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Expanding National Data Centres to provide High Performance Computing (HPC)

Various countries are building National Data Centres (NDCs) to consolidate their Information and Communication Technology (ICT) activities and in the process reducing costs, improve efficiencies and security, and stimulate economic growth. The high costs associated with building resilient data centres that meet Tier III/IV standards pose a challenge in accommodating higher densities making it difficult for such environments to scale. These data centres become legacy environments as soon as they are built as they can only accommodate densities of up to about 3 – 5 kW per rack. The high volume of data that is generated every millisecond calls for dynamic data centres that will accommodate mixed densities up to 30kW without costly customization, and to improve competitiveness while performing High Performance Computing (HPC). The Royal Science and Technology Park (RSTP) in the Kingdom of Eswatini is upgrading their National Data Centre to a mixed density environment to accommodate HPC activities. This research will investigate how to upgrade the current NDC at RSTP and position it to participate in global HPC activities and further to be part of the CTBT ecosystem supporting various research activities.

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