indicates otherwise –

**"Act"** means the Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007);

**"affected person"** means a person who –

- (a) lawfully conducted an activity in a central astronomy advantage area prior to the restriction of that activity by virtue of regulations made by the Minister in terms of section 23 of the Act; and
- (b) is required by the Minister in terms of section 23(3) (a) of the Act to cease that activity or to comply with conditions prescribed in terms of section 23(3) (b) of the Act;

**"co-management entity"** means an organ of state, a local community, an individual or other party with whom the relevant management authority has entered into a co-management agreement in terms of section 18 of the Act;

**"financial loss"** means –

- (a) the cost to a radio communications network service licensee to implement a requirement or a condition imposed in terms of section 23 of the Act;
- (b) the connecting cost and additional user cost to a radio communications service user for an electronic communications service that is different to the electronic communications service used by that user prior to the promulgation of a regulation made in terms of section 23 of the Act;

**"GPS"** means global positioning system;

**"licence exempt operator"** means a person who provides a service pursuant to an exemption granted by ICASA in terms of section 6 of the Electronic Communications Act, 2005, or uses radio frequency spectrum which is exempt from requiring a radio frequency spectrum licence by virtue of section 31(6) of the Electronic Communications Act, 2005, and regulations made in terms thereof;

**"licensee"** means a person to whom ICASA has issued a licence to provide a service in terms of Chapter 3 or to use radio frequency spectrum in terms of section 31 of the Electronic Communications Act, 2005; and

**"Spectrum Regulations"** means the regulations to prohibit and restrict the use of certain radio frequency spectrum in terms of section 22 of the Act and certain declared activities in terms of section 23 of the Act, within the relevant central astronomy advantage area declared for radio astronomy purposes.

## **2. Scope of the regulations**

- (1) These regulations apply to any central astronomy advantage area declared for radio astronomy purposes and related scientific endeavours.
- (2) If there are differences between the English and the Afrikaans versions of these regulations, the English version will take precedence.

## **3. Procedures and criteria to apply for financial compensation**

- (1) An affected person who has suffered a financial loss solely as a direct result of that person's compliance with a requirement or a condition imposed in terms of section 23(3)(a) or (b) of the Act, or a person whose use of the service of a licensee or a licence exempt operator is adversely affected as a direct result of that operator's compliance with a requirement or a condition imposed in terms of section 23(3)(a) or (b) of the Act, may apply for compensation in terms of this regulation.
- (2) The application for compensation contemplated in sub-regulation (1) must be done on a form obtained from the relevant management authority or co-management entity and submitted to the relevant management authority or co-management entity within two (2) years of the implementation of the relevant requirement or condition.
- (3) The said application must contain –
  - (a) the applicant's full name, postal address, email address, telephone number and tax reference number;
  - (b) the address where the applicant will accept service of any notice, process or any other document concerning the application;
  - (c) the address or GPS location where the applicant lawfully conducted the relevant activity or used the service, which is the subject of the application, immediately before the implementation of the relevant requirement or condition;
  - (d) if at the time of making the application, the applicant conducts the activity or uses the service which is the subject of the application at an address or GPS location different from the address or location provided in sub-regulation (c) , the details of the different address or location;

- (e) a copy of all relevant documents published by notice in the *Gazette* in terms of section 23 of the Act;
- (f) a detailed description of the activity lawfully conducted or the service used by the applicant immediately before the implementation of the relevant requirement or condition;
- (g) an affidavit by the applicant confirming –
  - (i) whether the applicant solely as a direct result of compliance with the requirement imposed in terms of section 23(3) (a) of the Act, ceased the relevant activity and the date thereof;
  - (ii) the manner and extent to which the applicant modified its conduct of the relevant activity solely as a direct result of compliance with a condition imposed in terms of section 23(3)(b) of the Act; or
  - (iii) the manner and extent to which the applicant's use of the service was adversely affected solely as a direct result of compliance with a requirement or condition imposed in terms of section (23)(3)(a) or (b).
- (h) a detailed description of any property or equipment which was owned or used by the applicant to conduct the relevant activity or the service where the use of that property or equipment has been adversely affected solely as a direct result of compliance with the requirement or condition imposed in terms of section 23(3) of the Act, including a detailed description of –
  - (i) the condition of the property or equipment;
  - (ii) the extent to which the applicant used the property or equipment to conduct the relevant activity or use the service;
  - (iii) the market value of the property or equipment;
  - (iv) the record of the acquisition or use of the property or equipment;
  - (v) the extent to which the State invested in, subsidised, or otherwise assisted the applicant with the acquisition or maintenance of the property or equipment or the conduct of the relevant activity; and

- (vi) the extent to which the property or equipment has been adversely affected solely as a direct result of compliance with the requirement or condition imposed in terms of section 23(3) of the Act, taking into account other possible uses of that property by the applicant or a third party;
  - (i) a detailed description of any financial loss suffered by the applicant solely as a direct result of compliance with the requirement or conditions imposed in terms of section 23(3) of the Act, including any financial loss due to a conversion to an alternative electronic communication service as the impacted service was no longer usable;
  - (j) any other particulars which are relevant or necessary for the relevant management authority or co-management entity to-
    - (i) consider the application; and
    - (ii) calculate the amount of compensation to be paid, if any, including full particulars as to the basis and manner of calculation of all amounts;
  - (k) a complete record of any correspondence with, and written representations submitted to the relevant management authority or co-management entity in terms of section 23 of the Act; and
  - (l) supporting evidence in respect of paragraphs (f) to (j).
- (4) If an applicant applies for compensation in relation to different activities or services, the applicant must submit a separate application in relation to each activity or service.

#### **4. Processing of the application by the management authority**

- (1) The relevant management authority or co-management entity may request, in writing, such further information from the applicant as may be necessary to consider the application and the applicant must respond to the request for further information within thirty (30) days from the date that the request was sent.
- (2) The relevant management authority or co-management entity must consult ICASA, on each application received, to determine whether the activity



involved in the application for financial compensation was lawfully conducted within the relevant central astronomy advantage area immediately before the relevant Spectrum Regulations were promulgated.

- (3) The relevant management authority or co-management entity must refer the application, all relevant documentation and any further particulars submitted by the applicant, together with a recommendation by the relevant management authority or co-management entity on the application, to the Minister for a decision within sixty (60) days from the date that the last information required was received.
- (4) The relevant management authority or co-management entity must -
  - (a) Within ninety (90) days of receipt of the last information required for an application, inform the applicant in writing of the Minister's decision and provide the applicant with written reasons for the decision; and
  - (b) Any decision to grant compensation must be accompanied by an offer of compensation determined by the Minister.

#### **5. Determination of compensation by the Minister**

- (1) If the Minister decides that the applicant should receive compensation, the amount of compensation, the manner and the time of payment thereof must be just and equitable, reflecting an equitable balance between the public interest and the interests of the affected person, having regard to all the relevant circumstances, including –
  - (a) the nature and extent of the activity lawfully conducted or the service used by the applicant immediately before the implementation of the relevant requirement or condition;
  - (b) the extent to which the applicant ceased the relevant activity, the nature and extent to which the applicant modified its conduct of the relevant activity, or the extent and nature to which the applicant's use of the service was adversely affected, solely as a direct result of compliance with the requirement or conditions imposed in terms of section 23(3) of the Act;

- (c) the property or equipment which was owned or used by the applicant to conduct the relevant activity or use the service and the extent to which the use thereof has been adversely affected solely as a direct result of compliance with the requirement or conditions imposed in terms of section 23(3) of the Act; and
- (d) the financial loss suffered by the applicant solely as a direct result of compliance with the requirement or conditions imposed in terms of section 23(3) of the Act.

## **6. Acceptance of the offer by the applicant**

- (1) Within thirty (30) days of the receipt of the offer in sub-regulation 4(4)(b), the applicant must inform the relevant management authority or co-management entity in writing of its acceptance or rejection of the offer.
- (2) If the applicant accepts the offer made in terms of sub-regulation 4(4)(b), the relevant management authority or co-management entity must pay the applicant the amount in a manner and within the period agreed upon by the applicant and the relevant management authority or co-management entity, which period may not be more than sixty (60) days after receipt of notice of acceptance of the offer from the applicant.
- (3) The applicant may take the Minister's decision, contemplated in regulation 5(1), on review in terms of the provisions of the Promotion of Administrative Justice Act, 2000.

## **7. Offences and penalties**

Any person who contravenes these regulations is guilty of an offence and liable on conviction to a fine not exceeding R1 000 000 (one million rand) or to imprisonment or to both a fine and imprisonment.

## **8. Short title and commencement**

These regulations are called the Regulations on Financial Compensation Procedures for central astronomy advantage areas, 2015, and will come into operation on a date to be determined by the Minister by notice in the Gazette.



## 1. Definitions

In these regulations unless the context indicates otherwise –

**"Act"** means the Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007);

**"co-management entity"** means an organ of state, a local community, an individual or another party with whom the relevant management authority has entered into a co-management agreement in terms of section 18 of the Act;

**"distribution power system"** means a power system that operates below 132 kV;

**"electrical equipment"** means any electrical machinery, appliances or devices used for construction, exploration, farming, household, manufacturing, maintenance, or mining purposes;

**"electrical infrastructure"** means any infrastructure or facility to be used in any way for electricity generation, electricity distribution, electricity transmission, or for a distribution or transmission power system, or electrical facilities and equipment used for any application excluding electricity distribution and transmission that existed prior to the date on which these regulations are promulgated by publication in the Government Gazette;

**"electricity distribution"** means the conveyance of electricity through a distribution power system;

**"electricity generation"** means the production of electricity by any means including inverters converting direct current into alternating current;

**"Electricity Regulation Act"** means the Electricity Regulation Act, 2006 (Act No. 4 of 2006);

**"electricity transmission"** means the conveyance of electricity through a transmission power system;

**"electromagnetic interference"** means radio frequency interference emitted unintentionally by electricity generation installations, electricity distribution or transmission infrastructure, and electrical equipment, and which characteristically occupies broad parts of the radio frequency spectrum;

**"ITU"** means the International Telecommunications Union;

**"Karoo Central Astronomy Advantage Area 1"** means the Karoo Central Astronomy Advantage Area 1 declared in Notice No. 198 in Government Gazette No. 37434 published on 12 March 2014;

**"protection corridors"** mean strips of land, alongside a radio astronomical spiral arms configuration, within which SKA stations within the Karoo Central Astronomy Advantage Area 1 are to be positioned, with a width of 5 km on either side of each spiral arm, as defined in Annexure A;

**"Radio Astronomy Protection Levels Regulations, 2012"** means the regulations made to define the radio astronomy observation protection levels for the astronomy advantage areas declared for purposes of radio astronomy, published in Notice No. R.90 in Government Gazette No. 35007 on 10 February 2012;

**"radio astronomy station"** means one or more receiving systems at a location, including accessory equipment, for receiving radio waves of cosmic origin for the purposes of radio astronomy;

**"radio frequency interference"** means the detrimental effect of received radio signals or signals from electromagnetic emissions that exceed the protection levels prescribed in the Radio Astronomy Protection Levels Regulations, 2012;

**“SABS”** means the South African Bureau of Standards established by section 3 of the Standards Act, 2008 (Act No. 8 of 2008);

**“SANS”** means a South African National Standard developed by the SABS in terms of the Standards Act, 2008 (Act No. 8 of 2008), and includes international standards adopted by the SABS;

**“separation distance”** means the minimum clear distance required between any electrical infrastructure and the nearest SKA Infrastructure Territory, in order not to exceed the applicable protection levels prescribed in the Radio Astronomy Protection Levels Regulations;

**“SKA”** means the Square Kilometre Array radio telescope consisting of an array of radio astronomy stations to be located in the Republic of South Africa and in participating African countries in accordance with the decision of the SKA Organisation, a private company (limited by guarantee) incorporated in the United Kingdom;

**“SKA Infrastructure Territories”** means the protection corridors within the Karoo Central Astronomy Advantage Area 1 as defined in Annexure A and the 20km radius circular area around the SKA Virtual Centre;

**“SKA Virtual Centre”** means the geographical point located at geographical co-ordinates 30.71292 degrees South and 21.44380 degrees East that relates to the SKA array of radio astronomy stations within the Karoo Astronomy Advantage Areas and is specified as the centre Assessment Point for the application of protection levels as defined in the Radio Astronomy Protection Levels Regulations, 2012; and

**“transmission power system”** means a power system that operates at or above 132 kV.

## **2. Scope of the regulations**

- (1) Subject to sub-regulation 3(3), these regulations apply to any electrical infrastructure and electrical equipment within the Karoo Central Astronomy Advantage Area 1.
- (2) If there are differences between the English and the Afrikaans versions of these regulations, the English version will take precedence.

## **3. Conditions for electrical infrastructure**

- (1) No person may construct, install, operate or use any electrical infrastructure and electrical equipment within the Karoo Central Astronomy Advantage Area 1 unless it complies with these regulations and the relevant management authority has issued a permit in relation thereto.
- (2) All electrical infrastructure and any electrical equipment used in connection therewith –
  - (a) may not cause electromagnetic interference within SKA Infrastructure Territories which exceeds the protection levels prescribed in the Radio Astronomy Protection Levels Regulations, 2012; and
  - (b) must be separated from the nearest SKA Infrastructure Territory by a minimum separation distance determined in accordance with regulation 8 of these regulations.
- (3) Electrical infrastructure with an electrical power rating of less than 10 kVA, located at a distance greater than 6 km from the nearest SKA Infrastructure Territory, is exempted from the requirement to acquire and possess a permit and to provide the information specified in sub-regulation 6(2) unless it is found that interference is caused.
- (4) Electrical infrastructure with an electrical power rating of more than 10 kVA but not more than a 100 kVA, located at a distance from the nearest SKA Infrastructure Territory of greater than that to be prescribed by the Minister for the various types of facilities or

equipment, must acquire a permit but is exempted from compliance with sub-regulation 6(2) of these regulations subject thereto that electromagnetic interference is not caused.

**4. Additional conditions for electricity generation by means of wind turbines**

- (1) In addition to the conditions in regulation 3, no person may erect a wind-driven electrical turbine generator with a capacity of 10 kVA or more within any radio line-of-sight of the SKA Infrastructure Territories.
- (2) In order to determine whether a radio line-of-sight condition exists, a topographical terrain profile must be drawn between –
  - (a) the maximum height above sea level of the tip of a turbine blade on the generator; and
  - (b) the ground height above sea level plus 15 metres at the nearest point of any SKA Infrastructure Territory, or any other point within the SKA Infrastructure Territories if deemed to be required by the relevant management authority as a result of intervening topography;using a minimum of 20 meter resolution digital terrain model for the area and taking the ground conductivity in the Karoo Central Astronomy Advantage Area 1 into account.
- (3) If the determination in sub-regulation (2) is affected by the possible use of non-reflective turbine blades or the non-existence of a radio frequency interference source that may be reflected, an assessment with calculations or measurements must be carried out to verify that the applicable protection levels as prescribed in the Radio Astronomy Protection Levels Regulations, 2012, will not be exceeded.

**5. Additional conditions for distribution or transmission power systems**

- (1) In addition to the conditions in regulation 3 of these regulations, no person may construct or install any new overhead distribution or transmission power systems with a voltage rating –



- (a) equal or greater to sixty-six thousand Volts (66 000 V) within sixteen km of SKA Infrastructure Territory; and
  - (b) less than sixty-six thousand Volts (66 000 V) within six km of SKA Infrastructure Territories.
- (2) Despite compliance with sub-regulation (1), the distribution or transmission power system may not cause electromagnetic interference to SKA Infrastructure Territories which exceeds the protection levels prescribed in the Radio Astronomy Protection Levels Regulations, 2012.

## **6. Application and conditions for a permit**

- (1) An applicant for a permit, contemplated in sub-regulation 3(1) of these regulations, must submit the application to the management authority or co-management entity for the Karoo Central Astronomy Advantage Area 1.
- (2) The application contemplated in sub-regulation (1) must contain –
- (a) a design report of the proposed new infrastructure and a list of all the electrical equipment to be installed or used;
  - (b) a GIS-shape file or electronically tabulated data, of the proposed location of the new infrastructure, including the ground level height above sea level and the maximum height of the new infrastructure above ground level;
  - (c) the electromagnetic emissions determined in accordance with regulation 3(3);
  - (d) the required minimum separation distance; and
  - (e) the list of geographical locations where the required separation distance is not complied with.
- (3) The management authority or the co-management entity must consider the application and inform the applicant in writing of its decision no later than sixty (60) days of receipt of the application.
- (4) If the authority or entity considering the application is satisfied that the electrical infrastructure and any electrical equipment used in

connection therewith complies with regulations 3, 4 and 5 of these regulations, that authority must issue a permit to the applicant.

- (5) If the application does not comply with regulations 3, 4 and 5, the authority or entity must allow an applicant, within a period of thirty (30) days of date of request, to provide details of mitigation measures which the applicant will take to comply with the regulations.
- (6) The relevant management authority or entity considering the application must take into account the mitigating measures and take a decision on the application no later than sixty (60) days of receipt of the application.
- (7) If the authority or entity decides to grant the permit,
  - (i) the authority or entity must issue the permit; and
  - (ii) the permit must include all the conditions with which the applicant must comply relating to electrical infrastructure, and its construction, installation or operation.
- (8) If a person or entity who has been issued a permit ceases its operations or ceases to use any electrical infrastructure to which the permit relates, that person or entity must give written notice thereof to the authority or entity which granted the permit within three months of such cessation.

## **7. Determination of electromagnetic emission levels**

- (1) For the purposes of these regulations, electromagnetic emissions must be determined with reference to any applicable SANS standard or a standard prescribed in terms of the Electricity Regulation Act.
- (2) If the emission standard has not been determined as contemplated in sub-regulation (1), or the emissions are different to those specified in the applicable standard, a detailed measurement report of the actual emission levels based on the applicable SANS measurement standard or a measurement report from an accredited measurement laboratory in the Republic or another country must be provided by the applicant to the authority or entity, together with supporting documentation.

- (3) If an applicable standard, as contemplated in sub-regulation (1) or (2) above, is not available or deemed to be inappropriate by the relevant management authority, and the undertaking of a measurement campaign is not possible due to technical or other reasons, the relevant management authority or co-management entity must determine which existing standard is the most appropriate and must be used.
- (4) A suitable standard may also be established in terms of section 37 of the Act.

#### **8. Determination of minimum separation distances**

- (1) The determination of the minimum separation distance by the applicant must be carried out by means of physical measurements or computerised propagation calculations to determine the required frequency dependent attenuation of the electromagnetic interference to avoid any interference exceeding the protection levels prescribed in the Radio Astronomy Protection Levels Regulations, 2012, within the SKA Infrastructure Territories.
- (2) The reference heights for the measurement or prediction process are –
  - (a) the maximum height above sea level of the electrical infrastructure; and
  - (b) the ground height above sea level plus 15 metres at any relevant location within the SKA Infrastructure Territories.
- (3) The determination of the separation distance must be based on the following criteria:
  - (a) The relevant ITU Recommendations on propagation.
  - (b) The interference level that will not be exceeded for more than 5% of the time over a twenty-four hour period.
  - (c) The use of an isotropic antenna with 0dB gain at the relevant point within the SKA Infrastructure Territories.

- (d) The use of a digital terrain model with the best resolution available.
  - (e) The ground conductivity within the Karoo Central Astronomy Advantage Area 1.
  - (f) The electromagnetic emission level determined according to regulation 7 of these regulations that would cause the highest level of interference.
- (4) The required frequency dependant attenuation of the electromagnetic interference to be used to determine the minimum separation distance is the difference between the highest electromagnetic emission level determined according to regulation 7 of these regulations that would cause the highest level of interference and the applicable protection level prescribed in the Radio Astronomy Protection Levels Regulations, 2012.
- (5) The minimum separation distance must be determined using the applicable ITU Recommendation for radio wave propagation and the required attenuation of the electromagnetic interference determined in sub-regulation 8(4) of these regulations.

#### **9. Procedures to resolve electromagnetic interference**

In the event that electromagnetic interference is caused by electrical infrastructure or electrical equipment exempted from these regulations in terms of sub-regulations 3(3) or 3(4) of these regulations or by electrical infrastructure or electrical equipment for which a permit has been issued, due to errors or accuracy limitations in the calculations to determine separation distances, the following criteria and procedures shall apply-

- (1) The relevant management authority must request a detailed measurement report on the actual electromagnetic interference levels based on the applicable SANS measurement standards, or another applicable standard as determined by the relevant management authority, together with supporting documentation, to be provided to the management authority or the co-management entity by the person who owns the infrastructure or electrical equipment.

- (2) If the person who owns the electrical infrastructure or electrical equipment is not able to provide the report, then the management authority or the co-management entity must, at the cost of the person who owns the infrastructure or electrical equipment, arrange for the measurements to be done in order to determine to what extent the applicable protection level prescribed in the Radio Astronomy Protection Levels Regulations, 2012, is exceeded.
- (3) The electromagnetic interference must be reduced to below the applicable protection level prescribed in the Radio Astronomy Protection Levels Regulations, 2012, by establishing the required minimum separation distance determined in accordance with regulation 8 of these regulations or by implementing appropriate mitigation measures around the source of the electromagnetic interference.
- (4) A permit must be issued by the management authority in which the conditions for the ongoing operation of the electrical infrastructure or electrical equipment are specified.

#### **10. Location of the SKA Virtual Centre and protection corridors**

- (1) The geographical location of the SKA Virtual Centre is subject to review and finalisation within 12 months of the promulgation of these regulations.
- (2) The protection corridors within the Karoo Central Astronomy Advantage Area 1 are subject to annual review in accordance with progression in the development of the SKA with the intention to phase them out and to require only the protection of the radio astronomy stations located within the corridors.

#### **11. Offences and penalties**

Any person who contravenes these regulations is guilty of an offence and liable on conviction to a fine not exceeding R1 000 000 (one million rand) or to imprisonment or to both a fine and imprisonment.

**12. Short title and commencement**

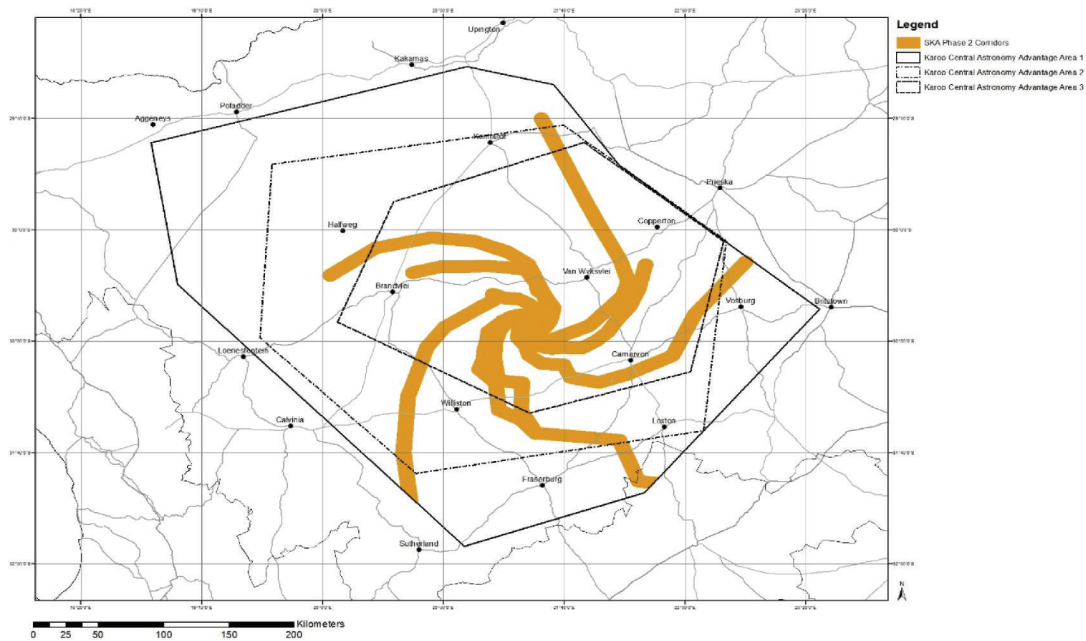
These regulations are called the Regulations Restricting Electromagnetic Interference in the Karoo Central Astronomy Advantage Area 1, 2015, and will come into operation on a date to be determined by the Minister by notice in the Gazette.

**ANNEXURE A**

**Map of protection corridors containing the SKA radio astronomy stations within the Karoo Central Astronomy Advantage Area 1**

The map below depicts the protection corridors required for approximately 54 SKA radio astronomy stations located within the Karoo Central Astronomy Advantage Area 1 but which fall outside the 20 km radius around the SKA Virtual Centre. The protection corridors are required in the development process for the SKA configuration over time.

A smaller scale version of the map below and/or a GIS-shape file is available on request from the relevant management authority or co-management entity. The perimeters of the corridors are 5 km distant on either side of the spiral arms along which the SKA stations are to be positioned.



## **EXPLANATORY MEMORANDUM ON THE DRAFT REGULATIONS FOR THE PROTECTION OF THE KAROO CENTRAL ASTRONOMY ADVANTAGE AREAS**

An abbreviated version of this memorandum is available. The full length and abbreviated versions are also available in Afrikaans. Nothing in this document will negate anything prescribed in the

### **Contents**

1. Introduction
2. Radio astronomy and the SKA
3. Protection and the Astronomy Geographic Advantage Act
4. Summary of the protection measures and procedures in the draft Regulations
  - 4.1. Draft Karoo Central Astronomy Advantage Areas (AAAs) Spectrum Regulations, 2015
  - 4.2. Draft Regulations on Administrative Matters for central AAAs (Radio Astronomy), 2015
  - 4.3. Draft Regulations on Financial Compensation Procedures for central AAAs, 2015
  - 4.4. Draft Regulations restricting EMI in the Karoo Central AAA1
5. Frequently asked questions and answers
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Regulations.

### **1. Introduction**

- 1.1. The purpose of this explanatory memorandum is to provide additional information, a description of the protection scheme for the declared Karoo Central Astronomy Advantage Areas (AAAs), and summaries of the draft Regulations.
- 1.2. The Karoo Central AAAs were declared on 12 March 2014 after the conclusion of the prescribed public consultation and consideration of all representations.
- 1.3. A map of the declared areas is available on page 4 of this document.

### **2. Radio Astronomy and the SKA**

- 2.1. Radio astronomy is a field of scientific research conducted globally, along with optical astronomy, to increase the knowledge and understanding of the universe and the scientific laws that govern it. By receiving and analysing the cosmic radio signals emitted by stars and other matter in the universe, we are able to better understand and explain much of the phenomena observed in the vast extent of the universe in, and beyond, our solar system.
- 2.2. The cosmic radio signals received from space are extremely weak, as they have travelled across the universe for millions of years over vast distances before reaching the earth. The levels of these signals are about a million times weaker than that received by cell phones and other radio communication devices.
- 2.3. Very large and sensitive receiving installations are used for radio astronomy. The weak cosmic signals received, can be interfered with and made unusable by signals from radio communication and electromagnetic radiation that exceed the reception threshold level for radio astronomy. Reception at this level must therefore be protected. The established protection levels are based on internationally accepted standards and procedures developed by the International Telecommunication Union.



- 2.4. The reception threshold and protection level for radio astronomy is far below the required levels for usable radio communications. The protection level varies somewhat over the radio frequency spectrum, but is in the range (minus) -220 dBm/Hz to (minus) -250 dBm/Hz.
- 2.5. The cosmic signals can be found across the radio frequency spectrum due to different frequencies emitted by different chemical elements. As a result, radio astronomy observations of cosmic signals have to be carried out over very large portions of the radio frequency spectrum.
- 2.6. Radio frequency interference (RFI) to the reception of cosmic signals may be caused by radio communication systems. Although the frequency spectrum occupation of these systems in the Northern Cape Province may be very low compared to other areas in the Republic of South Africa, some of the radio communication signals, and in particular high power terrestrial broadcasting transmissions, may propagate over very large distances depending on the site and mast elevation, the transmitted power used, the direction of the transmission and the intervening topographical terrain. Very high levels of RFI may cause saturation in the radio astronomy receiving system, destroying its cosmic signal reception capability entirely, or even causing permanent damage to the receiver equipment.
- 2.7. Electromagnetic interference (EMI) is another form of RFI, caused by electricity generation, electricity distribution and the use of electrical equipment and machinery. This interference occurs over very large frequency bands but occurs only over short distances, i.e. 5 to 20 km depending on the system and propagation conditions.
- 2.8. The Square Kilometre Array (SKA)<sup>1</sup> is a new generation, multi-national radio telescope that will be the most powerful observatory in the world. The key consideration in the location of the SKA was to find the most suitable area for the telescope with acceptable climatic conditions, extremely low levels of RFI and EMI and that protection will be provided against RFI and EMI. The SKA Organisation's decision to locate the major portion in the Karoo region of the Northern Cape Province in the Republic of South Africa followed a worldwide search and international bidding process. The final decision was taken after an intensive analysis by experts of all the factors affecting the location of the SKA.
- 2.9. For the SKA, protection is required to cover its expected lifetime of 50 years.

### **3. Protection and the Astronomy Geographic Advantage Act**

- 3.1. In order to establish a long term astronomy protection scheme for the Republic of South Africa, the Government of the Republic of South Africa considered it necessary to promulgate legislation for the protection of Astronomy Geographic Advantage Areas. The Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007) (hereinafter referred to as the AGA Act), was promulgated and published in Government Gazette No. 31157 on 17 June 2008 in English and in Tswana. The English version was signed by the President. The AGA Act became operational by the publication of Proclamation No. 28 in Gazette No. 32163 on 24 April 2009. An Afrikaans translation of the AGA Act is on request available from the Astronomy Management Authority at the Department of Science and Technology. The translated version has no official status.

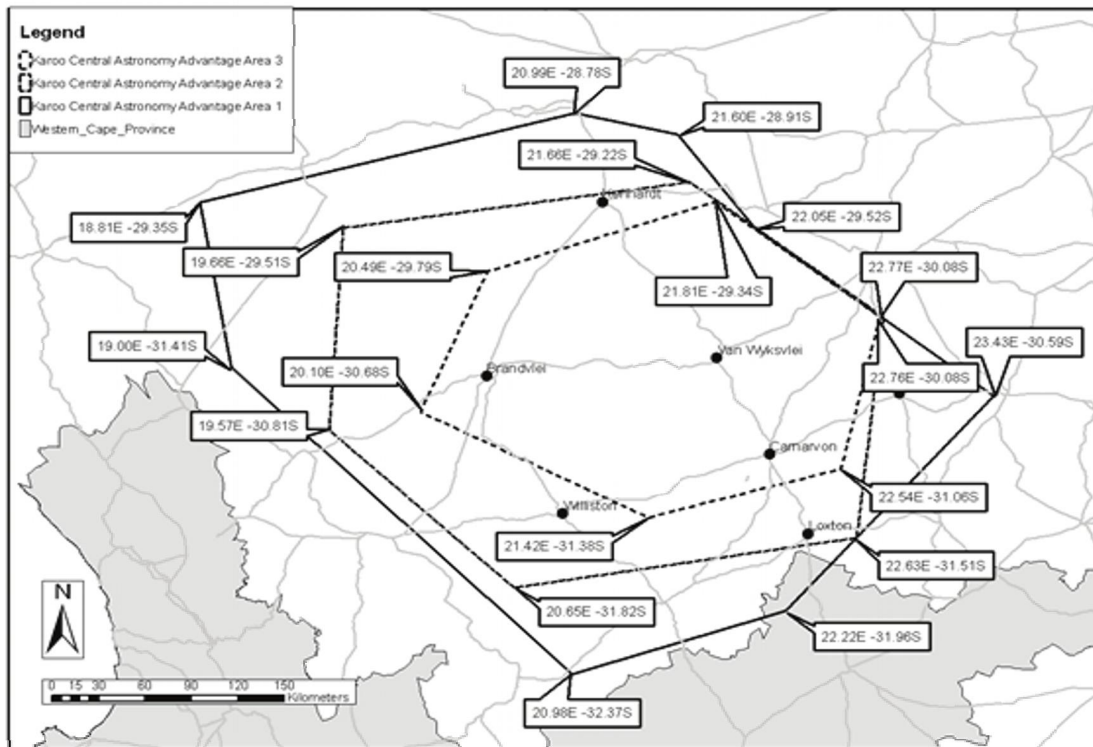
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<sup>1</sup> Much more information on the SKA can be found on the South African SKA website [www.ska.ac.za/](http://www.ska.ac.za/) and the international website [www.skatelescope.org/](http://www.skatelescope.org/).

- 3.2. The AGA Act provides the framework and principles to conduct and to protect the various kinds of astronomy anywhere within the Republic of South Africa. Protected areas are to be declared and protection measures prescribed in regulations for particular astronomy endeavours. The protection measures include the restriction of radio frequency spectrum use, restriction of possible detrimental activities, establishment of the required protection criteria and standards and the establishment of administrative procedures to implement and maintain the measures. Due to the complexity involved in declaring the different categories of protected areas and making protection regulations for each category, the implementation of the protection scheme is carried out in a number of sequential steps.
- 3.3. The AGA Act provides for comprehensive public participation during the declaration of areas and the making of protection regulations. This includes the following:
- 3.3.1. During the public consultation process for the declaration of the areas to be protected, permanent registers of interested and affected parties must be compiled for each of the core, central or coordinated AAAs; copies of the notice and proposed declarations must be sent by registered letters to any private land owner in the core or central AAAs and, where possible, any other lawful occupier of land within the relevant AAAs must be informed of the consultation process in an appropriate manner (all these activities were carried out during the consultation for the declaration of the Karoo Central AAAs);
- 3.3.2. Prior to publishing a notice to make regulations, copies of the notice and draft regulations must be sent to the persons included in the relevant permanent register of interested and affected parties by registered post or other method agreed to;
- 3.3.3. The notices, the draft declarations or regulations with sufficient information must be published in the Government Gazette and include an invitation to submit written representations or objections within 60 days. The notice must also be published in at least two national newspapers distributed in the area; and
- 3.3.4. The relevant provisions in the Promotion of Administrative Justice Act, 2000 (Act no.3 of 2000) (hereinafter referred to as PAJA) and its Regulations, must be complied with.
- 3.4. The following measures have already been implemented in terms of the AGA Act in order to provide the necessary protection for radio astronomy observations by the SKA:

<b>Protection Measures for the SKA radio telescope</b>	<b>AGA Act Reference</b>	<b>Government Gaz. Numbers</b>	<b>Date</b>
Declaration of the Northern Cape Province, excluding Sol Plaatje Municipality as an AAA	Section 5	Notice 115 GG 32951	19 February 2010
Declaration of the Karoo Core AAA consisting of 13 406 hectares land (Property of National Research Foundation)	Section 7	Notice 723 GG 33462	20 August 2010
Declaration of the establishment and operation of the MeerKAT and SKA to be astronomy and related scientific endeavours	Section 28(1)	Notice 897 GG 33614	15 October 2010
Regulations prescribing the radio astronomy protection levels as the South African Radio Astronomy Service (SARAS) protection levels	Sections 37 & 50	Notice R.90 GG 35007	10 February 2012

standard			
Regulations for the protection of the Karoo Core AAA restricting all radio frequency spectrum use and listed activities unless required for radio astronomy	Sections 22, 23 & 50	Notice R.456 GG 35450	22 June 2012
Declaration of the Karoo Central AAAs (Map below)	Section 9	Notice 198 GG 37434	12 March 2014



3.5. The protection philosophy applied in the development of the protection scheme is based on the following principles:

- 3.5.1. That inference to the reception of cosmic radio signals and data loss will be minimised, so that the expected information and discoveries will be yielded;
- 3.5.2. That the impact of the protection scheme on radio communication, electrical activities and other activities that may adversely affect radio astronomy observations will be minimised;
- 3.5.3. That the required level of protection with respect to RFI will be applied at the SKA Virtual Centre (SVC), as the most sensitive part of the SKA, to the maximum extent possible. This will result in the restrictions on radio communications gradually decreasing with distance from the SVC. In addition, frequency use will be limited to exempted frequency bands and radiated power levels limited to 40 dBm;
- 3.5.4. That for EMI caused by electricity generation, distribution and electrical equipment and machinery, the required protection level will be applied to the 20 km radius area

- around the SKA Virtual Centre and the protection corridors for remote SKA stations in the Karoo Central AAA1. Protection will be achieved by maintaining the required separation distance between the interference sources and the stated protection areas;
- 3.5.5. That the required protection level to be applied will be in accordance with the South African Radio Astronomy Service (SARAS) Standard Regulations already promulgated;
- 3.5.6. That the provision of alternative radio communication options will be facilitated in the area where all existing terrestrial radio communication options would be restricted as a result of compliance with the protection measures, and, in some cases, where there are no existing terrestrial telecommunication service options available;
- 3.5.7. That the presence of limited RFI will be accepted following the consideration of requirements for essential radio communications, and the optimisation of the possible protection without completely restricting those communications; and
- 3.5.8. That saturating level RFI cannot be allowed within the protected area around the SKA Virtual Centre and within the protection corridors as this level of RFI would prevent the SKA radio astronomy receiving facilities from producing usable output and may damage the equipment.
- 3.6. The radio frequency spectrum from 100 MHz to 25.5 GHz will, within the respective declared Karoo Central AAAs, be reserved for SKA radio astronomy observations and must, to the maximum extent possible, be clear of any radio signals that exceed the protection level. Any use of the reserved spectrum for essential radio communication stations located within the Karoo Central AAAs will be considered for exemption (under certain conditions) from the restrictions.
- 3.7. All existing and future radio communication transmissions from fixed base stations located within the Karoo Central AAAs, and where necessary also from mobile and portable radio apparatus, need to be assessed according to prescribed procedures to determine whether the protection requirements will be met. Permits are to be issued for those stations and transmissions that may continue to operate within the Karoo Central AAAs. Permits will include exemptions for frequency spectrum to be used and the permitted transmission characteristics.
- 3.8. Low power (less than 250 mW) short range devices as defined by ICASA in their Radio Frequency Spectrum Regulations will be exempted. These devices should not be used within 50 km of the SKA Virtual Centre. Higher powered short range devices will be subject to assessment and protection measures to be applied.
- 3.9. Essential radio communication services are to be identified and designated as such by the Management Authority. If necessary, such services will be permitted to exceed the protection levels after the following have been determined:
- 3.9.1. That all restrictions imposed by the protection regulations have been taken into account;
- 3.9.2. That alternative technical options for the delivery of those services have been considered, and
- 3.9.3. That RFI and restrictions which will significantly affect the service delivery, have been minimised.

- 3.10. Electricity generation and distribution infrastructure existing when the Regulations are promulgated will be accepted in their current form
- 3.11. New electrical facilities or activities with a power rating of more than 10 kVA and/or within 6 km of the 20 km protected area around the SKA Virtual Centre or an SKA protection corridor, will require a permit subject to a prescribed assessment process first being conducted.
- 3.12. Any RFI or EMI caused by certain electrical or radio communication exempted in the protection regulations will be investigated with the object to eliminate such interference.

#### **4. Summary of the Protection Measures and Procedures in the Draft Regulations**

The draft Regulations that accompany the notice and the regulations schedule on the intention to make regulations to protect the Karoo Central AAAs, consist of four sets of Regulations that addresses four different aspects of the protection scheme. The summaries that follow will briefly describe the contents of each of the draft Regulations but the Regulations themselves must be studied to determine their full measure and meaning.

##### **4.1. Schedule A - Draft Karoo Central AAAs Spectrum Regulations, 2015**

- 4.1.1. Regulation 1 of the draft Regulations contains 23 definitions of terminology used in the Regulations to which certain meanings are ascribed.
- 4.1.2. Regulation 2 states that the regulation applies to the Karoo Central AAAs and that the English version will take precedence.
- 4.1.3. Regulation 3 prescribes that:
- (a) All measures in the Regulations on the use of frequency spectrum within the Karoo Central AAAs will apply to the frequency spectrum from 100 MHz to 25.5 GHz;
  - (b) The use of the specified radio frequency spectrum will be restricted one year after the Regulations came into operation unless an exemption has been granted, a permit issued for its use and RFI is not caused at the SVC;
  - (c) Existing spectrum use up to 200 MHz may continue to be used subject to the acquisition of permits; and
  - (d) One year after the Regulations came into operation, no radio communication may be engaged which causes or is capable of causing RFI at the SVC unless it has been considered by the management authority and a permit has been issued to the person conducting the activity.
- 4.1.4. Regulation 4 prescribes that one year after the Regulations came into operation, the conditions that will apply on the use of radio frequency spectrum or any radio communication, in addition to not causing, or being capable of causing, RFI at the SVC, will include the following:
- (a) Effective radiated power of transmitters is limited to 40 dBm;
  - (b) Saturation level RFI must not be exceeded within the protection corridors as described in Annexure A to the Regulations or within a radius of 20 km from the SVC;

- (c) Prescribed protection levels must not be exceeded at the SVC unless it is for an essential service and a level in excess of the protection level is specified in the permit issued; and
- (d) These conditions also apply to the construction, upgrade or expansion of any fixed radio station for which a permit has been issued but will not apply to radio communications within the frequency spectrum from 100 to 200 MHz that was in use before the Regulations were promulgated.

4.1.5. Regulation 5 prescribes that:

- (a) From the date that the Regulations came into operation, no person may construct, upgrade or expand any fixed radio station within the Karoo Central AAAs which would cause or is capable of causing RFI at the SVC unless a permit in relation thereto has been acquired;
- (b) After one year no person may use any radio station, or apparatus or appliance that causes RFI at the SVC or saturation level RFI within the protection corridors or within 20 km of the SVC; and
- (c) The RFI assessment must firstly be carried out for radio stations or apparatus at fixed locations and secondly also on related mobile or portable stations or apparatus that may cause RFI, including Short Range Devices (SRDs) as defined by Independent Communications Authority of South Africa (ICASA) in their Radio Frequency Spectrum Regulations with an output greater than 250 mW; which may all be geographically restricted to avoid causing RFI. Typical examples of SRD's are internet modem routers with WiFi, DECT cordless phones and low power video surveillance equipment.

4.1.6. Regulation 6 states that:

- (a) The possession of a permit is not required for SRDs with an output of less than 250 mW subject thereto that RFI is not caused at the SVC or saturation level RFI is not caused within the protection corridors or within 20 km of the SVC;
- (b) The exemption for the possession of a permit only applies standard SRDs without any enhancements; and
- (c) In the event that interference is caused at any radio astronomy station by an SRD, the matter will be subjected to the prescribed compliance assessment procedures and methods which will be considered to reduce interference in order to comply with the required protection levels. SRDs should not be used within 50 km of the SVC.

4.1.7. Regulation 7 provides that the location of the SKA Virtual Centre is subject to review and finalisation within 12 months after the promulgation of the Regulations and that the protection corridors are subject to annual review with the intention that they be phased out leaving only the SKA stations to be protected.

4.1.8. Regulation 8 provides that the Minister may extend the one year periods prescribed in Regulations 3, 4 and 5 up to a maximum of 3 years.

4.1.9. Regulation 9 provides that any permitted financial compensation will be subject to the Regulations on Financial Compensation Procedures for central astronomy advantage areas, 2015.

- 4.1.10. Regulation 10 determines offences and penalties applicable.
- 4.1.11. Regulation 11 prescribes that the Regulations will come into operation on a date to be determined by the Minister by notice in the Gazette.
- 4.1.12. Annexure A provides a map of the protection corridors and information on their location.

#### **4.2. Schedule B - Draft Regulations on Administrative Matters for the Central AAAs (Radio Astronomy), 2015**

- 4.2.1. Regulation 1 of the draft Regulations contains 24 definitions of terminology used in the Regulations to which certain meanings are ascribed.
- 4.2.2. Regulation 2 states that the Regulations will apply to any central AAA declared for radio astronomy purposes and that the English version will take precedence.
- 4.2.3. Regulation 3 prescribes a process that must be carried out soon after the Regulations came into operation to determine the frequency spectrum to be exempted from the restriction that it may not be used within the relevant Central AAAs. The process includes consultation with ICASA; consultation with existing radio communication base station owners, registered interested and affected parties, publication of the proposed exempted spectrum and inviting written submissions. After consideration of the submissions, a list of the exempted spectrum must be published in the Government Gazette at least 6 months prior to the restriction on spectrum use coming into operation.
- 4.2.4. Regulation 4 prescribes that:
  - (a) Frequency use and radio transmissions that existed before the Spectrum Regulations came into operation may not continue to do so beyond one year (extendable to a max of 3 years) after the Spectrum Regulations came into operation, and any new frequency use and transmissions may not commence, unless a permit has been issued for that frequency use and those transmissions;
  - (b) Short range devices (SRDs) exempted by ICASA in their Radio Frequency Spectrum Regulations from the requirement to have a radio frequency spectrum licence do not require a permit if their output is less than 250 mW, they comply with the operating conditions prescribed by ICASA, radio frequency interference is not caused and they are used individually and not enhanced. If these conditions are not met, a permit must be applied for and a compliance assessment carried out;
  - (c) A compliance assessment must be carried out by a competent person appointed by the applicant before a permit can be issued; and
  - (d) The application for a permit and compliance assessment for the existing transmissions or for new transmissions must conform to prescribed criteria, specified document formats and must be submitted to the relevant management authority. If spectrum that is not exempted is to be used in the Karoo Central AAAs, a request and motivation for the use of that spectrum must be included in the permit application.
- 4.2.5. Regulation 5 prescribes the evaluation conditions and the processing of permit applications and compliance assessments by the management authority which must conform to specified criteria and prescribed time frames. Provision is made for the

applicant to make additional submissions in the event that an application is not in compliance with the protection requirements, for the resolution of disputes and for the extension of prescribed time frames. The contents of permits to be issued are prescribed. If RFI is caused after a permit has been issued for a compliant transmission, then the assessment process must be reviewed. Application may be made for the amendment of an issued permit which is subject to the processing and assessment criteria prescribed for new applications.

- 4.2.6. Regulation 6 prescribes the technical procedures, criteria, standards and the compliance assessment form to be completed for the determination of RFI levels and compliance with the protection levels.
- 4.2.7. Regulation 7 prescribes the types of radio communication services that may qualify as essential services, and the procedures and conditions for a radio communication service to be classified as an essential service. The determination whether a service is an essential service or not must be done before the compliance assessment for a permit application. An essential service may be allowed to exceed the protection level to a limited extent but will not be allowed to exceed the saturation level RFI.
- 4.2.8. Regulation 8 prescribes the criteria for persons who may carry out the compliance assessment and who must complete and sign the compliance assessment report.
- 4.2.9. Regulation 9 prescribes the criteria and conditions for a permit register to be kept.
- 4.2.10. Regulation 10 determines offences and penalties applicable.
- 4.2.11. Regulation 11 states that the Regulations will come into operation on a date to be determined by the Minister by notice in the Gazette.
- 4.2.12. Annexure A provides a framework for the compliance assessment report and Annexure B a framework for an application for a permit.

#### **4.3. Schedule C - Draft Regulations on Financial Compensation Procedures for central AAAs, 2015**

- 4.3.1. These Regulations give effect to section 23(3)(a) in the AGA Act which provides for financial compensation where a radio communication activity that was lawfully conducted immediately before the promulgation of Spectrum Regulations for the relevant area is restricted or terminated in order to comply with the regulations.
- 4.3.2. Regulation 1 includes eight definitions for certain terminology used in the Regulations.
- 4.3.3. Regulation 2 states that the Regulations will apply to any central AAA declared for radio astronomy purposes and that the English version will take precedence.
- 4.3.4. Regulation 3 prescribes the information required in an application for financial compensation.
- 4.3.5. Regulation 4 prescribes the procedures and criteria for the processing of financial compensation applications by the relevant management authority.
- 4.3.6. Regulation 5 prescribes the criteria and procedures for decisions to be made by the Minister on financial compensation applications.
- 4.3.7. Regulation 6 prescribes the criteria for acceptance of offers for financial compensation, payment procedures and a provision for the review of the Minister's decision in terms of the provisions of PAJA.



4.3.8.Regulation 7 determines offences and penalties applicable.

4.3.9.Regulation 8 states that the Regulations will come into operation on a date to be determined by the Minister by notice in the Gazette.

#### **4.4. Schedule D - Draft Regulations restricting EMI in the Karoo Central AAA1**

4.4.1.Regulation 1 includes 23 definitions for certain terminology used in the Regulations.

4.4.2.Regulation 2 states that the Regulations apply to any electrical infrastructure and electrical equipment located within the Karoo Central AAA1 and that the English version will take precedence. The definition for electrical infrastructure excludes electricity distribution and transmission that existed prior to the publication of these regulations.

4.4.3.Regulation 3 prescribes that:

- (a) Electrical infrastructure and equipment may not be constructed, installed, operated or used within the Karoo Central AAA1 unless a permit has been issued for its use and it complies with the regulations ;
- (b) Electrical infrastructure and equipment may not cause RFI within SKA Infrastructure Territory (Protection corridors as described in Annexure A and a 20 km circular area around SVC) and must be separated by a required distance to avoid RFI;
- (c) Electrical infrastructure with a power rating of less than 10 kVA and with a separation distance of more than 6 km is exempted from the requirement to acquire and possess a permit unless EMI is caused; and
- (d) Electrical infrastructure with a power rating of more than 10 kVA but not more than 100 kVA, located at a distance greater than the distances for various facilities and equipment to be prescribed by the Minister must acquire a permit but is exempt from the requirement to provide EMI assessment reports unless EMI is caused.

4.4.4.Regulation 4 prescribes additional conditions for electricity generation with a capacity of 10 kVA or more when wind turbines are used.

4.4.5.Regulation 5 prescribes additional conditions for the transmission and distribution of electricity in order to comply the prescribed protection.

4.4.6.Regulation 6 prescribes the procedures involved in applications for permits and the information required.

4.4.7.Regulation 7 prescribes how the EMI level is to be determined.

4.4.8.Regulation 8 prescribes criteria and standards to be applied in the determination of the required separation distances to avoid EMI.

4.4.9.Regulation 9 prescribes procedures to attend to and resolve EMI that occurs.

4.4.10. Regulation 10 provides that the location of the SKA Virtual Centre is subject to review and finalisation within 12 months after the promulgation of the Regulations and that the protection corridors are subject to annual review with the intention that they be phased out leaving only the SKA stations to be protected.

4.4.11. Regulation 11 determines offences and penalties applicable.

4.4.12. Regulation 12 states that the Regulations will come into operation on a date determined by the Minister by notice in the Gazette.

4.4.13. Annexure A provides a map of the protection corridors and information on their location.

## 5. Frequently asked questions and answers

### 5.1. Will FM radio and television signals (reception) be affected?

The existing FM radio transmissions will not be restricted and reception will remain as it is. Existing television reception will change across the whole of South Africa as a result of the national project led by the Department of Communications to migrate from terrestrial analogue to terrestrial digital television transmissions. This change will also lead to a greater use of satellite reception in remote communities. The establishment of terrestrial digital television transmissions will need to comply with the protection requirements for the SKA. However, all television and radio services in South Africa are broadcasted via satellite covering the whole country, which will not be affected. Government has a policy in place to subsidise the poorest households for the migration cost to the new digital television transmissions, including satellite reception in the Northern Cape in areas affected by the SKA.

### 5.2. Will cell phone services be affected?

The availability of existing cell phone coverage around the SKA central infrastructure is sparse. Due to the high sensitivity of radio astronomy receivers within the SKA area, existing cell phone coverage still causes unacceptable interference to certain parts of the SKA central infrastructure and will need to be restricted. The circular area within a radius of about 80 km from the SKA Virtual Centre is the area where existing usable cell phone signals may be affected. However, cell phone coverage in the towns such as Carnarvon, Van Wyksvlei and Williston will not be affected. To compensate for the loss of communication within the affected area, and also to support SKA operations, an alternative radio communication system that will not interfere with the SKA is being planned for future deployment. It will be an advanced multi-channel duplex radio communication system that will operate with mobile, handheld and fixed radios. The network will use similar frequencies to the existing low frequency mobile communication network ('Marnet'), which will not be affected by the protection requirements. Additionally, a scheme for low cost satellite VSAT communications is being set up to provide for telephony and internet access.

### 5.3. Will the use of electrical machinery be affected?

The only possibility of an effect on electrical machinery or activities may be those located close to the Central SKA Infrastructure (up to 36 km from centre) or close to a remote SKA station (up to 16 km), depending on topography. Very few interference situations are expected, which can be attended to individually when they are identified, and would not involve any of the towns in the area.

### 5.4. Why the SKA was located in the Karoo and were the existing conditions considered?

The study to locate the SKA in South Africa started in 2003 when a thorough study on the suitability of existing and expected conditions in South Africa was carried out to consider hosting the SKA. In South Africa, the Northern Cape Province is by far the most suitable area with the lowest population and industrial density together with the lowest volume of radio communication and electrical activities. Three areas were considered in the Province, i.e. Kalahari, Karoo and Namaqualand. Karoo turned out to be the better option. Notwithstanding the low economic activity density, the Karoo does offer the basic infrastructure required to support the SKA alongside good atmospheric conditions, radio quietness, geotechnical stability and good security conditions. On a global basis, six countries thought that they may offer acceptable conditions but only Western Australia and

the Northern Cape Province met the requirements but with the latter being the better option.

## 6. Abbreviations

AAAs	Astronomy Advantage Areas
AGA	Astronomy Geographic Advantage
AGA Act	Astronomy Geographic Advantage Act
dBm	decibel above one milliwatt
DECT	Digital Enhanced Cordless Telecommunications
EMI	Electromagnetic Interference
FM	Frequency Modulation
GG	Government Gazette
GHz	Giga (thousand million) Hertz
ICASA	Independent Communications Authority of South Africa
km	kilometre
kVA	kilo Volt-Ampere
MHz	Mega (million) Hertz
RFI	Radio Frequency Interference
SARAS	South African Radio Astronomy Service
SKA	Square Kilometre Array
SRDs	Short Range Devices (as defined by ICASA)
SVC	SKA Virtual Centre
VSAT	Very Small Aperture Terminal (two-way satellite ground station)
WiFi	local area wireless computer networking technology mainly using the 2.4 and 5 GHz frequency bands

## DEPARTEMENT VAN WETENSKAP EN TEGNOLOGIE

NO. 1166

23 NOVEMBER 2015

**KENNISGEWING VAN VOORNEME OM REGULASIES VIR DIE BESKERMING VAN DIE KAROO SENTRALE ASTRONOMIEVOORDEELGEBIEDE TE MAAK KRAGTENS DIE WET OP GEOGRAFIESE ASTRONOMIEVOORDEEL WET 21 VAN 2007.**

Hierdie kennisgewing is van toepassing op die Karoo Sentrale Astronomievoordeelgebiede verklaar vir die doel van radioastronomie en verwante wetenskaplike ondernemings kragtens artikels 9(1) en (2) van die "Astronomy Geographic Advantage Act, 2007 (Act Nr. 21 of 2007)" (hierna hierin na verwys as "die Wet").

Ek, Grace Naledi Mandisa Pandor, Minister van Wetenskap en Tegnologie gee hiermee kennis, kragtens artikels 22, 23, 42 en 50 tot 52 van die Wet, nadat ek die instemming van die Onafhanklike Kommunikasie-owerheid van Suid-Afrika en van die Minister van Finansies (sover hierdie Regulasies finansiële implikasies het) verkry het, van my voorneme om Regulasies te maak, soos dit in die aangehegte Skedules uiteengesit is en hieronder gelys is.

Skedule A: Regulasies om die gebruik van sekere radiofrekwensiespektrum en sekere aktiwiteite in die Karoo Sentrale Astronomievoordeelgebiede verklaar vir radio-astronomie doeleindes te verbied en te beperk.

Skedule B: Regulasies oor administratiewe aangeleenthede vir Sentrale Astronomievoordeelgebiede verklaar vir radio-astronomie doeleindes.

Skedule C: Regulasies oor finansiële vergoedingsprosedures vir Sentrale Astronomievoordeelgebiede.

Skedule D: Regulasies om elektromagnetiese steuring in die Karoo Sentrale Astronomievoordeelgebied 1 te beperk.

Die konsep regulasies is van toepassing op die Karoo Sentrale Astronomievoordeelgebiede verklaar vir die doeleindes van radio-astronomie en verwante wetenskaplike ondernemings kragtens artikels 9(1) en (2) van die Wet. Die pakket dokumente met die regulasies sal in die Noordkaap beskikbaar gestel word.

Belanghebbende en geaffekteerde persone en lede van die publiek word uitgenooi om geskrewe voorleggings of besware teen die regulasies wat die Skedules bevat, binne sestig (60) dae na hierdie publikasie, te maak aan:

Mnr. Mere Kgampe	OF	Dept. van Wetenskap en Tegnologie
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Navrae kan telefonies gemaak word by 012 843 6644

Aandag word gevestig op die aangeleenthede wat hieronder beskryf word –

- Die geskrewe en mondelinge voorleggings wat gedurende die openbare raadplegingsproses vir die verklaring van die gebied gemaak is, sal in ag geneem word saam met enige nuwe voorleggings wat na aanleiding van hierdie kennisgewing gemaak mag word vir sover dit verband hou met aspekte wat by die konsepregulasies ingesluit is. 'n Persoon wat alreeds 'n geskrewe en/of 'n mondelinge voorlegging gemaak het, mag nog voorleggings maak.
- Neem asseblief kennis dat enige geskrewe voorleggings wat na die sluitingsdatum ontvang word, nie in ag geneem hoef te word nie.
- Enige persoon wat 'n geskrewe voorlegging maak en ook 'n mondelinge voorlegging by 'n openbare verhoor wil maak, moet dit aandui in hulle geskrewe voorlegging.
- Aandag word gevestig op Kennisgewing 649 van 2010 in Staatskoerant Nr 33328 op 2 Julie 2010 gepubliseer waarin belanghebbende en geaffekteerde persone in die voorgestelde kern, sentrale en gekoördineerde astronomievoordeelareas aangedui in die skedule by daardie kennisgewing, uitgenooi is om hulle besonderhede by die Departement te registreer. Enige persoon wat nog nie geregistreer het nie, en dit wil doen, mag die Departement kontak met 'n versoek om geregistreer te word. Kontak besonderhede van geregistreerde persone wat verander het, behoort reggemaak te word.



MEV GNM PANDOR, LP

MINISTER VAN WETENSKAP EN TEGNOLOGIE

**SKEDULE A****REGULASIES OM DIE GEBRUIK VAN SEKERE  
RADIOFREKWENSIESPEKTRUM EN SEKERE AKTIWITEITE IN DIE  
KAROO SENTRALE ASTRONOMIEVOORDEELGEBIEDE VERKLAAR VIR  
RADIOASTRONOMIE DOELEINDES TE VERBIED EN TE BEPERK.****INDELING VAN DIE REGULASIES**

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stasies binne die Karoo Sentrale Astronomievoordeelgebied 1  
insluit

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## 1. Woordomskrywings

In hierdie regulasies, tensy dit uit die samehang anders blyk, beteken–

**"beskermingsgange"** stroke land, naasliggend aan 'n radio astronomiese spiraalarm konfigurasie, waar binne SKA-stasies in die Karoo Sentrale Astronomievoordeelgebied 1 geplaas sal word, met 'n wydte van 5 km aan weerskante van elke spiraalarm soos uitgebeeld en omskryf in Bylae A;

**"dBm"** die radiofrekwensie kragvlak uitgedruk in desibels met verwysing na een milliwatt;

**"effektiewe uitgestraalde krag"** die produk van die radiofrekwensiekrag aan die antenna gelewer en die antennewins, relatief tot 'n half golflengte dipool, in die betrokke rigting;

**"Karoo kernastronomievoordeelgebied"** die Karoo Kernastronomievoordeelgebied verklaar op 20 Augustus 2010 in Kennisgewing No. 723 in Staatskoerant No. 33462;

**"Karoo sentrale astronomievoordeelgebiede"** die Karoo Sentrale Astronomievoordeelgebiede verklaar op 12 Maart 2014 in Kennisgewing No. 198 in Staatskoerant No. 37434;

**"lisensie vrygestelde operateur"** 'n persoon wat 'n diens verskaf ingevolge die vrystelling deur OKOSA toegestaan kragtens artikel 6 van die Wet op Elektroniese Kommunikasie of radiofrekwensiespektrum gebruik wat vrygestel is van die vereiste vir 'n radiofrekwensiespektrum lisensie in gevolge artikel 31(6) van die Wet op Elektroniese Kommunikasie en regulasies daarkragtens gemaak;

**"lisensiehouer"** soos omskryf in die Wet op Elektroniese Kommunikasie, 2005 (Wet No. 36 van 2005) 'n persoon aan wie 'n lisensie uitgereik is om dienste te verskaf kragtens Hoofstuk 3 of die radiofrekwensiespektrum gebruik kragtens Hoofstuk 5 van die Wet op Elektroniese Kommunikasie, 2005;

**"medebestuursentiteit"** 'n staatsorgaan, 'n plaaslike gemeenskap, 'n individu of 'n ander party met wie die betrokke bestuursgesag 'n medebestuursooreenkoms aangeaan het kragtens artikel 18 van die Wet;

**"noodsaaklike diens"** 'n radiokommunikasiediens gebruik in 'n sentrale astronomievoordeelgebied wat as 'n noodsaaklike diens geklassifiseer is kragtens die kriteria en prosedures voorgeskryf in regulasie 7 van die Regulasies oor Administratiewe Aangeleenthede vir die sentrale astronomievoordeelgebiede verklaar vir radio-astronomie, 2015;

**"radio-apparaat"** 'n elektroniese kommunikasie fasiliteit wat in staat is om enige sein deur middel van radio te ontvang of te versend;

**"Radio-astronomie Beskermingsvlakke Regulasies"** die regulasies gemaak om die beskermingsvlakke vir radio-astronomie waarnemings in die gebiede wat as astronomievoordeelgebiede vir radioastronomie doeleindes verklaar is, te bepaal en wat op 10 Februarie 2012 in Kennisgewing No. R.90 in Staatskoerant No. 35007 gepubliseer is;

**"radioastronomie stasie"** een of meer ontvangstelsels by 'n plek, insluitend die bybehorende toerusting, vir die ontvangs van radiogolwe van kosmiese oorsprong vir die doeleindes van radioastronomie;

**"Radiofrekwensiespektrum Regulasies 2015"** die regulasies deur OKOSA gemaak wat op 30 Maart 2015 in Kennisgewing No. 279 van 2015, in Staatskoerant No. 38641 gepubliseer is;

**"radiofrekwensiesteuring"** die nadelige effek van radioseine ontvang wat die beskermingsvlakke in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf vir meer as 5% van die tyd oor 'n tydperk van 24 uur oorskry;

**"radiokommunikasie"** die uitstraling, uitsending of ontvangs van inligting, insluitend, sonder beperking, stem, klank, data, teks, video, animasie, visuele beelde, bewegende beelde en prente, seine of 'n

kombinasie daarvan deurmiddel van radio of ander elektromagnetiese golwe sonder die hulp van 'n tasbare geleier;

**"radio stasie"** soos omskryf in die Wet op Elektroniese Kommunikasie, 2005, een of meer senders of ontvangers of 'n kombinasie van senders en ontvangers, insluitend die bybehorende toerusting, wat op een plek nodig is vir die uitvoering van elektroniese kommunikasie, 'n uitsaaidiens of enige elektroniese kommunikasie wat deur OKOSA gemagtig is, en enige radio-apparaat wat op 'n spesifieke geografiese ligging gebruik word,

**"Regulasies oor Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radio-astronomie, 2015"** die regulasies soos gepubliseer op xxxx in Kennisgewing No. xxx van xxx in Staatskoerant No. xxx;

**"Regulasies oor Finansiële Kompensasie Prosedures vir sentrale astronomievoordeelgebiede, 2015"** die regulasies soos gepubliseer op xxxx in Kennisgewing No. xxx in Staatskoerant No. xxx;

**"SKA"** die Square Kilometre Array-radioteleskoop bestaande uit 'n opset van radio-astronomie stasies om in die Republiek van Suid-Afrika en in deelnemende Afrika-lande geplaas te word volgens die besluit van die SKA-organisasie, 'n private maatskappy (beperk deur garansie) opgeneem in die Verenigde Koninkryk;

**"SKA Virtuele Middelpunt"** die geografiese punt by die geografiese koördinate 30.71292 grade Suid en 21.44380 grade Oos wat verband hou met die SKA-opstelling van radioastronomie stasies binne die Karoo Astronomievoordeelgebiede en wat as die middelste Waardebepalings Verwysingspunt voorgeskryf is vir die toepassing van beskermingsvlakke soos in die Radioastronomie Beskermingsvlakke Regulasies bepaal;

**"versadigingsvlak"** 'n kragvlak van (minus) -100 dBm, of hoër, ontvang vir 'n radiofrekwensie steuringsein waarby die versadigingsverskynsel

voorkom by 'n radio-astronomie stasie of by 'n gespesifiseerde waardebeplating verwysingspunt of -punte of binne 'n bepaalde gebied;

**“waardebeplating verwysingspunt”** die SKA Virtuele Middelpunt of ander geografiese ligging of punt gedefinieer in terme van hierdie regulasies, wat gebruik word as die waardebeplatingpunt vir die toepassing van die toepaslike beskermingsmaatreëls soos voorgeskryf in hierdie regulasies; en

**"Wet"** die Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007).

## 2. Toepassing van die regulasies

- (1) Die regulasies is van toepassing op die betrokke Karoo Sentrale Astronomievoordeelgebiede wat verband hou met die frekwensiespektrum in die Kennisgewing gespesifiseer waarin die Karoo Sentrale Astronomievoordeelgebiede verklaar is.
- (2) Indien daar verskille tussen die Engelse en Afrikaanse weergawes van hierdie regulasies is, sal die Engelse weergawe voorrang geniet.

## 3. Verbod en Beperkinge op die gebruik van radiofrekwensiespektrum vanaf 100 MHz tot 25.5 GHz

- (1) Een (1) jaar nadat hierdie regulasies in werking gestel is, mag geen lisensiehouer of lisensie-vrygestelde operateur of enige ander persoon die radiofrekwensiespektrum vanaf 100 MHz tot 25.5 GHz vir uitsendings binne die Karoo Sentrale Astronomievoordeelgebiede gebruik nie, tensy –
  - (a) die gebruik benodig word vir die doeleindes van radioastronomie en verwante wetenskaplike ondernemings as sodanig verklaar kragtens artikel 28(1) van die Wet; of
  - (b) die gebruik van die spesifieke spektrum binne die beperkte spektrum van die verbod vrygestel is kragtens die betrokke voorskrifte in die Regulasies op Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radioastronomie, 2015; of
  - (c) die spektrumgebruik ingevolge regulasie 6 van hierdie regulasies vrygestel is; en
  - (d) in die geval van paragraaf 3(1)(b), dat die betrokke bestuursgesag 'n permit kragtens regulasie 4 van die Regulasies op Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radioastronomie, 2015, aan daardie persoon uitgereik het in verband met die gebruik van daardie spektrum.
- (2) (a) Die verbod in subregulasie 3(1) is nie van toepassing nie op die gebruik van radiofrekwensiespektrum vanaf 100 MHz tot 200MHz wat wettiglik in gebruik was onmiddellik voor die uitvaardiging van hierdie regulasies;

- (b) Nogtans, mag enige lisensiehouer of vrygestelde operateur wat enige van die radiofrekwensiespektrum waarna in 3(2)(a) verwys is en dit binne die Karoo Sentrale Astronomievoordeelgebiede gebruik, dit net doen indien die betrokke bestuursgesag 'n permit kragtens sub-regulasie 3(1)(d) aan daardie persoon uitgereik het met betrekking tot die gebruik van daardie spektrum.
- (3) Een (1) jaar vanaf die datum waarop hierdie regulasies in werking tree, mag geen televisie uitsaaidienslisensiehouer of uitsaaiseinverspreidingslisensiehouer 'n televisie-uitsaaidiens in analogoos formaat oor 'n terrestriële sendstasie binne die Karoo Sentrale Astronomievoordeelgebiede geleë, uitsend nie.
- (4) Een (1) jaar vanaf die datum waarop hierdie regulasies in werking tree, mag geen lisensiehouer of lisensie vrygestelde operateur of enige persoon in enige radiokommunikasie met die gebruik van die radiofrekwensiespektrum van 100 MHz te 25,5 GHz binne die Karoo Sentrale Astronomievoordeelgebiede betrokke wees nie, tensy -
- (a) die aktiwiteit nodig is vir die doeleindes van radioastronomie en verwante wetenskaplike ondernemings as sodanig verklaar kragtens artikel 28(1) van die Wet;
- (b) die aktiwiteit vrygestel is van die besit van 'n permit in terme van regulasie 6; of
- (c) moontlike radiofrekwensiesteuring in oorweging geneem is en gehanteer is deur die betrokke bestuursgesag of medebestuursentiteit tydens die oorweging van die lisensiehouer of lisensie-vrygestelde operateur se aansoek vir 'n permit kragtens die Regulasies op Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radioastronomie, 2015.
- (5) Enige beoogde toepassing van subregulasie (4) moet voldoen aan regulasie 4 van hierdie regulasies.

#### 4. Voorwaardes vir die gebruik van radiofrekwensiespektrum vanaf 100 MHz tot 25.5 GHz

- (1) Een (1) jaar nadat hierdie regulasies in werking gestel is, mag geen lisensiehouer of lisensie-vrygestelde operateur of enige persoon die radiofrekwensiespektrum vanaf 100 MHz tot 25.5 GHz gebruik en betrokke wees in radiokommunikasie binne die Karoo Sentrale Astronomievoordeelgebiede nie, tensy die gebruik en uitsendingsaktiwiteite aan die volgende voorwaardes voldoen –
- (a) effektiewe uitgestraalde krag oorskry nie 40 dBm nie;
  - (b) die versadigingsvlak word nie binne die beskermingsgange in die Karoo Sentrale Astronomievoordeelgebiede, soos in Bylae A omskryf, of binne 'n radius van 20km vanaf die SKA Virtuele Middelpunt, oorskry nie; en
  - (c) die beskermingsvlakke in die Radioastronomie Beskermingsvlakke Regulasies bepaal, soos by die SKA Virtuele Middelpunt toegepas, word nie oorskry nie, tensy die gebruik of aktiwiteit vir 'n noodsaaklike diens is waarvoor 'n spesifieke steuringsvlak groter as die voorgeskrewe beskermingsvlak gespesifiseer is in die permit uitgereik kragtens regulasie 4 in die Regulasies op Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radioastronomie, 2015, aan die persoon wat die spektrum gebruik of die aktiwiteit uitvoer.
- (2) Sub-regulasie 4(1) is ook van toepassing op die oprigting, opgradering, uitbreiding of gebruik van enige radiostasie soos beoog in regulasie 5 en volgens 'n permit wat in die verband uitgereik is.
- (3) Sub-regulasie 4(1), behalwe vir sub-regulasie 4(1)(b) is nie van toepassing op enige lisensiehouer of lisensie-vrygestelde operateur wat onmiddellik voor die uitvaardiging van hierdie regulasies toegelaat was om wettiglik die radiofrekwensie spektrum tussen 100 MHz en 200 MHz te gebruik nie.

## **5. Voorwaardes op konstruksie, opgradering, uitbreiding of gebruik van radiostasies of radio-apparaat**

- (1) Vanaf die datum wanneer hierdie regulasies in werking tree, en tensy dit nodig is vir die doeleindes van radio-astronomie en verwante wetenskaplike ondernemings, mag geen lisensiehouer of lisensie vrygestelde operateur of enige ander persoon enige radiostasie in die Karoo Sentrale Astronomievoordeelgebiede bou, opgradeer of uitbrei nie wat die radiofrekwensiespektrum vanaf 100 MHz tot 25,5 GHz gebruik nie, tensy die betrokke persoon vir 'n permit aansoek gedoen het, en dit toegestaan is vir sodanige opgradering of uitbreiding deur die betrokke bestuursgesag kragtens regulasie 4 in die Regulasies op Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radioastronomie, 2015.
- (2) Een (1) jaar vanaf die datum waarop hierdie regulasies in werking tree, mag geen lisensiehouer of lisensie vrygestelde operateur of enige persoon enige radiostasie of enige radioapparaat of enige toestel binne die Karoo Sentrale Astronomievoordeelgebiede gebruik nie wat radiofrekwensiesteuring veroorsaak by die SKA Virtuele Middelpunt of versadigingsvlak radiofrekwensiesteuring binne die beskermingsgange in die Karoo Sentrale Astronomievoordeelgebiede, soos omskryf in Bylae A, of binne 20 km vanaf die SKA Virtuele Middelpunt veroorsaak.
- (3) Voldoeningsbepaling moet deur die lisensiehouer of lisensie vrygestelde operateur uitgevoer word voor die uitreiking van enige permit kragtens regulasie 4 in die Regulasies op Administratiewe Aangeleenthede vir sentrale astronomievoordeelgebiede verklaar vir radioastronomie, 2015, en moet die volgende aspekte insluit tot die mate waartoe hulle van toepassing is –
  - (a) Die bepaling van die radiofrekwensiesteuringsvlak by die SKA Virtuele Middelpunt en die versadigingsvlak radiofrekwensiesteuring binne die beskermingsgange in die Karoo Sentrale Astronomievoordeelgebiede, soos omskryf in Bylae A, of binne 20 km vanaf die SKA Virtuele Middelpunt;



- (b) Die bepaling van radiofrekwensiesteuring na verwys in subregulasie 5(3)(a) moet eerstens op die basis (vaste) radiostasies of radio-apparaat of toestelle by 'n vaste geografiese ligging geplaas, uitgevoer word;
  - (c) Indien radiofrekwensiesteuring of versadigingsvlak steuring ook veroorsaak mag word deur mobiele of draagbare radiostasies of radio-apparaat wat in verband met die basis stasie of radio-apparaat by 'n vaste ligging gebruik word, moet die bepaling van radiofrekwensiesteuringsvlakke ook met betrekking tot die mobiele of draagbare radio-apparaat uitgevoer word; en
  - (d) Die bepaling en waardebeplanning van radiofrekwensiesteuring mag ook van toepassing wees op enige radio-apparaat waarvoor radiofrekwensiespektrum lisensie vrystellings deur OKOSA voorgeskryf is in Deel III, regulasie (4) van die Radiofrekwensiespektrum Regulasies 2015 wat 'n uitgestraalde kragvlak van groter as 250 milliwatt het.
- (4) Bykomende voorwaardes, wat beperkinge op die geografiese area waarin die mobiele of draagbare radiostasies gebruik mag word, of enige ander metode wat die steuring tot die beskermingsvlak sal beperk, mag insluit, sal voorgeskryf word vir enige permit wat reeds uitgereik is, in die geval dat –
- (a) Mobiele of draagbare radiostasies wat saam met 'n basis stasie waarvoor 'n permit reeds uitgereik is, gebruik word, radiofrekwensiesteuring by die SKA Virtuele Middelpunt veroorsaak; of
  - (b) Daar versadigingsvlak radiofrekwensiesteuring bestaan binne die beskermingsgange in die Karoo Sentrale Astronomievoordeelgebiede, soos omskryf in Bylae A, of binne 20 km vanaf die SKA Virtuele Middelpunt.

## 6. Vrygestelde radioapparaat

- (1) Radio apparaat, waarvoor radiofrekwensiespektrumlisensie vrystellings deur OKOSA in Deel III, regulasie (4) van die Radiofrekwensiespektrum Regulasies 2015 voorgeskryf is, word

- vrygestel van die vereiste vir die besit van 'n permit in hierdie regulasies voorgeskryf is, onderworpe daaraan dat –
- (a) Radioapparaat wat 'n uitgestraalde kragvlak van meer as 250 milliwatt produseer, van die vrystelling uitgesluit is;
  - (b) Radiofrekwensiesteuring van meer as die relevante beskermingsvlak soos in die Radio-Astronomie Beskermingsvlakke Regulasies voorgeskryf, nie by die SKA Virtuele Middelpunt of versadigingsvlak steuring nie binne die beskermingsgange of binne 'n 20 km radius vanaf die SKA Virtuele Middelpunt veroorsaak word nie; en
  - (c) Die vrygestelde radio-apparaat word slegs gebruik soos deur OKOSA voorgeskryf en nie wanneer hulle transmissie eienskappe versterk word of verskeie eenhede in netwerke gekoppel word nie.
- (2) Indien enige van die radio-apparaat in sub-regulasie 6 (1) oorweeg, radiofrekwensiesteuring veroorsaak, sal die gebruik van sulke apparaat onderhewig wees aan die toepassing van beskermingsmaatreëls deurdat–
- (a) die Minister kern astronomievoordeelgebiede verklaar waarbinne al die vrygestelde radioapparaat nie gebruik mag word nie; of
  - (b) die betrokke bestuursowerheid voorwaardes in 'n permit bepaal vir die gebruik van daardie kategorie van radio-apparaat.
- (3) Die toestaan of wysiging van 'n permit, in subregulasie 6(2)(b) beoog, sal onderworpe wees aan die voorwaardes en kriteria voorgeskryf in die Regulasies oor Administratiewe Aangeleenthede, vir sentrale astronomievoordeelgebiede verklaar vir radio-astronomie, 2015.
- (4) Die radioapparaat waarvoor vrystellings vir radiofrekwensiespektrumlisensies deur OKOSA voorgeskryf is in Deel III, regulasie (4) van die Radiofrekwensiespektrum Regulasies 2015 behoort nie in werking te wees of gebruik te word binne 50 km van die SKA Virtuele Middelpunt nie.

**7. Ligging van die SKA Virtuele Middelpunt en beskermingsgange**

(1) Die ligging van die SKA Virtuele Middelpunt is onderhewig aan hersiening en finalisering binne 12 maande van die uitvaardiging van hierdie regulasies.

(2) Die beskermingsgange in die Karoo Sentrale Astronomievoordeelgebied 1 is onderhewig aan jaarlikse hersiening in ooreenstemming met vordering in die ontwikkeling van die SKA met die doel om die gange uit te faseer en om slegs die beskerming van die radio-astronomie stasies binne die gange geleë, te vereis.

**8. Finansiële vergoeding**

Enige finansiële vergoeding wat beoog word kragtens artikel 23(3)(a) van die Wet in verband met 'n beperking op radiokommunikasie uitsendings wat wettig uitgevoer is binne die Karoo Sentrale Astronomievoordeelgebiede voordat hierdie regulasies uitgevaardig is, sal onderworpe wees aan die Regulasies op Finansiële Kompensasie Procedures 2015 vir sentrale astronomievoordeelgebiede, 2015.

**9. Misdrywe en strawwe**

Enige persoon wat hierdie regulasies oortree, is skuldig aan 'n misdryf en by skuldigbevinding strafbaar met 'n boete van hoogstens R1 000 000 (een miljoen rand) of gevangenisstraf of beide 'n boete en gevangenisstraf.

**10. Kort titel en inwerkingtreding**

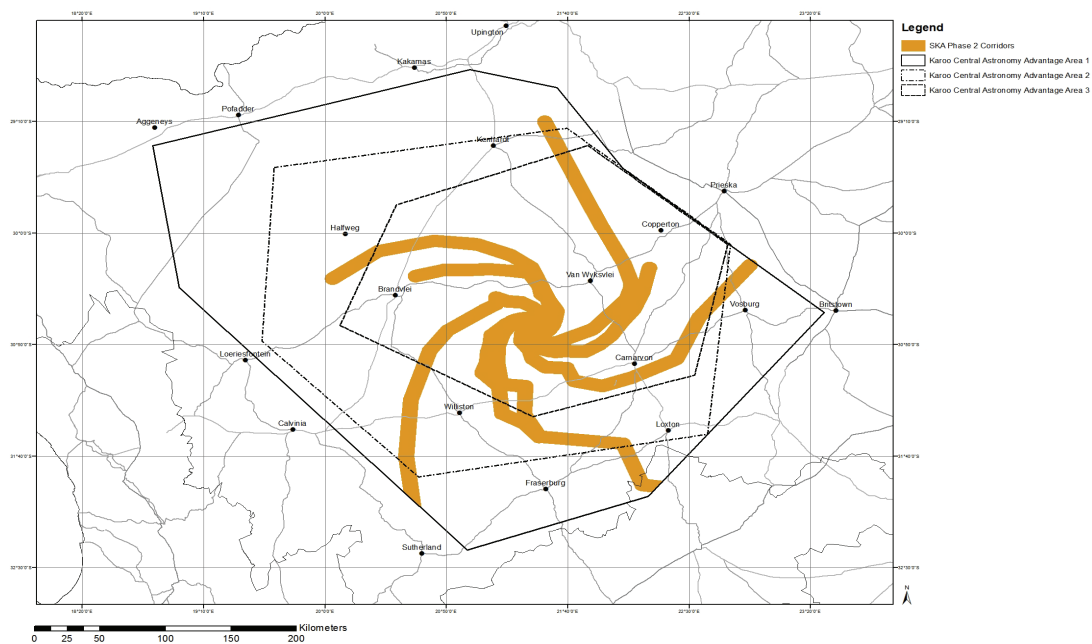
Hierdie regulasies heet die Karoo Sentrale Astronomievoordeelgebiede Spektrum Regulasies, 2015 wat op 'n datum in werking sal tree om deur die Minister bepaal te word met 'n kennisgewing in die Staatskoerant.

## BYLAE A

### Kaart van die beskermingsgange wat die SKA radio-astronomie-stasies binne die Karoo Sentrale Astronomievoordeelgebied 1 insluit

Die kaart hieronder beeld die beskermingsgange uit wat nodig is vir ongeveer 54 SKA radio-astronomie stasies binne die Karoo Sentrale Astronomievoordeelgebied 1 geleë, maar wat buite die 20 km radius rondom die SKA Virtuele Middelpunt val. Die beskermingsgange word benodig vir die ontwikkelingsproses van die SKA-opset met verloop van tyd.

'n Kleiner skaal weergawe van die kaart hieronder getoon en / of 'n GIS-vorm lêer is op versoek beskikbaar vanaf die bestuursgesag of mede-bestuursentiteit. Die buite grense van die gange is op 'n afstand van 5 km aan weerskante van die spiraal arms waarlangs die SKA-stasies geplaas sal word.



**SKEDULE B****REGULASIES OOR ADMINISTRATIEWE AANGELEENTHEDE VIR SENTRALE  
ASTRONOMIEVOORDEELGEBIEDE VERKLAAR VIR RADIOASTRONOMIE  
DOELEINDES****INDELING VAN DIE REGULASIES**

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## 1. Woordomsrywings

In hierdie regulasies, tensy dit uit die samehang anders blyk, beteken—

**“beperkte radiofrekwensiespektrum”** die radiofrekwensiespektrum waarvan die gebruik deur die Minister kragtens artikel 22 van die Wet verbied of beperk is;

**“bevoegde persoon”** ’n persoon wat aan elkeen van die vereistes voldoen wat in regulasie 8 van hierdie regulasies voorgeskryf is;

**“dBm”** die radiofrekwensie kragpeil uitgedruk in desibels met verwysing na een milliwatt;

**“effektiewe uitgestraalde krag”** die produk van die krag aan die antenna gelewer en die antennewins, relatief tot ’n half golflengte dipool, in die betrokke rigting;

**“geaffekteerde persoon”** ’n persoon wat –

- (a) wettiglik ’n aktiwiteit in ’n sentrale astronomievoordeelgebied uitgevoer het voor die beperking van daardie aktiwiteit deur middel van regulasies wat deur die Minister kragtens artikel 23 van die Wet gemaak is; en
- (b) kragtens artikel 23(3)(a) van die Wet deur die Minister vereis word om daardie aktiwiteit te staak of om aan voorwaardes wat kragtens artikel 23(3)(b) van die Wet voorgeskryf is, te voldoen;

**“ITU”** die International Telecommunication Union;

**“lisensie vrygestelde operateur”** ’n persoon wat ’n diens verskaf ingevolge die vrystelling deur OKOSA toegestaan kragtens artikel 6 van die Wet op Elektroniese Kommunikasie, 2005 of radiofrekwensiespektrum gebruik wat vrygestel is van die vereiste vir ’n radiofrekwensiespektrum lisensie in gevolge artikel 31(6) van die Wet op Elektroniese Kommunikasie, 2005 en regulasies daarkragtens gemaak;

**“lisensiehouer”** soos omskryf in die Wet op Elektroniese Kommunikasie, 2005 (Wet No. 36 van 2005) ’n persoon aan wie ’n lisensie uitgereik is om dienste te

verskaf kragtens Hoofstuk 3 of die radiofrekwensiespektrum te gebruik kragtens Hoofstuk 5 van die Wet op Elektroniese Kommunikasie, 2005;

**"medebestuursentiteit"** 'n staatsorgaan, 'n plaaslike gemeenskap, 'n individu of 'n ander party met wie die bestuursgesag 'n medebestuursooreenkoms aangegaan het kragtens artikel 18 van die Wet;

**"noodsaaklike diens"** 'n radiokommunikasiediens in 'n sentrale astronomievoordeelgebied gebruik wat as 'n noodsaaklike diens geklassifiseer is kragtens die kriteria en prosedures in regulasie 7 van hierdie regulasies voorgeskryf;

**"Radio-astronomie Beskermingsvlakke Regulasies"** die regulasies gemaak om die radio-astronomie waarneming beskermingsvlakke te definieer vir die astronomievoordeelgebiede wat vir die doel van radio-astronomie verklaar is, en op 10 Februarie 2012 in Kennisgewing No. R.90 in Staatskoerant No. 35007 gepubliseer is;

**"radio-astronomie stasie"** een of meer ontvangstelsels by 'n plek, insluitend die bybehorende toerusting, vir die ontvangs van radiogolwe van kosmiese oorsprong vir die doeleindes van radio-astronomie;

**"radio-apparaat"** 'n elektroniese kommunikasiefasiliteit wat in staat is om enige sein per radio uit te send of te ontvang;

**"radiofrekwensiesteuring"** die nadelige impak van radioseine wat ontvang word en die beskermingsvlakke in die Radio-astronomie Beskermingsvlakke Regulasies, 2012 voorgeskryf, oorskry vir meer as 5% van die tyd oor 'n tydperk van 24 uur;

**"Radiofrekwensiespektrum Regulasies"** die regulasies wat deur OKOSA gemaak soos gepubliseer op 31 Maart 2011 in Kennisgewing 184 van 2011, in Staatskoerant No. 34172;

**"radiokommunikasie"** die uitstraling, uitsending of ontvangs van inligting, insluitend sonder beperking, stem, klank, data, teks, video, animasie, visuele beelde, bewegende beelde en prente, seine of 'n kombinasie daarvan

deurmiddel van radio of ander elektromagnetiese golwe sonder die hulp van 'n tasbare geleier;

**"radiokommunikasiediens"** enige diens voorsien aan die publiek, dele van die publiek, die Staat, of intekenaars tot so 'n diens, wat in sy geheel of hoofsaaklik bestaan uit oordrag met enige soort radiokommunikasie oor 'n radiokommunikasienetwerk;

**"radiokommunikasie netwerkdiens lisensiehouer"** 'n persoon aan wie OKOSA 'n elektroniese kommunikasienetwerkdiens lisensie kragtens Hoofstuk 3 van die Wet op Elektroniese Kommunikasie uitgereik het;

**"radio stasie"** soos in die Wet op Elektroniese Kommunikasie, 2005 gedefinieer, een of meer senders of ontvangers of 'n kombinasie van senders en ontvangers, insluitend die bybehorende toerusting, wat op een plek nodig is om 'n elektroniese kommunikasiediens, 'n uitsaaidiens of enige elektroniese kommunikasie wat deur OKOSA gemagtig, oor te dra, en enige radio-apparaat wat by 'n spesifieke geografiese ligging gebruik word;

**"Spektrum Regulasies"** die regulasies om die gebruik van sekere radiofrekwensiespektrum kragtens artikel 22 van die Wet en sekere verklaarde aktiwiteite kragtens artikel 23 van die Wet binne die betrokke sentrale astronomievoordeelgebiede vir radio-astronomie doeleindes verklaar, te verbied of te beperk.

**"versadigingsvlak"** 'n kragvlak van (minus) -100 dBm of hoër vir 'n radiofrekwensie steuringsein ontvang waarby die versadigingsverskynsel voorkom by 'n radio-astronomie stasie of by 'n gespesifiseerde verwysingspunt of -punte of binne 'n gespesifiseerde area;

**"voldoeningsbepaling":**

(a) die vergelyking van radiofrekwensie steuringsvlakke by die betrokke waardebehalingspunte volgens die beskermingsmaatreëls voorgeskryf in die betrokke Spektrum Regulasies met die toepaslike beskermingsvlakke bepaal



in ooreenstemming met die Radio-astronomie Beskermingsvlakke Regulasies;

- (b) die vergelyking van radiofrekwensie steuringsvlakke by die toepaslike waardebepalingspunte volgens die beskermingsmaatreëls voorgeskryf in die toepaslike Spektrum Regulasies met die versadigingsvlak; en
- (c) die bepaling of daar voldoening is aan alle toepaslike regulasies kragtens die Wet gemaak;

om uitgevoer te word deur die bevoegde persoon aangewys deur die aansoeker vir 'n permit kragtens regulasie 8 van hierdie regulasies;

**“waardebepalingspunt”** die geografiese ligging, of enige betrokke punt binne 'n area, wat in die betrokke sentrale astronomievoordeelgebiede Spektrum Regulasies gedefinieer is vir gebruik as die waardebepalingspunt vir die toepaslike beskermingsmaatreëls voorgeskryf in die betrokke Spektrum Regulasies; en

**“Wet”** die Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007).

## **2. Toepassing van die regulasies**

- (1) Die regulasies is van toepassing op enige sentrale astronomievoordeelgebiede wat vir die doeleindes van radio-astronomie verklaar is soos beoog in artikel 9 van die Wet.
- (2) Indien daar verskille tussen die Engelse en Afrikaanse weergawes van hierdie regulasies is, sal die Engelse weergawe voorrang geniet.

## **3. Vrystelling van verbod of beperkings op gebruik van radiofrekwensiespektrum**

- (1) Om vas te stel watter radiofrekwensiespektrum vrygestel kan word van 'n verbod of beperking op die gebruik daarvan in die betrokke Spektrum Regulasies opgelê vir uitsendings binne 'n sentrale astronomievoordeelgebied geleë, moet die betrokke bestuursowerheid of medebestuursentiteit in die Staatskoerant kennis gee, so gou as wat redelikerwys prakties is nadat die Spektrum Regulasies vir daardie gebied afgekondig is, van 'n lys van die radiofrekwensiespektrum wat oorweeg moet word vir vrystelling van 'n verbod of beperkings op die gebruik daarvan vir uitsendings binne daardie gebied geleë.
- (2) Die kennisgewing in sub-regulasie (1) beoog -
  - (a) mag ook die samevoeging voorstel van radiofrekwensiespektrum wat reeds binne daardie sentrale astronomievoordeelgebied in gebruik is; en
  - (b) moet belanghebbende en geaffekteerde persone uitnoui om geskrewe voorleggings na aanleiding van die kennisgewing in te dien, binne sestig (60) dae vanaf die datum van die kennisgewing.
- (3) Voor die publikasie van die kennisgewing in die Staatskoerant, in sub-regulasie (1) beoog, moet die betrokke bestuursgesag of medebestuursentiteit-
  - (a) OKOSA raadpleeg oor die radiofrekwensiespektrum wat vir vrystelling oorweeg moet word; en

- (b) volgens die metode in artikel 22(4) van die Wet beoog, al die bestaande lisensiehouers en lisensie vrygestelde operateurs wat radiostasies binne daardie sentrale astronomievoordeelgebied bedryf en wat in die permanente register van belanghebbende en geaffekteerde persone vir daardie gebied gelys is, in kennis stel van die kennisgewing wat in die Staatskoerant gepubliseer sal word.
- (4) Die betrokke bestuursgesag of medebestuursentiteit moet die voorleggings ontvang, oorweeg en mag bykomende inligting van 'n persoon wat die geskrewe voorlegging gemaak het, aanvra.
- (5) Na oorweging van die voorleggings en enige bykomende inligting wat ontvang is, moet die betrokke bestuursgesag of medebestuursentiteit aanbevelings aan die Minister maak betreffende die radiofrekwensiespektrum om vrygestel te word.
- (6) Die Minister mag die lys van vrygestelde radiofrekwensiespektrum met 'n kennisgewing in die Staatskoerant publiseer ten minste ses maande voor die datum waarop die verbod of beperkings op die gebruik van die spektrum binne daardie gebied in werking sal tree.
- (7) Die betrokke bestuursgesag of medebestuursentiteit mag, in reaksie op 'n versoek van OKOSA, die vrystelling van bykomende radiofrekwensiespektrum vir gebruik binne 'n sentrale astronomievoordeelgebied oorweeg.

#### **4. Vereiste vir 'n permit en voldoeningsbepaling**

- (1) 'n Lisensiehouer of 'n lisensie vrygestelde operateur of enige persoon wat seine vanaf 'n radiostasie binne 'n sentrale astronomievoordeelgebied met die gebruik van radiofrekwensiespektrum binne daardie gebied uitgesend het, onmiddellik voordat die Spektrum Regulasies vir daardie gebied afgekondig is, mag slegs vir 'n tydperk van een jaar aanhou om daardie seine uit te send nadat daardie regulasies in werking getree het, tensy die betrokke bestuursgesag 'n permit vir die uitsending van daardie seine aan daardie lisensiehouer of operateur uitgereik het vir die uitsending van daardie seine na die eenjaar tydperk.

- (2) Die Minister mag, met 'n kennisgewing in die Staatskoerant, die eenjaar tydperk in subregulasies 4 (1) beoog, tot 'n maksimum tydperk van drie jaar verleng.
- (3) 'n Lisensiehouer of 'n lisensie vrygestelde operateur of enige persoon mag nie, nadat die Spektrum Regulasies vir 'n sentrale astronomievoordeelgebied afgekondig is, begin om seine met die gebruik van radiofrekwensiespektrum vanaf 'n radiostasie binne daardie gebied uit te send nie, tensy die betrokke bestuursgesag 'n permit vir die uitsending van daardie seine aan daardie lisensiehouer of operateur uitgereik het nie.
- (4) Radio-apparaat wat deur OKOSA in Deel III, artikel (4) van die Radiofrekwensiespektrum Regulasies, 2015, vrygestel is van die vereiste om 'n radiofrekwensiespektrumlisensie te besit, benodig nie 'n permit om aan te hou of om te begin om seine binne 'n sentrale astronomievoordeelgebied uit te send nie nadat die Spektrum Regulasies afgekondig is, onderworpe daaraan dat:
- (a) radio-apparaat met 'n radiofrekwensie kraguitset van meer as 250 milliwatt van die vrystelling uitgesluit is;
  - (b) radio-apparaat met 'n radiofrekwensie kraguitset van minder as 250 milliwatt ten volle voldoen aan die toepaslike vereistes en toestande in Bylae B van die Radiofrekwensiespektrum Regulasies, 2015, gespesifiseer;
  - (c) die radiofrekwensiesteuring in die betrokke Spektrum Regulasies beskryf, nie veroorsaak word nie;
  - (d) dat as radiofrekwensiesteuring veroorsaak word, die geografiese gebruik van die apparaat beperk mag word soos in die betrokke Spektrum Regulasies voorgeskryf; en
  - (e) die vrystelling van die nodigheid vir 'n permit slegs van toepassing is op apparaat wat individueel gebruik word soos in die Radiofrekwensiespektrum Regulasies, 2015, gespesifiseer en nie wanneer veelvuldige eenhede in netwerke gekoppel is nie of die apparaat op enige manier versterk is nie.

- (5) Indien radiofrekwensiesteuring veroorsaak word deur radio-apparaat waarna in subregulasie 4 (4) verwys is, of indien die radioapparaat nie gebruik word volgens die vereistes en toestande in die Radiofrekwensiespektrum Regulasies, 2015, voorgeskryf nie, of as veelvuldige eenhede gekoppel is of die eenhede versterk is, dan moet 'n voldoeningsbepaling soos in subregulasies 4(6) en 4(7) beoog, uitgevoer word om die omvang van die radiofrekwensiesteuring te bepaal en moet aansoek vir 'n permit gedoen word.
- (6) Voor die uitreiking van enige permit vir die uitsending van 'n sein vanaf 'n radiostasie in 'n sentrale astronomievoordeelgebied met die gebruik van radiofrekwensiespektrum, moet 'n voldoeningsbepaling uitgevoer word deur die lisensiehouer of lisensie vrygestelde operateur vir elke sodanige sein.
- (7) 'n Voldoeningsbepaling kan slegs deur 'n bevoegde persoon, soos in regulasie 8 van hierdie regulasies beoog, uitgevoer word wat in diens van die lisensiehouer of die lisensie vrygestelde operateur staan wat die sein uitsend of van voorneme is om dit te doen, of deur 'n bevoegde persoon wat deur die lisensiehouer of operateur vir hierdie doel gekontrakteer is.
- (8) Radiofrekwensiesteuringvlakke wat geproduseer word deur 'n sein uitgesend vanaf enige radiostasie binne 'n sentrale astronomievoordeelgebied moet bepaal word deur die gebruik van die radiostasie data om in die voldoeningbepalingsverslag vermeld te word en volgens die tegniese kriteria in regulasie 6 van hierdie regulasies voorgeskryf.
- (9) Die voldoeningbepalingsverslag van toepassing op rekenaarmodellering moet ooreenstem met die raamwerk wat in Bylae A van hierdie regulasies verskaf is en moet al die inligting en data daarin vereis, insluit.
- (10) Vir metings, soos in subregulasie 5(6) beoog, moet 'n geskikte gedetailleerde voldoeningsverslag verskaf word wat 'n beskrywing van die metingsproses en standarde gebruik, die lys van meet- en bybehorende toerusting gebruik met kalibrasie sertifikate, volledige inligting oor die metingsparameters (plek, hoogte, datum, tyd, weerstoestand, ens) en die meet resultate insluit.

- (11) 'n Aansoek om 'n permit moet ooreenstem met die raamwerk in Bylae B van hierdie regulasies voorsien en al die inligting en data daarin vereis, insluit.
- (12) Die voltooide aansoekvorm en die voldoeningbepalingsverslag moet deur die lisensiehouer of lisensie vrygestelde operateur aan die betrokke bestuursgesag vir evaluering voorgelê word.
- (13) Die radiostasie data moet in 'n elektroniese formaat voorgelê word, verkieslik ascii, met die moontlikheid om dit vir gebruik in 'n rekenaarprogram in te voer of om te skakel.
- (14) Indien 'n aansienlike aantal uitsendings en voldoeningbepalings in 'n enkele aansoek en verslag gehanteer word, kan die inligting en data nodig volgens Bylaes A en B verskaf word in 'n Microsoft Excel spreiblad, of enige ander elektroniese getabuleerde data formaat.
- (15) Indien 'n lisensiehouer of lisensie vrygestelde operateur met uitsendings besig is, of van voorneme is om seinuitsendings te doen, vanaf 'n radiostasie binne 'n sentrale astronomievoordeelgebied met die gebruik van beperkte radiofrekwensiespektrum, en graag wil voortgaan om daardie spektrum te gebruik na die datum waarop die verbod of beperkings in werking tree, kan daardie lisensiehouer of operateur 'n vrystelling van daardie verbod of sodanige beperkinge versoek en die versoek met 'n motivering daarvoor saam met die permitaansoek en die voldoeningbepalingsverslag by daardie gesag of entiteit indien.

#### **5. Evaluering van voldoeningsverslae en die aansoek vir permit**

- (1) Die betrokke bestuursgesag of medebestuursentiteit moet elke voldoeningsverslag en aansoek vir 'n permit wat ingedien is, evalueer.
- (2) Indien 'n onvolledige voldoeningsverslag of permit aansoek ontvang word –
  - (a) sal die aansoeker daarvan skriftelik in kennis gestel word binne veertien (14) dae na ontvangs van die aansoek;
  - (b) mag die onvolledige verslag en/of aansoek deur 'n volledige weergawe vervang word; en

(c) sal die evalueringsproses slegs 'n aanvang neem wanneer die volledige weergawes van die verslag en aansoek beskikbaar is.

(3) Indien die radiofrekwensie spektrum in gebruik –

- (a) nie beperkte radiofrekwensie spektrum is nie;
- (b) die vasgestelde radiofrekwensie steuringsvlakke nie die toepaslike voorgeskrewe beskermingsvlakke oorskry nie; en
- (c) die uitsending aan al die toepaslike beperkinge en regulasies kragtens die Wet gemaak, voldoen,

moet die betrokke bestuursgesag binne dertig (30) dae vanaf die datum waarop die permitaansoek en voldoeningsverslag by die bestuursgesag ingedien is, uitgesluit die tydsverloop vir verpligte eksterne raadplegings en reaksies op versoeke vir inligting aan die aansoeker, die permit uitreik en die lisensiehouer of operateur skriftelik daarvan in kennis stel.

(4) Indien 'n lisensiehouer of 'n lisensie vrygestelde operateur 'n versoek by die betrokke bestuursgesag ingedien het insake die vrystelling van beperkte frekwensiespektrum, dan moet daardie gesag binne sestig (60) dae na die datum waarop die aansoek voorgelê is, uitgesluit die tydsverloop vir verpligte eksterne raadpleging en reaksies op versoeke vir inligting aan die aansoeker, die lisensiehouer of lisensie vrygestelde operateur skriftelik adviseer oor sy besluit rakende die versoek vir vrystelling.

(5) Indien die radiofrekwensiesteuringsvlakke die toepaslike voorgeskrewe beskermingsvlakke oorskry of die uitsending voldoen nie aan enige van die toepaslike beperkings of regulasies nie, moet die betrokke bestuursgesag binne dertig (30) dae vanaf die datum waarop die voldoeningsverslag by die gesag ingedien is, die lisensiehouer of lisensie vrygestelde operateur skriftelik daarvan in kennis stel.

(6) In die geval van 'n dispuut tussen die aansoeker en die betrokke bestuursgesag en medebestuursentiteit aan die ander kant, oor –

- (a) die geldigheid van die radiofrekwensie steuringsvlakke bepaal deur middel van rekenaarberekeninge; of

(b) die akkuraatheid van die vasgestelde radiofrekwensiesteuringsvlakke wat as onaanvaarbaar deur die bestuursgesag en die medebestuursentiteit beskou word,

dan moet daar toepaslike en uitvoerbare metings van die werklike steuringsvlak by die gespesifiseerde waardebepalingspunt uitgevoer word in ooreenstemming met die betrokke voorskrifte in regulasie 6 van hierdie regulasies.

- (7) 'n Lisensiehouer of lisensie vrygestelde operateur wat 'n geskrewe kennisgewing soos in sub-regulasie 5(5) beoog, ontvang, mag ondersoek instel en metodes oorweeg om die steuringsvlakke te verminder na die voorgeskrewe beskermingsvlakke en om aan die toepaslike beperkings en regulasies te voldoen en mag die voorgestelde metodes skriftelik aan die betrokke bestuursgesag voorlê binne dertig (30) dae na die datum waarop die kennisgewing in subregulasie 5(5) ontvang is.
- (8) Die betrokke bestuursgesag of die medebestuursentiteit moet daardie voorgestelde metodes te evalueer en binne dertig (30) dae vanaf die datum van ontvangs daarvan, uitgesluit die tydsverloop vir verpligte eksterne raadplegings of reaksies op versoeke vir inligting aan die aansoeker, die lisensiehouer of operateur skriftelik in kennis stel of die voorgestelde metode om radiofrekwensiesteuring te beperk, aanvaarbaar is.
- (9) Indien die betrokke bestuursgesag of medebestuursentiteit die voorstelle aanvaar, dan moet die lisensiehouer of die operateur daardie voorstelle binne neëntig (90) dae vanaf die datum van ontvangs van die besluit die voorstelle in werking stel waarna die gesag, onderhewig aan die suksesvolle implementering van die voorstelle, die permit moet uitreik en aan die lisensiehouer of operateur lewer.
- (10) Indien die betrokke bestuursgesag meer tyd nodig as die tyd gespesifiseer kragtens sub-regulasies 5(3), 5(4), 5(5) of 5(8) om besluite te neem, of daar bevind word dat 'n uitgebreide tegniese evaluering en/of metings nodig word, mag die gesag binne die gespesifiseerde tydperk, insluitend enige geldige bykomende tyd, die lisensiehouer of operateur in



kennis stel dat bykomende tyd, tot 'n maksimum van een honderd en tagtig (180) dae nodig is en redes verstrekkend waarom dit nodig is.

- (11) Indien die bestuursgesag nalaat om binne die tydperke in sub-regulasies 5(3), 5(4), 5(5) of 5(8) gespesifiseer, op te tree, of waar die gesag kragtens sub-regulasie 5(10) die tydperk met 'n sekere hoeveelheid van die tyd verleng het en nalaat om binne die verlengde tydperk op te tree, word dit geag dat die aansoek geweier is.
- (12) 'n Permit wat deur die betrokke bestuursgesag aan 'n lisensiehouer of 'n lisensie vrygestelde operateur uitgereik is, moet die frekwensies of die frekwensieband wat gebruik mag word spesifiseer tesame met uitsendingseienskappe en voorwaardes waaraan die lisensiehouer of operateur moet voldoen.
- (13) As 'n verslag ontvang word, nadat die permit uitgereik is, dat die radiofrekwensiesteuring aan radio-astronomie hoër is as die vlak wat in die permit gespesifiseer is, dan moet die voldoeningbepalingsverslag deur die aansoeker vir die permit en die betrokke bestuursgesag bevestig word.
- (14) Die bevestiging van die voldoeningbepaling wat op subregulasie 5(13) betrekking het en kragtens hierdie regulasies uitgevoer word, moet deur die aansoeker en die betrokke bestuursgesag hersien om word om die korrektheid daarvan te bepaal met inagneming van die akkuraatheid van die rekenaarmodellering toegepas of die metings uitgevoer.
- (15) As die betrokke bestuursgesag of medebestuursentiteit dit nodig ag, dan moet metings van die radiofrekwensiesteurings uitgevoer word. Die resultate van die hersiening sal bepaal of die uitsendingseienskappe in die uitgereikte permit aangepas moet word om te verhoed dat die toepaslike beskermingsvlak oorskry word.

- (16) As 'n lisensiehouer of 'n lisensie vrygestelde operateur aan wie 'n permit uitgereik is, verlang om die frekwensies of die frekwensieband wat gebruik mag word, die uitsendingseienskappe, of die voorwaardes in die permit voorgeskryf, te wysig, dan moet daar by die betrokke bestuursgesag aansoek gedoen vir so 'n wysiging.
- (17) Regulasies 4(6) tot 4(16), met die nodige wysigings in ag geneem, is op so 'n wysigingsaansoek vir 'n uitgereikte permit van toepassing.
- (18) Indien die bestuursgesag dertig (30) dae na die uitreiking van 'n permit vasstel dat die voorwaardes in die permit nie nagekom word nie, dan sal die permit onmiddellik deur die betrokke bestuursowerheid teruggetrek word. Die houer van so 'n permit moet onmiddellik enige aktiwiteit wat kragtens die permit uitgevoer word, staak.

**6. Tegniese standaard vir die bepaling van radiofrekwensie steuringsvlakke**

- (1) Die voldoeningsbepaling, in subregulasie 4(6) beoog, moet die volgende insluit:
- (a) Die bepaling van die radiofrekwensie steuringsvlakke wat ooreenkom met die beskermingsmaatreëls in die betrokke Spektrum Regulasies voorgeskryf met betrekking tot die toepaslike beskermingsvlakke in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf;
  - (b) Die bepaling van die radiofrekwensie steuringsvlakke wat ooreenkom met die beskermingsmaatreëls in die betrokke Spektrum Regulasies voorgeskryf met betrekking tot die versadigingsvlak; en
  - (c) Die bepaling of daar voldoening is aan al die toepaslike regulasies kragtens die Wet gemaak.
- (2) Die bepaling van die radiofrekwensie steuringsvlakke moet in die eerste plek uitgevoer word deur middel van die rekenaar modellering wat wetenskaplike metodes deur die ITU aanbeveel, gebruik en wat radiofrekwensie steuringsvlakke bereken wat ooreenkom met die beskermingsmaatreëls in die betrokke Spektrum Regulasies voorgeskryf en die kriteria in subregulasie 6 (7) gespesifiseer.
- (3) As rekenaarmodellering is nie haalbaar of toepaslik is nie, of as groter akkuraatheid vereis word as wat rekenaarmodellering kan voorsien, dan

moet die radiofrekwensie steuringsvlakke deur middel van metings bepaal word.

- (4) Die metingstandaarde en tegnieke wat gebruik word, moet ooreengekom word tussen die betrokke bestuursgesag of medebestuursentiteit en die bevoegde persoon, soos in regulasie 8 van hierdie regulasies beoog, wat die voldoeningsbepaling sal uitvoer.
- (5) Indien 'n ooreenkoms nie bereik kan word nie, moet die betrokke bestuursgesag of medebestuursentiteit 'n gepaste standaard en tegnieke bepaal om gebruik te word.
- (6) Die verwysingshoogte vir metings of seinvoorspellings is 10 meter bo die grondvlak by die waardebepalingspunte vir die beskermingsmaatreëls in die betrokke Spektrum Regulasies voorgeskryf.
- (7) Die berekening van radiofrekwensie steuringsvlakke moet op die volgende kriteria gebaseer wees -
  - (a) die toepassing van die toepaslike ITU Aanbeveling vir golfvoortplanting;
  - (b) seinvlakke wat vir nie meer as 5% van die tyd oor 'n vier en twintig (24) periode oorskry sal word nie;
  - (c) 'n isotropiese antenna toestand met 0 dB wins by die waardebepalingspunte vir die beskermingsmaatreëls in die betrokke Spektrum Regulasies voorgeskryf;
  - (d) die gebruik van die beste beskikbare digitale terrein model; en
  - (e) senderstasiedata deur die gelisensieerde of lisensie vrygestelde elektroniese kommunikasienetwerk operateur of radiofrekwensiespektrum lisensiehouer verskaf word volgens die gespesifiseerde besonderhede in Bylae A tot hierdie regulasies.
- (8) Die bevoegde persoon wat die voldoeningsbepaling hanteer, moet uitvoering gee aan –
  - (a) 'n Punt-tot-punt berekening op die golfvoortplantingspad tussen die radiostasie of ligging van die radio-apparaat en die gespesifiseerde waardebepalingspunte van die radiofrekwensie steuringsvlak by die waardebepalingspunte vir die beskermingsmaatreëls in die betrokke Spektrum Regulasies voorgeskryf;

- (b) die berekening van die seinpadverliese oor die golfvoortplantingspaai na verwys in (a), in dB; en
- (c) die vergelyking van die radiofrekwensie steuringsvlakke, by die toepaslike waardebevestigingspunte na verwys in (a) om te bepaal of dit die toepaslike beskermingsvlakke oorskry of nie, met:
  - (i) die betrokke beskermingsvlak in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, of
  - (ii) die versadigingsvlak.

Die resultate van (a), (b) en (c) hierbo moet in die voldoeningbepalingsverslag in subregulasie 4(8) voorgeskryf, verstrek word.

#### **7. Kriteria, prosedures en voorwaardes van toepassing op 'n noodsaaklike diens**

- (1) Radiokommunikasiedienste wat die toepassings hieronder gelys, verskaf, mag deur die betrokke bestuursgesag oorweeg word vir klassifikasie as noodsaaklike dienste -
  - (a) uitsaaiseinverspreiding via geostasionêre satelliete vir verspreiding na terrestriële uitsaaisenders en direk-na-huis ontvangs;
  - (b) elektroniese kommunikasienetwerkdienste van provinsiale en nasionale omvang deur OKOSA gelisensieer kragtens artikel 5(3) van die Wet op Elektroniese Kommunikasie;
  - (c) elektroniese kommunikasie vir die bedryf en instandhouding van elektrisiteitstransmissie en -verspreiding kragstelsels;
  - (d) elektroniese kommunikasie vir die bedryf en instandhouding van spoorvervoer;
  - (e) elektroniese kommunikasie vir sekerheidsdienste en hul doelwitte soos in Hoofstuk 11 van die Grondwet van die Republiek van Suid-Afrika 1996, omskryf, plaaslike regering en hul doelwitte soos in Hoofstuk 7 van die Grondwet omskryf, gesondheidsdienste en nooddienste;
  - (f) elektroniese kommunikasie vir lugvaart en maritieme dienste in frekwensiespektrum toewysings met betrekking tot die veiligheid en

gereeldheid van vlugte en die seevaartuie, insluitend kommunikasie, radio navigasie en waarnemingstelsels; en

(g) geostasionêre satellietkommunikasie.

- (2) In die bepaling deur die betrokke bestuursgesag of 'n radiokommunikasiediens in sub-regulasie 7 (1) ingesluit as 'n noodsaaklike diens geklassifiseer behoort te word, of nie, moet oorweging gegee word aan –
- (a) die bestaan van 'n funksioneel geskikte en ekonomies gangbare alternatief wat voldoen aan, of beter voldoen aan, die beperkings, voorwaardes en standaard in hierdie regulasies vir die beskerming van radio-astronomie voorgeskryf; en
  - (b) die moontlike gebruik van 'n alternatiewe frekwensieband en/of 'n alternatiewe tegnologie wat 'n mindere radiofrekwensie steuringsimpak het op die beskerming van radio-astronomie het.
- (3) 'n Aansoeker vir 'n permit benodig ooreenkomstig regulasie 4 in verband met 'n radiokommunikasiediens wat mag kwalifiseer om as 'n noodsaaklike diens kragtens subregulasie 7(1) geklassifiseer te word, moet dit so in sodanige aansoek aandui.
- (4) Die klassifikasie vir elke verskillende tipe radiokommunikasiediens, wat in 'n ander frekwensieband werk of 'n ander tegnologie gebruik, in die besonder vir lisensiehouers wat veelvuldige tipes dienste verskaf, moet afsonderlik bepaal word en so in die permit uitgereik, aangedui word.
- (5) Die betrokke bestuursgesag of medebestuursentiteit moet, voordat die evalueringsproses vir die voldoeningbepaling en die aansoek vir 'n permit soos in regulasie 5 voorgeskryf, 'n aanvang neem, bepaal of die radiokommunikasiediens betrokke as 'n noodsaaklike diens geklassifiseer sal word.
- (6) As 'n radiofrekwensie steuringsvlak met betrekking tot 'n noodsaaklike diens die toepaslike voorgeskrewe beskermingsvlak kragtens die Radio-astronomie Beskermingsvlakke Regulasies, 2012, by die voorgeskrewe waardebevestigingspunte oorskry en nie verminder kan word sonder om daardie diens aansienlik te beïnvloed nie, moet die verskaffer van daardie diens 'n verduideliking in die aansoek by die bestuursgesag of

medebestuursentiteit ingedien, insluit oor die redes waarom die steuringsvlak nie verminder kan word nie en versoek dat 'n radiofrekwensie steuringsvlak wat meer as die voorgeskrewe waarde is, toegelaat word.

- (7) 'n klassifikasie as 'n noodsaaklike diens kan gekanselleer word as 'n ander elektroniese kommunikasiestelsel wat funksioneel geskik en ekonomies gangbaar is en voldoen aan of beter voldoen aan die beperkings, voorwaardes en standarde in die betrokke Spektrum Regulasies vir die beskerming van die radio-astronomie voorgeskryf.
- (8) Geen verligting mag deur die betrokke bestuursgesag toegestaan word waar radiofrekwensiesteuring die versadigingsvlak by enige toepaslike verwysingspunt in die betrokke Spektrum Regulasies voorgeskryf, oorskry nie.

#### **8. Kriteria vir persoon wat die voldoeningsbepaling uitvoer**

- (1) 'n Persoon wat die voldoeningsbepaling uitvoer en die verslag opstel, moet:
  - (a) 'n tersiêre akademiese kwalifikasie in elektroniese of radiofrekwensie ingenieurswese besit, tenminste op die vlak wat die persoon sal kwalifiseer om as 'n professionele ingenieurstechnoloog kragtens die Wet op die Ingenieursweseprofessie, 2000 (Wet No 46 van 2000) te registreer;
  - (b) toegang hê tot of in staat wees om toegang te bekom tot 'n gerekenariseerde frekwensiespektrum beplanningstelsel wat bruikbaar is om rekenaarmodellering uit te voer vir die radiofrekwensie seinvlak berekeninge op die betrokke ITU aanbevelings oor voortplanting gebaseer en gebruik maak van die beste beskikbare digitale terreinmodel; en
  - (c) in staat wees om ten minste twee verwysings te verskaf vir werk wat suksesvol binne die laaste vyf (5) jaar uitgevoer is en die bepaling van radiogolf voortplanting en seinsterktes behels het.
- (2) Alternatief tot sub-regulasie 8(1), moet die betrokke bestuursgesag of die medebestuursentiteit 'n evaluering van die vaardighede en ervaring van 'n persoon wat die voldoeningsbepaling en die samestelling van die verslag wil uitvoer om bepaal of die persoon oor die nodige vermoë en kapasiteit beskik.

- (3) Die nodige inligting soos in Bylae A, item 1 bepaal is, moet deur die aansoeker vir 'n permit verskaf word vir oorweging en evaluering deur die bestuursgesag of medebestuursentiteit.

## **9. Permitregister**

- (1) Die uitsendingseienskappe en die voorwaardes wat in elke permit kragtens regulasie 5 uitgereik, gespesifiseer is, moet deur die betrokke bestuursgesag in 'n permit register vir die betrokke sentrale astronomievoordeelgebied ingeskryf word.
- (2) Die besonderhede van die inligting wat in die permit register ingeskryf moet word, moet die data wat vir die voldoeningsbepaling gebruik is en die voldoeningsresultate insluit, soos weerspieël in Bylae A, items 2 tot 6, vir elke waardebepalingspunt wat betrokke is.
- (3) Die waardebepalingsinligting in die register mag slegs aan die betrokke bestuursgesag of medebestuursentiteit en die permithouer beskikbaar gestel word.

## **10. Misdrywe en strawwe**

Enige persoon wat hierdie regulasies oortree, is skuldig aan 'n misdryf en by skuldigbevinding strafbaar met 'n boete van hoogstens R1 000 000 (een miljoen rand) of gevangenisstraf of beide 'n boete en gevangenisstraf.

## **11. Kort titel en inwerkingtreding**

Hierdie regulasies heet die Regulasies oor Administratiewe Aangeleenthede vir die Sentrale Astronomievoordeelgebiede (Radio-astronomie) en sal op 'n datum in werking tree om deur die Minister bepaal te word deur middel van 'n kennisgewing in die Staatskoerant.

**BYLAE A: Raamwerk vir die voldoeningbepalingsverslag****1. Bevoegde persoon wat die ondersoek uitgevoer het**

- 1.1. Naam van die bevoegde persoon: .....
- 1.2. Bewys dat die bevoegde persoon aan elk van die vereistes in regulasie 8 voorgeskryf, voldoen:
- 1.2.1. Akademiese kwalifikasie:  
.....
- 1.2.2. Toegang tot 'n gerekenariseerde frekwensie beplanningstelsel  
.....
- 1.2.3. Twee verwysings na frekwensiespektrum beplanningswerk wat in die laaste vyf jaar uitgevoer is:
- 1.2.3.1. ....
- 1.2.3.2. ....
- 1.3. Alternatief vir 1,2, versoek dat 'n evaluering van die persoon uitgevoer word  
.....

**2. Radiostasie data vir 'n spesifieke uitsending**

Die items hieronder is van toepassing op 'n vaste radio stasie. As 'n ander situasie betrokke is in die voldoeningbepaling, dan moet slegs die toepaslike items ingevul word en voldoende inligting verskaf word om die uitsendingsbron behoorlik te omskryf en te identifiseer.

'n Getabuleerde skedule moet gebruik word vir veelvuldige uitsendings vanaf 'n stasie by 'n spesifieke plek of van stasies by verskillende plekke

- 2.1. Draerfrekwensie (in MHz tot 4 desimale):  
.....
- 2.2. Unieke verwysingsnommer (nie meer as tien karakters/syfers nie):  
.....
- 2.3. Naam van lisensiehouer of lisensie vrygestelde operateur:  
.....
- 2.4. Radiostasie naam:  
.....



2.5. Geografiese koördinate (in grade tot vier desimale)

.....

2.6. Grondvlak bo seevlak (in meters):

.....

2.7. Hoogte bo grondvlak van die sendantenne middel (in meters):

.....

2.8. EUK in die rigting van die Waardebepalingspunt (WP) (in dBm):

.....

2.9. Polarisasie van die sein oorgesend:

.....

2.10. Bandwydte van die sein oorgesend (in MHz):

.....

### **3. Tegniese voorwaardes op die seinsterkte berekening toegepas**

3.1. Gerekenariseerde frekwensiebeplanningstelsel gebruik:

.....

3.2. Die ITU Aanbeveling toegepas op die voortplantingberekeninge:

.....

3.3. Opsie verkies (indien enige) vir die ITU Aanbeveling toegepas:

.....

3.4. Digitale topografiese terreinmodel gebruik:

.....

### **4. Resultate van die radiofrekwensiesteuring (RFS) voldoeningsbepaling by die toepaslike AP met betrekking tot die radio-astronomie beskermingsvlak**

4.1. Toepaslike AP: Geografiese koördinate (in grade tot vier desimale):

.....

4.2. RFS vlak (in dBm/Hz) by die AP:

.....

4.3. Voortplantingpadverlies (in dB) tussen die radiostasie en die AP:

.....

4.4. Beskermingsvlak (BV) (in dBm/Hz) soos bepaal volgens die Radio-astronomie Beskermingsvlakke Regulasies:

.....

4.5. Resultaat van die RFS en PL vlakke vergelyking:

.....

**5. Resultate van die RFS voldoeningbepaling by die toepaslike AP met betrekking tot die versadigingsvlak**

5.1. Ligging van die toepaslike AP: Geografiese koördinate (in grade tot vier desimale):

.....

5.2. RFS vlakke by die toepaslike AP:

.....

5.3. Resultaat van die vergelyking met die versadigingsvlak:

.....

**6. Voldoeningbepaling m.b.t. alle toepaslike regulasies kragtens die Wet gemaak**

6.1. Alle toepaslike regulasies word aan voldoen: Ja.....of Nee.....

6.2. Verskaf verwysings na toepaslike regulasies waaraan nie voldoen word nie, met die redes vir nie-voldoening

.....

**7. Voldoeningsverslag onderteken deur:**

Met die ondertekening van hierdie Voldoeningsverslag, verklaar ek dat die inligting en resultate in hierdie verslag na die beste van my wete waar en korrek is.

_____	_____	_____	_____
Naam van persoon	Naamtekening	Datum	Plek

**BYLAE B: Raamwerk vir 'n permitaanzoek****1. Aansoeker**

1.1. Naam van persoon of entiteit.....

1.2. ID of registrasienommer.....

1.3. Indien 'n entiteit, die naam van kontakpersoon en haar/sy posisie  
.....

1.4. Posadres.....

1.5. e-posadres.....

1.6. Telefoonnommers.....

**2. Besonderhede van uitsendings waarvoor permitte vereis word (indien meer as drie uitsendings betrokke is, gebruik 'n getabuleer skedule)**

Besonderhede	Transmissie 1	Transmissie 2	Transmissie 3
Perseelnaam			
Geografiese koördinaat (breedtegraad)			
Geografiese koördinaat (lengtegraad)			
Tipe radiokommunikasie			
Draer / middel frekwensie (MHz)			
Sendkrag by antenna-inset (dBm)			
Antenna tipe & wins (dB)			
OKOSA radiofrekwensie spektrumlisensie nommer			

Frekwensiespektrum in gebruik (Beperkte / vrygestelde)			
Voldoeningsbepaling gedoen (Ja/Nee)			
Radiofrekwensie steuring oorskry beskermingsvlak (Ja/Nee)			
Radiofrekwensie steuring oorskry versadigingsvlak (Ja/Nee)			
Voldoening aan die toepaslike beperkinge in Spektrum Regulasies (Ja/Nee)			
Mening oor kwalifikasie vir klassifikasie as 'n noodsaaklike diens (Ja/Nee)			

### 3. Aansoek om 'n permit of permitte onderteken deur:

In die ondertekening van hierdie aansoek, verklaar ek dat die inligting wat verskaf is na die beste van my wete waar en korrek is.

\_\_\_\_\_  
Naam van persoon

\_\_\_\_\_  
Naamtekening

\_\_\_\_\_  
Datum

\_\_\_\_\_  
Plek

**SKEDULE C**  
**REGULASIES OOR FINANSIELE VERGOEDINGSPROSEDURES**  
**VIR SENTRALE ASTRONOMIEVOORDEELGEBIEDE**

**INDELING VAN DIE REGULASIES**

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## 1. Woordomsrywings

In hierdie regulasies tensy dit uit die samehang anders blyk, beteken–

### **"finansiële verlies"** –

- (a) die koste vir 'n radiokommunikasie netwerkdienis lisensiehouer om 'n vereiste of 'n voorwaarde kragtens artikel 23 van die Wet voorgeskryf, te implementeer; en
- (b) die aansluitingskoste en bykomende gebruikskoste vir 'n radiokommunikasiedienis gebruiker vir 'n elektroniese kommunikasiedienis wat anders is as die elektroniese kommunikasiedienis wat deur daardie gebruiker benut is voor die uitvaardiging van 'n regulasie kragtens artikel 23 van die Wet gemaak;

### **"geaffekteerde persoon"** 'n persoon wat –

- (a) wettiglik 'n aktiwiteit in 'n sentrale astronomievoordeelgebied uitgevoer het voor die beperking van daardie aktiwiteit deur middel van regulasies wat deur die Minister kragtens artikel 23 van die Wet gemaak is; en
- (b) kragtens artikel 23(3)(a) van die Wet deur die Minister vereis word om daardie aktiwiteit te staak of om aan voorwaardes wat kragtens artikel 23(3)(b) van die Wet voorgeskryf is, te voldoen;

**"GPS"** die global positioning system;

**"lisensiehouer"** 'n persoon aan wie OKOSA 'n lisensie uitgereik het om 'n diens kragtens Hoofstuk 3 van die Wet op Elektroniese Kommunikasie, 2005, te verskaf of om radiofrekwensiespektrum kragtens artikel 31 daarvan, te gebruik;

**"lisensie vrygestelde operateur"** 'n persoon wat 'n diens verskaf ingevolge die vrystelling deur OKOSA toegestaan kragtens artikel 6 van die Wet op Elektroniese Kommunikasie, 2005 of radiofrekwensiespektrum gebruik wat vrygestel is van die vereiste vir 'n radiofrekwensie spektrum lisensie in gevolge artikel 31(6) van die Wet op Elektroniese Kommunikasie, 2005, en regulasies daarvolgens gemaak;

**"medebestuursentiteit"** 'n staatsorgaan, 'n plaaslike gemeenskap, 'n individu of 'n ander party met wie die betrokke bestuursgesag 'n medebestuursooreenkoms aangegaan het kragtens artikel 18 van die Wet;

**“Spektrum Regulasies”** die regulasies om die gebruik van sekere radiofrekwensiespektrum kragtens artikel 22 van die Wet en sekere verklaarde aktiwiteite kragtens artikel 23 van die Wet binne die betrokke sentrale astronomievoordeelgebied vir radio-astronomie doeleindes verklaar, te verbied of te beperk; en

**"Wet"** die Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007).

## **2. Toepassing van die regulasies**

- (1) Die regulasies is van toepassing op enige sentrale astronomievoordeelgebied verklaar vir radio-astronomie doeleindes en verwante wetenskaplike ondernemings.
- (2) Indien daar verskille tussen die Engelse en Afrikaanse weergawes van hierdie regulasies is, sal die Engelse weergawe voorrang geniet.

## **3. Prosedures en kriteria om vir finansiële vergoeding aansoek te doen**

- (1) 'n Geaffekteerde persoon wat 'n finansiële verlies gely het, alleenlik as 'n direkte oorsaak van daardie persoon se voldoening aan 'n voorgeskrewe vereiste of voorwaarde kragtens artikel 23(3)(a) of (b) van die Wet, of 'n persoon wie se gebruik van 'n diens verskaf deur 'n lisensiehouer of 'n lisensie vrygestelde operateur, nadelig geaffekteer is, as 'n direkte gevolg van daardie operateur se voldoening aan 'n vereiste of voorwaarde toegepas kragtens artikel 23(3)(a) of (b) van die Wet, mag vir kompensasie kragtens hierdie regulasie aansoek doen.
- (2) Die aansoek om vergoeding in sub-regulasie (1) beoog, moet op 'n vorm by die betrokke bestuursgesag of medebestuursentiteit verkry, gedoen word, en moet by die betrokke bestuursgesag of medebestuursentiteit ingedien word binne twee (2) jaar na die implementering van die betrokke vereiste of voorwaarde.
- (3) Die gemelde aansoek moet die volgende insluit -
  - (a) die aansoeker se volle name, posadres, e-posadres, telefoon nommer en belastingverwysingsnommer;
  - (b) die adres waar die aansoeker aflewering van enige kennisgewing, proses of enige ander dokument met betrekking tot die aansoek in ontvangs sal neem;
  - (c) die adres of GPS ligging waar die applikant die betrokke aktiwiteit wettig uitgevoer het of waar die diens wat die onderwerp van die aansoek is, onmiddellik voor die implementering van die betrokke vereiste of voorwaarde gebruik is;
  - (d) Indien die aansoeker, teen die tyd dat die aansoek gedoen word, die aktiwiteit uitvoer of die diens gebruik, wat die onderwerp van die aansoek



- is, by 'n adres of GPS ligging wat anders is as dit wat onder sub-regulasie (c) hierbo verstrek is, verskaf dan daardie ander adres of ligging;
- (e) 'n afskrif van al die betrokke dokumente wat met 'n kennisgewing in die Staatskoerant kragtens artikel 23 van die Wet gepubliseer is;
- (f) 'n gedetailleerde beskrywing van die aktiwiteit wat wettig uitgevoer is of die diens wat gebruik is onmiddellik voor die implementering van die betrokke vereiste of voorwaarde;
- (g) 'n beëdigde verklaring deur die applikant wat bevestig –
- (i) of die aansoeker die betrokke aktiwiteit gestaak het slegs as 'n direkte gevolg van die voldoening aan die vereiste kragtens artikel 23(3)(a) van die Wet toegepas en die datum waarop dit gedoen is;
  - (ii) die manier en die omvang van die aansoeker se verandering van sy uitvoering van die betrokke aktiwiteit slegs as 'n direkte oorsaak van die voldoening aan 'n voorwaarde kragtens artikel 23(3)(b) van die Wet toegepas; of
  - (iii) die aard en die omvang van die nadelige effek op die aansoeker se gebruik van die diens slegs as 'n direkte oorsaak van die voldoening aan 'n vereiste of voorwaarde kragtens artikel 23(3)(a) of (b) van die Wet toegepas;
- (h) 'n gedetailleerde beskrywing van enige eiendom of toerusting wat deur die aansoeker besit of gebruik was om die betrokke aktiwiteit uit te voer of die diens waar die gebruik van daardie eiendom of toerusting nadelig geaffekteer is, alleenlik as 'n direkte gevolg van voldoening aan die vereiste of voorwaarde toegepas kragtens artikel 23(3) van die Wet, met insluiting van volledige beskrywings van –
- (i) die toestand van die eiendom of toerusting;
  - (ii) die mate waartoe die aansoeker die eiendom of toerusting gebruik het om die betrokke aktiwiteit uit te voer of die diens te gebruik;
  - (iii) die markwaarde van die eiendom of toerusting;
  - (iv) die geskiedenis van die verkryging of gebruik van die eiendom of toerusting;
  - (v) die mate waartoe die Staat belê het in, 'n subsidie verskaf het, of andersins hulp verleen het aan die aansoeker met die verkryging of

instandhouding van eiendom of toerusting of om die betrokke aktiwiteit uit te voer; en

- (vi) die mate waartoe die eiendom of toerusting nadelig geaffekteer is alleenlik as 'n direkte gevolg van voldoening aan die vereiste of voorwaarde kragtens artikel 23(3) van die Wet toegepas, met inagneming van ander moontlike gebruike van die eiendom deur die aansoeker of 'n derde party;
  - (i) 'n volledige beskrywing van enige finansiële verlies deur die aansoeker gely as 'n direkte gevolg van voldoening aan die vereiste of voorwaardes kragtens artikel 23(3) van die Wet toegepas, insluitend enige finansiële verlies as gevolg van 'n omskakeling na 'n alternatiewe elektroniese kommunikasiediens omdat die geaffekteerde diens nie langer bruikbaar was nie;
  - (j) enige ander besonderhede wat betrokke of nodig is vir die betrokke bestuursgesag of medebestuursentiteit om -
    - (i) die aansoek te oorweeg; en
    - (ii) die vergoedingsbedrag om betaal te word, indien enige, te bereken, insluitend volle besonderhede van die grondslag en metode om al die bedrae te bereken;
  - (k) 'n volledige opgawe van enige briefwisseling met, en geskrewe vertoë voorgelê aan die betrokke bestuursgesag of medebestuursentiteit kragtens artikel 23(3) van die Wet; en
  - (l) ondersteunende getuienis met verwysing na paragrafe (f) tot (j).
- (4) Indien 'n aansoeker vir vergoeding in verband met verskillende aktiwiteite of dienste aansoek doen, moet die aansoeker 'n afsonderlike aansoek met betrekking tot elke aktiwiteit of diens indien.

#### **4. Verwerking van die aansoek deur die bestuursgesag**

- (1) Die betrokke bestuursgesag of medebestuursentiteit mag skriftelik sodanige verdere besonderhede van die aansoeker versoek as wat nodig mag wees om die aansoek te oorweeg en die aansoeker moet binne dertig (30) dae na die versoek gestuur is, op die versoek vir verdere inligting reageer.

- (2) Die betrokke bestuursgesag of medebestuursentiteit moet OKOSA raadpleeg op elke aansoek ontvang, om vas te stel of die aktiwiteit betrokke in die aansoek om finansiële vergoeding wettig binne die betrokke sentrale astronomievoordeelgebied uitgevoer was onmiddellik voordat die betrokke Spektrum Regulasies uitgevaardig is.
- (3) Die betrokke bestuursgesag of medebestuursentiteit moet die aansoek, al die betrokke dokumentasie en enige verdere besonderhede deur die aansoeker ingedien, tesame met 'n aanbeveling deur die betrokke bestuursgesag of medebestuursentiteit op die aansoek, na die Minister verwys vir 'n beslissing binne sestig (60) dae vanaf die datum wat die laaste inligting benodig, ontvang is.
- (4) Die betrokke bestuursgesag of medebestuursentiteit moet –
- (a) Binne neëntig (90) dae na die ontvangs van die laaste inligting vir 'n aansoek benodig, die aansoeker skriftelik van die Minister se besluit in kennis stel en die aansoeker met geskrewe redes vir die besluit voorsien; en
  - (b) by enige besluit oor die toestaan van vergoeding 'n aanbod van vergoeding soos deur die Minister bepaal, insluit.

## **5. Bepaling van vergoeding deur die Minister**

- (1) Indien die Minister besluit dat 'n aansoeker vergoed behoort te word, moet die bedrag van die vergoeding, en die manier en tyd van betaling daarvan, regverdig en billik wees wat 'n billike balans tussen die openbare belang en die belange van die geaffekteerde persoon weerspieël met inagneming van al die betrokke omstandighede, insluitend -
- (a) die aard en omvang van die aktiwiteit wettig uitgevoer, of die diens deur die aansoeker gebruik onmiddellik voor die inwerkingstelling van die betrokke vereiste of voorwaarde;
  - (b) die mate waartoe die aansoeker die betrokke aktiwiteit gestaak het, die aard en omvang waartoe die aansoeker sy/haar uitvoering van die betrokke aktiwiteit verander het, of die mate en aard waartoe die aansoeker se gebruik van die diens nadelig geaffekteer is, alleenlik as 'n

direkte resultaat van voldoening aan die vereiste of voorwaardes kragtens artikel 23(3) van die Wet toegepas;

- (c) die eiendom of toerusting wat deur die aansoeker besit of gebruik was om die betrokke aktiwiteit uit te voer, of die diens te gebruik en die mate waartoe die gebruik daarvan nadelig geaffekteer is, alleenlik as 'n direkte resultaat van voldoening aan die vereiste of voorwaardes kragtens artikel 23(3) van die Wet toegepas; en
- (d) die finansiële verlies deur die aansoeker gely, alleenlik as 'n direkte resultaat van voldoening aan die vereiste of voorwaardes kragtens artikel 23(3) van die Wet toegepas.

#### **6. Aanvaarding van die aanbod deur die aansoeker**

- (1) Binne dertig (30) dae na die ontvangs van die aanbod in subregulasie 4(4)(b), moet die aansoeker die betrokke bestuursgesag of medebestuursentiteit skriftelik in kennis stel of die aanbod aanvaar of verwerp word.
- (2) Indien die aansoeker die aanbod kragtens subregulasie 4(4)(b) gemaak, aanvaar, moet die betrokke bestuursgesag of mede-bestuursentiteit die aansoeker die bedrag betaal op 'n manier en binne die tydperk waarop daar tussen die aansoeker en die betrokke bestuursgesag of medebestuursentiteit ooreengekom is, welke tydperk nie meer as sestig (60) dae na die ontvangs van die kennisgewing van aanvaarding van die aanbod deur die aansoeker mag wees nie.
- (3) Die aansoeker mag die Minister se besluit in regulasie 5(1) beoog, in hersiening neem kragtens die bepalings van die Wet op die Bevordering van Administratiewe Geregtigheid, 2000.

#### **7. Misdrywe en strawwe**

Enige persoon wat hierdie regulasies oortree, is skuldig aan 'n misdryf en by skuldigbevinding strafbaar met 'n boete van hoogstens R1 000 000 (een miljoen rand) of gevangenisstraf of 'n boete en gevangenisstraf.

#### **8. Kort titel en inwerkingtreding**

Hierdie regulasies heet die Regulasies oor Finansiële Vergoedingsprosedures vir sentrale astronomievoordeelgebiede, 2015, en sal op 'n datum in werking tree om deur die Minister bepaal te word met 'n kennisgewing in die Staatskoerant.



## 1. Woordomsrywings

In hierdie regulasies tensy dit uit die samehang anders blyk, beteken–

**"beskermingsgange"** stroke land, naasliggend aan 'n radio astronomiese spiraal arms konfigurasie waar binne SKA-stasies in die Karoo Sentrale Astronomievoordeelgebied 1 geplaas sal word, met 'n wydte van 5 km aan weerskante van elke spiraalarm soos uitgebeeld en omskryf in Bylae A;

**"elektriese krag distribusiestelsel"** 'n stelsel vir elektriese kragverspreiding wat onder 132 kV werk;

**"elektriese krag transmissiestelsel"** 'n stelsel vir elektriese kragverspreiding wat op of bo 132 kV werk;

**"elektrisiteitsopwekking"** die produksie van elektrisiteit op enige manier, insluitend omsitters wat gelykstroom na wisselstroom verander;

**"elektrisiteitstransmissie"** die vervoer van elektrisiteit deur middel van 'n transmissiestelsel vir elektriese kragverspreiding;

**"elektrisiteitsverspreiding"** die vervoer van elektrisiteit deur middel van 'n distribusiestelsel vir elektriese kragverspreiding;

**"elektriese toerusting"** enige elektriese masjinerie, toerusting of toestelle wat gebruik word vir konstruksie, eksplorاسie, boerdery, huishouding, vervaardiging, instandhouding, of mynbou doeleindes;

**"elektriese infrastruktuur"** enige infrastruktuur of fasiliteit wat op enige manier gebruik word vir die opwekking van elektrisiteit, die verspreiding van elektrisiteit, die transmissie van elektrisiteit, of vir 'n elektriese krag distribusie- of transmissiestelsel, of elektriese fasiliteite en toerusting gebruik vir enige aanwending uitgesluit elektrisiteitsverspreiding en -transmissie wat bestaan het voor die datum waarop hierdie regulasies is uitgevaardig deur publikasie in die Staatskoerant;

**"elektromagnetiese steuring"** radiofrekwensiesteuring onbedoeld uitgestraal deur elektrisiteitsopwekking installasies, elektrisiteitsverspreiding of transmissie infrastruktuur, en elektriese toerusting, en wat kenmerkend wye dele van die radiofrekwensiespektrum beset;

**"ITU"** die International Telecommunication Union;

**"Karoo Sentrale Astronomievoordeelgebied 1"** die Karoo Sentrale Astronomievoordeelgebied 1 op 12 Maart 2014 verklaar in Kennisgewing No. 198 in Staatskoerant No. 37434;

**"medebestuursentiteit"** 'n staatsorgaan, 'n plaaslike gemeenskap, 'n individu of 'n ander party met wie die betrokke bestuursgesag 'n medebestuursooreenkoms aangegaan het kragtens artikel 18 van die Wet;

**"Radio-astronomie Beskermingsvlakke Regulasies, 2012"** die regulasies gemaak om die beskermingsvlakke vir radio-astronomie waarnemings in die gebiede wat as astronomievoordeelgebiede vir radioastronomie doeleindes verklaar is, te bepaal en wat op 10 Februarie 2012 in Kennisgewing No. R.90 in Staatskoerant No. 35007 gepubliseer is;

**"radioastronomie stasie"** een of meer ontvangstelsels by 'n plek, insluitend die bybehorende toerusting, vir die ontvangs van radiogolwe van kosmiese oorsprong vir die doeleindes van radioastronomie;

**"radiofrekwensiesteuring"** die nadelige effek van radioseine of elektromagnetiese uitstralings wat ontvang word en die beskermingsvlakke in die Radioastronomie Beskermingsvlakke Regulasies, 2012 voorgeskryf, oorskry;

**"SABS"** die Suid-Afrikaanse Buro van Standaarde ingestel deur artikel 3 van die Wet op Standaarde, 2008, (Wet No. 8 van 2008);

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**AIDS HELPLINE: 0800-0123-22 Prevention is the cure**

**"SANS"** 'n Suid-Afrikaanse Nasionale Standaard deur die SABS ontwikkel kragtens die Wet op Standaarde, 2008 (Wet No. 8 van 2008) ontwikkel is en sluit internasionale standaarde in, wat deur die SABS geïnkorporeer is;

**"SKA"** die Square Kilometre Array-radioteleskoop bestaande uit 'n opset van radio-astronomie stasies om in die Republiek van Suid-Afrika en in deelnemende Afrika-lande geplaas te word volgens die besluit van die SKA-Organisasie, 'n private maatskappy (beperk deur garansie) opgeneem in die Verenigde Koninkryk;

**"SKA Virtuele Middelpunt"** die geografiese punt by geografiese koördinate 30.71292 grade Suid en 21.44380 grade Oos wat verband hou met die SKA-opstelling van radioastronomie stasies binne die Karoo Astronomievoordeelgebiede en wat as die middelste Waardebepaling Verwysingspunt voorgeskryf is vir die toepassing van beskermingsvlakke soos in die Radioastronomie Beskermingsvlakke Regulasies, 2012, bepaal.

**"skeidingsafstand"** die minimum vry afstand tussen enige elektriese infrastruktuur en die naaste SKA Infrastruktuur Grondgebied vereis, ten einde nie die toepaslike beskermingsvlakke in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, te oorskry nie;

**"SKA Infrastruktuur Grondgebiede"** die beskermingsgange in die Karoo Sentrale Astronomievoordeelgebied 1 soos in Bylae A gedefinieer en die sirkelvormige gebied met 'n 20km straal om die SKA Virtuele Middelpunt;

**"Wet op Elektrisiteitsregulering"** die Wet op Elektrisiteitsregulering, 2006 (Wet No. 4 van 2006); en

**"Wet"** die Astronomy Geographic Advantage Act, 2007 (Act No. 21 of 2007);

## **2. Toepassing van die regulasies**

- (1) Onderworpe aan sub-regulasie 3(3), sal hierdie regulasies van toepassing wees op enige nuwe elektriese infrastruktuur en toerusting binne die Karoo Sentrale Astronomievoordeelgebied 1.
- (2) Indien daar verskille tussen die Engelse en Afrikaanse weergawes van hierdie regulasies is, sal die Engelse weergawe voorrang geniet.

## **3. Voorwaardes vir elektriese infrastruktuur**

- (1) Geen persoon mag enige elektriese infrastruktuur en toerusting binne die Karoo Astronomievoordeelgebied 1 oprig, installeer, bedryf of gebruik nie tensy dit aan hierdie regulasies voldoen en die betrokke bestuursgesag 'n permit daarvoor uitgereik het.
- (2) Alle nuwe elektriese infrastruktuur en enige elektriese toerusting wat in verband daarmee gebruik word -
  - (a) mag nie elektromagnetiese steuring aan die SKA Infrastruktuur Grondgebiede veroorsaak wat die beskermingsvlakke in die Radioastronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, oorskry nie, en
  - (b) moet met 'n minimum skeidingsafstand volgens regulasie 8 van hierdie regulasies bepaal, van die naaste SKA Infrastruktuur Grondgebied verwyderd wees.
- (3) Elektriese infrastruktuur met 'n elektriese kragvermoë van minder as 10 kVA, geleë op 'n afstand van meer as 6 km vanaf die naaste SKA Infrastruktuur Grondgebied, word vrygestel van die vereiste om 'n permit te verkry en te beskik en om die inligting wat in sub-regulasie 6(2) verlang word, te verskaf tensy daar bevind word dat steuring veroorsaak word.
- (4) Elektriese infrastruktuur met 'n elektriese kragvermoë van meer as 10 kVA maar nie meer as 'n 100 kVA nie, geleë op 'n afstand vanaf die naaste SKA Infrastruktuur Grondgebied van meer as dit om deur die Minister voorgeskryf te word vir die verskillende soorte fasiliteite of toerusting, moet 'n permit te bekom, maar word vrygestel om aan sub-regulasie 6 van hierdie regulasies te voldoen onderworpe daaraan dat elektromagnetiese steuring nie veroorsaak word nie.

**4. Bykomende voorwaardes vir elektrisiteitsopwekking deur middel van windturbines**

- (1) Bykomend tot die voorwaardes in regulasie 3, mag geen persoon 'n windgedrewe elektriese turbine-opwekker met 'n kapasiteit van 10kVA of meer binne enige radiosiglyn van die SKA Infrastruktuur Grondgebiede oprig nie.
- (2) Om vas te stel of daar 'n radiosiglyn toestand bestaan, moet 'n topografiese terreinprofiel geteken word tussen -
  - (a) die maksimum hoogte bo seevlak van die punt van die turbinelem op die opwekker; en
  - (b) die grond hoogte bo seevlak plus 15 meter by die naaste punt van enige SKA Infrastruktuur Grondgebiede of enige ander punt binne die SKA Infrastruktuur Grondgebiede indien dit nodig geag word deur die betrokke bestuursgesag as 'n gevolg van die topografie tussenin;met die gebruik van ten minste 'n 20 meter resolusie digitale terreinmodel vir die gebied en met inagneming van die grondgeleiding in die Karoo Sentrale Astronomievoordeelgebied 1.
- (3) Indien die bepaling in sub-regulasie (2) deur die moontlike gebruik van nie-weerkaatsende turbinelemme beïnvloed mag word, of indien 'n radiofrekwensiesteuringsbron wat weerkaats mag word, moontlik nie bestaan nie, moet 'n waardebepaling met berekening of metings nogtans uitgevoer word om te bevestig dat die toepaslike beskermingsvlakke soos in die Radioastronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, nie oorskry sal word nie.

**5. Bykomende voorwaardes vir elektriese krag distribusie- en transmissiestelsels**

- (1) Benewens die voorwaardes in regulasie 3 van hierdie regulasies, mag geen persoon enige nuwe oorhoofse elektriese krag distribusie- of transmissiestelsels oprig of installeer nie met 'n spanningsvermoë -
  - (a) gelyk aan of groter as 66 000 Volt binne 16 km van die SKA Infrastruktuur Grondgebiede; en

- (b) minder as 66 000 Volt binne 6 km van die SKA Infrastruktuur Grondgebiede.
- (2) Ondanks voldoening aan sub-regulasie (1), mag die elektriese krag distribusie- of transmissiestelsel nie elektromagnetiese steuring aan die SKA Infrastruktuur Grondgebiede veroorsaak wat die voorgeskrewe beskermingsvlakke in die Radioastronomie Beskermingsvlakke Regulasies, 2012, oorskry nie.

#### **6. Aansoek en voorwaardes vir 'n permit**

- (1) 'n Aansoeker vir 'n permit, in subregulasie 3(1) moet sy aansoek by die bestuursgesag of die mede-bestuursentiteit vir die Karoo Sentrale Astronomie-voordeelgebied 1 indien.
- (2) Die aansoek in sub-regulasie (1) beoog, moet die volgende bevat-
- (a) 'n ontwerpverslag vir die voorgestelde nuwe infrastruktuur en 'n lys van al die elektriese toerusting wat geïnstalleer of gebruik gaan word;
  - (b) 'n "GIS-shape" lêer of elektronies getabuleerde data van die voorgestelde ligging van die nuwe infrastruktuur, insluitend die hoogte van die grondvlak bo seevlak en die maksimum hoogte van die nuwe infrastruktuur bo grondvlak;
  - (c) die elektromagnetiese uitstraling bepaal volgens regulasie 3(3);
  - (d) die nodige minimum skeidingsafstand; en
  - (e) die lys van geografiese liggings waar daar nie aan die vereiste skeidingsafstand nie aan voldoen word nie.
- (3) Die bestuursgesag of die medebestuursentiteit moet die aansoek oorweeg en die aansoeker nie later nie as sestig (60) dae na die ontvangs van die aansoek skriftelik van sy besluit in kennis stel.
- (4) Indien die gesag of die entiteit wat die aansoek oorweeg tevrede is dat die elektriese infrastruktuur en enige elektriese toerusting wat in verband daarmee gebruik word aan regulasies 3, 4 en 5 voldoen, moet daardie gesag 'n permit aan die aansoeker uitreik.
- (5) As die aansoek nie voldoen aan regulasies 3, 4 en 5 nie, moet die gesag of entiteit die aansoeker toelaat om binne dertig (30) dae vanaf die datum van die versoek, besonderhede te verstrek oor die

beperkingsmetodes wat die aansoeker sal toepas om aan die regulasies te voldoen.

- (6) Die betrokke bestuursgesag of entiteit wat die aansoek oorweeg, moet die beperkingsmetodes in ag neem en 'n besluit op die aansoek neem nie later nie as sestig (60) dae na die ontvangs van die aansoek
- (7) As die gesag of die entiteit besluit om die permit toe te staan,
  - (i) moet die gesag of entiteit die permit uitreik; en
  - (ii) die permit moet al die voorwaardes insluit waaraan die aansoeker moet voldoen met betrekking tot die elektriese infrastruktuur en die konstruksie, installasie of bedryf daarvan.
- (7) As 'n persoon aan wie 'n permit uitgereik is sy bedryf staak of ophou om enige elektriese infrastruktuur waarmee die permit verband hou, te gebruik, dan moet daardie persoon binne drie maande na die staking van gebruik of die sluiting, geskrewe kennis daarvan gee aan die gesag of entiteit wat die permit uitgereik het.

#### **7. Bepaling van elektromagnetiese uitstralingsvlakke**

- (1) Vir die doeleindes van hierdie regulasies, moet elektromagnetiese uitstraling bepaal word met verwysing na enige toepaslike SANS standaard of 'n standaard wat kragtens die Wet op Elektrisiteitsregulering voorgeskryf is.
- (2) Indien die uitstraling nie bepaal is soos in sub-regulasie (1) beoog nie, of die uitstraling is anders as dit wat in die toepaslike standaard gespesifiseer is, moet 'n gedetailleerde metingsverslag van die werklike uitstralingsvlakke op die toepaslike SANS meetstandaarde gebaseer of 'n metingsverslag van 'n geakkrediteerde metingslaboratorium in Suid-Afrika of in 'n ander land, deur die aansoeker verskaf word aan die gesag of entiteit, tesame met ondersteunende dokumentasie.
- (3) Indien 'n toepaslike standaard, soos in sub-regulasie (1) of (2) hierbo beoog, nie beskikbaar is nie of geag om onvanpas te wees deur die betrokke bestuursgesag, en die onderneming om 'n metingsveldtog uit te voer is nie moontlik nie as gevolg van tegniese of ander redes,

dan moet die betrokke bestuursgesag of medebestuursentiteit bepaal watter standaard die mees geskikte is en gebruik moet word.

- (4) 'n Geskikte standaard kan ook kragtens artikel 37 van die Wet gevestig word.

#### **8. Bepaling van minimum skeidingsafstande**

- (1) Die bepaling van die minimum skeidingsafstand deur die aansoeker moet deur middel van fisiese metings of gerekenariseerde golfvoortplantingsberekeninge uitgevoer word om die vereiste frekwensie afhanklike verswakking van die elektromagnetiese steuring nodig te bepaal om enige steuring binne die SKA Infrastruktuur Grondgebiede wat die beskermingsvlakke in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, te vermy.
- (2) Die verwysingshoogtes vir die metings- of voorspellingsproses is -
- (a) die maksimum hoogte bo seevlak van die elektriese infrastruktuur; en
  - (b) die grondhoogte bo seevlak plus 15 meters by enige toepaslike ligging binne die SKA Infrastruktuur Grondgebiede.
- (3) Die bepaling van die skeidingsafstand moet op die volgende kriteria gebaseer wees:
- (a) Die betrokke ITU Aanbevelings oor golfvoortplanting.
  - (b) Die steuringsvlak wat nie vir meer as 5% van die tyd oor 'n tydperk van 24 uur oorskry sal word nie.
  - (c) Die gebruik van 'n isotropiese antenne met 0 dB wins by die betrokke punt binne die SKA Infrastruktuur Grondgebiede.
  - (d) Die gebruik van 'n digitale terrein model met die beste resolusie beskikbaar.
  - (e) Die grondgeleiding binne die Karoo Sentrale Astronomievoordeelgebied 1.
  - (f) Die elektromagnetiese uitstralingsvlak volgens regulasie 7 in hierdie regulasies bepaal wat die hoogste steuringsvlak sal veroorsaak.

- (4) Die benodigde frekwensie afhanklike verswakking van die elektromagnetiese steuring om gebruik te word om die minimum skeidingsafstand te bepaal, is die verskil tussen die hoogste elektromagnetiese uitstralingsvlak volgens regulasie 7 van hierdie regulasies bepaal wat die hoogste steuringsvlak sal veroorsaak en die toepaslike beskermingsvlak in die Radioastronomie Beskermingsvlakke Regulasies 2012, voorgeskryf.
- (5) Die minimum skeidingsafstand moet bepaal word deur die gebruik van die toepaslike ITU Aanbeveling vir radiogolf voortplanting en die benodigde verswakking van die elektromagnetiese steuring in subregulasie 8(4) van hierdie regulasies bepaal.

#### **9. Prosedures om elektromagnetiese steurings op te los**

In die geval dat elektromagnetiese steuring veroorsaak word deur elektriese infrastruktuur of elektriese toerusting wat vrygestel is van hierdie regulasies kragtens sub-regulasies 3(3) of 3(4) van hierdie regulasies of deur elektriese infrastruktuur of elektriese toerusting waarvoor 'n permit uitgereik is, as gevolg van foute of beperkings op die akkuraatheid van berekeninge om skeidingsafstande te bepaal, dan sal die volgende kriteria en prosedures van toepassing wees –

- (1) Die betrokke bestuursgesag moet 'n volledige metingsverslag aanvra wat op die werklike elektromagnetiese steuringsvlakke volgens die toepaslike SANS meet standaard gebaseer is, of 'n ander toepaslike standaard soos deur die betrokke bestuursgesag bepaal, wat saam met ondersteunende dokumentasie aan die bestuursgesag of die medebestuursentiteit verskaf moet word deur die persoon wat die eienaar is van die infrastruktuur of elektriese toerusting.
- (2) As die persoon wat die eienaar van die elektriese infrastruktuur of elektriese toerusting is, nie in staat is om die verslag te voorsien nie, dan moet die bestuursgesag of die medebestuursentiteit reël dat die metings gedoen word, met die koste daarvan deur die eienaar van die infrastruktuur of elektriese toerusting gedek, om te bepaal tot watter mate die toepaslike beskermingsvlak in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, oorskry word.



- (3) Die elektromagnetiese steuring moet verminder tot onder die toepaslike vlak in die Radio-astronomie Beskermingsvlakke Regulasies, 2012, voorgeskryf, deur die vereiste minimum skeidingsafstand daar te stel volgens regulasie 8 van hierdie regulasies of om gepaste beperkingsmaatreëls rondom die bron van die elektromagnetiese steuring te implementeer.
- (4) 'n Permit moet word deur die bestuursgesag uitgereik word waarin die voorwaardes vir die voortgesette bedryf van die elektriese infrastruktuur of elektriese toerusting gespesifiseer word.

#### **10. Ligging van die SKA Virtuele Middelpunt en beskermingsgange**

- (1) Die geografiese ligging van die SKA Virtuele Middelpunt is onderhewig aan hersiening en finalisering binne 12 maande na die uitvaardiging van hierdie regulasies.
- (2) Die beskermingsgange in die Karoo Astronomievoordeelgebied 1 is onderhewig aan jaarlikse hersiening in ooreenstemming met vordering in die ontwikkeling van die SKA met die doel om hulle uit te faseer en om slegs die beskerming van die radio astronomie stasies binne die gange geleë, te vereis.

#### **11. Misdrywe en strawwe**

Enige persoon wat hierdie regulasies oortree, is skuldig aan 'n misdryf en by skuldigbevinding strafbaar met 'n boete van hoogstens R1 000 000 (een miljoen rand) of gevangenisstraf of 'n boete en gevangenisstraf.

#### **12. Kort titel en inwerkingtreding**

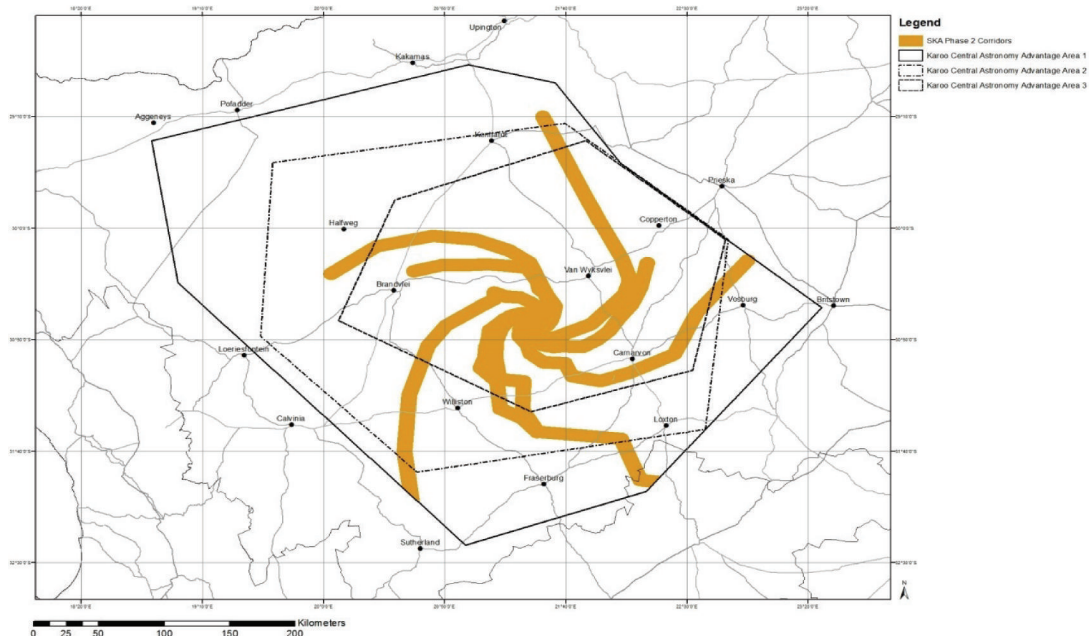
Hierdie regulasies heet die Regulasies om Elektromagnetiese Steuring binne die Karoo Sentrale Astronomievoordeelgebied 1, te beperk, 2015, en sal op 'n datum in werking tree om deur die Minister bepaal te word met 'n kennisgewing in die Staatskoerant.

## BYLAE A

### Kaart van die beskermingsgange wat die SKA radio-astronomie-stasies binne die Karoo Sentrale Astronomievoordeelgebied 1 insluit

Die kaart hieronder beeld die beskermingsgange uit wat nodig is vir ongeveer 54 SKA radio-astronomie stasies geleë binne die Karoo Sentrale Astronomievoordeelgebiede 1 geleë, maar wat buite die 20 km radius rondom die SKA Virtuele Middelpunt val. Die beskermingsgange word benodig vir die ontwikkelingsproses van die SKA-opset met verloop van tyd.

'n Kleiner skaal weergawe van die kaart hieronder getoon en / of 'n GIS-vorm lêer is op versoek beskikbaar vanaf die bestuursgesag of medebestuursentiteit. Die buite grense van die gange is op 'n afstand van 5 km aan weerskante van die spiraalarme waarlangs die SKA-stasies geplaas sal word.



**VERDUIDELIKENDE MEMORANDUM OOR DIE KONSEP REGULASIES VIR DIE BESKERMING VAN DIE KAROO SENTRALE ASTRONOMIEVOORDEELGEBIEDE**

'n Verkorte weergawe is beskikbaar. Die vollengte en verkorte weergawes is ook in Engels

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5. Vrae wat dikwels voorkom en antwoorde daarop
6. Afkortings

beskikbaar. Niks in hierdie dokument sal enigiets in die Regulasies voorgeskryf, weerspreek nie.

**1. Inleiding**

- 1.1. Die doel van die verduidelikende memorandum is die verskaffing van bykomende inligting, 'n beskrywing van die beskermingstelsel vir die verklaarde Karoo Sentrale Astronomievoordeelgebiede (AVGe), en opsommings van die konsep Regulasies.
- 1.2. Die Karoo Sentrale AVGe is op 12 Maart 2014 verklaar na die afhandeling van die voorgeskrewe openbare raadpleging en die oorweging van al die voorleggings.
- 1.3. 'n Kaart van die verklaarde gebiede is beskikbaar op die 4de bladsy van hierdie dokument.

**2. Radio-astronomie en die SKA**

- 2.1. Radio-astronomie is 'n wetenskaplike navorsingsveld wat wêreldwyd, tesame met optiese astronomie, uitgevoer word om die kennis en begrip van die heelal en die wetenskaplike wette wat dit beheer, te vermeerder. Die ontvangs en analise van die kosmiese radioseine wat deur die sterre en ander materie in die heelal uitgestraal word, stel ons in staat om die verskynsels waargeneem in die wye omvang van die heelal, binne en buite ons sonnestelsel, beter te verstaan en te verduidelik.
- 2.2. Die kosmiese radioseine ontvang, is uiters swak aangesien hulle oor die heelal vir miljoene jare lank oor ontsaglik groot afstande beweeg het voordat hulle die aarde bereik het. Die seinstrekte is omtrent 'n miljoen maal swakker as dit wat deur selfone en ander radiokommunikasie toestelle ontvang word.
- 2.3. Baie groot en sensitiewe ontvangsinstallasies word vir radio-astronomie gebruik. Die swak kosmiese seine wat ontvang word, kan versteur en onbruikbaar gemaak word deur seine van radiokommunikasie en elektromagnetiese uitstraling wat die ontvangsdrempel vir radioastronomie oorskry. Ontvangs op hierdie vlak moet dus beskerm word. Die

vasgestelde beskermingsvlakke is op internasionaal aanvaarde standarde en prosedures wat deur die Internasionale Telekommunikasie Unie ontwikkel is, gebaseer.

- 2.4. Die ontvangsdrempel en beskermingsvlak vir radio-astronomie is baie laer as dit wat vir bruikbare radiokommunikasie benodig word. Die beskermingsvlak varieer ietwat oor die radiofrekwensie spektrum maar is in die orde van (min)-220 dBm/Hz tot (min)-250 dBm/Hz.
- 2.5. Die kosmiese seine verskyn oor die radiofrekwensiespektrum weens die verskillende frekwensies deur verskillende chemiese elemente uitgestraal. Gevolglik moet radio-astronomie waarnemings van kosmiese seine oor baie groot dele van die radiofrekwensiespektrum uitgevoer word.
- 2.6. Radiofrekwensiesteuring (RFS) op die ontvangs van kosmiese seine mag deur radiokommunikasiestelsels veroorsaak word. Alhoewel die frekwensiespektrum besetting van hierdie stelsels in die Noordkaap Provinsie laag mag wees, in vergelyking met ander areas in die Republiek van Suid-Afrika, mag sommige radiokommunikasieseine, in besonder hoë krag terrestriële uitsaaiuitsendings, oor baie lang afstande voortplant afhange van die perseel- en mashoogte, die senderkrag gebruik, die rigting van die uitsending en die topografiese terrein tussenin. Baie hoë RFS-vlakke mag versadiging in die radioastronomie ontvangstelsel veroorsaak, wat die kosmiese sein ontvangsvermoë heeltemal vernietig, of selfs permanente skade aan die ontvangstoerusting veroorsaak.
- 2.7. Elektromagnetiese steuring (EMS) is 'n ander vorm van RFS wat deur elektrisiteitsopwekking en -verspreiding, en die gebruik van elektriese masjiene en toerusting, veroorsaak word. Hierdie steuring vind oor baie groot frekwensiebande plaas, maar net oor relatief kort afstande, d.i. 5 tot 20 km afhange van die stelsel en voortplantingstoestand.
- 2.8. Die Square Kilometre Array (SKA)<sup>1</sup> is 'n nuwe generasie, multinasionale radioteleskoop wat die kragtigste sterrewag in die wêreld sal wees. Die kern oorweging vir die plasing van die SKA was om die mees geskikte gebied vir die teleskoop te vind met aanvaarbare klimaattoestande, uiters lae vlakke van RFS en EMS en dat beskerming teen RFS en EMS verskaf sal word. Die SKA-Organisasie se besluit om die grootste gedeelte in die Karoo-streek van die Noordkaap Provinsie in die Republiek van Suid-Afrika te plaas, het op 'n wêreldwye soektog en internasionale mededingingsproses gevolg. Die finale besluit is geneem na 'n intensiewe analise deur kundiges van al die faktore wat die ligging van die SKA beïnvloed.
- 2.9. Beskerming word vir die SKA vereis oor die verwagte leeftyd van 50 jaar.

### 3. Beskerming en die Wet op Geografiese Astronomievoordeel

- 3.1. Om 'n langtermyn astronomie beskermingskema vir die Republiek van Suid-Afrika te vestig, het die Regering van die Republiek van Suid-Afrika dit nodig gevind om wetgewing vir die beskerming van Geografiese Astronomievoordeelgebiede uit te vaardig. Die Wet op Geografiese Astronomievoordeel, 2007 (Wet No. 21 van 2007) (verder aan na verwys as die GAV-Wet), is uitgevaardig en in Engels en in Tswana in Staatskoerant No. 31157 op 17 Junie 2008 gepubliseer. Die Engelse weergawe is deur die President onderteken. Die GAV-Wet is met die publikasie van Proklamasie No. 28 op 24 April 2009 in Staatskoerant No. 32163 in

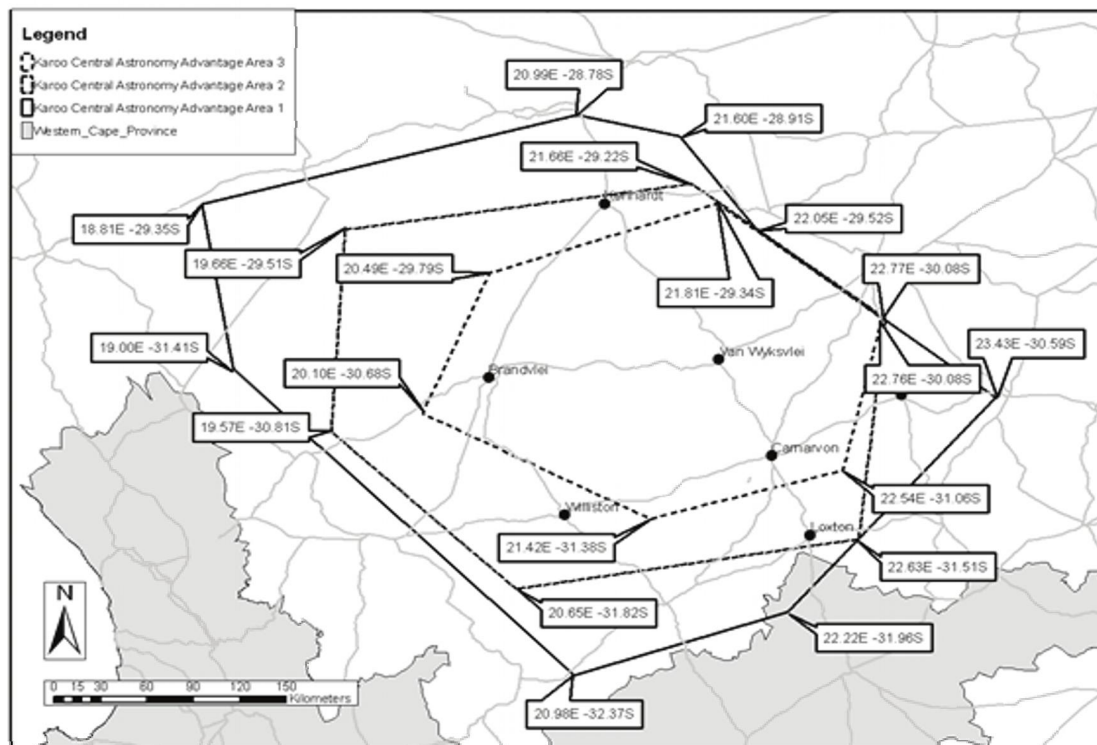
<sup>1</sup> Baie meer inligting oor die SKA kan op die Suid-Afrikaanse SKA webtuiste [www.ska.ac.za/](http://www.ska.ac.za/) en die internasionale webtuiste [www.skatelescope.org/](http://www.skatelescope.org/) gevind word.

werking gestel. 'n Afrikaanse vertaling van die GAV-Wet is op aanvraag beskikbaar vanaf die Astronomie Bestuursgesag in die Departement van Wetenskap en Tegnologie. Die vertaalde weergawe het geen amptelike status nie.

- 3.2. Die GAV-Wet verskaf die raamwerk en die beginsels om die verskillende soorte astronomie by enige plek binne Suid-Afrika uit te voer en te beskerm. Gebiede om beskerm te word moet verklaar word en beskermingsmaatreëls in regulasies voorgeskryf word vir spesifieke astronomie-ondernemings. Die beskermingsmaatreëls sluit die beperking van radiofrekwensiespektrumgebruik in, beperking van maontlike skadelike aktiwiteite, daarstelling van die nodige beskermingsmaatstawwe en -standaarde, en die daarstelling van administratiewe prosedures om die maatreëls in te stel en in stand te hou. Weens die kompleksiteit betrokke in die verklaring van die verskillende kategorieë van beskermdede gebiede en die maak van beskermingsregulasies vir elke kategorie, word die implementering van die beskermingskema in 'n aantal agtereenvolgende stappe uitgevoer.
- 3.3. Die GAV-Wet maak voorsiening vir omvangryke openbare deelname gedurende die verklaring van gebiede en die maak van beskermingsregulasies. Dit sluit die volgende in:
- 3.3.1. Gedurende die openbare raadplegingsproses vir die verklaring van die gebiede om beskerm te word, moet permanente registers van belanghebbende en geaffekteerde persone vir elke kern-, sentrale of gekoördineerde AVG opgestel word; afskrifte van die kennisgewing en voorgestelde verklarings moet per geregistreerde pos aan elke private grondeienaar binne die kern- of sentrale AVG gestuur word, en waar moontlik, moet enige ander wettige bewoner van die grond binne die betrokke AVG op 'n gepaste wyse oor die raadplegingsproses ingelig word (al hierdie aktiwiteite is uitgevoer gedurende die raadpleging vir die verklaring van die Karoo Sentrale AVGe);
- 3.3.2. Voor die publikasie van 'n kennisgewing om regulasies te maak, moet afskrifte van die kennisgewing en die konsep regulasies per geregistreerde pos, of 'n ander metode waarop ooreengekom is, gestuur word aan die persone wat in die permanente register van belanghebbende en geaffekteerde persone ingesluit is;
- 3.3.3. Die kennisgewings, konsep verklarings of regulasies moet met voldoende inligting in die Staatskoerant gepubliseer word en 'n uitnodiging insluit om geskrewe voorleggings of besware binne 60 dae in te dien. Die kennisgewing moet ook in ten minste twee nasionale koerante wat in die gebied versprei word, gepubliseer word; en
- 3.3.4. Daar moet voldoen word aan die betrokke voorskrifte in die Wet op die Bevordering van Administratiewe Geregtigheid, 2000 (Wet no. 3 van 2000) en sy Regulasies.
- 3.4. Die volgende maatreëls is reeds kragtens die GAV-Wet in werking gestel om die nodige beskerming aan radioastronomie waarnemings deur die SKA, te verskaf:

<b>Beskermingsmaatreëls vir die SKA radioteleskoop</b>	<b>GAV-Wet verwysing</b>	<b>Staatskoerant (SK) nommers</b>	<b>Datum</b>
Verklaring van die Noordkaap Provinsie, uitgesluit Sol Plaatje Munisipaliteit as 'n AVG	Artikel 5	Kennisgewing 115, SK 32951	19 Feb. 2010
Verklaring van die Karoo Kern AVG bestaande uit 13 406 hektaar grond (Eiendom van Nasionale Navorsingstigting)	Artikel 7	Kennisgewing 723 in SK 33462	20 Aug. 2010
Verklaring van die vestiging en bedryf van die MeerKAT en SKA vir astronomie en verwante wetenskaplike ondernemings	Artikel 28(1)	Kennisgewing 897 in SK 33614	15 Okt. 2010

Regulasies wat die radio-astronomie beskermingsvlakke standaard vir die Suid-Afrikaanse Radio-astronomiediens (SARAS) voorskryf	Artikels 37 & 50	Kennisgewing no. R.90 in Koerant 35007	10 Februarie 2012
Regulasies vir beskerming van Karoo Kern AVG wat alle radiofrekwensiespektrum-gebruik en gelyste aktiwiteite beperk tensy dit vir radio-astronomie nodig is	Artikels 22, 23 & 50	Kennisgewing no. R.456 in Koerant no. 35450	22 Junie 2012
Verklaring van die Karoo Sentrale AVGe (Kaart hieronder)	Artikel 9	Kennisgewing 198 in SK 37434	12 Maart 2014



3.5. Die beskermingsfilosofie wat in die ontwikkeling van die beskermingskema toegepas is, is op die volgende beginsels gebaseer:

- 3.5.1. Dat steuring op kosmiese radioseine ontvangs en dataverlies geminimaliseer sal word sodat die verwagte inligting en ontdekkings gerealiseer sal word;
- 3.5.2. Dat die impak van die beskermingstelsel op radiokommunikasie, elektriese aktiwiteite en ander aktiwiteite wat radio-astronomie skadelik mag affekteer, geminimaliseer sal word;
- 3.5.3. Dat die benodigde vlak van beskerming met betrekking tot RFS by die SKA Virtuele Middelpunt (SVM), as die mees sensitiewe gedeelte van die SKA, tot die maksimum moontlike omvang toegepas sal word. Dit sal die gevolg hê dat beperkings op radiokommunikasie geleidelik met afstand vanaf die SVM sal afneem. Daarbenewens sal frekwensiegebruik tot vrygestelde frekwensiebande beperk word en uitgestraalde kragvlakke tot 40 dBm beperk word;

- 3.5.4. Dat vir EMS, deur elektrisiteitsopwekking en -verspreiding en elektriese masjiene veroorsaak, die nodige beskerming toegepas sal word op die 20 km straalafstand rondom die SVM en op die beskermingsgange vir afgeleë SKA-stasies binne die Karoo Sentrale AVGe. Beskerming sal verkry word deur die handhawing van die nodige skeidingsafstand tussen die sturingsbronne en die gemelde beskermde areas;
- 3.5.5. Dat die benodigde beskermingsvlak wat toegepas sal word, volgens die Suid-Afrikaanse Radio-astronomiediens (SARAS) Standaard Regulasies wat reeds uitgevaardig is, sal wees;
- 3.5.6. Dat die voorsiening van alternatiewe radiokommunikasie opsies gefasiliteer sal word in die gebied waar alle bestaande terrestriële radiokommunikasie beperk sal word as gevolg van voldoening aan die beskermingsmaatreëls, en ook in sommige gevalle, waar daar geen bestaande terrestriële telekommunikasie dienste beskikbaar is nie;
- 3.5.7. Dat die teenwoordigheid van beperkte RFS aanvaar sal word na oorweging van die behoeftes vir noodsaaklike radiokommunikasie en die moontlike beskerming geoptimaliseer is sonder om daardie kommunikasie heeltemal te beperk; en
- 3.5.8. Dat versadigende vlak RFS nie toegelaat kan word binne die beskermde area rondom die SVM nie en nie binne die beskermingsgange nie omdat hierdie RFS-vlak sal verhoed dat die SKA radio-astronomie ontvangsfasiliteite bruikbare uitset lewer en die toerusting mag beskadig.
- 3.6. Die radiofrekwensiespektrum van 100 MHz tot 25.5 GHz sal binne die betrokke verklaarde Karoo Sentrale AVGe vir radio-astronomie waarnemings gereserveer word en moet tot die maksimum omvang moontlik vry van enige radioseine wees wat die beskermingsvlak oorskry. Enige gebruik van die gereserveerde spektrum benodig vir noodsaaklike radiokommunikasie stasies binne die Karoo Sentrale AVGe geleë, sal vir vrystelling (onder sekere voorwaardes) van die beperkinge oorweeg word.
- 3.7. Alle bestaande en toekomstige radiokommunikasie uitsendings vanaf basis stasies binne die Karoo Sentrale AVGe geleë, en waar nodig ook van mobiele en draagbare radio-apparaat, moet beoordeel word volgens voorgeskrewe prosedures om te bepaal of daar aan die beskermingsvereistes voldoen word. Permitte sal uitgereik word vir daardie stasies en uitsendings wat mag voortgaan om binne die Karoo Sentrale AVGe te werk. Die permitte sal die vrystellings vir frekwensiespektrum en toegelate uitsendingeienskappe om gebruik te word, insluit.
- 3.8. Laekrag kortafstand toestelle (minder as 250 mW) soos deur OKOSA in hulle Radiofrekwensiespektrum Regulasies gedefinieer, sal vrygestel word. Hierdie toestelle behoort nie binne 50 km vanaf die SVM gebruik te word nie. Hoër krag kortafstand toestelle sal aan beoordeling en die toepassing van beskermingsmaatreëls onderworpe wees.
- 3.9. Noodsaaklike radiokommunikasie dienste moet as sodanig deur die Bestuursowerheid geïdentifiseer en aangewys word. Indien nodig, sal sulke dienste toegelaat word om die beskermingsvlakke te oorskry nadat die volgende bepaal is:
- 3.9.1. Alle moontlike beperkings deur die beskermingsregulasies vereis in ag geneem is;
- 3.9.2. Alternatiewe tegniese opsies vir die aflewering van daardie dienste oorweeg is; en
- 3.9.3. RFS en beperkings wat die dienslewering aansienlik sal affekteer, geminimaliseer is.

- 3.10. Elektrisiteitsopwekking en -verspreiding infrastruktuur wat bestaan wanneer die Regulasies uitgevaardig word, sal aanvaar word soos dit in sy huidige vorm is.
- 3.11. Nuwe elektriese fasiliteite of aktiwiteite met 'n kragvermoë van meer as 10 kVA en/of binne 6 km vanaf die 20 km straalafstand rondom die SVM of 'n SKA-beskerminingsgang geleë, sal 'n permit benodig onderworpe daaraan dat 'n voorgeskrewe beoordelingsproses eers uitgevoer word.
- 3.12. Enige RFS of EMS wat deur sekere elektriese of radiokommunikasie veroorsaak word wat in die beskermingsregulasies vrygestel is, sal ondersoek word met die doel om sulke steuring te elimineer.

#### **4. Opsomming van die Beskerminingsmaatreëls en die Prosedures in die Konsep Regulasies**

Die konsep Regulasies wat die kennisgewing en die regulasie skedule vergesel met die bedoeling om regulasies vir die beskerming van die Karoo Sentrale AVGs te maak, bestaan uit vier stelle Regulasies wat vier verskillende aspekte van die beskermingskema aanspreek. Die opsommings wat hierop volg, sal kortliks die inhoud van elk van die konsep Regulasies beskryf maar die konsep Regulasies self moet bestudeer word om hulle volle omvang en betekenis te bepaal.

##### **4.1. Skedule A - Konsep Karoo Sentrale AVGe Spektrumregulasies, 2015**

- 4.1.1. Regulasie 1 van die konsep Regulasies sluit 23 woordomsrywings in van woordgebruik in die regulasies waaraan sekere betekenis toegekryf is.
- 4.1.2. Regulasie 2 bepaal dat die Regulasies op die Karoo Sentrale AVGe van toepassing is en dat die Engelse weergawe sal voorrang geniet.
- 4.1.3. Regulasie 3 skryf voor dat:
  - (a) Alle maatreëls in die Regulasies op frekwensiespektrumgebruik binne die Karoo Sentrale AVGs op die frekwensiespektrum van 100 MHz tot 25.5 GHz van toepassing sal wees;
  - (b) Die gebruik van die gespesifiseerde radiofrekwensiespektrum sal een jaar na die Regulasies in werking gestel is, beperk wees tensy 'n vrystelling toegestaan is, 'n permit uitgereik is en RFS nie by die SVM veroorsaak word nie;
  - (c) Bestaande spektrumgebruik tot by 200 MHz se gebruik mag voortgaan mits permitte verkry word; en
  - (d) Een jaar nadat die Regulasies in werking gestel is, mag geen radiokommunikasie onderneem word wat RFS by die SVM veroorsaak nie, of daartoe in staat is nie, tensy dit deur die bestuursgesag oorweeg is en 'n permit uitgereik is aan die persoon wat die aktiwiteit uitvoer.
- 4.1.4. Regulasie 4 bepaal dat een jaar nadat die Regulasies in werking gestel is, sal die voorwaardes van toepassing op die gebruik van radiofrekwensiespektrum, of enige radiokommunikasie, benewens die beperking op die veroorsaking van RFS by die SVM, of op die vermoë om dit te doen, ook die volgende insluit:
  - (a) Effektiewe uitgestraalde krag van senders is tot 40 dBm beperk;
  - (b) Versadigingsvlak RFS moet nie in die beskermingsgange in Bylae A tot die Regulasies beskryf, of binne 'n straalafstand van 20 km vanaf die SVC, oorskry word nie;
  - (c) Voorgeskrewe beskermingsvlakke by die SVM moet nie oorskry word nie tensy dit vir 'n noodsaaklike diens is en 'n vlak hoër as die beskermingsvlak in die uitgereikte permit gespesifiseer is; en



- (d) Die voorwaardes is ook van toepassing op die konstruksie, verbetering of uitbreiding van enige vaste radiostasie waarvoor 'n permit uitgereik is, maar is nie van toepassing nie op radiokommunikasie binne die frekwensiespektrum vanaf 100 tot 200 MHz wat in gebruik was voordat die Regulasies uitgevaardig is.

4.1.5. Regulasie 5 skryf voor dat:

- (a) Vanaf die datum wat die Regulasies in werking tree, mag geen persoon binne die Karoo Sentrale AVGe enige vaste radiostasie oprig, verbeter of uitbrei nie wat RFS by die SVM veroorsaak, of in staat is om dit te doen nie, tensy 'n permit in verband daarmee bekom is;
- (b) Na een jaar mag geen persoon enige radiostasie, apparaat of toestel gebruik nie wat RFS by die SVM, of versadigingsvlak RFS binne die beskermingsgange of binne 20 km vanaf die SVM veroorsaak nie; en
- (c) Die RFS waardebeplanning moet eerstens uitgevoer word vir radiostasies of apparaat by vaste liggings en tweedens ook vir verwante mobiele of draagbare stasies of apparaat wat RFS mag veroorsaak, insluitend kortafstand toestelle (SRDs) met 'n uitset groter as 250 mW soos deur OKOSA (ICASA) in hulle Radiofrekwensiespektrum Regulasies omskryf, wat geografies beperk mag word om RFS te vermy. Tipiese voorbeelde van kortafstand toestelle is "internet modem routers" met WiFi, DECT koordlose telefone, en lae krag video waarnemingstoerusting.

4.1.6. Regulasie 6 bepaal dat:

- (a) Die besit van 'n permit nie nodig is vir kortafstand toestelle met 'n uitset van minder as 250 mW nie, onderworpe daaraan dat RFS nie by die SVM of versadigingsvlak RFS nie binne die beskermingsgange of binne 20 km vanaf die SVM veroorsaak word nie;
- (b) Die vrystelling op die besit van 'n permit is slegs van toepassing op standaard kortafstand toestelle sonder enige versterking; en
- (c) In die geval dat steuring veroorsaak word by enige radio-astronomie stasie deur 'n kortafstand toestel, sal die aangeleentheid aan die voorgeskrewe voldoeningbeplanning prosedures onderwerp word en sal daar metodes oorweeg word om die steuring te verminder om sodoende aan die vereiste beskermingsvlakke te voldoen. Kortafstand toestelle behoort nie binne 50 km vanaf die SVM gebruik te word nie.

4.1.7. Regulasie 7 bepaal dat die ligging van die SVM aan hersiening en finalisering onderworpe is binne 12 maande nadat die regulasies uitgevaardig is en dat die beskermingsgange aan jaarlikse hersiening onderworpe is met die doelwit dat hulle uitgefaseer sal word en net die SKA-stasies beskerm word.

4.1.8. Regulasie 8 maak voorsiening dat die Minister die eenjaar periode wat in regulasies 3, 4 en 5 voorskryf is tot 'n maksimum van 3 jaar mag verleng.

4.1.9. Regulasie 9 maak voorsiening dat enige toegelate finansiële vergoeding onderworpe sal wees aan die Regulasies oor Finansiële Vergoedingsprosedures vir sentrale AVGe, 2015.

4.1.10. Regulasie 10 bepaal die oortredings en strawwe wat van toepassing is.

- 4.1.11. Regulasie 11 skryf voor dat die Regulasies op 'n datum in werking sal tree om deur die Minister bepaal te word deur middel van 'n kennisgewing in die Staatskoerant.
- 4.1.12. Bylae A behels 'n kaart vir die beskermingsgange en inligting oor hulle ligging.

#### **4.2. Skedule B - Konsep Regulasies oor Administratiewe Aangeleenthede vir die Sentrale AVGe (Radio-astronomie), 2015**

- 4.2.1. Regulasie 1 van die konsep Regulasies sluit 24 woordomskrywings in van woordgebruik in die Regulasies waaraan sekere betekenis toegeeskryf is.
- 4.2.2. Regulasie 2 bepaal dat die Regulasies van toepassing sal wees op enige sentrale AVGe vir radio-astronomie doeleindes verklaar en dat die Engelse weergawe voorrang sal geniet.
- 4.2.3. Regulasie 3 skryf 'n proses voor wat gou uitgevoer moet word nadat die Regulasies in werking gestel is om die frekwensiespektrum te bepaal wat vrygestel moet word van die beperking dat dit nie binne die Karoo Sentrale AVGe gebruik mag word nie. Die proses sluit raadpleging met OKOSA in; raadpleging van bestaande radiokommunikasie basisstasie eienaars en geregistreerde belanghebbende en geaffekteerde partye; publikasie van die voorgestelde vrygestelde spektrum en om geskrewe verstoë aan te vra. Na oorweging van die verstoë, moet 'n lys van die vrygestelde spektrum in die Staatskoerant gepubliseer word ten minste 6 maande voordat die beperking op spektrumgebruik in werking tree.
- 4.2.4. Regulasie 4 skryf die volgende voor:
- (a) Frekwensiegebruik en radio-uitsendings wat bestaan het voordat die Spektrum Regulasies in werking tree, mag nie voortgaan nie na een jaar (verlengbaar tot 3 jaar) nadat die Spektrum Regulasies in werking getree het nie, en enige nuwe gebruik en uitsendings mag nie 'n aanvang neem nie tensy 'n permit uitgereik is vir daardie frekwensiegebruik en daardie uitsendings;
  - (b) Kortafstand toestelle deur OKOSA vrygestel van die vereiste om 'n radiofrekwensiespektrum lisensie te besit, het nie 'n permit nodig nie as hul uitsendings minder as 250 mW is, indien hulle voldoen aan bedryfsvoorwaardes deur OKOSA voorgeskryf, radiofrekwensiesteurings nie veroorsaak word nie en hulle individueel gebruik word en nie versterk is nie. As daar nie aan die voorwaardes voldoen word nie, moet daar vir 'n permit aansoek gedoen word en 'n voldoeningsbepaling uitgevoer word;
  - (c) 'n Voldoeningsbepaling moet gedoen deur 'n bevoegde persoon wat deur die aansoeker aangestel is, voordat 'n permit uitgereik kan word; en
  - (d) Die aansoek vir 'n permit en die voldoeningsbepaling vir bestaande uitsendings of vir nuwe uitsendings moet aan voorgeskrewe standarde en gespesifiseerde dokumentformate voldoen, en moet by die betrokke bestuursgesag ingedien word. Indien spektrum wat nie vrygestel is nie, gebruik wil word, moet 'n versoek en motivering vir die gebruik van daardie spektrum by die permitaansoek ingesluit word.
- 4.2.5. Regulasie 5 skryf die beoordelingsnorme en die verwerking van permitaansoeke en voldoeningsbepalings deur die bestuursgesag voor wat aan gespesifiseerde maatstawwe en tydskaal moet voldoen. Voorsiening is gemaak dat aansoekers addisionele voorleggings kan maak in die geval dat die aansoek nie aan beskermingsvereistes voldoen nie, vir die oplossing van geskille en vir die verlenging van voorgeskrewe tydskaal. Die inhoud van permitte om uitgereik te word, is voorgeskryf. Indien RFS veroorsaak word nadat 'n permit uitgereik is vir 'n uitsending wat voldoen het, dan moet die voldoeningsbepalingsproses hersien word. Aansoek kan

gedoen word vir die wysiging van 'n uitgereikte permit wat onderworpe sal wees aan die norms vir die verwerking en voldoeningsbepaling voorgeskryf vir nuwe aansoeke.

- 4.2.6. Regulasie 6 spesifiseer die tegniese prosedures, norms, standaard en die voldoeningsbeoordeling vorm om voltooi te word, vir die bepaling van die radiofrekwensie steuringsvlakke en of dit aan die beskermingsvlakke voldoen.
- 4.2.7. Regulasie 7 skryf die tipe radiokommunikasiedienste voor wat as noodsaaklike dienste mag kwalifiseer en die prosedures en voorwaardes vir 'n radiokommunikasiediens om as 'n noodsaaklike diens geklassifiseer te word. Die bepaling of 'n diens 'n noodsaaklike diens is, of nie, moet gedoen word voor die voldoeningsbepaling vir 'n permitaansoek. 'n Noodsaaklike diens mag toegelaat word om die beskermingsvlak in 'n beperkte mate te oorskry maar sal nie toegelaat word om die versadigingsvlak RFS te oorskry nie.
- 4.2.8. Regulasie 8 bepaal die norms vir persone wat die voldoeningsbepaling mag doen en die voorgeskrewe voldoeningsbepaling verslag moet voltooi en onderteken.
- 4.2.9. Regulasie 9 skryf die norms en voorwaardes voor vir 'n permit register om gehou te word.
- 4.2.10. Regulasie 10 bepaal die toepaslike oortredings en strawwe.
- 4.2.11. Regulasie 11 bepaal dat die regulasies in werking sal tree op 'n datum om deur die Minister bepaal te word met 'n kennisgewing in die Staatskoerant.

#### **4.3. Skedule C - Konsep regulasies oor Finansiële Vergoedingsprosedures vir sentrale AVGe, 2015**

- 4.3.1. Hierdie Regulasies gee uitvoering aan artikel 23(3)(a) van die GAV-Wet wat voorsiening maak vir finansiële vergoeding in die geval van 'n radiokommunikasie aktiwiteit wat wettig uitgevoer is, onmiddellik voordat die Spektrum Regulasies vir die betrokke gebied uitgevaardig is, beperk word of opgeskort word om aan die regulasies te voldoen.
- 4.3.2. Regulasie 1 behels tien woordskrywings vir sekere woordgebruik in die Regulasies.
- 4.3.3. Regulasie 2 bepaal dat die Regulasies op enige sentrale AVGe, vir radio-astronomie doeleindes verklaar, van toepassing sal wees en dat die Engelse weergawe voorrang sal geniet.
- 4.3.4. Regulasie 3 skryf die inligting voor wat nodig is in 'n aansoek om finansiële vergoeding.
- 4.3.5. Regulasie 4 spesifiseer die prosedures en norms vir die verwerking van finansiële vergoedingsaansoeke deur die betrokke bestuursgesag.
- 4.3.6. Regulasie 5 bepaal die norms en prosedures vir besluite om deur die Minister geneem te word oor finansiële vergoedingsaansoeke.
- 4.3.7. Regulasie 6 bepaal die norms vir die aanvaarding van aanbiedinge vir finansiële vergoeding, betalingsprosedures en maak voorsiening vir die hersiening van die Minister se besluit kragtens die voorskrifte in die Wet op die Bevordering van Administratiewe Geregtigheid.

4.3.8.Regulasie 7 bepaal die toepaslike oortredings en strawwe.

4.3.9.Regulasie 8 bepaal dat die regulasies in werking sal tree op 'n datum om deur die Minister bepaal te word met 'n kennisgewing in die Staatskoerant.

#### 4.5. Skedule D - Konsep Regulasies oor beperking van EMS in die Karoo Sentrale AVG1

- 4.5.1. Regulasie 1 sluit 23 woordomsrywings in vir sekere woordgebruik in die Regulasies.
- 4.5.2. Regulasie 2 bepaal dat die Regulasies op elektriese infrastruktuur en elektriese toerusting binne die Karoo Sentrale AVG1 geleë, van toepassing is en dat die Engelse weergawe voorrang sal geniet. Die definisie vir elektriese infrastruktuur sluit elektrisiteitsdistribusie en –transmissie wat voor die uitvaardiging van hierdie regulasies bestaan het, uit.
- 4.5.3. Regulasie 3 bepaal dat:
- Elektriese infrastruktuur en toerusting nie gekonstrueer, geïnstalleer, bedryf of gebruik mag word binne die Karoo Sentrale AVG1 nie tensy 'n permit uitgereik is vir die gebruik daarvan en dit aan die regulasies voldoen;
  - Elektriese infrastruktuur en toerusting mag nie RFS binne die SKA Infrastrukturgebied (Beskermingsgange soos in Bylae A beskryf en die 20 km straal sirkulêre area rondom die SVM) veroorsaak nie en moet verwyderd wees met die vereiste afstand om RFS te vermy;
  - Elektriese infrastruktuur met 'n kragvermoë van minder as 10 kVA en met 'n skeidingsafstand van meer as 6 km, is vrygestel van die vereiste om 'n permit te bekom en te besit tensy EMS veroorsaak word; en
  - Elektriese infrastruktuur met 'n kragvermoë van meer as 10 kVA, maar nie meer as 100 kVA nie, wat op 'n afstand geleë is wat groter is as die afstande om deur die Minister voorgeskryf te word vir die verskeie fasiliteite en toerusting, moet 'n permit bekom maar is vrygestel van die vereiste om EMS-bepalingsverslae te verskaf, tensy EMS veroorsaak word.
- 4.5.4. Regulasie 4 spesifiseer addisionele voorwaardes vir elektrisiteitsopwekking met 'n kapasiteit van 10 kVA of meer wanneer windturbines gebruik word.
- 4.5.5. Regulasie 5 bepaal addisionele voorwaardes vir die transmissie en verspreiding van elektrisiteit om aan die voorgeskrewe beskerming te voldoen.
- 4.5.6. Regulasie 6 bepaal die prosedures betrokke vir permitaansoeke en die inligting wat vereis word.
- 4.5.7. Regulasie 7 spesifiseer hoe die EMS vlak bepaal moet word.
- 4.5.8. Regulasie 8 skryf die norms en standarde voor om toegepas te word in die bepaling van die vereiste skeidingsafstande om EMS te vermy.
- 4.5.9. Regulasie 9 skryf die prosedures voor om aandag te gee en oplossings te vind vir EMS wat voorkom.
- 4.5.10. Regulasie 10 maak voorsiening dat die ligging van die SKA Virtuele Middelpunt onderworpe aan hersiening en finalisering is binne 12 maande na die uitvaardiging van die Regulasies en dat die beskermingsgange onderworpe is aan 'n jaarlikse hersiening met die bedoeling dat dit uitgefaseer sal word sodat net die SKA-stasies beskerming verlang.
- 4.5.11. Regulasie 11 bepaal die toepaslike oortredings en strawwe.
- 4.5.12. Regulasie 12 bepaal dat die regulasies in werking sal tree op 'n datum om deur die Minister bepaal te word met 'n kennisgewing in die Staatskoerant.
- 4.5.13. Bylae A behels 'n kaart van die beskermingsgange en inligting oor hulle ligging.

## 5. VRAE WAT DIKWELS VOORKOM EN ANTWOORDE DAAROP

### 5.2. Sal FM-radio en televisie seine (ontvangs) geaffekteer word?

Die bestaande FM-radio uitsendings sal nie beperk word nie en ontvangs sal bly soos dit is. Bestaande televisie ontvangs sal oor die hele Suid-Afrika verander as gevolg van die nasionale projek wat deur die Departement van Kommunikasie gelei word om van terrestriële analoog na digitale televisie uitsendings oor te skakel. Die verandering sal ook na 'n groter gebruik van satellietontvangs in afgeleë gemeenskappe lei. Die vestiging van terrestriële digitale uitsendings sal aan die beskermingsvereistes vir die SKA moet voldoen. Hoe dit ook al sy, alle Suid-Afrikaanse televisie en radiodienste word via satelliet met landwye dekking uitgesaai, wat nie geaffekteer sal word nie. Die Regering het 'n beleid in plek vir subsidiëring van die armste huishoudings vir oorskakelingskoste na die nuwe digitale televisie uitsendings, insluitende satellietontvangs in die Noordkaap in gebiede wat deur die SKA geaffekteer word.

### 5.3. Sal selfoondienste geaffekteer word?

Die beskikbaarheid van bestaande selfoondekking in die omgewing van die SKA Sentrale Infrastruktuur is yl. As gevolg van die hoë sensitiwiteit van radio-astronomie ontvangers binne die SKA-gebied, veroorsaak bestaande selfoondekking steeds onaanvaarbare steuring aan sekere dele van die SKA sentrale infrastruktuur wat nodig is om beperk te word. Die sirkulêre area met 'n straal van omtrent 80 km vanaf die SKA Virtuele Middelpunt is die area waar bestaande bruikbare selfoonseine geaffekteer mag word. Desnieteenstaande sal selfoondekking in dorpe soos Carnarvon, Vanwyksvlei en Williston nie geaffekteer word nie. Om vir die verlies van kommunikasie binne die geaffekteerde gebied te vergoed en om ook SKA bedrywighede te ondersteun, word 'n alternatiewe radiokommunikasiesistelsel wat nie die SKA sal steur nie, beplan vir toekomstige ontplooiing. Dit sal 'n gevorderde multikanaal tweerigting radiokommunikasiesistelsel wees wat met mobiele, hand- en vaste toestelle werk. Die netwerk sal soortgelyke frekwensies gebruik as die huidige lae frekwensie mobiele kommunikasienetwerk ('Marnet'), wat nie deur die beskermingsvereistes geaffekteer sal word nie. Addisioneel daartoe, word 'n lae koste satelliet (VSAT) kommunikasie skema ontplooi om toegang tot telefonie en internet te bied.

### 5.4. Sal die gebruik van elektriese masjiene geaffekteer word?

Die enigste moontlike impak op elektriese masjiene of aktiwiteite sal die naby die Sentrale SKA Infrastruktuur geleë (tot sover as 36 km vanaf die middelpunt) of naby 'n afgeleë SKA stasie (tot sover as 16 km) wees, afhangende van die topografie. Baie min steuringsgevalle word verwag, wat individueel aandag kan kry wanneer hulle geïdentifiseer is en sal nie enige van die dorpe in die gebied betrek nie.

### 5.5. Hoekom is die SKA in die Karoo geplaas en is bestaande toestande oorweeg?

Die studie om die SKA in Suid-Afrika te plaas, het in 2003 begin toe 'n deeglike studie oor die geskiktheid van bestaande en verwagte toestande in Suid-Afrika uitgevoer is om die huisvesting van die SKA te oorweeg. In Suid-Afrika is die Noordkaap Provinsie verreweg die mees geskikte gebied met die laagste bevolking en industriële digtheid tesame met die laagste volume radiokommunikasie en elektriese aktiwiteite. Drie areas is destyds in die Provinsie oorweeg, nl. Kalahari, Karoo en Namakwaland. Karoo het uitgedraai om die beter opsie te wees. Ten spyte van die lae ekonomiese aktiwiteitsdigtheid, bied die Karoo die basiese infrastruktuur nodig om die SKA te ondersteun tesame met goeie weerstoestande, radiostilte, geotegniese stabiliteit en goeie veiligheidstoestande. Op 'n wêreldwye grondslag

het ses lande gedink dat hulle aanvaarbare toestande bied, maar slegs Wes-Australië en die Noordkaap Provinsie het aan die vereistes voldoen maar laasgenoemde is die beter opsie.

#### 6. Afkortings

AVG	Astronomievoordeelgebied
AVGe	Astronomievoordeelgebiede
dBm	desibel bo een milliwatt
DECT	Digitale koordlose telefone
EMS	Elektromagnetiese steuring
FM	Frekwensie modulase vir radio gebruik
GAV-Wet	Wet op Geografiese Astronomievoordeel
GHz	Gigahertz (duisend miljoen siklusse per sekonde)
OKOSA	Onafhanklike Kommunikasie-owerheid van Suid-Afrika
Km	kilometer
kVA	kilo (1000) Volt-Ampere – elektriese kragvermoë
MHz	Megahertz (miljoen siklusse per sekonde)
RFS	Radiofrekwensiesteuring
SARAS	South African Radio Astronomy Service - Suid-Afrikaanse Radio-astronomiediens
SK	Staatskoerant
SKA	Square Kilometre Array
SVM	SKA Virtuele Middelpunt
VSAT	Very Small Aperture Terminal (twee-rigting satelliet aardstasie)
WiFi	Plaaslike area draadlose rekenaarnetwerktegnologie wat hoofsaaklik die 2.4 en 5 GHz frekwensiebande gebruik.







# **WARNING!!!**

## **To all suppliers and potential suppliers of goods to the Government Printing Works**

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One of the ways in which the syndicate operates is by requesting quotations for various goods and services on a quotation form with the logo of the Government Printing Works. Once the official order is placed the syndicate requesting upfront payment before delivery will take place. Once the upfront payment is done the syndicate do not deliver the goods and service provider then expect payment from Government Printing Works.

Government Printing Works condemns such illegal activities and encourages service providers to confirm the legitimacy of purchase orders with GPW SCM, prior to processing and delivery of goods.

To confirm the legitimacy of purchase orders, please contact:

Renny Chetty (012) 748-6375 ([Renny.Chetty@gpw.gov.za](mailto:Renny.Chetty@gpw.gov.za)),

Anna-Marie du Toit (012) 748-6292 ([Anna-Marie.DuToit@gpw.gov.za](mailto:Anna-Marie.DuToit@gpw.gov.za)) and

Siraj Rizvi (012) 748-6380 ([Siraj.Rizvi@gpw.gov.za](mailto:Siraj.Rizvi@gpw.gov.za))

# IMPORTANT

## Information

### from Government Printing Works

Dear Valued Customers,

Government Printing Works has implemented rules for completing and submitting the electronic Adobe Forms when you, the customer, submits your notice request.

Please take note of these guidelines when completing your form.

#### GPW Business Rules

1. No hand written notices will be accepted for processing, this includes Adobe forms which have been completed by hand.
2. Notices can only be submitted in Adobe electronic form format to the email submission address [submit.egazette@gpw.gov.za](mailto:submit.egazette@gpw.gov.za). This means that any notice submissions not on an Adobe electronic form that are submitted to this mailbox will be **rejected**. National or Provincial gazette notices, where the Z95 or Z95Prov must be an Adobe form but the notice content (body) will be an attachment.
3. Notices brought into GPW by "walk-in" customers on electronic media can only be submitted in Adobe electronic form format. This means that any notice submissions not on an Adobe electronic form that are submitted by the customer on electronic media will be **rejected**. National or Provincial gazette notices, where the Z95 or Z95Prov must be an Adobe form but the notice content (body) will be an attachment.
4. All customers who walk in to GPW that wish to submit a notice that is not on an electronic Adobe form will be routed to the Contact Centre where the customer will be taken through the completion of the form by a GPW representative. Where a customer walks into GPW with a stack of hard copy notices delivered by a messenger on behalf of a newspaper the messenger must be referred back to the sender as the submission does not adhere to the submission rules.
5. All notice submissions that do not comply with point 2 will be charged full price for the notice submission.
6. The current cut-off of all Gazette's remains unchanged for all channels. (Refer to the GPW website for submission deadlines – [www.gpwonline.co.za](http://www.gpwonline.co.za))
7. Incorrectly completed forms and notices submitted in the wrong format will be rejected to the customer to be corrected and resubmitted. Assistance will be available through the Contact Centre should help be required when completing the forms. (012-748 6200 or email [info.egazette@gpw.gov.za](mailto:info.egazette@gpw.gov.za))
8. All re-submissions by customers will be subject to the above cut-off times.
9. All submissions and re-submissions that miss the cut-off will be rejected to the customer to be submitted with a new publication date.
10. Information on forms will be taken as the primary source of the notice to be published. Any instructions that are on the email body or covering letter that contradicts the notice form content will be ignored.

You are therefore advised that effective from **Monday, 18 May 2015** should you not comply with our new rules of engagement, all notice requests will be rejected by our new system.

Furthermore, the fax number **012- 748 6030** will also be **discontinued** from this date and customers will only be able to submit notice requests through the email address [submit.egazette@gpw.gov.za](mailto:submit.egazette@gpw.gov.za).

