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Communications

Major Programme 3:
Communications

Major Programme 3 has as its main components the transport of data from the IMS facilities, the distribution of IMS data and IDC products to States Signatories, and the transport of the necessary ancillary data using the Global Communications Infrastructure (GCI).

GCI MANAGEMENT

Discussions with the GCI contractor to identify cost savings that would allow additional GCI requirements to be fulfilled without having to increase the ceiling of the contract were completed successfully. These additional requirements include an enhanced network management system (NMS), a new firewall and a virtual private network (VPN) as an alternative to the installation of very small aperture satellite terminals (VSATs). The new NMS will provide enhanced reporting with graphical features, which are overlaid with real time global weather patterns. The firewall will allow improved management of data flow across the GCI.

GCI TOPOLOGY

GCI coverage of the polar regions is not possible using the standard VSAT infrastructure deployed for the GCI. Other satellite and Internet technologies are required to establish communications to these locations. New connections to the polar regions were achieved using customized configurations for each location. The infrasound station IS27 (Georg von Neumayer, Antarctica) was connected using a hybrid of both satellite and VPN technologies. Connectivity was also established in a similar manner to the primary seismic stations PS5 (Mawson) and PS50 (Vanda) and to the auxiliary seismic stations AS35 (SANAE Station) and AS114 (South Pole) in Antarc-

IS52/RN66, Diego Garcia, Chagos Archipelago, United Kingdom.

RN8, Cocos Islands, Australia.

tica. With these five new sites a total of seven sites are now connected in the polar regions.

VPNs functioned in a pilot configuration throughout 2003. The performance characteristics of these connections have been shown to exceed the GCI criteria used to benchmark the performance of VSAT connections. During Part II of the Twenty-First Session of WGB in September 2003, VPN technologies were accepted as a viable solution for continuous data transfer on an exceptional basis. By the end of 2003, 10 VPN circuits were installed and operating as part of the GCI.

GCI IMPLEMENTATION

GCI coverage continued to expand throughout 2003, with 20 VSATs being installed. As of 31 December, 204 GCI site surveys had been completed, and VSATs had been installed at 158 IMS, NDC and development sites. Of the total planned number of 248 VSATs, 63.7% are now installed. In 2003, 42 radio frequency licences, including several which had been outstanding for a long time, were obtained. However, 5 VSATs had to be turned off because they did not have a licence. Of the 248 licences needed, 173 (69.75%) had been obtained in 55 of 90 countries (62.5%) by the end of the year.

The sharing of the GCI with third parties and the forwarding of continuous data from the IDC to the NDCs of States Signatories were implemented. The rules adopted by the Commission for the provisional shared use of the GCI were also fully implemented.

INTERNET COMMUNICATION

The performance of the current Internet links (two links each of 2 megabits per second) was consistent during 2003, with an availability of greater than 99.9%. Since the second (optical fibre) link to the VIC was established in 2002, there has not been a major outage in Internet communication. The two links are now sharing the normal Internet traffic as well as the new VPN traffic for the GCI. The capability to monitor usage and load sharing for each Internet connection was to be added to the NMS in early 2004 to ensure that the quality of service is maintained.

AS65, La Paz, Mexico.

RN3, Bariloche, Argentina.

TECHNOLOGY REFRESHMENT

The current contract for the GCI will expire in 2008. To ensure continuity of GCI services, the PTS worked with a group, established by WGB, of experts of States Signatories to define future GCI performance requirements and technology options. The group held meetings in conjunction with the Twenty-First Session of WGB and as part of the GCI–Evaluation Workshop held in October (see "Workshop" below and "Workshops" in Major Programme 5). Further meetings will take place in 2004 during each of the WGB sessions, and interim observations and findings will be presented to WGB.

WORKSHOP

The second GCI–Evaluation Workshop took place from 20 to 23 October 2003 in Vienna and was attended by 100 participants from 30 States Signatories, United Nations and other international organizations, and the telecommunications industry. Apart from GCI technology refreshment, as mentioned above, discussions focused on the current O&M of the GCI. The ultimate goals are to facilitate optimal use of the GCI in its current form, adapt it to the needs of the station operators and ensure its sound and appropriate development. Participants made presentations on global networks, based on their experience in procuring, operating and maintaining such networks. (See also "Workshops" in Major Programme 5.)

GCI–Evaluation Workshop, Vienna, October 2003.