Management Response to the Review Report on the National Institute for Theoretical Physics
20 April 2017
**Introductory Remarks**

As part of the quality assurance process of the National Research Foundation (NRF), the National Institute for Theoretical Physics (NITheP) underwent its second 5 year international review in the week of 6-10 March 2017. The context of the review is set out in the terms of reference contained in annexure 1 of the review report.

The NITheP management insured that the review panel had access to a large number of stakeholders. This included the Department of Science and Technology (DST), the NRF, top and middle management of the three hosting institutions, heads of a variety of Physics Departments, which included previously disadvantaged institutes (HDI’s), NITheP staff and postdoctoral fellows, NITheP students, bursary holders and NITheP associates. In addition the panel was given free access to all NITheP documentation, which included the self-assessment report, KPA report, financial statements, annual reports, policy and procedural documents, statistics on associates, students and bursary holders as well as agendas and minutes of all Board, Management and Scientific Advisory Committee (SAC) meetings.

Management already responded on 7 April 2017 to the factual content of the report (see Appendix A) and welcomes the opportunity to now respond to the recommendation of the report, some of which, if implemented, may have far reaching consequences for NITheP’s strategies, functioning and the execution of its mandate. In this response we aim to spell out these consequences and to point out the conditions required for an implementation of these recommendations that will not be detrimental to the functioning of NITheP and the execution of its mandate.

Below management responds to each recommendation individually.

**Recommendation 1:** There is no doubt that the Panel finding is that NITheP should continue to operate and to grow.

**Response 1:** Management welcomes this recommendation. It is in line with previous recommendations and management urges the NRF and DST to find an instrument outside the CoE model by means of which this can be implemented. The recommendation of growth clearly requires a larger investment in NITheP, such as the selective accelerated growth scenario spelled out in the 2017-2021 business plan.

**Recommendation 1.1:** The lifetime of the National Institute of Theoretical Physics should be comparable to that of a National Facility to extract the most value from the investment. Continuation will depend on performance assessments at 5 year intervals.

**Response 1.1:** Management strongly supports this. Again the greater permanency accompanying this recommendation fits well with the selective accelerated growth scenario of the 2017-2021 business plan.

**Recommendation 2:** Move the “hub” node to UWC.

**Response 2:** Management finds this to be a reasonable suggestion from a transformation point of view. This is, however, one of several hosting alternatives of the hub that may address the issue of transformation effectively. For example, the existing nodes at WITS
and UKZN may also offer viable alternatives due to their recent track records in transformation. Furthermore, transformation is an important issue for all the stakeholders concerned and they should all be thoroughly consulted before a final decision or compromise is made. In the particular case of UWC the following issues will have to be clarified:

- UWC will have to agree to becoming the hosting institution. In particular, they will have to agree to providing the necessary physical infrastructure. This infrastructure will have to be well integrated with the physics department, be easily accessible to students and yet ensure institutional neutrality (see also recommendation 4.4).
- If SU is no longer the hosting institution, it cannot act as employer of NITheP staff and can therefore also not second them. Staff will have to be transferred to UWC.
- UWC will have to agree to the additional contributions required under the funding agreement, which may depend on the instrument employed. In the current model of a CoE, this is a 10% contribution to the budget.
- Given the investments implied above, this move will only be attractive and sensible for UWC if NITheP’s life-time extends well beyond the current funding horizon of 2019.
- Given the recent volatility on the UWC campus, every precaution will have to be made to ensure the security of the considerable number of international visitors to NITheP.

**Recommendation 2.1**: For continuity, staff should be seconded to this node.

**Response 2.1**: This recommendation is not implementable in its current form (see second bullet above).

**Recommendation 3**: The pace of student transformation in terms of race and gender must be accelerated as a strategic priority.

**Response 3**: Management agrees fully and several suggestions on how to achieve this have been made in the 2017-2021 five year plan.

**Recommendation 3.1**: The internship scheme appears to be giving results and should be retained.

**Response 3.1**: Management agrees fully. The 2017-2021 five year plan foresees a growth in this program.

**Recommendation 3.2**: NITheP should consider having fewer bursaries at higher values.

**Response 3.2**: Management agrees fully. The 2017-2021 five year plan foresees the phasing out of honours bursaries in favour of higher valued M.Sc. and Ph.D. bursaries. A further reduction in the number of M.Sc. and Ph.D. bursaries to increase the bursary values is certainly a possibility.

**Recommendation 3.3**: Funding decisions and transactions connected with the bursary programme must be completed by December of each year.
Response 3.3: Management agrees fully and currently adheres to this time line: On 1 October the bursary call opens, on 30 November it closes, screening takes place the first week of December and bursary letters are sent out in the second week of December. The target date for completion is 15 December. There are, however, often delays with students on the waiting list. Although they are informed that they are on the waiting list in December, it can often take until March of the next year before they get a final answer. This is mostly due to successful students shopping around for higher valued bursaries. This can be resolved by making bursary values higher and implementing cut-off dates. Payment of new and existing bursaries is often delayed due to late submissions of proof of registration and annual progress reports. NITheP is not allowed to proceed with payment without these documents and cannot take responsibility for these delays.

Recommendation 3.4: Active scouting for candidates should be undertaken by the Director and Deputy Directors from the beginning of the third undergraduate year for internships. Leaders should extend invitations personally to top candidates, and maintain personal contact throughout the student’s career.

Response 3.4: Management agrees. The 2017-2021 five-year plan makes provision for an undergraduate outreach programme in favour of the more traditional school outreach activities. The latter is already sufficiently covered by many physics school outreach programmes. The intention with the introduction of this programme is to spot and retain talent in the currently inefficient undergraduate pipeline. Scouting at school level can be done in collaboration with existing school outreach programmes.

Recommendation 3.5: Within the next year, a source of undergraduate bursaries must be found to extend the pipeline coverage.

Response 3.5: Management agrees. Again the 2017-2021 five-year plan makes provision for such a programme. Sourcing the funding is the main obstacle as the DST does not fund undergraduate bursaries, although this is done in the case of the SKA.

Recommendation 3.6: A sponsor, possibly from the financial sector, should be found to support a pamphlet specifically addressing careers in Theoretical Physics.

Response 3.6: Management agrees. Current pamphlets already address partially career opportunities, but a dedicated one can be useful. Generally, the cost to produce these is quite low and can be absorbed in the current marketing budget and/or the re-allocation of funding for marketing material.

Recommendation 3.7: The Draft IUPAP Waterloo Charter on women in physics should be obtained through the South African Institute of Physics.

Response 3.7: Management will follow this up with the SAIP.

Recommendation 4: Networks and awareness should be supported and expanded.

Response 4: Management agrees, but it must be kept in mind that the network that can be supported efficiently is a strong function of available resources. Detailed scenarios for the growth of the network under different funding scenarios can be found in the 2017-2021 five-year plan.
**Recommendation 4.1:** The Associate network should be further expanded, with special attention to rural universities and universities near the Western Cape node. The existing success of the Associate publications and the advantages of the NITheP RFP should be exploited.

**Response 4.1:** Agreed. The same remarks as under response 4 are applicable here.

**Recommendation 4.2:** The Chris Engelbrecht Summer School, Training Workshops and Research Workshops form a valuable part of the transformation of the physics landscape and should be retained and strengthened, and sited at HDUs more frequently.

**Response 4.2:** Agreed. Training events form an integral part of the 2017-2021 five year plan.

**Recommendation 4.3:** Every effort should be made to sustain ASESMA, and to initiate at least one similar school in the broader NITheP scope, since this is a valuable and recognised tool in building physics in Africa.

**Response 4.3:** The same comments as in response 4.2 apply here.

**Recommendation 4.4:** NITheP nodes should always be embedded in host environments with a vigorous student population.

**Response 4.4:** Management wholeheartedly agrees with this. Particularly important for management is also easy access to NITheP nodes for students from all backgrounds. At WITS and UKZN this is achieved through the allocation of NITheP specific areas that are well integrated with the Physics Departments. At Stellenbosch it is different in that the NITheP office space is situated in STIAS. The rationale behind this was to place the hub in an institutional neutral environment to promote NITheP’s identity as a National Institute. Although it is still within easy walking distance of the Physics Department, it does make interaction with students and staff in the department less efficient. To find a balance between institutional neutrality and optimal accessibility is a challenge that any future hosting institution will have to face and will also be of crucial importance if recommendation 2 is to be implemented.

**Recommendation 4.5:** The number of members between different nodes should be better balanced.

**Response 4.5:** Management agrees. This is an issue that the new management will have to address from a strategic point of view and within the parameters of available resources. The selective accelerated growth scenario of the 2017-2021 five-year plan already makes provision for growth of the nodes. By redistributing the proposed growth in positions between the nodes the issue above can be addressed in this scenario.

**Recommendation 5.1:** NITheP, NRF and DST should react to these recommendations in a timely manner, i.e. within 6 months.

**Response 5.1:** Management welcomes this recommendation. In particular, the future of NITheP has to be clarified as soon as possible as the current uncertainty beyond 2019
already impacts on the present decision making process. In addition, several of the key recommendations, such as recommendation 2, can only be implemented once clarity has been obtained about NITheP’s future.

Regarding recommendation 2, management would like to point out that implementation within 6 months is unrealistic. It is more realistic to have all the discussions with stakeholders within the next 6 months.

**Recommendation 5.2:** We encourage future attempts of involving Black South Africans and women in future Panels.

**Response 5.2:** Agreed.

**Concluding Remarks and overall response**

NITheP views the recommendations made by the panel in a very positive light as it clearly endorses the NITheP agenda, recognises the essential differences between NITheP and CoE’s and, based on this, pleads for more permanency. Management strongly identifies with and supports these recommendations. Management also strongly supports the timely response of the DST and NRF to these recommendations as the uncertainty surrounding NITheP’s future has had a negative impact in the past and is still impacting negatively on current decision making processes.

Management finds the restructuring of NITheP in terms of the relocation of the hub at UWC or elsewhere acceptable provided that all stakeholders agree that it is in the best interest of NITheP, the execution of its mandate and transformation goals.

Management supports all the other recommendations as they often derive from initiatives in NITheP’s own 2007-2011, 2011-2016 and 2017-2021 five year plans.
Appendix A

Management Comments on the Review Report on the National Institute for Theoretical Physics
7 April 2017
Introductory Remarks

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The management received the final report of the review panel on 31 March 2017 and after careful study of the report, would like to respond on the factual content as follows.

Response on factual content of the review report

Overall the management found the factual content of the report to be an accurate reflection of the developmental history and current status of NITheP. There are, however, a small number of minor corrections, comments and clarifications that management would like to make.

- On p.14 under recommendation 2 the final bullet stating “The staff can be seconded from SU with minimum effort” is an oversimplification. If SU is no longer the hosting institution staff cannot be employed by SU and therefore also not seconded. Staff will have to be transferred to the new institution with appropriate guarantees.

- On p.15 some clarification on point 3.2.2 is required. It is indeed NITheP’s policy to inform new bursary applications on the outcome of their applications by December. The time line followed is: 1 October the bursary call opens, 30 November the bursary call closes, screening takes place the first week of December and bursary letters are send out in the second week of December. The target date for completion is 15 December. There are, however, often delays with students on the waiting list. Although they are informed that they are on the waiting list in December, it can often take until March of the next year before they get a final answer. This is mostly due to successful students shopping around for higher valued bursaries. This can be resolved by making bursary values higher and implementing cut-off dates. Payment of new and existing bursaries is often delayed due to late submissions of proof of registration and annual progress reports. NITheP is not allowed to proceed with payment without these documents.

- On p.17 “IBM Watson” should probably read “IBM Research Center.”
• On p.20 under the key findings of point 3.5 it is not quite correct that advice to government did not take place. Prof Petruccione chaired a committee and co-authored a report for the DST on cyberinfrastructure. The details of the report are as follows: National Integrated Cyberinfrastructure System. A framework for the establishment and maintenance of a sustainable NICIS. Report of the International Committee for the Development of South Africa’s National Integrated Cyberinfrastructure System. Appointed by the Department of Science and Technology. Professor Francesco Petruccione (chair), Dr Scott Hazelhurst, Dr Gudmund Host, Professor Amanda Lourens, Dr Cynthia McIntyre, Dr Richard Moore. December 17, 2013.

**Concluding Remarks**

The NITheP management is encouraged by the strong emphasis this report places on the importance of Theoretical Physics, not only for all scientific endeavours, but also for the broader socio-economic development of the region. As a natural outflow the report recommends a more permanent structure for NITheP, which management welcomes.