



science  
& technology

Department:  
Science and Technology  
REPUBLIC OF SOUTH AFRICA

## Karoo Central Astronomy Advantage Areas

### FORM 3: Permit application with competent person assessment

#### Purpose

This form must be used to apply for a permit to use the radio frequency spectrum, and conduct radio transmissions within that portion of the spectrum, within the Karoo Central Astronomy Advantage Areas.

This form should be used if the applicant wishes to arrange for the required compliance assessment to be conducted by a competent person employed or contracted by the applicant. Form 1, requesting accreditation of the person concerned as competent to conduct the assessment, should be used in conjunction with Form 3.

If, however, the applicant would rather request the management authority to conduct the compliance assessment, then Form 2 should be used instead of Form 3.

#### Background

The Astronomy Geographic Advantage Act, 2007 (Act No.21 of 2007) (“AGA Act”), provides inter alia for the protection of areas within the Republic of South Africa that are uniquely suited for radio astronomy.

The Karoo Central Astronomy Advantage Areas were declared for the purpose of radio astronomy and related scientific endeavours in terms of the AGA Act in Government Gazette No. 37434, under Notice No.198, on 12 March 2014.

The Regulations on the Protection of the Karoo Central Astronomy Advantage Areas, made in terms of the AGA Act, were published in Government Gazette No. 41321, under Notice No. 1411 on 15 December 2017. The effective date of the Regulations is 15 December 2018.

The Regulations stipulate the following<sup>1</sup>:

1. Schedule A, sub-regulation 3(2): As of 15 December 2019 (one year after the effective date of the Regulations), no operator may use the radio frequency spectrum between 100 MHz and 25.5 GHz, or conduct radio transmissions within that portion of the spectrum, within the Karoo Central Astronomy Advantage Areas unless a permit to do so has been issued.
2. Schedule B, sub-regulations 4(1) and (2): Before any such permit can be issued, a compliance assessment of each radio transmission concerned must be conducted, either by the management authority or by a person employed or contracted by the applicant who is competent to conduct such assessments.
3. Schedule B, sub-regulation 4(3): The assessment must determine whether the radio transmissions comply with the requirements of radio frequency interference protection

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<sup>1</sup> The statement of the requirements of the Regulations in this form are provided for the convenience of the applicant. Nothing stated in the application form will negate anything prescribed in the published Regulations.

at the Square Kilometre Array (SKA) Virtual Centre, with the prohibition of saturation level interference, and with all other applicable regulations.

4. In terms of Schedule A, sub-regulation 4(1)(b), radio frequency interference may be permitted to exceed the prescribed protection levels if the radio transmission concerned can be classified as a designated service. Schedule B, sub-regulation 7(1) identifies the types of radio transmissions that may be classified as designated services. Schedule B, sub-regulation 7(2) stipulates that, in the case of a transmission that may be classified as a designated service, the applicant must request such classification in his/her permit application and provide the specified information in support of this request.
5. By signing the application form, permission is given to the Astronomy Management Authority by the applicant to process, collect, receive, record, organise, collate, store, update, modify, retrieve, alter, consult, use, disseminate, distribute, merge, share, link, erase or destroy personal information received from the applicant.

<b>Details of transmissions for which permits are required</b> (If more than two transmissions are involved, use a tabulated schedule.)	
Legislation	Astronomy Geographic Advantage Act, 2007
AGA unique reference	
Site name	
Transmitter name	
Municipality/nearest town	
Type of radio communications service	
Typical application	
<b>Permit applicant</b>	
Applicant/company name	
Physical address	
Postal address	
Website	
Phone number	
Email address	
<b>Contact person</b>	

Surname		
Full Names		
Mobile number		
Email address		
<b>Transmission characteristics (radio station including accessory equipment)</b>		
<b>Transmission Details</b>	<b>Transmission 1</b>	<b>Transmission 2</b>
ICASA licence exempt	Yes/No	Yes/No
ICASA licence number		
Frequency assignment/centre frequency (MHz)		
Bandwidth allocated (MHz)		
Effective radiated power: power to antenna plus antenna gain in relevant direction (dBm)		
Polarisation		
Geographic location (longitude and latitude in WGS84 decimal degrees)		
Antenna height (above ground/site level)		
Transmission time during day/week/month		
<b>Antenna characteristics</b>		
Antenna type		
Antenna producer/make		
Maximum gain (dBi)		
Horizontal beam width		
Vertical beam width		
Detailed antenna characteristics via attachment		
Elevation/tilt		
Azimuth		

<b>Predicted or measured radio frequency interference levels</b>		
Full Names and Surname of competent person		
ID number of competent person		
Propagation calculation standard used		
Power spectral density at the SKA Virtual Centre (dBm/Hz)		
Applicable protection level for radio astronomy observations prescribed in the Protection Levels Regulations, 2012 (dBm/Hz)		
High-risk interference level (dBm) at nearest geographic location on the periphery of the protection corridors or the 20 km radius circle around the SKA Virtual Centre		
Applicable high-risk geographic location (longitude and latitude in WGS84 decimal degrees)		
<b>Criteria that must be met for the permit to be issued</b>		
Saturation level within the protection corridors not exceeded	Yes/No	Yes/No
Saturation level within the 20 km radius circle around the SKA Virtual Centre not exceeded	Yes/No	Yes/No
Protection level prescribed in the Protection Levels Regulations, 2012 at the SKA Virtual Centre not exceeded	Yes/No	Yes/No
The permit application complies with all the applicable requirements as listed in Annexure A to Schedule B of the Regulations	Yes/No	Yes/No
The radio frequency spectrum is to be used and radio transmissions are to be made for a designated service	Yes/No	Yes/No
The portion of the radio frequency spectrum to be used is exempted in terms of regulation 3 of Schedule B of the Regulations	Yes/No	Yes/No
<b>Conditions that may be included in the permit (sub-regulation 4(3) of Schedule A of the Regulations)</b>		
To ensure that mobile or portable devices used in conjunction with a base station do not exceed the protection levels prescribed in the Protection Levels Regulations, 2012 at the SKA Virtual Centre		

To ensure that the saturation level radio frequency interference is not exceeded within the protection corridors or within a 20 km radius circle around the SKA Virtual Centre		
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<b>Request for classification as a designated service</b> (regulation 7 of Schedule B of the Regulations)		
Classification of designated service		
Transmissions and radio frequency interference levels that cannot be reduced		
Reasons why the interference levels cannot be reduced (use attachment for full explanation)		
Request for a radio frequency interference level in excess of the prescribed value to be permitted		
Reasons why an alternative frequency band and/or alternative technology is not functionally suitable and not economically feasible (use attachment for full explanation)		
<b>Files to be attached to the application</b>		
Signed report of compliance assessment based on computer modelling (PDF format)		
Transmission characteristics of the radio station including accessory equipment		
All required information and data as listed and described in a schedule to be obtained from the management authority		
Detailed predicted or measured signal levels		
Antenna characteristics (MSI or NSMA format)		
ICASA licence		
<b>Declaration</b>		
<p>I/we declare that –</p> <ul style="list-style-type: none"> <li>• the information furnished in this application is true and correct in every respect;</li> <li>• I/we have the necessary records to support the information provided for inspection purposes.</li> </ul>		

**Signed by:** ..... (Full Names and Surname)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Place