The Rural Campuses Connection Project (RCCP)
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RCCP I

In early 2010 HESA and TENET jointly requested the DHET to provide grant funding of R127 million to build fifteen extensions to the SANReN network and by this means to connect 53 mostly rural campuses of South African universities to SANReN. In November of that year the DHET approved a grant to HESA of R28 million for effecting such connections, and on this basis TENET and HESA jointly mounted the Rural Campus Connectivity Project, with TENET acting as technical implementation agent under the guidance of a steering committee that included representatives of HESA, the SANReN Group, TENET, ASAUDIT and the DHET.

The project ran over the years 2011-2014 and connected 20 sites to the SANReN network, at network speeds varying from 50 Mbit/s to 1 Gbit/s. During these years the SANReN network itself underwent substantial development: not only did its reach within South Africa extend significantly, but the international bandwidth available to it reached 30 Gbit/s, with the activation of DST-sponsored WACS capacity. Sites joining SANReN at the end of this period were joining a very much more capacious network than those that joined at the beginning. For most of these campuses the increment in capacity amounted to a qualitative change in connectivity, allowing them to do things that would have been previously inconceivable. To this extent the project was a success and delivered most of the planned benefits. Nevertheless the project encountered many difficulties. These included:

Defining "ruralness". Many sites at the urban edge were at risk of appearing too urban to qualify for RCCP support, and not sufficiently research-intensive to be high on the list of DST priorities. This problem was never entirely solved but in the main it was addressed pragmatically, and peri-urban sites were more often than not brought under the RCCP umbrella.

Selecting sites. The potential site list underwent several revisions as institutions brought previously unrecorded sites to the project's attention.

Poor co-ordination with SANReN. In many cases the RCCP planners made planning assumptions about the SANReN network that were frustrated by the exigencies of the SANReN project itself. Thus in some cases a completed access build could not be connected to SANReN because the latter had been unavoidably delayed in reaching a particular region; in other instances the passage of time – over several years – led to the SANReN planners reprioritising, and deciding to include in their targets sites that had been previously intended for RCCP connections.

Operations and Maintenance costs. Any component of network infrastructure has recurring costs for operations and maintenance. In deploying such components, the RCCP had to plan for the ultimate recovery of these costs from the beneficiaries. This requirement caused a considerable degree of resentment, since sites connected to SANReN with DST funding were not faced with the same burden.

Inability to benefit from high-speed circuits. In more than one case the campus network in use at a connected site was too antiquated to take advantage of the newly delivered capacity.

Infrastructure deficits. The original grant proposal to the DHET had envisaged the construction of several optical fibre access networks to augment the primary SANReN network. In the end almost no fibre was laid: there was insufficient funding, and commercial fibre route builders were generally not interested in the regions of interest to the project. More reliance than was initially hoped for had to be placed upon wireless circuits.

RCCP II

As RCCP I drew to a close in late 2014, HESA and TENET jointly constructed a proposal for further funding to extend and complete RCCP I. The second proposal identified equitable access to technology – targeted as an important issue in the White Paper on Post-School Education and Training – as the primary outcome sought for the second round of the project. The proposal envisaged a more rounded and coherent intervention that would aim not only to deploy technology but also to augment the capacity to use that technology for educational purposes. Thus a significant training component was included in the RCCP II proposal – not merely for formal technical skill building but also for more complex capacity problems such as policy and process development capabilities. In this way it is hoped to deliver not simply better connectivity but also better ability to use the connectivity for organisational purposes, particularly for research and for teaching and learning.

In 2015 the DHET approved a new grant of R71 million to HESA for the proposed program, subject to some modifications that are still under discussion. RCCP II will build upon the achievements of RCCP I and will, it is hoped, avoid the mistakes made in RCCP I. In this regard five key principles are worth mentioning:

Optical fibre circuits for main campuses: the limits of current production wireless technologies make it very hard to connect a site at better than 1 Gbit/s, where some SANReN sites have 40. The project intends to deliver optical fibre connections all main campuses not connected by fibre.

Adequate levels of redundancy: most sites connected by RCCP I were connected by single "spur" connections, where most sites connected by the SANReN group are connected in ring topologies that offer much more reliable service. RCCP aims to deliver higher levels of reliability.

More strategic selection of sites: a closer interrogation of institutional purposes will be mounted in selecting sites to be connected under RCCP II.

Better co-ordination with SANReN: All parties are hopeful that the liaison problems that bedevilled the previous project will be a thing of the past.

Significant human capacity development: A key principle of RCCP II will be to augment both technical and human capacity, leading to improved use of capacity for institutional purposes.