1 Assignment title

Review of the Astro and Geosciences facilities, i.e. the South African Astronomical Observatory (SAAO), Hermanus Magnetic Observatory (HMO) and the Hartebeesthoek Radio Astronomy Observatory (HartRAO)

2 Assignment principal and Review Reference Group

The Assignment Principal is the President and CEO of the National Research Foundation (NRF). The Review Reference Group comprises the NRF President, the NRF Vice-President and the Executive Director: Knowledge Management and Strategy.

The role of the Review Reference Group is to:
- approve the terms of reference;
- approve the review plan and budget from the review management service provider;
- appoint the review panel;
- receive the final report from the review panel and the responses of the management of HartRAO, HMO and SAAO;
- provide comments and recommendations on the review process and the extent to which the terms of reference for the review have been addressed.

The Assignment Principal will forward the following to the NRF Board:
- the final report by the review panel including
- the response of the management of HartRAO, HMO and SAAO as well as
- the comments and recommendations by the Review Reference Group on the review process and the extent to which the terms of reference for the review have been addressed.

3 Review Management Service Provider

The Evaluation Centre of the NRF will act as the Review Management Service Provider. The responsibilities of the Evaluation Centre will be to:
- develop a plan for the review exercise, including a budget;
- manage, coordinate and administer the entire review process, including logistics;
- provide support to the review panel, including compiling reports;
- source the necessary information from SAAO, HMO and HartRAO.

4 The purpose of the review

The purpose of the review will be to provide:
firstly and most importantly, a prospective view on the best ways and means to stimulate optimal future use of the infrastructure and equipment of SAAO, HMO and HartRAO by national and international users. This should be considered in the light of the:

- recent repositioning of the astro-geosciences facilities in the National System of Innovation
- coming on stream of the South African Large Telescope (SALT) as well as the bid for the Square Kilometre Array (SKA), in particular;

secondly, a retrospective view on the performance of SAAO, HMO and HartRAO respectively in terms of the objectives stated in their strategic and business plans as well as;

an assessment of the outcome and impact of the activities of SAAO, HMO and HartRAO respectively in terms of meeting national goals and objectives;

based on the above, recommendations regarding the strategic direction and operational execution of the mandate of SAAO, HMO and HartRAO.

5 The scope of the review

The prospective view will cover the next five years but may also address long-term goals to which the facilities should strive. The retrospective view will cover the past five financial years ending in March 2004.

In the case of the HMO the review should focus on the transformation and the repositioning of HMO from being a CSIR commercially-driven service-provider to a national facility which commenced in 2002.

In conducting the review, the panel should, where possible, take into account any previous reviews of each facility and their recommendations.

6 Review dimensions

The review panel is requested to conduct the review and to determine the strengths, weaknesses and impact of each facility, i.e. SAAO, HMO and HartRAO, in terms of the aspects outlined below:

6.1 Strategic direction of the Facility

Comment on the extent to which:

- HartRAO, HMO and SAAO still meet the criteria of a National Research Facility as identified in the System Wide Review of 1998;
- SAAO has repositioned itself in view of SALT coming on stream;
- HartRAO is facing up to the challenges regarding South Africa’s bid for the SKA;
- HMO has repositioned itself as a national research facility.

6.2 Performance of the Facility

- Relate the input of each facility to its output both in terms of external and internal users, i.e. determine whether each facility provided value for money in terms of its goal attainment;
- For benchmarking purposes, relate the performance of each facility, where appropriate to similar facilities in other countries;
Where possible, comment also on the appropriateness of the performance indicators (output, outcome and impact) used by each facility.

6.3 Utilisation of the Facility by external users

Comment on the:
- appropriateness of mechanisms utilised by HartRAO, HMO and SAAO to facilitate access to their equipment and infrastructure by both national and international users;
- extent of use by the various users;
- appropriateness and extent of current and envisaged collaborations with external users.

6.4 Management of the Facility

- Comment on the appropriateness of the management strategies, policies and objectives;
- Assess whether the management structures and processes were well designed and appropriate to achieve the objectives of each facility;
- Assess the performance of the respective role players in the management of each facility, particularly in implementing policies;
- Comment on the appropriateness and efficient and effective use of resources, both financial and human;
- Comment on the effectiveness and efficiency in maintaining and developing the equipment infrastructure;
- Comment on the evaluation, monitoring and control of activities supported by each facility.

6.5 Transformation

Comment on the:
- internal transformation of HartRAO, HMO and SAAO in terms of transformation policies such as employment equity (in particular, race and gender), staff development, access, etc;
- external transformation i.e. to what extent did HartRAO, HMO and SAAO contribute to transformation within the National System of Innovation, including race and gender.

6.6 Facility impact and stakeholder satisfaction

- Explore the relevance of each facility's objectives and the impact of its performance for the users of that facility, the participating Higher Education Institutions, industry, etc (i.e., determine the extent to which the expectations of stakeholders have been met and the extent to which each facility is addressing national needs and priorities as identified in the NRF Strategic Plans, the White Paper on Science and Technology, and the National R&D Strategy).

7 The review process

7.1 The appointment of the review team, preparations and programme
The assignment principal will appoint the review panel and convenor of the review panel;

The review panel should comprise no more than six persons with appropriate experience and skills to conduct the review. Panel members should represent the spectrum of SAAO, HMO and HartRAO and should include at least three foreign experts;

The resource documents for the review listed in the Annexure will be available to the panel well in advance of the commencement of the review;

The service provider will draw up a programme in consultation with the assignment principal and the management teams of SAAO, HMO and HartRAO. The review panel will have the opportunity to interrogate the proposed programme and to recommend amendments and additions should the need arise;

The review panel will have the opportunity to interview members of management of SAAO, HMO and HartRAO, stakeholders from industry, the Higher Education Sector (HES), project leaders, team members, student beneficiaries, users of the research, etc;

The review panel will decide on and pursue its own line of questioning during interviews and will likewise decide on the format of its report.

### 7.2 Deliverables

- A feedback session between the assignment principal, the management of HartRAO, HMO and SAAO and participants;
- A preliminary report on completion of the *in situ* reviews;
- A final report including an executive summary and recommendations for each facility by the review panel within two weeks of completion of the *in situ* reviews. The report will, inter alia, outline the following:
  - strengths, weaknesses and impact of each of the three facilities;
  - efficient ways to reach objectives and improve on performance and impact;
  - lessons for future strategies to be followed, etc;
- A response from the management of HartRAO, HMO and SAAO within two weeks after receipt of the final report;
- Comments and recommendations by the Reference Group on the review process and the extent to which the terms of reference for the review have been addressed within two weeks after receipt of the final report;
- Placement of the final report on the NRF website within two weeks of its consideration by the NRF Board.

### 8 Time frame

The evaluation will take place during September 2004 depending on the availability of suitable reviewers.

### 9 Budget

9.1 The Evaluation Centre will submit a budget for the review to the Review Reference Group for its approval.

9.2 The costs incurred for the review will be covered from NRF Executive funds.

*The terms of reference may be amended should the need arise*
Annexure

Documents for the review panel

1. Self-evaluation reports by the South African Astronomical Observatory (SAAO), Hermanus Magnetic Observatory (HMO) and Hartebeesthoek Radio Astronomy Observatory (HartRAO) respectively
2. NRF Act
3. White Paper on Science and Technology
4. SETIs (Science, Engineering and Technology Institutions) Report on the System Wide Review
5. SETIs (Science, Engineering and Technology Institutions) Report on National Facilities (completed in 1998)
6. SETIs (Science, Engineering and Technology Institutions) Report on the National Research Foundation and the Agency Function (completed in 1998)
7. South Africa’s National Research and Development Strategy
8. Reports on previous reviews of the South African Astronomical Observatory (SAAO), Hermanus Magnetic Observatory (HMO) and Hartebeesthoek Radio Observatory (HartRAO), where applicable
9. NRF Strategic Plans
10. Strategic and Business plans of SAAO, HMO and HartRAO respectively
11. Latest annual reports of HartRAO, HMO and SAAO