IT-PacNet 2001

Regional Information and Communication Technologies Strategy meeting
April 2001, Forum Secretariat, Suva Fiji

SOPAC Joint Contribution Report 138

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1 INTRODUCTION

Alex Nicholson at the Forum Secretariat opened the 8Th IT-PacNet meeting on the 23rd April 2001. The meeting was set early to allow recommendation to be forwarded to the CROP Annual meeting. The agenda was adopted in Annex 15.2 Agenda

The purpose of IT-PacNet is to define strategies for the member of the Committee of Regional Organisation of the Pacific (CROP). It is understood that these strategies could be a suitable blueprint for many other organisations and member countries of the CROP organisation.

Kisione Finau proposed to the group to visit the USPNet facilities during the Wednesday session. A diagram of USPNet is in Annex 15.13 USPNet

1.1 Participants

Norman Kapun, FFA

Alex Nicholson, Forum Secretariat

Pedro Leone, Forum Secretariat

Matilda Tapousa, SPREP

Hervé Dropsy, SPREP

Kisione Wesley Finau, USP

Tom Pierce, USP

James Britton, USP

Phill Hardstaff, SPC

Marie-José Quintard, SPC

Wolf Forstreuter, SOPAC

Les Allinson, SOPAC

Franck Martin, SOPAC

William Ganileo, Vanuatu

Torrey Bernahardt Karlsen, UNEP/GRID

1.2 Apologies

PIDP

Richard StClair, Niue

2 RECOMMENDATIONS

The group made the following 59 recommendations for implementation by CROP organisations and urged that non-CROP organisations and member countries consider these recommendations for adoption in their own ICT plan.

Note: the recommendation in **bold** are new or modified recommendations made this year. The recommendation [CROP] will be highlighted to the CROP meeting for consideration.

2.1 ICT Planning

1. Due to the increasing strategic importance of ICT in any organisation, it is essential that all organisations have an ICT plan.

2. Any ICT activities including computer hardware and software acquisitions must be endorsed by ICT staff.

3. Architects make appropriate provisions for ICT requirements in new buildings and renovations and that ICT management must be consulted during the planning stages of buildings.

4. Careful consideration should be given to the purchase and use of ergonomic furniture or computer peripherals to minimise the occurrence of Repetitive Strain Injury (RSI).

5. Any ICT equipment should have a budget for recurrent costs such as maintenance, support and upgrades along with a depreciation policy for ICT equipment.

6. Owing to the widening range of activities that organisations are expecting the ICT unit to address (such as PABX, fax, satellite, video conferencing / presentations, web publishing, GPS, remote connectivity / Internet access, power distribution and training) it is recommended that appropriate and adequately skilled additional human resources are needed to meet this increasing demand. It should be noted that as a guideline, one dedicated ICT support professional is recommended per 35 nodes minimum.

2.2 INTERNET/INTRANET Technology

7. Agreed that SOPAC would continue to maintain the Fiji Internet/Intranet Group (FIG), which is now fully operational with eight partners. Participants agreed that FIG had been successful in raising Internet awareness, but the biggest problem remains the limited and high cost of bandwidth.

8. Each regional organisation should make available a publication list or the full text of publications on their web site; and should be encouraged to provide relevant hyperlinks to other regional organisations sites.

9. Savings can be achieved by the electronic publication of documents on the web. Where publications cannot be distributed free of charge, organisations are encouraged to provide a summary of the document on the web.

10. Graphic and publication designers, as well as ICT staff should be involved in the construction of web sites. However, they must be advised to take into consideration the low performance of connections in the region. There are textbook and other references that describe good design technologies for web sites and web pages such as http://info.med.yale.edu/caim/manual/.

11. Organisations should ensure that their web sites are regularly maintained and updated.

12. Web publication policy should be in conformity with standard organisation publication and information release policies.

13. It should be noted that regardless of how much bandwidth is available it would eventually become limited. It was resolved that each organisation must be responsible for bandwidth management.

14. Intranet web sites should be employed for the dissemination of internal information.

2.3 Training of ICT Professionals

15. Resolved to encourage placements/training attachments of ICT people, students, and student fellowships wherever feasible and to contribute to the training of IT professionals in the region.

16. Strongly recommended is a subscription to MS TechNet (Microsoft Technical Information Network) as well as professional magazines for ICT groups as a source of technical information and support where Microsoft is the common software.

17. The Microsoft Developer Network (MSDN) is also recommended for those organisations undertaking development work in Microsoft products.

18. Recognise the benefit of encouraging ICT staff to obtain a recognised industry professional certification relevant to the work of the organisation such as Microsoft Certified Professional (MCP) and Cisco Certified Network Administrator (CCNA).

2.4 Information dissemination and publishing

19. IT-PacNet members keep each other informed of relevant conferences and meetings and if a member attends then information is also shared.

20. It was recognised that CD-ROM remains the standard media for data dissemination, thus organisations are urged to acquire a CD Writer. CD-R is preferred against CD-RW for data dissemination due to media cost. It was also suggested that web sites could be distributed using CD-ROM on request by member countries.

2.5 Documentation and procedures

21. Recommended that organisations should continue to have an operations manual that includes a current list of approved application software and hardware.

22. Recommends the use of Intranet to disseminate and keep up-to-date documentation and procedures.

2.6 Training

23. Multimedia tools are a very cost-effective, flexible and practical solution for training staff.

24. [CROP] Management policy should endeavour to provide ICT training for staff members during working hours.

25. [CROP] Management policy should allocate adequate resources to train users to effectively use corporate tools in liaison with ICT staff.

26. USP should advise other CROP organisations information on capacity and the availability of USP centres, and the procedures to use them.

27. CROP organisations should advise each other of their ICT and GIS/RS training calendar.

28. IT-PacNet encourages CROP organisations to maintain and strengthen fellowship attachment schemes for ICT staff in the region.

2.7 Liaison with other organisations or groups

29. IT-PacNet should be renamed "Pacific Information and Communication Technologies Working Group" while the IT-PacNet name remains for the mailing list.

30. IT-PacNet should prepare a set of issues and recommendations to be raised at the CROP meetings and the Pacific Island Forum meetings.

31. IT-PacNet should ensure that one representative attends the INET meeting and participate in ISOC.

32. IT-PacNet encourages the UNEP/GRID initiative and for USP and SPC to share there experience with UNEP/GRID and explore avenues of Co-operation with the group.

33. Consideration should be given that IT-PacNet liases with media organisations to promote IT issues to a wider audience.

34. Asked that organisations share positive and negative performance reports on their suppliers and products. The group encourages the use of the IT-PacNet (mailto:IT-PACNET@list.sopac.org.fj) mailing list as a forum for discussion.

35. In recognition of the limited resources available in the region, the group continues to recommend the consideration of utilising specialised skills within the group for consultancies, at cost.

36. Formal invitation to the next IT-PacNet meeting should be sent as soon as possible to each organisation focal points and Forum Secretariat should send invitations to governments to ensure that member countries have the opportunity to host the meeting.

37. Encourages the wider ICT community to attend future meetings including representatives from the private sector.

38. Encourages the wider donor community to assist CROP member countries to attend the meeting.

2.8 Geographic Information Systems and Remote Sensing.

39. To reflect the importance of GIS/RS technology and applications and in order to develop robust, effective and sustainable GIS/RS systems, every CROP organisation and PIC government should establish a GIS/RS focal point. This focal point should be established within a unit that could best provide:

. strong links to as wide a possible range of end-user application groups, and

. expertise in GIS/RS development, implementation and support, and

. expertise in ICT development, implementation and support.

2.9 Telecommunication policy and Infrastructure concerns

40. [CROP] The group recognises the difficulties faced within the region in formulating appropriate communications policy with the limited resources available to Pacific Island governments. The group recommends serious consideration be given to the provision of a communication regulatory advisory capacity to be established within the Forum Secretariat or other organisation to provide expert, unbiased advice to assist member states in their development of an appropriate regulatory environment.

41. [CROP] The group recognises the importance of establishing clear measurable objectives for the appropriate development of global information infrastructure. It therefore

recommends that the action plan produced as a result of the Forum Communication Policy Ministerial Meeting of April 1999 be supplemented by a practical implementation schedule and encourages the development of similar practical solutions at the country level.

42. Due to limited resources, the group advises when developing national ICT strategy plans to consider previous plans such as the French Information Infrastructure Action Plan of 1998 (http://www.internet.gouv.fr/english/sommaire.html)

43. [CROP] IT-PacNet has noted that the countries ICT infrastructure is increasingly important to the work of the organisations and the development of our member countries. IT-PacNet recommends that CROP takes note of this issue and ensures that appropriate action is taken in member countries and that there is increased Co-ordination between ministries to provide better infrastructure.

2.10 Pacific Chapter of the Internet Society

44. IT-PacNet having acted to create the Pacific chapter of the Internet society (ISOC), encourages CROP organisations to provide help to the chapter.

45. IT-PacNet recognises the value of a Pacific voice within ISOC to guide and enhance the future development of the Internet within the region and encourages as wide and active membership with the Pacific chapter as possible.

2.11 Security and Privacy

46. [CROP] CROP organisations should adopt a Risk Management plan and IT-PacNet should set up an ICT template to be used.

47. [CROP] Each CROP organisation should have a security plan for the organisation as a whole where ICT units would participate on the ICT issues.

48. [CROP] The IT-PacNet group recommends that the CROP meeting request the Forum Secretariat to set up a security review of all CROP organisations.

49. Intranet and Internet web sites should be clearly separated for security reasons. This may entail the use of separate servers and/or separate network segments

50. Security policies must be well documented and the computer systems should continue to be appropriately protected.

51. Virus protection systems should be implemented and routinely updated.

52. A secure backup policy should be maintained with consideration for disaster recovery, including off-site storage.

53. IT-PacNet noted that the cost of outage is more than the backup power installation for our organisations; therefore a full backup power system should be implemented.

54. Appropriate configuration of mail servers be implemented to prevent their use for the propagation of unsolicited email (Spam) and viruses and consideration should be given to filtering potentially harmful attachments.

55. Organisations are advised to consider security with the publication of sensitive data for restricted access via the Internet using public key encryption such as Verisign. Without encryption, all data including passwords are transmitted in plain text.

56. All organisations should develop an acceptable user policy (AUP) for their computer networks where staff should be made aware of such policy using such accepted practices as login messages.

2.12 Hardware Recommendations

2.12.1 Disposal of Hardware

57. It is recommended that all hardware that has reached the end of its lifetime or can no longer be repaired be disposed of in a responsible manner. In the case of Small Island developing states it may be necessary to ship such equipment to other countries where disposal methods are established.

2.12.2 New Hardware Purchases

58. It is recommended that current proven technologies appropriate for business functions as identified in the IT Plan be purchased and should provide a minimum functional lifetime of 3 years.

59. In any purchase of hardware, the prime consideration should be quality service and support and preference should be given to local suppliers where appropriate.

The following hardware is recommended.

2.12.2.1 Computers

2.12.2.1.1 Desktops - Personal Systems

Name brand desktop computers such as Compaq, Dell and HP are recommended. Low cost clones should be avoided due to their limited lifetime and reliability. However there may be cases where clones can be employed provided they include high quality components such as motherboards, video cards, network cards and hard disks.

The minimum configuration for desktop systems is:

- Processor: Intel Pentium III minimum.
- RAM: 128MB minimum SDRAM.
- Hard Disk: 10Gb uncompressed
- Monitor: 17" minimum. 72 Hz min, less than .28 mm pitch, 1024x768 resolution, Energy saving.
- Video card: AGP, PCI or integrated 4MB minimum
- CD-ROM
- Audio
- LCD screens should be considered in environments with high humidity and limited power availability.

2.12.2.1.2 Portable Computers

Due to the disproportionately high cost and specificity of docking stations, careful consideration should be given to their purchase.

Due to the high or equivalent cost of portable computers and their limitations as compared to desktop systems, the minimum specifications for portable computers is lower than what is required for desktop systems. The minimum configuration for portable computers is:

- Processor: Pentium III
- Two type II PC-Card slots
- Integrated modem and Ethernet ports.

- RAM: 128MB minimum
- Hard Disk: 10Gb uncompressed
- CD-ROM
- 14" TFT 1024x768 screens are recommended for users who spend considerable time using their laptop.
- Consideration should be given to battery type and care where users require extended use without mains power. If extended use without mains power needed, extra battery should be purchased with unit.

The group expressed a general positive experience with Toshiba and Compaq laptops, although selection of a particular brand should be based more on local support rather than brand name only.

2.12.2.1.3 Server

The highest possible reliability is desirable for a network server, so name brands which are marketed specifically as servers, and that are well supported in the region are recommended (Compaq, HP).

Consideration should be given to micro server solutions for small workgroups. The minimum configuration for mainstream servers is:

- Pentium III.
- 512 MB RAM minimum with parity checking.
- SCSI high performance drives and controller.
- 10Gb of useable disk space as a minimum.
- External DDS-4 tape backup drive. A spare unit should be considered for redundancy.
- Software RAID 0 (disk mirroring) as a minimum. Hardware RAID 5 as a preferred solution.
- CD-ROM.

Quantum Snapservers V3.0 or above could be an alternative way for doing file storage and backup or other embedded appliance with a Linux base.

CROP agencies will monitor and evaluate micro servers as alternative cost effective solutions to Microsoft NT Server solutions in appropriate situations and make recommendations for deployment and support when necessary.

2.12.2.1.4 Physical Network

For new buildings it is strongly recommended that a flexible cabling infrastructure be adopted that allows implementation of new technology such as the convergence between data, voice, and video networks. The cabling should meet approved standards.

Ethernet is recommended for all networks. Fibre optical cabling is recommended as a backbone especially for inter-building and new building connections. All network cards should be PCI 10/100 BaseTX and a respected brand such as 3Com.

100BaseT is recommended for new LANs. Network cables should be Category 5 minimum.

It is recommended that careful consideration be given to selecting the cabling contractor and that approved testing be conducted of all cables, post installation, and approved separation of mains and data.

Switching hubs should be considered for new installations and should be managed where appropriate. In the construction of new buildings, it is essential that architects liase with the IT staff during the planning and subsequent stages.

2.12.2.1.5 Peripherals

2.12.2.1.5.1 Backup systems

Backup solutions are essential for all systems. An adequate backup strategy is essential and should include an off-site storage policy. Backup solutions should encompass all critical data resources including messaging systems such as Microsoft Exchange. Backup policies should be disseminated to users.

2.12.2.1.5.2 Power Conditioning and UPS

Uninterruptable power supplies (UPS) of adequate capacity are necessary to prevent the loss of data and are especially relevant in countries with unreliable power. All UPS systems should be periodically tested to verify their operation and UPS units connected to servers should be appropriate for automatic shut down.

Hubs should also be connected to UPS. The group recommends that double conversion technology UPS should be used while power boards with spike protection are essential. Use of modem line protection is also recommended. Care should be taken to connect Laser Printers to UPS. Generally a surge protected only port is available on some UPS.

2.12.2.1.5.3 Printers and Plotters

Hewlett Packard (HP) printers and plotters remain the preferred choice with the model dependent on price and performance requirements.

2.12.2.1.5.4 Modems

The recommended manufacturer is 3Com (US Robotics). Specific models are recommended as follows:

Courier for high end or leased line and a Sportster for lower speed lines. External modems for desktop computers are preferred. The group cautioned against the difficulties encountered with low price modems.

2.12.2.1.5.5 Scanners

Hewlett Packard scanners are the preferred types.

2.12.2.1.5.6 Recordable CD Writers

HP internal IDE RW drives are recommended and recordable CDs (CD-R) media be used in all organisations to distribute data sets greater than 5Mb. External CD writers that connect via parallel port are not recommended.

DVD is emerging as a reliable cost-effective distribution medium for large data sets.

DVD writable are emerging as a replacement to CD-RW

Zip and Jazz drives are recommended as secondary methods of dissemination.

2.12.2.1.5.7 Video conferencing

Videum Conference Pro PCI has been successfully used with Microsoft NetMeeting under both Microsoft NT and Windows 9x. Many other brands have been found to be unreliable and incompatible with NT.

2.13 Software Recommendations

2.13.1 General Software Recommendations

Due to the regular release of software with proven incompatibilities and bugs, the group highly recommends against the installation of first release software. This is particularly important for critical applications such as file servers. New releases of software should be evaluated on a testbed system.

CROP agencies should ensure full compliance with software licensing within a reasonable timeframe and any software included in computer equipment supplied to member countries under donor funded programmes should be licensed.

2.13.2 New software Purchases

It is recommended that current proven technologies appropriate for business functions as identified in the IT Plan be purchased. The following software is recommended.

2.13.2.1 Operating systems

Windows NT Server 4.0 SP4 for network servers or Windows 2000 SP1

Due to superior stability and performance, Windows NT 4.0 and Windows 2000 Workstation remains the preferred workstation platform.

Windows 2000 is recommended for notebook computers due to NT's limited support for portable functionality.

Linux-based servers are a feasible and cost-effective alternative to Microsoft where appropriate technical expertise exists. CROP agencies will be closely monitoring developments in office suites and other necessary software tools for Linux on the desktop and will make recommendations when appropriate.

2.13.2.2 Server Suite

Microsoft BackOffice 4.5 is a cost-effective server solution. BackOffice for Small Business may create licensing and upgrade problems.

Internet Information Server (IIS 4.0) provides a cost-effective solution for a web/ftp server.

Linux is highly recommended as a cost-effective platform for firewall and Internet applications (RedHat or Mandrake recommended), but organisations intending to use it should ensure that they have access to some adequate technical expertise.

ArcServe or BackupExec are recommended for Windows NT backup.

2.13.2.3 Applications

2.13.2.3.1 Office Suites

MS Office Professional 97 (with Service Release 2). It was noted that there is some backward compatibility between Office 95 and Office 97.

Caution should be exercised in migrating to Microsoft Office 2000 until compatibility problems between Access 97 and 2000 are resolved.

2.13.2.3.2 Database

MS Access is the recommended standard. The issue of compatibility between different versions of Access was highlighted.

2.13.2.3.3 Web design

FrontPage2000 is recommended as an easy to use web design tool. Visual InterDev 6.0 and Drumbeat 2.0 are appropriate choices for more demanding development tasks, such as interfacing with databases.

2.13.2.3.4 Mapping and GIS

MapInfo Professional 5.5 is the current standard.

MapBasic 5.5 is recommended, if development work is required.

2.13.2.3.5 Utilities

Mcafee VirusScan, Norman Anti-Virus, Norton Anti-Virus or Antigen for MS Exchange are the current standard for virus protection.

It is recommended that a subscription to updates (both engine and virus data files) for the relevant operating systems be purchased. Many viruses are propagated very effectively by Internet mail systems and as a consequence it is highly recommended that a mail server anti-virus extension be utilised to stop infection as soon as possible. Subscriptions to email virus alerts are recommended.

For computer maintenance:

- ERD commander is recommended as an emergency NT recovery tool.
- Norton Ghost for disk duplication and installation.
- Execsoft Diskeeper is essential for defragmentation, and Undelete for recovering files on NT.
- LapLink/PC-Anywhere is recommended for ad-hoc file transfers and remote control.
- Quota Manager to prevent system disk overload.
- Pkware tools (Pkzip, WinZip) for file compression.
- PowerQuest tools (Partition Magic, Drive Image) as specialist tools.

2.13.2.3.6 Mail

MS Exchange Server 5.5 (SP3) is recommended and includes many security enhancements. (Anti-SPAM)

Maxcompression for exchange server is recommended for conserving email bandwidth over limited capacity connections.

MS Outlook 2000 is the recommended client for MS Exchange Server although some incompatibilities have been noted in the Macintosh version.

Outlook Express 5.X has all Internet messaging features including IMAP and can be used as an adequate client for accessing Internet email.

Pegasus is also a good mail client as hackers and viruses less target it.

2.13.2.3.7 Document Management and Library Software

Fulcrum Knowledge Server is recommended for evaluation of a comprehensive document management and indexing system.

Organisations should consider replacing CDS-ISIS with the Windows version. Several organisations have decided to utilise DbTextWorks (InMagic) in place of CDS-ISIS. The Forum Secretariat uses the EOS Q Series.

Several organisations report success in this area using the DBTextWorks products. WebPublisher allows access to DBTextworks database collections through the web interface.

2.13.2.3.8 Financial Software

Off-the-shelf application software is recommended as opposed to an in-house development application.

Most off-the-shelf applications can be customised. SunSystems and ACCPAC are being used by several regional organisations. Attention should be drawn to the importance of the selection of a support company.

2.13.2.3.9 Publications Software

Adobe PageMaker 7.0 is the current standard for high-end publications while PhotoShop 5.5 is a good complement for desktop publishing. Microsoft Publisher 98 is recommended for mid-range tasks. The group highlighted the need to select packages that provide web editing and web management tools such as FrontPage 2000. It is recommended that all presentations be converted to PDF files using Adobe Acrobat 4.0.

2.13.2.3.10 Training Software

Self-training packages are a cost-effective way to train staff.

2.13.2.3.11 Network Management Software

Systems Management Server (SMS) 2.0 SP2 is not anymore an essential tools and some of its functionality can be replaced by easier tools like Dameware, Wininstall 2000 and VNC. SMS 2.0 SP2 provides integrated inventory, remote control, and software distribution services. Use of a network management solution is highly recommended to reduce the significant support costs associated with multi-user LANs.

2.13.2.3.12 Development Software

Due to Visual Basic being the underlying environment of the Microsoft Office suite it is highly recommended as the development environment of choice within the region. Visual Studio 6.0 Enterprise is a comprehensive bundle of development tools that allow production of professional quality applications software in several major languages (InterDev, C++, Vbasic, VJ++, SQL).

3 REVIEW OF LAST YEAR MEETING

The report is distributed at each SOPAC Annual Session. The hardware and software list is useful for people in helping them to organise their purchase. External consultants find this report useful to get information on the situation of the Pacific Island Countries.

An ordering page should be inserted in the report to help people to get further copy. A copyleft notice should be inserted to allow the wide distribution of the report. An ISBN number should be present (cf. http://www.gnu.org/).

4 STATUS REPORT FROM CROP ORGANISATIONS

4.1 FFA

4.1.1Report

4.1.1.1 Introduction

I am pleased to report on the progress of the ITC division to this meeting. As always changes are always taking place in terms of technological developments. As remote as we are, striving to keep up with developments is a daunting task. However given the correct resources and backing from our respective management, we are able to take advantage of these developments and deliver to our respective organisations and member countries the level of services that they deserve.

We are limited by distance, technically skilled personnel and most important of all the funds. With the kind assistance of our aid donors and the correct backing of our management, we are able to deliver the level of services to achieve our respective organisations goals. This year FFA will see the upgrade of its VMS system to use internet as a mode of transferring vessel position data. The legacy x25 system will be dropped. We hope to do a complete upgrade of the member country VMS workstations by the end of the year. We will see our internet bandwidth upgraded from 28.8K to 64K. This will give us the correct bandwidth to transport VMS data. And we are working closely with our local telecommunications carrier to implement a digital radio link to replace the traditional copper cables that carry all our crucial data from our headquarters to the Telekom and subsequently to the rest of the world.

I would like to acknowledge the role that ITPACNET has played in bring together technical people to develop policies and assist with technical issues facing our organisations and member countries. The recommendations of the meeting have been very useful in guiding us in a common direction.

4.1.1.2 Objective

The Agency's main ITC focus is to provide an effective Information Technology and data communication base for the secretariat and to its member countries. Funding constraints and work priorities still play a major role in the Secretariat's decision on which projects to implement and which ones to defer or not to undertake.

4.1.1.3 ITC Staffing and Funding

Since the last report, staffing level has not changed. We currently retain 4 professional staff and one support staff. The 4 positions are Information Technology Manager (Norman Kapun), Senior Analyst Programmer (Gurd Mar), Database Administrator (Ramesh Chand) and Network Administrator (Gerald Porowai).

The Librarian position is a support staff position. Nancy Kwalea held this position. Her contract ended at the end of last year. Due to funding re-prioritisation this year, the position has not been filled. Temporary staffing arrangements have been made to ensure the Library continues to deliver the necessary services. When a more permanent funding source is secured, the position will be filled.

The positions of Senior Project Analyst, Data Librarian and Information Officer are still vacant. Funding is again the main reason we cannot fill the positions. A lot of the work that these positions would produce has been absorbed by the 4 currently filled positions. This is putting a drain on the available resources however given the nature of the way the agency functions, projects and work priorities have to be re- arranged to accommodate this shortfall.

4.1.1.4 Vessel Monitoring System (VMS)

The Vessel Monitoring System is still by far the biggest system the secretariat has had to date. Because it was the first of the kind to be developed in this region, a lot of work had to be put in after the initial development to refine the system to a more stable system.

Working closely with the joint developers, Aspect Computing of Australia and Absolute Computing of New Zealand, the IT division has been able to ensure the system continues to function and most of all deliver the outputs that it was set to deliver.

As of April this year, there are over 500 vessels registered on the VMS register. It is expected that by the end of this year, there will be a total of 1000 vessels registered on the VMS register.

When the VMS system was first developed, several modes of communication were considered as the communication medium for the system. Vessel position reports are sent from the vessels via satellite to the Perth Land Earth Station (LES). From LES the positions are downloaded to Honiara via X25. The positions are then processed and grouped into respective countries where the vessels are operating. These are then ready to download by the member countries.

About 95% of member countries now have internet connections and pick up their vessel positions via internet. IDD direct dial facilities are also available as a backup means to download.

New development.

The system is currently being upgraded to do away with the X25 protocol. All vessel position data will now be downloaded from LES to Honiara via internet. The software component of the VMS system that defines the protocol is in testing at the time of reporting. By the end of May the new upgrade will be implemented.

4.1.1.5 Corporate Data Resource (CDR)

The Corporate data resource facility has seen a new addition to its group of systems. The Tuna Industry database system was developed and integrated into the facility. Tuna Industry database is a database profile of the tuna industry which includes resources profiles such as organisations, personnel, manufacturers etc. of all those who are directly or indirectly involved in the tuna industry.

This brings to 7 the number of systems under the CDR facility. The others are;

- Regional Register (REG)
- Vessel Activity and Catch
- People and Organisations
- Observer Database
- Violations and Prosecutions

- Fisheries Agreements and Licenses

There are plans to develop new systems and integrate them into the CDR facility. As reported last year, the Fish Price and Marketing Database has not yet been developed.

4.1.1.6 Hardware Platform

FFA continues to use Hewlett Packard as its preferred hardware. HP 9000 servers for Unix and oracle and mid-range for Network and file servers. And HP PC's are standard workstations for staff.

We note that sometimes the member countries find themselves in positions where they are being offered goods which includes computer hardware that are not of their choice. This is obvious in countries where aid donors make donations in kind and not cash. It introduces non-uniformity of hardware. Servicing and maintenance of these hardware becomes a problem. In most cases, we have seen equipment that cannot get fixed and stored away in corners collecting dust.

Our reason for maintaining one standard platform is purely for maintenance and support. Our nearest HP support centre is Brisbane although we maintain our support agreement with HP headquarters in Melbourne.

For laptops, we use Toshiba. We have dropped Compaq several years ago.

4.1.1.7 Corporate Applications

During the second half of this year we will be upgrading our HP Unix operating system and Oracle database. This will mean significant changes to the applications. Oracle is the database engine for all our large systems. They include CDR, VMS and the Finance One accounting package. We will upgrade oracle to release 8.x and HP-UX to release 11.x.

Our reason for not doing them earlier is because we could not get certification from application support as to upgrade. Finance One for example would not run on HP-UX 11.x until the application is upgraded.

4.1.1.8 Network

The preferred network operating system is Windows NT. TCP/IP is the preferred protocol for network access and clients operating system is Windows 95. Windows 98 and few Windows NT workstations.

4.1.1.9 Office Automation

Office applications comprise of the standard applications i.e. the MS Office 97 suite including Word, Excel, Access, PowerPoint, Microsoft Exchange and Project. Outside these applications, only MapInfo (and FFAmaps) is endorsed. Office2000 is under evaluation.

4.1.1.10 Efforts for 2001

- All 4 staff of the IT division support crucial corporate applications. Our staff are heavily involved with all the system and we encourage familiarisation for all systems. At times while others are away, one or 2 persons can maintain minimal support.

- We are working closely with Solomon Telekom to upgrade our bandwidth from 28.8K to 64K. This will happen in next month or so. This depends on the capability of Solomon Telekom to provide such a service. They have a 256K link out of the country so we are really restricted to how big a pipe we can get.

- The VMS upgrade will be implemented in the next month also. This will take advantage of the internet link and do away with X25.

- The member country VMS workstations will be getting a new hardware and software upgrade before the end of this year. This is in line with the countries requirements to

ensure that hardware and software are current. All the workstations in the countries have already gone off their warranty period. The upgrade will be in the form of a complete set of system.

4.1.2Comments

VMS: The position report can be intercepted because the report contains only the Id of the vessel and its position and is therefore meaningless for outsiders. The data is sent from Perth to Honiara. Then the data is encrypted. The member countries connect then on the Internet and get authorised to the system, and then the report specific for the country is downloaded.

Telecom: Telekom is marketing line with a potential capacity of 64kbps but it is understood that this is a peak speed when there is no congestion on the 256kbps link outside the country. Prices 28.8kbps 6,800SID/month, 64kbps 10,200SID/Month (1USD=3SID about).

Staff: There was a number of issues with staffing due to the events in Solomon Island. Mainly property was targeted but not the staff of FFA. There was no departure of staff due to the events. It is acknowledged that recruiting new staff will be more difficult.

Telecommunication: FFA has bought an Inmarsat C phone system for emergency purposes.

4.2 Forum

4.2.1Report

4.2.1.1 Introduction

Since December 1995 several sections related to information management were amalgamated into the *Information Services* section within the Corporate Services Division. Information Services comprises Computer Services, the Library, and Records Management and in October 1997, responsibility for the PABX system, voice communications and the satellite television system were added.

The post for MIS, which was left vacant as of 28th March 2000, has never been filled except that computer services now come under the guidance of the Manager Finance.

4.2.1.2 Computer Services

Computer Services delivers a basic array of core services to the Forum Secretariat - installing, repairing and maintaining servers, desktop computers and peripherals; developing and supporting the local area network (LAN), access to the Internet and the Secretariat's web site; user support, supporting the voice communications system leased from Telecom Fiji; and supporting the satellite television system.

4.2.1.2.1 Priorities

In line with the overall objective of the *Information Services* section of providing access to timely information for all staff, Computer Services is adopting a client-service approach. The main priorities for IT at ForumSec include:

1) standardisation of hardware and software including licensing and registration of all software; (2) improvement of users' computer knowledge through outsourcing of training and; (3) improvement of computer support services through

2) on-going needs assessment and evaluation of user needs and full help desk facilities

4.2.1.2.2 Current Environment & Network Overview

Presently, the ForumSec network environment consists of a fibre backbone between eight buildings and 10BaseT Ethernet switching to clients using 3Com Superstack 11 switches, linked to eight servers that run on Windows NT 4.0 SP5 plus two new Quantum Snap Servers for dedicated file sharing.

- File Server – SharedData, PrivateData, Payroll System
- PDC, DHCP, Private Data
- SQL 6.5 with Sun Systems 4.2.5-3 for Finance Services
- EOS Professional Series (online Library system), Backup Printserver (printers added and mapped and ready for sharing)
- IIS 4.0 and Proxy Server 2.0, Routing & RAS to FIG
- Exchange 5.5 SP3 Email Server (Dedicated)
- Printserver, Archives, Software resource server.
- Intranet server for internal web-surfing

To improve network reliability and reduce disruption to network services, corporate applications and data have been installed on separate servers.

4.2.1.2.3 Security

Network security is enforced within Windows NT via user accounts for Forum Secretariat computer users. Automated daily incremental and weekly full backups are implemented and stored on and off-site. During implementation of the Internet connection to the Fiji Internet Group (FIG) Microsoft Proxy Server is used for the protection of the Forum LAN. In March 1999, Information Services registered itself with ORBs to rectify anti-spamming and relaying of messages through the ForumSec Email Server. Network Associates Mcafee VirusScan is used for client protection and also looking at getting AntiGen for Exchange 5.5

4.2.1.2.4 Internet

Since June 1997, a dial-up line to the Fiji Internet/Intranet Group (FIG) based at SOPAC provides organisation-wide Internet access for e-mail and web browsing. The e-mail server is based on Exchange Server 5.5 and clients use Outlook 98 (though a few are still on 97). All professional contract staff including some support staff have access to the web. An additional computer with dial-up connection to Fiji Internet Services is setup in the library for staff and the public. All staff including Auxiliary staff have internet email access. A mirror site is setup on the SIDSNET server in the US, however a commercial mirror site in Australia is being sort after at the moment.

4.2.1.2.5 Voice communications

Since 1994, the Secretariat has leased a NEAX 2400 PABX from Telecom Fiji. This was replaced in November 1999 as a Y2K compliancy upgrade. The Secretariat has purchased a replacement system - NEC NEAX 74000 ICS 120 - 4 PIM. A new billing system, CABS is included with the purchase of the new PABX system. The new system maintains the features seen in the old one, which includes: 27 switchboard lines (phone 312 600), 16 in-dial lines (phone 220 <extension number>) and 200-extension capacity (80 + used).

4.2.1.2.6 Satellite television system

In December 1997, the Secretariat upgraded its TVRO satellite system to include connections to the library, PIAD mini-conference room and the residential houses. The following channels are received via the current satellite dish position to the PAS2 satellite: Australia TV, MTV, and National Geographic. In addition, the TVRO system receives Fiji TV One.

4.2.1.2.7 Power

After the political crises last year and the consequent power disruptions, the Forum Secretariat have managed to install a generator with enough output to power the whole Forum Secretariat complex including the residence. In addition to this, all PCs have their own UPS to further reduce the risk of data loss/power loss during the change over of power supply.

4.2.1.3 Future Developments

Planned future developments include:

a) Increasing data transfer speed on Forum LAN from 10MBps to 100MBps

b) Data publishing to CD-ROM of Forum Secretariat records for in-house access via a CD ROM server and travel to Forum Secretariat meetings such as the Forum Officials Committee (FOC) meeting.

c) Review of document flow procedures and implementation of a computerised records management information system.

d) Continue to improve computerised help desk facility for on going user support.

e) Upgrade of library information system to Q Series and making library system online to staff and accessible via Internet.

f) Rack mounting of new servers and existing ones.

4.2.1.4 Vision

To provide the structure and the organisational climate to encourage the orderly, effective and efficient development of IT in the Forum Secretariat and to monitor regional information developments.

4.2.1.5 Mission:

The general philosophic framework for the continuing development and implementation of this plan are expressed in the following mission statements:

- Improve service delivery to Forum Secretariat staff through the use of IT.
- Make information more accessible through an affordable, shared and widely used IT infrastructure.
- Use IT to respond quickly to changing business requirements.
- Invest in people, tools, methods and partnerships necessary to improve knowledge and skills of the human resources.

4.2.1.6 Principles, Objectives

There are three guiding principles for the use of IT in the Forum Secretariat.

(1) Support the corporate objectives of the Forum Secretariat by providing competitive service delivery through effective IT investments, establish adequate and effective business policies, standards and procedures;

(2) Provide broad access to corporate data to the Secretariat staff for the divisional work programmes by providing the hardware and software for staff that is required by them to effectively and efficiently perform their jobs;

(3) Assist all staff in reaching their full potential through professional development, continuing education and training opportunities by providing a system of ongoing training of all staff in the capabilities of the IT infrastructure and in the many uses of IT to enhance skills and service delivery.

The IT Plan has been approved by Management and it will be a useful management tool in rationalising need for and obtaining funds for developments.

4.2.2Comments

Power: The estimated loss at Forum Secretariat for lack of power is estimated at FJD2500/hour. The cost analysis showed that a generator is reimbursed after 10 hours of

power cut per year. A power generator also provides added security by powering security lights, fire alarms…

SNAP Servers: The snap servers are a cost effective system to do file sharing. It is not fully compliant with the Windows NT domain users and group. 120GB for FJD7000. Backup is done via NTBackup, BackupExec or Arcserve. The system is RAID5 using IDE drives.

Printer: Forum has difficulty with Samsung printers that was donated. It is difficult to find accessories or even toners.

Communication: Forum Secretariat is worried about communication in Nauru for the Forum Ministerial meeting. They have envisaged various system including the resurrected IRIDIUM.

4.3 PDIP

4.3.1Report

4.3.1.1 Introduction

The Pacific Islands Development Program, unlike the rest of the CROP organizations, has a very unique information technology infrastructure in that the PIDP is housed within larger institutions. The home of the PIDP, the East-West Center, is responsible for providing equipment, technical expertise and training to the PIDP, while the East-West Center as a whole benefits from its location on the University of Hawaii at Manoa campus and is a node on the wider UH network. This allows the PIDP to operate without any dedicated IT staff and has the potential to take advantage of the vast resources of a major U.S. research university in the accomplishment of its objectives. That said, there are many ways that the PIDP could vastly improve upon its current IT objectives to benefit the Pacific Islands.

4.3.1.2 Information Technology Support and Services (ITS - East-West Center)

As previously mentioned, the East-West Center as a whole provides the IT infrastructure and support for the PIDP. As such, a complete inventory of the Center's capacity and equipment is beyond the scope of a PIDP report. For the PIDP, ITS has provided a desktop computer for every employee with the minimum specifications as follows:

Processor	Intel Pentium III
Processor Speed	400MHz
RAM	128MB
Hard Disk	13GB
CDROM	40X CDRW
Video	ATI 2D/3D AGP 4MB
Audio	Integrated
Network Interface	10/100 Ethernet
Keyboard	PS/2
Mouse	IntelliMouse
Monitor	17" Color SVGA
Speakers	Included
Operating System	MS Windows 98

Application Software	MS Office Pro – Word, Excel, Access, PowerPoint, Outlook
AntiVirus	Network Associates McAfee AntiVirus 4.5. ITS has a system in place where updates to the virus definitions occur automatically at log-on throughout the network. ITS is also in the process of installing server-based, email filtering programs to intercept viruses prior to their entry into the system.

Staff has access to two networked HP LaserJet printers (4050 and 4MP) within our immediate office area and the ability to print to many different printers in the Center, including two Color LaserJet 4500s. Two senior staff members also have older laser printers in their individual offices. Scholarship students have access to a dedicated computer lab with three PCs and 2 functional printers of older vintage.

An ITS policy has recently been implemented that allows for regular replacement and/or upgrade of existing PCs and equipment on a rotating, first in, first-out basis (approximately every 3 years).

ITS provides all computers in the building with local area network access including several centralized servers (both Windows NT and UNIX, for storage and file swapping, a web server (for small, program specific web pages), IMAP e-mail accounts, and access to the Internet (size of pipe is unknown to me). The department liases with the IT department of the University of Hawaii for issues related to Internet access since the Center is a node on the UH system. There are also plans underway to construct a Centerwide "Razor's Edge" database to be utilized by all departments and programs.

In addition, ITS, in conjunction with Human Resources, provides ongoing training opportunities for staff to improve their computing skills. These trainings are either provided by IT staff if possible, or contracted to outside agencies that handle the training sessions.

The East-West Center provides the PIDP with a phone system with integrated AUDIX voice-mail features.

4.3.1.3 The PIDP's Additional Equipment

In addition to Center provided equipment, the PIDP has purchased a variety of items necessary for its work. These include 3 laptop computers, portable printer, and a scanner with document feed, and a variety of software including PageMaker 6.5, Illustrator 8.0, Acrobat 4.0, OmniPage 10, and FrontPage 2000.

4.3.1.4 The PIDP's Programs

The main programmatic use of information technology, besides the day-to-day office administration, is the hosting of several informational web sites. The Pacific Islands Report (http://pidp.ewc.hawaii.edu/pireport/) is a digest of 20-25 daily Pacific Islands news items compiled by Al Hulsen and utilized by many people throughout the region and the world. In the 4 years of its existence there have been nearly 800,000 hits on the site and kudos from around the world are regularly received for the comprehensiveness and quality of the news items provided.

The Pacific Islands Business Network (PIBN http://pidp.ewc.hawaii.edu/pibn) is a project of the United States-Pacific Islands Nations Joint Commercial Commission (JCC) and serves as an information conduit to provide purchasing agents, overseas investors, and individual

consumers with details about products and services available in JCC member Pacific Islands states.

These web sites, in addition to the PIDP and JCC informational sites are housed within a private company in Honolulu but maintained by the PIDP staff through FrontPage and telnet access to the Cobalt Raq UNIX based-server. Note: the sites were very recently migrated from a Windows NT based server to the UNIX one due to the severe limitations of functionality experience with NT and the age and unreliability of the server. The archive portion of the Pacific Islands Report will, however, remain on the NT box.

The PIDP has, in the past, arranged for Pacific Islanders to attend a variety of IT courses through the University of Hawaii Outreach College (community education program). This is not a formal program, but potentially available to islanders upon recommendation of governments and contingent upon available funding.

4.3.1.5 Future Strategies/Programs

The PIDP does not have an IT strategy, apart from that carried out by the Center as a whole.

The PIDP, in coordination with the East-West Center's Seminars program, is exploring the possibility of offering IT trainings and seminars to Pacific islanders in the future. This program is currently in the design phase and any input that could be provided by others in the region is more than welcome.

4.4 SOPAC

4.4.1Report

4.4.1.1 Introduction

The year 2000 was a most challenging period with the disastrous events in Fiji severely disrupting operations within the Secretariat where the worst was power outages both scheduled and unexpected.

This placed a heavy burden on the unit as the Secretariat requires 24/7 operations of its networked information system as well as 24/7 operations of its Internet link where the latter is a service shared by other major development organisations in Suva.

The power disruptions lasted some four months and usually only four hours maximum of power was available during the day when it was necessary to operate four standby generators strategically located throughout the Secretariat to maintain 24/7 operations.

Despite the exquisite inconvenience of maintaining 24/7 operations together with continual repair of hardware caused by unexpected loss of power, low voltage and inconsistent frequencies the overall operations of the Secretariat were maintained.

Needless to say, a single generator with adequate capacity for the entire Secretariat and automatic changeover features is a high priority item on the Secretariat's wish list for 2001.

The staffing during 2000 was relatively static with the Information Technology Manager, Network and Database Developer, Remote Sensing Specialist unchanged while the Information Technology Officer, Ms Anna Elaise resigned in November to take up the position of Webmaster with the International Seabed Authority in Jamaica. We have close ties with this organisation and congratulate them in their excellent choice for this post. It should be noted that with the high migration of skilled IT professionals from Fiji since the events of May 2000 the Secretariat has bee unable to fill this post with a suitable replacement. The Secretariat was fortunate, however, in filling the post of Remote Sensing Officer in August 2000 with Ms Myriam Gallois from New Caledonia.

In 1999 the key tasks were rationalised into three task development areas to provide better transparency and ease of reporting as follows.

- Information Systems
- Communications
- GIS and Remote Sensing
- During 2000 the fields of Information Systems and Communications have converged and in keeping with the goal of ease of reporting the task development areas have been further rationalised into two:
- Information and Communication Technologies
- GIS and Remote Sensing

Information and Communication Technologies (ICT) includes information system deployment, database development and maintenance and more broadly, data warehousing. The Regional Data Centre holdings are included as well as organisation of offshore data (Law Of the Sea Issues). The dividing line between Information Technology and Communication Technologies has blurred where the later includes wide and local area networking employing Internet as the predominant transport mechanism. Internet and Intranets are included in ICT as well as Internet Service Provider (ISP) operations.

GIS & Remote Sensing is fundamental to the operations of a Geoscience organisation and this task development area is often the final layer of the knowledge management system that is built upon the foundations of Information Systems with data warehouses and communications infrastructure.

Each task development area has been divided into two sections; member country support and secretariat support where both may include training or technology transfer. Task profiles, however, may address one section in one area or several sections in several areas and will vary according to the requirements of individual member countries.

It is also important to note that ICT and GIS and Remote Sensing are the fundamental tools of Island Systems Management that was introduced during the 1999 session.

4.4.1.2 Information and Communication Technologies

4.4.1.2.1 Support to Member Countries in ICT Development

SOPAC is dedicated to the support of all Member Countries in the development, installation and maintenance of appropriate Information Technology (ICT) systems. These systems are essential for improving the effectiveness of the relevant government department by providing access to timely and accurate information. These systems are the building blocks of the knowledge management systems.

The objective is the provision of relevant and effective ICT systems to assist member countries in discharging their obligations under resource management objectives.

Training or technology transfer is essential to maintain skill levels of member country technical staff responsible for deployment and development of in-country information systems.

The objective is to provide adequately trained staff in member countries to ensure that information systems are maintained and developed. Tasks include the following

4.4.1.2.1.1 Regional

A major initiative has been the establishment and development of the Fiji Internet Group that provides a shared access to the International Internet for a group of development organisations located in Fiji that include the European Union Delegates Office, Fiji Institute of Technology, Fiji National Training College, Fiji School of Medicine, Fiji Trade and Investment Board, Forum Secretariat, French Embassy, Mineral Resources Department as well as

missions such as the Federated States of Micronesia and Marshall Islands. This initiative assists both directly and indirectly all member countries.

A review was conducted of the ICT status of the International Seabed in Jamaica where this sister organisation assists all member countries though its regulatory work in offshore mining in international waters.

Representation was made at the Internet Conference 2000 (INET) held in Japan with the objective of promoting Internet development in all member countries. The experience of Tuvalu in establishing an ISP was presented to INET. It was noted that apart from the technical matters raised during the conference, the conference put a lot of issues on how the Internet is vital component for nation rebuilding or simply nation building.

Procurement and delivery of power conditioning equipment was carried out for Meteorology Department offices in Kiribati, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

4.4.1.2.1.2 Country Specific

A component of the Fiji Landowner Awareness Project for Forestry Department was undertaken where this consisted of multimedia production targeted at landowners.

A LAN/WAN was established within the Ministry of Natural Resources Development in Kiribati that linked the Headquarters, Fisheries Department and Agriculture Department together and to the Internet via a gateway at the Headquarters.

A proposal for implementing an ICT system for the Nauru Rehabilitation Corporation was provided that would allow identification of risks and establishment of an appropriate rehabilitation program.

A desktop computer was supplied to the Niue Police Department to enable them to access meteorological and other environmental data that is continually down linked from the EMWIN satellite system.

A LAN/WAN was established within the Meteorology Division, Samoa where this included a three-week training attachment for a staff member from the observatory as well as provision of a server.

A national ISP was established in Tuvalu. Extensive computer equipment was procured, set-up and shipped to Tuvalu for the National Fisheries Corporation, Ministry of Lands and Survey, Office of the Prime Minister and Department of Customs. In addition, on-going support was provided to the Tuvalu High Commission in Suva for establishing and developing their networked information system with connection to the Internet.

4.4.1.2.2 Support to the Secretariat in ICT Development

The information system is a foundation for all activities within the Secretariat and provides all staff with access to organisational information via a server-based system where the servers include file and resource sharing, Internet web services, Intranet web services and security. SOPAC is a web-centric organisation and continually migrates and reorganises datasets to be accessible through the common interface of web browsers.

Training or technology transfer is provided for Secretariat staff responsible for maintenance of the corporate information system as well as other staff on an as needed basis.

The objective is to provide ease of access to information through organised datasets using a common interface. Tasks include the following.

There was on-going development of the Task Profiles Database with linkage to SOPAC Financials, a SunSystems based accounting package provided through the support of Australia. This linkage provides excellent control for financial management and donor reporting. The system also reports via a web interface.

The total networked information system named SOPACNet is continually evolving where key activities include introduction of more cost effective Linux based server solutions especially

for the communications, external web and firewall server. A migration from 10 to 100 Mbps local area network infrastructure is progressing.

Other activities include migration of Microsoft Access databases into Microsoft SQL Server for more robust operations within a corporate environment as well as enabling linkage of some datasets with the SQL Server based SunSystems Financials.

The implementation of a Virtual Library system for the Publications and Library Unit to enable the scanning of paper documents into a digital database was also carried out.

4.4.1.3 GIS and Remote Sensing Development

4.4.1.3.1 Support to Member Countries

SOPAC is dedicated to supporting member countries in the use of GIS and Remote Sensing technology; and supporting in-country technical staff involved in the development of GIS-related work.

The objective is the applied use of this technology to provide improved management of the resources in a sustainable manner through the development of knowledge management systems.

SOPAC has initiated the development of in-country Computer Mapping experience and has shown that the sustainability of these projects can only be achieved if proper training is supplied in-country or through attachments at the Secretariat.

The objectives include the training of users from the various government departments and to show the benefit of the use of GIS for high-level decision-making. Tasks include the following

4.4.1.3.1.1 Regional

A fundamental component of the Pacific Marine Pollution Prevention Program (PACPOL) is a GIS database to assist in evaluating risks through a spatial data interface where such risks include high vessel traffic areas, navigational hazards such as reefs and prior incidents. SPREP is managing the program and selected SOPAC as the lead organisation in GIS and Remote Sensing as the GIS developer for this component.

The GIS Policy Paper has been continually updated as it is a living document and was produced to assist all member countries, other CROP agencies and the Secretariat with guidelines for selecting compatible tools and ownership of data. Again it should be stressed that MapInfo products are the recommended regional standard and are endorsed by the CROP Information Technology Working Group. This GIS Policy paper was further adopted at the Marine Scientific Research workshop held in Papua New Guinea.

We have produced an annual SOPAC Data CD since 1995 for distribution to all member countries at the annual session. The majority of the data is in MapInfo format and is accessible via a web browser. 3D bathymetry and satellite image coverage are amongst new features this year and the CD was distributed during the annual session in Kiribati.

We promote technology transfer through the use of various publication systems and methods that include mailing Lists such as GIS-PACNET, FIG-NET and IT-PACNET, the SOPAC Web, publications such as the Pacific GIS & Remote Sensing Newsletter (a joint SOPAC / USP publication), user support in Remote Sensing Data Acquisition, Pacific Secretariat for the Permanent Committee on GIS and Infrastructure for Asia and the Pacific (PCGIAP), and regional member of the International Society for Photogrammetry and Remote Sensing. In addition we provide a help desk for GIS and Remote Sensing issues as well as assisting USP through specialist lectures for graduate and post graduate students and support for postgraduate students in new techniques for image analysis.

SOPAC is aware that technology transfer should not only be made available to SOPAC member country geological departments but to all Pacific regional stakeholders where the method envisaged is through active participation in on-line and off-line forums.

Development of a Metadata System is ongoing where this task will support in-country technicians and departments in all member countries involved in development of GIS/RS related work. Development of a Metadata System for geographical data sets is required for proper cataloguing and access to accurate and current datasets.

4.4.1.3.1.2 Country Specific

A GIS was established in Kosrae State, Federated States of Micronesia, for land use planning, coastal monitoring and land cover change during a two week.

A component of the Fiji Landowner Awareness Project for Forestry Department was the development of a GIS based Pre Harvest Inventory.

Assistance was provided to the Mineral Resources Department, Fiji through institutional strengthening in the selection of GIS staff as well as conducting a two-week MapBasic GIS workshop. This training course was requested by MRD as the Australian funded consultant was not capable of fulfilling this task.

A landowner boundary rapid mapping project for the Native Lands Trust Board, Fiji using GPS and GIS tools has been approved for funding by ADB but final transfer of funds have been delayed due to the events of May 2000.

A shallow water lagoon-mapping project in Kiritimati Island, Kiribati was supported through extensive image analyses of Landsat data.

Four-week training attachment was provided for a student from Vanuatu who was studying at the University of New Caledonia.

There was on-going support for the GIS for Power Utilities project located at the Tonga Electric Power Board.

4.4.1.3.2 Support to Secretariat

SOPAC as the recognised lead organisation in GIS and Remote Sensing employs these technologies within the broad range of technical programs and respective units. The Information Technology Unit has been tasked with co-ordinating these activities within the Secretariat.

The objective is co-ordinated development of scalable and transferable systems that assist all SOPAC programs in effectively carrying out their respective tasks. Tasks include the following.

A project, named FMaps was initiated to develop a GIS under an open source license with cooperation of the international programming community to operate under the Linux operating system. It is anticipated that this will eventually provide a free or very low cost alternative to MapInfo and other GIS or desktop mapping products.

In general, the unit provides support to all other units in the Secretariat in developing GIS applications where these are becoming fundamental to many programs, projects and tasks.

4.4.1.4 Success Stories

The major success stories for the period September 1999 to April 2001 are:

4.4.1.4.1 Fiji – Forestry Export Market System

The establishment of a chain of custody for harvesting natural rain forest is fundamental to Fiji being granted green labelling status that will enable value adding of natural forest products to be marketed in major countries. The chain of custody system was implemented using proven information and communication technology to establish a wide area network to connect regional field offices to a central database at Forestry Management Services with links to Customs and timber industry. Bar code labelling was used to track timber flow and sustainable management developed with landowner participation.

Technologies:

- Information and Communication Technologies.
- GPS, GIS and Remote Sensing.

Key outputs:

- Green labelling through sustainable forest management and established chain of custody practice.
- National value adding.
- Harmonisation of natural forest harvesting with landowners.
- Increased value of product and increasing job creation.

4.4.1.4.2 Fiji – Provision of electrical services during extensive power disruptions

The "coup" of May 19 2000 resulted in severe disturbances throughout Fiji and one such event was the occupation by landowners of the Monasavu hydroelectric power generation plant and its resulting shutdown. This resulted in FEA (Fiji Electricity Authority) having to rely solely on diesel generation plants that are inadequate to meet the needs of the country. FEA was obliged to introduce load shedding or power rationing that has resulted in SOPAC receiving power a maximum of four hours per working day and many days without any power due to FEA generators failing. This situation continued for four months. SOPAC adapted by acquiring four generators and installing suitable changeover switches to ensure key data and communications services were not disrupted and major areas had access to power.

Technologies:

- Information and Communication Technologies.

Key outputs:

- Continued business communications.
- Continued business operations.

4.4.1.4.3 Kiribati - Internet and Wide Area Network Installation

The objective is to provide Internet on demand and e-mail to all departments of the Ministry of Natural Resources Development (MNRD). The headquarters and Fisheries Department are complete and the Agriculture Department should be finished first quarter 2001. This task has involved three in-country visits, two training attachments and a major equipment purchase and shipment with three servers and some thirty desktop and notebook computers. The generous support of Taiwan ROC has been a major factor in the success of the task.

Technologies:

- Information and Communication Technologies.

Key outputs:

- Enhanced communications for MNRD.
- Model for other national ministries.

4.4.1.4.4 Tuvalu – Establishment of National Internet Service Provider

This task although started in early 1999 was only completed end of 1999 session While a further visit is needed for upgrade, maintenance and training that is the subject of a funding request to UNDP, it is considered that this is a major success in providing affordable Internet access to a wide range of people in Tuvalu.

Technologies:

- Information and Communication Technologies.

Key outputs:

- Affordable Internet access.
- Access to global knowledge economy.
- Potential for participation in e-Commerce activities.

4.4.1.4.5 Tonga – High resolution satellite Images

The availability of high-resolution satellite images (2m to 4m pixels) allows mapping to 1:10,000 that was previously only possible with Aerial Photography. This scale is suitable for surveying and nearly for cadastral mapping. There is a huge cost saving in operations and it is possible to perform rectification of all historical photographs allowing land use change detection especially for deforestation and coastal erosion monitoring.

An IKONOS Multi-Spectral satellite image with 4m spatial resolution was acquired for an area that of approximately 235 sq km that covered the capital and the western sector of Tongatapu. The aforementioned processing was performed on the image acquired October 2000 and aerial photosets from 1968, 1979 and 1990. The output data from the time series enabled a clear demonstration that significant costal erosion had occurred through the clearing of mangroves.

Technologies:

- Geographic Information Systems and Remote Sensing.

Key outputs:

- Affordable Surveying.
- Land use change detection.

4.4.1.4.6 Secretariat – Tasks and Finance

The Secretariat has developed a task reporting system over the past three years that is at the foundation of the work program. These tasks summarise the work to be done for the member countries or for the secretariat and are presented as a task profile. Member countries use these task profiles to guide SOPAC in its work program. Since the installation of the SunSystems Financials, a key code has been reserved to link each transaction to a particular task. The result is that unit heads can monitor on a day-to-day basis the funding and spending of their respective tasks. Furthermore, it is planned to create greater involvement from member countries by providing them with monthly e-mail reports or access to these via a secured web interface.

Technologies:

- Information and Communication Technologies.

Key outputs:

- Accurate auditing.
- Increased reporting to stakeholders while reducing workload of the finance unit.
- Greater interaction with member countries.

4.4.1.5 Software at Secretariat

Software inventory by servers and clients is listed as follows. The Secretariat has upgraded to Microsoft Office 2000 after the corporate database were migrated to SQL server 7.0 and the clients to Access 2000. Most of these databases are also available via a web interface either on the public or intranet site.

4.4.1.5.1 Servers

Microsoft Windows NT 4.0 Server SP 6.0

Mandrake Linux 7.0 and 7.2

BackOffice 4.5

SunSystems / Vision

ARCserve Enterprise with Exchange and SQL Server agents

4.4.1.5.2 Client

Microsoft Windows NT 2000 Workstation SP 1.0

Microsoft Windows NT 4.0 Workstation SP 4.0

Microsoft Windows 9x

MANDRAKE LINUX 7.2

Microsoft Office 2000 Professional SR2

Microsoft Project 98

Microsoft FrontPage 2000

Microsoft InterDev

Microsoft Outlook 2000

Visio 2000

Adobe Acrobat 4.0

Adobe PageMaker 6.5

Adobe PhotoShop 5.5

MapInfo/MapBasic 6.0

Vertical Mapper 2.5

ERDAS Imagine

McAfee for NT and 9x

Trimble Pathfinder GPS

Hypack Swath Mapping

Mike 21 Hydrodynamic modelling

4.4.2Comments

Forestry: The work done at the Forestry department was requested by the department and the MC representative was fully aware. In this case our mandate lies more in GIS and ICT, which was the fundamentals of the project rather than forestry work. SOPAC member countries support GIS/RS, which leads us sometime to go in other fields as GIS/RS is considered as an applied science on its own rather than a tool.

Toner: We sell our used toner for recycling, but we do not buy recycled toner due to their poor performance.

4.5 SPC

4.5.1Report

4.5.1.1 Introduction

This is the first time for me to represent SPC at an IT-PACNET meeting and only my second IT-PACNET meeting. I would stress that this report is more an Engineers report than a Managers report ✍. I was acting IT Manager from late January 2001 to April 20 2001. The big focus over the last year was how can we do "more with less", more about that later.

The last year at SPC has been a fairly exciting one IT wise with lots of new hardware and software being introduced to SPC. Some of the highlights from the year were.

- New IT Manager
- Finally, goodbye to Win9x
- Introduction of automated Installations
- 6 New HP Netservers installed (4 bought and 2 donated)
- Regional IT Needs Assessment Planning Conference Planned for August 2001
- COMET (Noumea-Suva Satellite Link) has been On-Line for just over a year
- Introduction of CBT Training from Smartforce

Al Blake left SPC in December 2000 and was replaced by Sam Taufao who took up his post on 21 April 2001. We also said goodbye to Shereena Singh from our Suva office.

Current IT staff - Noumea (for approx. 180 total staff based in Noumea)

- Sam Taufao – IT Manager
- Phill Hardstaff – Senior Support Engineer
- Patrick Rehmann – Support Engineer
- Yannick LePommelec – Support Engineer
- Sesalina Lavamai (attachment, NZ funding)
- Christine Lemesle (Clerical – Part Time)
- Sesalina joined SPC as a training attachment for one year courtesy of the generous funding of the New Zealand Government. This has proved to be very successful and it is hoped that we can continue to take on attachments at SPC in the IT unit.

Last of Win9X machines installed with NT4 (except for one or two laptops)

The last of the Windows 95 (we never went to Windows 98 on the desktop) machines was installed with NT 4 in the last year. We use Windows 98 on about 3-4 laptops and that's about it. The main reason for this was stability and to lower the support overhead, I would have to say this has been a huge success. The support overhead of NT4 (and also Windows 2000) is much less than that of Windows 9x and we have seen a large reduction on Operating System related helpdesk calls. Blue screens are practically non-existent; this is mainly due to the stability of Matrox and 3COM drivers. The video drivers especially being one of the most important and usually one the most overlooked components of system stability.

All new desktop and laptop installations using Windows 2000

All new Pc's and any reinstalls are done with Windows 2000 SP1. We have had no problems at all with Windows 2000 and have in fact found it easier to install and maintain that Windows NT 4, we have also found it to be more stable.

All existing PC's running NT4 SP 5 or 6 or Win2K SP1

Most new servers running Win2K Server SP1 (2 servers at the moment)

The SPC web server is running Windows 2000 with all available web related Hot fixes. We also are using one standalone Windows 2000 server on our main Windows NT domain. We have not yet introduced Active Directory except on the web server which is in it's own domain.

Office 2000 in the next few months, still using Office 97 SR1.

SPC Continues to use Office 97, a few workstations have been installed with Office 2000 but we have seen no real need to move to Office 2000 at this stage.

4.5.1.2 Purchasing Policy

Best option for us is clones with specific components.

Computers at SPC on the desktop are almost 100% clones. These are assembled by a local supplier to OUR specifications. We have specified parts for 1) Their reliability and 2) Good solid driver support. This list includes but is not limited to :

Matrox Video Cards (G450 now)

3COM 3C905c NICS

QUANTUM IDE hard disks

DFI Motherboards

128Mb memory minimum

Adaptec SCSI Adapters

HP Printers, scanners, servers.

Supplier is reviewed on a yearly basis

Continue to use Toshiba laptops bought from Canada (only place we can get French laptops easily). Local support for laptops is almost non-existent.

4.5.1.3 Existing Software in use

Not much change here from last years list. Most of what we use with the exception of Anti-Virus is much the same as the standard CROP list. We use Fulcrum for indexing / searching Exchange Public Folders, Mail Boxes, File Shares and web Sites, see Power Point presentation for screen shots.

- Arcserve 6.61 for backups
- Fulcrum for Indexing Exchange, servers.
- Exchange 5.5 SP4
- SQLServer7.0
- NVC Anti-Virus (Norman Virus Control)
- NTP Quota Manager
- RightFax 7.0 automated faxing (Subject of another session)
- Lyris Listserver 4.0

- MaxCompression (auto zipping for Outlook)
- LogCaster 2.61 Centralised NT log alerting
- WebTrends Log Analyser

4.5.1.4 New Software, last 12 months

- Guardian Firewall 5.02 (running on NT4)
- Antigen Anti-Virus for Exchange
- WinInstall 2000
- Dameware NT Utilities
- ReadIris Pro for OCR
- Windows Media Services 4.1 (conference broadcasts)
- SmartForce

  One thing I left out of my presentation here was the Smartforce CBT (Computer Based Training) material. A presentation was made to IT-PACNET showing a sample course, for more information see http://www.smartforce.com. More information will be distributed to the IT-PACNET list.

4.5.1.4.1 Dameware NT Utilities

Cost about US $200

Most all NT Utilities rolled into one

Robust / low overhead

Remote Control

Process Viewer

Remote Command console

Easy Access to most machine info

Big time saver if you are mostly NT / 2000

4.5.1.4.2 Guardian Firewall

Old firewall was Linux based and extremely complex

Only one person knew how to configure it

Did an evaluation of NT based GUI firewalls

Chose Guardian over Firewall-1(Checkpoint) mainly because of pricing of Firewall-1

The Guardian firewall has been in place for just over a year now, it has been rock solid and easy to use. We recently upgraded the firewall computer to a HP Netserver with 4 x 3COM 3C905 cards in it (see PowerPoint for network diagram). This was based on the fact that more than 350 users go through our firewall as well as our DNS, web Site and Mail Server, all of which are on the inside of the firewall, so we decided as this was such an important piece of hardware / software that it should be running on solid / reliable hardware. It was decided to keep the old Guardian Firewall computer (a clone server) intact, up to date and ready to run in case of failure of the new Firewall computer, this would mean that if we had a Firewall failure we would be back up in about 15 minutes.

For more information http://www.netguard.com

*Only complaint is logging, it logs to Access DB which can get very large very quickly, I have turned this off and log to a syslogger on an NT box (Syslogs for NT $99) which logs to text files.

4.5.1.4.3 Antigen AntiVirus for Exchange

We bought Antigen for Exchange last year when we were looking for something a bit more reliable for our Exchange server (we were using NVC for Exchange). We have been more than happy with Antigen, it is extremely reliable and auto updates. For more information see http://www.sybari.com. Over the last few months it has scanned over 250,000 attachments and deleted over 5,000. SPC handles about 2000 to 3,000 messages in and out each day. It also allows file filtering and we are now using this filter exe, com and vbs files.

- Installs itself into IMC
- Allows file filtering by name, contents etc.
- Checks all mail in and out at the IMC level
- Can be configured to scan Public Folders and Mail Boxes
- EXTREMELY robust and reliable, no interference to normal Exchange operations
- We are now blocking ALL
- EXE
- COM
- VBS
- More to follow !

Antigen scans for EXES etc inside ZIP files

4.5.1.4.4 WinInstall 2000

Most of the new software I have focused on has been aimed at allowing us to do more with less. The number of IT staff at SPC has not changed for a few years now but we continue to get new staff, which of course increases the support load for IT. Our first step in this area was to get rid of all Windows 9x machines, the next step was automated installations to reduce the amount of time doing installs and reinstalls. We decided on WinInstall 2000 for the reasons outlined below.

- Chosen for it's flexibility
- Used for ALL Operating System and application installs at SPC Noumea for both desktops and Laptops (excepting servers)
- Have separate NT4 (English and French) Windows 2000 installations(En & Fr) based on either 3C905, NE2000 or 3COM PCMCIA cards.
- Boot into floppy, answer 2 questions ("Register to" and "computer name") to Install Win2K to SP1, uses all of the hard disk, no partition changes required afterwards.
- Allows you to build application packages using system snapshots
- Saves all changes made to a system in the package
- We have a package for all our normal applications and one for Network Admins !

4.5.1.4.5 Windows Media Services

Windows Media Services 4.1 is used to broadcast conferences (using multicast technology) from Noumea to Suva over 64Kb link using 16Kb for stereo sound and video, yes the image

is small. This allows Suva based staff to listen to conferences held in Noumea in either English or French.

4.5.1.4.6 LogCaster 2.61

Monitors NT Events logs

Consolidates events at Event Dispatcher

Allows filtering of events AT THE SERVER

Set up alerts by Email/Page/Broadcast for critical events

4.5.2Comments

Firewall: The previous system was only managed by a person and it was easier to change the system for something more user friendly than rather learn the old system.

System Management: MS SMS is easily replaced by the several specific applications like Dameware and WinInstall2000.

Internet: Staff is using a private ISP to connect to the internet from home. A special deal has been negotiated by SPC with an ISP. There is only one access to SPC network for management purpose only.

SPC has setup an equipment replacement fund, which is contributed by all programs. This funds help to maintain and sustain computers in some projects that have less funds. Computers that are more than 3 years old can be replaced under this fund. Other replacement is at the discretion of the Finance Manager and IT Manager.

SPC has setup the computers to shutdown after 8mn without power to avoid that a surge goes through the system when the power comes back and that the UPS are drained out.

SPC Suva IT has one staff who left, and they are actively looking for a replacement. Recruitment retention is an issue in many organisation.

4.6 SPREP

4.6.1Report

4.6.1.1 Mission

SPREP mission is “to promote co-operation in the South Pacific region and to provide assistance in order to protect and improve its environment and to ensure sustainable development for present and future generations”

SPREP aims are mainly to:

- Promote regional co-operation in environmental matters
- Assist members to protect and improve their shared environment
- Help members work towards sustainable development for present and future generations.
- SPREP activities are broadly oriented around four areas:
- Nature Conservation
- Waste, Pollution prevention
- Climate Change, Meteorology
- Economic Development and Environmental reporting

4.6.1.2 Staff

SPREP has a staff of about 70 users (including attachments, volunteers) with at least 65 of them IT users. SPREP has a total of 3 IT permanents staffs.

4.6.1.3 Network & Computer system

The park of personal computers is constituted of about 30 desktops and 40 laptops. All professional and travelling staffs are equipped with laptop as their main tool.

All personal computers are connected via a 10BaseT network to four NT4.0 servers that share the load of tasks: email (exchange 5.5), www (internet & intranet), file & printer server, DNS, Finance system, corporate database. On the client side, SPREP uses Windows 9x and NT workstation (4.0/2000) for OS. Other software applications are mainly Office 97/2000 and Outlook. The general IT setup is aligned broadly to the ITPacNet recommendations.

4.6.1.4 Main Development during 2000

4.6.1.4.1 New Headquarter and network

In August 2000, SPREP moved to its new headquarters, and subsequently implemented a new network with Fiber-optic cabling for campus connection and 10BaseT for intra-building connection. The infrastructure uses 100Mbs switches intra-building, with Gigabit inter-building connection. All port outlets could be used for either voice or data. The infrastructure will allow for unified communication as well as audio/video conferencing when and if these new communication technologies will become cost-effective for SPREP secretariat.

4.6.1.4.2 Corporate Data Management (CDM)

The development of the CDM initiative has been one of the main strategic projects from the IT unit during last year. SPREP CDM Initiative is a set of activities undertaken to firstly recognise data and information as one of SPREP's key corporate resources, and secondly, to introduce and establish appropriate techniques and practices for proper management of this essential asset. The outcome of SPREP CDM Initiative will be an organised and managed business process and environment capable of providing quality, timely, adequate and useable data and information for the organisation itself and for all its member countries and other stakeholders involved in managing the environment of the South Pacific Region. SPREP CDM Facility is therefore the vehicle for achieving the business goal of maximising the availability, timeliness, quality and useability of the data and information resource in order to generate and share knowledge, therefore supporting more effective decision making, awareness and capacity building.

The framework for managing data and information at SPREP consists of the following components:

- Methods, techniques and standards,
- Planning, control, review and other data management specific processes including database and application design and development,
- Information technology including computers, networks, software, etc.
- People that are involved at various levels of organisation and in various roles,

The main challenge has been so far the modelling of business function and processes, rather than more a technical nature. The various documents defining the CDM framework have been produced, and the first applications are aimed to be develop during 2001. The CDM initiative has also raised the awareness within SPREP of the influential role of IT in the strategic decision-making process with the organization. It was also recognized that IT is an enabler for improving its core business and associated processes

4.6.1.4.3 Involvement with Management-related reviews.

During 2000, SPREP was the focus of several reviews and similar exercises: a new action plan; a new corporate plan; an AusAUD review; a new draft organization structure; new work programme format. SPREP has also moved to its new headquarter and is planning 2 new buildings: The Information Resources Centre, and the Training and Education Centre.

SPREP recognized the importance and potential benefit to involve the IT unit in this reviews and exercises at early stages, reflecting the growing impact that IT and Information management have in the running of SPREP business. However positive this trend is, this growing involvement in more strategic and business issues means drawing IT resources away from technical IT work (implementation and support).

4.6.1.4.4 Attachments

During 2000, 2 country attachments were hosted in SPREP for 10 weeks each. As previous years, our members have very well appreciated the type of training.

4.6.1.5 Outlook for the future

4.6.1.5.1 New Training centre

By early 2001, both training and education centre and Information Resources Centre should be added to the current headquarter. The training and education center will include offices, classroom and a computer laboratory of about 12-networked computers.

4.6.1.5.2 Internet update

At the time of this meeting, Samoa is upgrading its international Internet from 256Kbs to 2Mbs. The objective is to upgrade the SPREP internet link to 64Kbs.

4.6.1.5.3 Mercure UNEPNet

The Satelllite Mercure UNEPNet project is presented in details in appendix XX. 2001/2002 should see the completion of this satellite communication project, and possibly its start of implementation depending of the outcome of the feasibility study and decision by our members.

4.6.1.5.4 CDM

The development of three integrated databases applications are currently planned for 2001/2002 as part as the CDM initiatives and will be focused on People and Organisation, Work Programme & Budget Management and monitoring, and Project planning.

4.6.1.5.5 Area of interest:

One of SPREP interests is to leverage its new network infrastructure to provide more effective and integrated communications tools, and is planning to evaluate and assess unified communication tools (integrated data/fax/voice messaging).

A second area of interest is to enhance retention, management and access to SPREP corporate memory and knowledge. The objective for next year is to assess and possibly implement knowledge management tools such as document management/search tools across diverse type of information repository (web, exchange, shared folder…)

4.7 USP

4.7.1Report

4.7.1.1 Introduction

The University of the South Pacific, Information Technology Services (ITS) will remember 2000 not only for the success with which staff handled the Y2K problem, but also for the disruption caused by political unrest in Fiji and Solomon Islands. Despite these, 2000 was yet another successful year for ITS. The staffs received support from all sections of the University, and were able to continue to provide excellent services at a demanding and challenging time.

ITS achieved a significant milestone with the launching of USPNet. In spite of the complexities of the setting-up and the technical difficulties of meeting the launch requirements, ITS was able to provide an excellent demonstration of how USPNet works. The launching of USPNet confirmed that it is totally unique, not only in the Region but also in the world. USPNet is no longer a hypothesis; it is real and, more importantly, working.

ITS has realised the importance of policy and regulations for using IT in the University. One of the policies approved in 2000 concerned Internet access. Prior to this, ITS had used software management to filter unwanted URLs or websites. That strategy did not sit well with IT users, who argued that they required the freedom to access information relevant to their academic studies and research. Policies on email distribution and dialup services were also approved. Other policies on areas such as position holder email addresses and using email as an official correspondence policy are currently under discussion.

As part of the University's effort to dose the gap in technology development, ITS has realised the importance of keeping a good record of the USP IT equipment. ITS carried out its own inventory system, and allows all sections to access this system. The inventory system is also ITS's effort to maintain and keep USP resources utilised properly and economically within a sustainable environment. Keeping USP abreast with IT developments will make a significant impact on its operation.

BANNER is an integrated software package for financial management, student records and human resources. After BANNER was successfully upgraded for Y2K compliance, extra effort was placed on implementing the full range of modules available in the system. The human resources modules, including ID card, leave and application modules have now been implemented. Staff and students are pleased to see these changes, especially staff who now have Smartcard IDs, and leave balances listed on their pay slips. The finance module work included a direct link to the ANZ Bank. An investigation of BANNER performance at USP Centres was also a major task and BANNER has now been installed at some of the Centres. A new server was also purchased for BANNER development work.

Reliable and sustainable IT infrastructure is a priority for users and service providers alike. This year ITS's infrastructure development was carried out at the campuses as well as in the Centres. Each Centre's network infrastructure and facilities for students has been upgraded. The decision to localise this project has proved to be cost-saving and efficient.

As usual the ITS training programmes for staff continued to be popular. A successful new training programme was conducted for students during orientation week 2000. ITS is continuously seeking to improve its services to users. Printing services were established for students, extended hours were granted for students accessing the Internet, a dedicated Helpdesk for Students was established, and lately, a Student Services Group was established to cater for student requirements. Despite losing key staff members before and after the coup, the dedication and commitment of remaining staff allowed ITS to maintain and improve services in 2000-2001.

4.7.1.2 STAFF:

IT Services has a total of 40+ permanent staff and over 50+ part-time staff. The 32 permanent staff comprises the Director, 4 Managers, 10 Analyst Programmer, 1 Chief Engineer, 2 Senior Communication Technicians, 2 User Consultants, 2 Assistant User Consultants, 7 Technicians (Networking and Hardware) operators, Cable Installers, USPNet Operators and a clerical officer. The 40 part-time comprises of students supervising our student facilities and helping in the office and part-time programmers hired on project basis.

4.7.1.3 Projects:

4.7.1.3.1 USPNet:

The USPNet was officially launched by the then Vice-President of Fiji Islands, Ratu Josefa Iloilo, just a year ago on 30 March 2000. USPNet worked extremely well to cope with the pressures generated by the political crisis in Fiji. Indeed, the University was able to video broadcast about 35 courses in semester 2 last year.

Since then, the system has continued to work well, while the University has been solving problems that have occasionally cropped up, and has enhanced the system to provide better services to member countries. The University is currently exploring the next phase of USPNet.

4.7.1.3.1.1 Use of the System

As envisaged, USPNet is being used to provide email, data, audio, voice, and video services. All Centres have email facility, can use the information management system on-line (some work on this continues), and can receive video lectures and participate in videoconferences. Audio tutorials were taken up readily to the point that the system had to be expanded. Given that we can conduct audio tutorials easily now, a minimum number of tutorials are now being built into the design of courses.

There was some difficulty initially with the speed of the management information system, Banner, but this has now been resolved with the use of a terminal server system.

The number of courses broadcast live has fallen from the record number last year. This has allowed more time for interactive activities, but we hope that a larger number of courses, 10 annually, will be broadcast in the future.

Telephony is being moved over to the USPNet. Currently, Tokelau and Samoa have had their telephony moved to USPNet, and work is progressing with the others.

4.7.1.3.1.2 Problems:

One of the problems facing USPNet is providing power supply. During the Fiji Political crisis, USP main hub experienced constant power outages, and decided to purchase standby generators to help our situation. USP now has purchased 4 generators as standby generators for Laucala Campus.

At the Centres we also have experienced problems of power rationale in Tokelau. It was fortunate that the New Zealand Government has funded (FJ$150,000) to install a Solar Power Generator to power our remote hub station in Tokelau. Plan is under consideration to power constant power to other centres such as Nauru, Tuvalu and others.

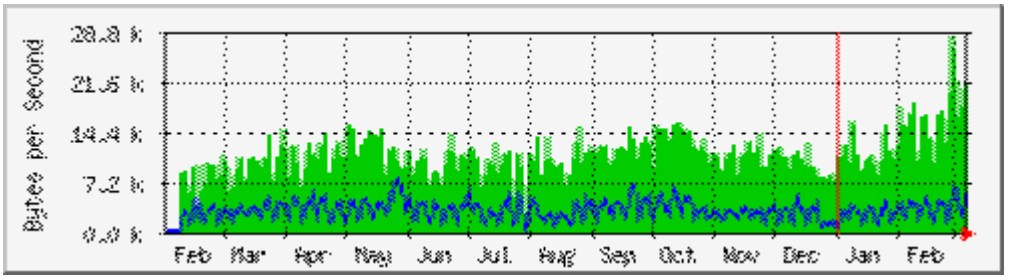
4.7.1.3.2 Local Area Network:

USP local Network project has been implementing since 1998. We have completed I, II & III phases of this project which included completing a fiber optic backbone network to all major buildings at Laucala, Emalus and Alafua Campus with CAT 5 E for distribution point. This project has been funding by New Zealand Government on NZODA programme. We are on phase IV that covers linking up Marine Studies (Lower Campus) and minor buildings left from other phases.

4.7.1.3.3 Internet:

4.7.1.3.3.1 Internet Bandwidth

In January 2000, the Internet bandwidth was doubled from 64Kbps to 128 Kbps, which was a significant upgrade. Despite this large increase, the internet link was quickly congested, as the available bandwidth proved to be insufficient to meet the demand for Internet services. The graph below shows our usage of the 128 Kbps link in the year 2000. The graph also shows the usage In Feb 2001, when the bandwidth was doubled again to 256Kbps. The graph clearly shows that the available bandwidth was quickly used in February.



4.7.1.3.4 Professional Training:

IT Services has been working on a plan to offer Professional Courses. We believe that we have staff with a great deal of experience in the IT profession and this resource could be used to offer professional courses. The professional courses fees are ranged from AU$1500.00 - AU$2500.00 for a course per person at FNTC. We are looking at the following areas:

1. Unix Administrator
2. VMS Administrator
3. NT Administrator
4. Networking (Cabling)
5. Internet (E-commerce)
6. Multi-media
7. Programming and scripting languages

The training is not only aiming for USP staff only, but we are looking at the regional especially member countries they don't access to such training.

4.7.1.3.5 Policy

This year ITS has approved 3 new policies: the Internet Policy, the Email Distribution Policy and the Dialup Services Policy. These policies are designed to provide USP users with guidelines, so that the new services remain sustainable and reliable. The policies also ensure that the services are of benefit to all users, and not just a few individuals.

The new policies can be viewed on the USP Web Site:

http://www.usp.ac.fj/ITS/Policies.

4.7.1.3.6 BANNER:

BANNER is an integrated software package for financial management, student records and human resources. Work on redundancy has continued slowly and was stalled during the crisis period due to funds being held back.

The new server was ordered in November 2000 to be delivered in January 2001.

The new redundant server will be used not only if the production server goes down but also allow for the following:

- to act as the development machine for MIS
- to provide greater flexibility in carrying out upgrades on Oracle Server and the Banner Software
- to provide greater flexibility in the re-organisation of the database
- to test backup procedures.

4.7.1.3.7 Upgrade Oracle Server to 7.3.4

There were plans to upgrade our Oracle Server Database Management Software for Banner to Oracle 7.4 but these did not eventuate.

However, this is now included in the work plan for 2001.

4.7.1.4 Future development.

4.7.1.4.1 USPNet Expansion and Future Development

The immediate future plans are for USPNet to reach the Fiji Centre and Sub-Centres so that the kinds of services that are provided to the other Centres are also provided to the Fiji Centre. Some connectivity has already been provided to the Fiji Centre, but we are working on providing comparable services soon.

We are also planning to extend USPNet beyond the Centres. Because most countries have domestic telephone monopolies, this expansion will require a lot of energy and discussions, but the University feels that unless the system is expanded, the more remote students will not benefit fully from the tremendous benefits of modern telecommunications.

In addition, the University and the World Bank are discussing ways of linking USPNet with the World Bank's Global Distance Learning Network (GDLN). Discussions between the two parties took place towards the end of 2000, and it is expected that final discussions will take place towards the middle of this year. The main issues currently holding back agreement are the requirement by the World Bank that we pay a (substantial) annual charge for bandwidth, and our current inability to take advantage of World Bank programmes due to congestion in our internet connection.

Finally, the University has also been visited by a team representing the POST-PARTNERS PROJECT through which we operate an earth station that allows the University to share information with a number of universities in Japan, Thailand, Indonesia, Philippines and Malaysia. We hope to explore the possibility of linking the two systems for mutual benefit.

4.7.1.4.2 Policy:

We have policies need to be completed such Equipment Replacement Policy. We also have other policies need to be revised. We also need to work on our Strategic Planning for 2003-2006.

4.7.1.4.3 Local Area Networking:

We need to extend our network to areas where they don't access our network. One of the things we are looking to do in the future depending on the funding, is to build more robustness backbone fibre optic at three campuses to sure our services has some contingency backup.

4.7.1.4.4 Services:

We need to improve our student services by all means. More PCs for our students not only for campuses but at the centers. New Servers as the demand growth get increase. We also need to work on valued add services. One of the new programme introduced lately is the professional training programme. This programme would be extended of the region especially those regional countries where such training available. Staff Training also is another area we will be looking at in particular in awareness training. The staff-training programme could be extended to cover private sectors and public services in the region.

4.7.2Comments

Staff: USP Computer Services lost 5 staff after the events in Fiji

IT Development: some mission from Japan approached USP to help the development of ICT in the region.

Power: USP is installing several generators in various location in the campus to sustain various service.

USPNet: the network is used for education from Tuesday to Friday due to the date change. There is an agreement between USP and the various government for the use of USPNet and as long that other follows the agreement they can be accommodated on the network.

4.8 General

5 IT-PACNET AND OTHER GROUPS

Despite IT-PacNet is at its 8th meeting, it is an official CROP sub-working group for the last 3 years. The purpose of becoming a CROP working group was to get the CROP heads attention. The IT-PacNet Terms of recommendation are in annex. 15.3 Terms of Re It is noted that now Information Technology clearly integrates communication too.

The IT-PacNet could raise some issues to the CROP meeting that will request Forum to organise specialised working groups to work on the matter.

Recommendation: IT-PacNet should prepare a set of issues and recommendations to be raised at the CROP meetings and the Pacific Island Forum meetings.

It is recognised that most of these issues whether technical or strategic involves usually the same people.

The private sector could also help in raising awareness in some issues raised by IT-PacNet, It was felt that the group has to develop its links with the private sector.

IT-PacNet was in fact called the Regional Information Communication Technologies Strategy meeting.

Recommendation: IT-PacNet should be renamed "Pacific Information and Communication Technologies Working Group" while the IT-PacNet name remains for the mailing list

In this field we have several groups which are policy / technical and government / private sector. It is important that working groups encompass all these groups.

USP is the only CROP member that attended the PITA meetings in the past years. There has been effort in the past to have a representative to each other meeting. PITA should be encouraged to attend the IT-PacNet meeting. The group should identify or highlight as much as possible how our advice may differ from the industry to clarify the various messages sent to the users. It is important that the Telecommunication Industry be aware of the issues raised by the group.

PICISOC is the Pacific Island Chapter of the Internet Society. This chapter has been created to represent the Pacific for Internet related issues.

Recommendation: IT-PacNet should ensure that one representative attends the INET meeting and participate in ISOC.

USP circulated a copy of an information paper on the Third Annual World IT Congress Asia Pacific that will be held at Hyatt Regency Coolum Resort, Sunshine Coast, Qeensland, Australia, 9-12 November 2001.

USP is planning to host the User Services Conference in November 2003 where this will be the first time the conference has been held outside Australian or New Zealand. The conference will focus on sectors such as ICT support and libraries.

Recommendation: IT-PacNet members keep each other informed of relevant conferences and meetings and if a member attends then information is also shared.

6 PACIFIC NETS

Mirror site: There is an increased demand for mirror facilities of regional web site outside the region.

Samoa: Telecom Samoa acts the Internet gateway for Samoa They decided to upgrade the backbone and to offer Internet to several ISPs. The WS domain is owned by the government and CSL has been awarded the commercial management of the domain name. The marketing of this domain name is quite successful. However the reliability of the telecommunication infrastructure is sometime problematic.

New Caledonia: There are 3 ISPs now. One of the first ISP got a slow link via a national ISP and used a 2Mbps down link only to receive data. This system was quite successful.

Torrey Karlsen presented the extension proposal to the Mercure project for the Pacific Island Countries (annex 15.8 UNEP/GRID Mercure Extension to Pacific). The recurring costs are usually phased out by the donors and have to be supported by the local organisation running the network. The role of the network is to strengthen the development of environmental issues in the region and as such each site needs to be assessed to identify the benefits in regard to this goal.

Some of the applications proposed is to provide for instance action plans that countries can fill and report backs to ensure the collection of data amongst all SPREP member countries. The usage of the Mercure network is monitored to insure that the links are operational and inter site billing is performed.

The use of the Mercure network could be extended to other department besides the environmental department.

The Mercure UNEPNet concept presented to the ITPacNet meeting is to implement cost-effective and efficient environmental telecommunications serving the member states of the South Pacific Regional Environment Programme. The goals are to increase regional coordination and implementation of environmental policy; to increase access to and usage of environmental information and data; and to facilitate the involvement of the Region in the activities of the Environment Programme.

Mercure is an operational satellite communications system run by the United Nations Environment Programme.

UNEPnet is a suites of data and telecommunications services offered by UNEP through the Mercure system and other telecommunications facilities.

Mercure comprises earth stations in 15 countries (see map below) communicating through INTELSAT satellites over the Atlantic and Indian Oceans. Most Mercure facilities are located at national environmental ministries, and are operated by their staff.

UNEPnet nodes include all Mercure sites, as well as UNEP regional and out posted offices, and partner sites such as secretariats of international environmental agreements. See the concept diagram on the next page, which portrays the Mercure subnets, the service nodes at UNEP offices, Mercure sites and other partner centres, and the integration between UNEPnet/ Mercure and he global internet.

The background detail on Mercure could be found in Annex 15.9 Background to UNEPnet/ Mercure

Mercure is capable of further expansion. This proposal suggests that an existing earth station be relocated to Bangkok and orientated to provide service to the Pacific Basin.

UNEPnet could provide services such as:

- An integrated management and support structure via the UNEPnet Implementation Centre (Norway) and industry partners (NERA, Newtec, Cisco, DTI, Swisscom, RUNIT/SINTEF, Nordunett)
- A private, secure limited-access network for inter-governmental transactions
- Internet facilities such as WWW, e-mail and file transfer
- Controlled connections between the private network and the public internet
- Low-cost voice-over-internet and fax-over-internet
- Digital communications (ISDN)
- Video-conferencing, via ISDN and internet amongst multiple parties
- Toolkits for environment information location systems and managing data repositories.

UNEPnet/ Mercure can, with modest investment, service this previously unserved area. The existing facilities in South East Asia, combined with in-country development and inter-linkage with strong regional partners, can extend world-class service to these states at reasonable cost.

Satellite communications operating under a UN environmental mandate can offer obvious benefits in these circumstances. Increased frequency and reliability of interaction can increase regional coordination and cooperation while also providing improved access to reference sources of environmental information and data. It can also facilitate the States' own ability to report under their obligation to regional and global environmental conventions

Proven environmental information technologies can be implemented in short time-frames and bring to these countries an integrated information service and support capability to meet their environmental requirements. The ability of the Environment Programme to meet the priority requirements of these Small Island Developing States and territories will be improved dramatically

The USPNet is a closed network where the agreement specifies that sites cannot use the network to place call in other sites countries. USP has extended experience in providing a satellite network over Pacific Island Countries. It is important to have dynamic bandwidth allocation to allow to use the links to their best. At the moment the system has a reserved 128kbps for video and 64kbps for all other traffic.

Intelsat C 1.5Mhz Ecu 70,000/year for a 2 year contract in 1998.

Recommendation: IT-PacNet encourages the UNEP/GRID initiative and for USP and SPC to share their experience with UNEP/GRID and explore avenues of co-operation with the group.

7 POLICY RISK MANAGEMENT

7.1 General Security

In the Pacific, several regional organisations had serious problems with their day to day operation.

In Solomon Islands, FFA thought that there was a possibility of a total blackout of communications. FFA decided to purchase an Inmarsat C system for emergency.

A contingency planning starts at organisation level and not at ICT level. It is important to take care of the staff and have an evacuation plan, attention is to be paid also to the safety of data and corporate information.

CROP Recommendation: CROP organisations should adopt a Risk Management plan and IT-PacNet should set up an ICT template to be used.

Before addressing the technical details of the security, it is first important to define what is to be protected in the organisation. An inventory of risks should be first established, then the vulnerability can be assessed and finally a response plan should be written, adopted and implemented. When the security plan is in place and where it is defined that some resources are essential and must be replaced in a certain time frame, then a contingency planning is required.

After a security plan and contingency plan is established, the ICT unit must communicate the result of this plan. For instance it is important for the users to know which data is backed up or not. It is the same with password and network security, it is important for the user to understand the security level required by the users.

Security can be a learning curve, and slowly stepping up the security ensure that the management and users as well as the ICT staff fully understand the security policy and therefore should share the responsibility of keeping the organisation secure.

In general security is a management issue which is responsible for the running of the organisation, but it is the role of ICT to advise and implement at the computer and data level.

In general the IT-PacNet group has focused only to network threat and hardware failure, but in Solomon Island and Fiji the buildings were threatened. Fortunately none of the event were sudden which allowed the ICT staff to think on how to evacuate the data, and ensure also that the off site backup is secured. IT issues are more and more pervasive to management issues. It is important that policies and plans are in place to have automatic procedures.

More and more external threat are faced by the organisation:

- Hackers
- Power blackout
- Telecommunication blackout
- Natural Hazards
- …

It is noted that in the ICT area no form of ICT audit is currently being performed in CROP organisations

CROP Recommendation: Each CROP organisation should have a security plan for the organisation as a whole where ICT units would participate on the ICT issues.

In general it is not the responsibility of the ICT manager to draw the security plan and drive the security assessment but should participate in it as it has some wider ranging issue

When FFA introduced the VMS system, they engaged a security consultant to audit the VMS system and in some extent the organisation.

Information is an important asset and should be protected.

CROP Recommendation: The IT-PacNet group recommends that the CROP meeting request the Forum Secretariat to set up a security review of all CROP organisations.

To protect the data, CROP organisations could use each other as off-site and off country backing site.

7.2 E-mail

E-mail is now an important tool for professionals. Because of the ease of copying e-mails to a large number of recipients, it appears that from time to time personal issues between only two staff are widely publicised.

E-mail is a different form of communication and must be learned for effective use. In general e-mails are not archived in the normal filing system and should be actively filled in either paper or digital format.

E-mails can be easily faked and therefore external people could be sending e-mails on the behalf of others that could lead to false libel. User identification mechanisms have to be investigated to ensure the safety of the organisation communications.

An Acceptable Use Policy (AUP) should be in place to indicate some limits on what is a sensible use of the ICT tools.

7.3 Privacy

All tools supplied by the organisation are owned by the organisation and therefore there is no privacy issues on the use of these tools. However a proper document should be in place to inform the user about these privacy issues.

7.4 Identity

Adequate password policies should be in place and password cracking software could be used by ICT staff to ensure that the password policy is sufficiently enforced.

7.5 Administrative issues

Because the ICT administrator has access to all of data inside an organisation, and because ICT issues are more and more pervasive to the organisation, it is important to have an administrator policy or guidelines that the administrators adhere to

(Annex 15.6 System Administrator Code of Ethics)

7.6 Infrastructure

CROP Recommendation: IT-PacNet has noted that the countries ICT infrastructure is increasingly important to the work of the organisations and the development of our member countries. IT-PacNet recommends that CROP takes note of this issue and ensures that appropriate action is taken in member countries and that there is increased co-ordination between ministries to provide better infrastructure.

Organisations should investigate the current infrastructure of their country to identify risk areas and define appropriate response.

8 E-BUSINESS

In SPC faxes are received by software that OCR on a fax server (using RightFax 7.0) and store digitally all incoming and outgoing faxes. These faxes are also printed to be stored in the registry. However several copies of the same fax live in the system. User acceptance of the digital copy of the fax is not there.

For outgoing faxes, a digital signature is added to the fax to reproduce the usual way faxes are sent.

Each outgoing fax is a template that the user fills in to specify number as well as budget line and other details . This runs from a common word macro.

Correspondence is also stored in the Exchange public folders for reference. In SPREP the public folders mimic the filing system numbering so that each e-mail can be archived. In SPC they use a single correspondence folder that stores all e-mail correspondence for each section, however, Fulcrum, indexing and searching software, is used to search the folder for past e-mails and faxes.

A document archival solution could be implemented to move dat6a that has not been access for a certain period of time to archive storage like magneto optical disk, the time period has yet to be determined.

In SPREP the registry scans documents and stores them using the library software, which is Inmagic.

The importance of document archiving becomes paramount when users have enough confidence to support e-mail as an official medium for correspondence.

It is important when installing such a system that the management is a part of the process. In another issue metadata needs to be appropriately stored with the document to facilitate retrieval.

ICT must be careful with the fragmentation of data into specialised fields, a general system than can work with any type of document is recommended.

It is to be noted that the distinction in terms of data storing between the library services and the ICT service is becoming fuzzy. It is therefore important to think about the various roles when most of the documents are becoming digital.

9 SOFTWARE/HARDWARE STANDARDS, WHAT FUTURE?

IT-PacNet reviewed last year's recommendations to reflect the new hardware and software available.

IT-PacNet noted the emergence of file server appliances.

In all software and hardware purchase, it should be ensured that staff is suitably skilled to manage the system.

MS SQL 7.0 has been found as a cost effective solution for a SQL server while Oracle is used when the system requirements are more stringent.

The importance of web design as a communication tool requires the proper understanding of graphical design. There is a series of links in annex 15.5 Resources that users can refer to for proper web design

An anti-virus is an essential tool for networks and should protect servers, services and workstations.

USP is the agent for most software products for educational discount. Regional organisations can access Microsoft product at 30% of the price (70% discount).

Fiji, Vanuatu and Samoa have copyright laws in the Pacific. Their level of enforcement varies.

PDA systems can be a useful tool to maintain address books and appointments while on the road. They must have a synchronisation system with the workstation or laptop.

9.1 UPS

There are several types of UPS, mainly online and offline. On online UPS, the power is always generated from the batteries while offline UPS uses only the batteries when the main fails. To factor the UPS power you have to consider all the factors: what to protect, should it be backed up by a generator, how good is the organisation grid…

Recommendation: IT-PacNet noted that the cost of outage is more than the backup power installation for our organisations; therefore a full backup power system should be implemented.

A full backup power system can be considered as a backup generator with batteries supplying 7 hours of power conditioning on their own.

10 GIS/RS, FINANCE, LIBRARY AND OTHER THEMATIC AREAS

10.1 GIS/RS

Geographic Information System and Remote Sensing requires special skills and therefore specialised staff. There are 3 areas, which are linked together between, surveying, mapping needs and ICT needs and the people using the application.

By history GIS/RS has been oscillating between these three areas, but the location of such services is depending of the size of the organisations and the people in each category as

well as the focus of the organisation. GIS/RS has required more and more resources from ICT systems.

It is important to have a vision where GIS/RS are going and from this vision defines where the system should be managed.

If a GIS/RS system needs to be implemented in a government or an organisation it needs a solid ICT base upon which the GIS/RS will be build.

GIS/RS are becoming more and more common; there is a need to have co-ordinated effort between all the stakeholders in GIS/RS and ICT to ensure a consistent structure throughout the organisation.

CROP Recommendation: To reflect the importance of GIS/RS technology and applications and in order to develop robust, effective and sustainable GIS/RS systems, every CROP organisation and PIC government should establish a GIS/RS focal point. This focal point should be established within a unit that can best provide:

. strong links to as wide a possible range of end-user application groups, and

. expertise in GIS/RS development, implementation and support, and

. expertise in ICT development, implementation and support.

Failure to address any one of these three areas will have serious consequences for GIS implementation.

MapInfo is the de facto tool for GIS development in Member Countries. In Vanuatu the system is well used and has become the standard in the country. There have been some cases where other packages were introduced but because of the expertise level in the country the systems built on other packages were not sustainable.

10.2 Finance

FFA uses Finance 1, which operates with an Oracle back end. USP uses Banner, which is also a student management system. SPREP uses ACCPAC system.

SunSystems requires huge support cost and have very stringent licensing enforcement. Discount of the main package usually hides the cost of the maintenance fee.

SPC uses R&B for the payroll system, while SOPAC uses Standss Paymaker a locally developed package. SPREP uses D-BIT payroll system by Neller Software that is integrated with ACCPAC. Vanuatu uses MYOB for the finance system.

10.3 Library

Forsec uses DataTrek as the backend for the library while GoPac is the front end. Forsec is looking to upgrade this package to a windows based package. SOPAC uses WinIsis from UNESCO and has built a web interface to the package. SPREP uses InMagic, SPREP uses also this software for document archival. SPC uses DBTextWork/InMagic with Inmagic Web publisher.

11 EDUCATION/TRAINING

USP organised a visit of USPNet (www.usp.ac.fj/its/sections/uspnet), which provides video teaching to all the USP centres in Member countries. IT-PacNet noted the importance of such a project for the Pacific and congratulated USP for establishing it.

The cost of training on products such as Microsoft product is quite expensive. To get an official certified trainer it costs NZD1800-2000 per day for the course, NZD540 per student for the material and NZD500 per day for the per diem not including flight and hotel. USP realises that it could provide the same level of service using its own staff to all people in

various countries for about FJD500 per course per student. The student will be awarded a USP certificate.

It is important that when someone participates in a course the certificate should be recognised in the region. USP could provide some help in reviewing courses done by other CROP organisations and help them to establish a professional certification in the region.

SPREP organised MSCE course with CSL and it cost about USD700 per participant. The official course provides certification that are established after an exam and the certification is recognised in the industry. However a regional recognised certificate could provide the same function.

USP would rather target non Microsoft products as there is already a broad availability of services for Microsoft products.

USP through its extension centres provide various course in MS Word, MS Excel which are quite popular and which certificates are recognised in the region.

USP congratulate PIDP for offering professional course in the region and would like to participate with PIDP to facilitate the courses offered by PIDP. USP has got some facilities in the region that PIDP could use and therefore provide more offering in the region. USP is willing to be the facilitator in various way from providing the course from PIDP materials to provides facilities for PIDP staff in the region.

Recommendation: USP should advise other CROP organisations information on capacity and the availability of USP centres, and the procedures to use them.

Recommendation: CROP organisations should advise each other of their ICT and GIS/RS training calendar.

USP advised that the mid semester break is the last week in June to the 2nd week in July while the Christmas break is the 2nd week in November to the 2nd week February and extension centres can be available for courses other than USP. However, f a course is conducted at a USP extension centre as a joint exercise with USP there will be no charges.

SPC purchased a computer assisted training system from SmartForce which cost about USD120 per user. Each training last between 2-3 hours. SPC recommends users to start by the intermediate exams and with the result establish which course, beginner, intermediate or advanced they would run. There is a special labs where people can run the course away from any disturbance.

USP is offering Oracle courses, however with the current situation in Fiji the courses have happened less often recently. USP is interested in running Cisco courses and will investigate a possible co-operation with FIT and the Cisco academy.

The priority for USP is to serve the students, but the facilities are available for other organisations. It is suggested that the request to use the facilities be forwarded to the USP IT Manager that confirm availability for all USP centres in the region.

SOPAC as well as SPC provides attachment programs from professionals in the region and Forum is operating the same scheme. USP does not have the same scheme but provides hosting for people sponsored by other organisations.

Recommendation: IT-PacNet encourages CROP organisations to maintain and strengthen fellowship attachment schemes for ICT staff in the region.

12 DISTRIBUTED INFORMATION SYSTEMS

We have several application in our organisations. FFA is running the Vessel Monitoring System amongst all its member countries and fishing vessels in the region. USP is doing tele-education with its centres. SPC is sharing data and information between its 2 locations. SOPAC has installed a distributed database for the Fiji Forestry department.

VMS because of security reason this network is independent to other networks. VMS stations are located in all FFA member countries. These stations are dialling FFA to receive the updates. The main problem in the beginning was to find adequate modems that could place IDD calls, despite the noise, latency,… Now most of the country have Internet access and it is used as the support network.

SPC has installed a webcast system from the conference room. The webcast uses 16kbps with a small video and stereo sound where on channel is in English and the other is in French. All staff of SPC is able to follow conferences. The software is the MS windows media tools. Voice Over IP will be installed between the PABX of Noumea and Suva.

USP is using a video broadcasting from any room in USP, Fiji, Samoa or Vanuatu to all of its centres. There is also a video conferencing and audio conferencing capability. USP is looking at being able to place calls between the centre using the USPNet.

There are informal reports and concerns that some Telecommunication companies in the Pacific do not authorise customers to use leased line to transmit data they see fit. This is particularly true for Voice Over IP or Fax Over IP.

SPREP is researching a unified telecommunication technologies for its internal network communication. SPREP reported that costs are still high and difficult to justify especially for a full Voice over IP network (ie all analog handset need to be replaced by more expensive IP devices). Concerns exist also in regarding the lack of support for this latest type of technology. However mixed analog/digital solution for integrated messaging (data/fax/voice) looks promising and cost effective.

SOPAC has developed a distributed database system for the Forestry department in Fiji. This database system track each log from the forest to the sawmill and after. The system was made using MS SQL 7.0. One server is located in Colo-I-Suva and workstations using the desktop version of SQL 7.0 are used in the various Divisional Forestry Office. The main problems were in terms of communication costs, and when one of the machine has to be rebuild and an initial synchronisation has to be performed. The forestry department is now capable to print reports and statistics in near real time.

13 PICISOC AND NOUMEA MEETING

13.1 PICISOC

The Pacific Chapter of the Internet Society was created by this group. It is noted that the current level of membership is insufficient to keep it as a chapter. It is therefore requested to all organisation to help drive the member ship (cf. report in Annex 15.7PICISOC)

13.2 Regional ICT Needs Assessment and Project Planning Conference, Noumea

Participants were provided copies of the Planning Session #1 report and SPC outlined the background to the SOPAC/SPC joint conference and advised that three donors, Australia, France and New Zealand, had responded in a positive manner to the original proposal as included in Annex 0 Planning Session 1.

SPC advised further that SOPAC and SPC had rewritten the original proposal as an information paper that is also included as Annex C and stated that due to the arrival of the new SPC ICT Manager it would be necessary that his input be needed and this would be carried out in Planning Session #2 that would be held within the next three weeks.

SOPAC advised that the outputs of this meeting would be a core component of the conference and that it had been suggested that the title “Project Planning” be replaced by

"Strategy Planning" to enable a set of "projects" rather than a single "project" to be identified to address the needs.

SPREP raised the issue of what outcomes the donors were expecting from the conference and it was agreed that they may be considering ICT development as a high priority for the region. SPREP advised that they had sought guidance from member countries in their priorities for ICT support versus environment issues and the general response was for smaller island states to require ICT support.

FORUM suggested that SOPAC and SPC may need to clarify their respective mandates in ICT development in member countries and further recommended that a policy stream be included in the conference as it is evident that many member governments are not providing incentives for developing ICT.

It was generally agreed that consideration be given to selecting the target participants and to ensure that an effective chair be identified. It was also suggested that the conference would be an ideal opportunity for Japan to participate in the ICT development issues of the region. It was recommended that UNESCO Apia be informed of this conference. It was also suggested that a representative be invited from a country that had successfully adopted ICT.

SOPAC and SPC agreed to create a conference specific mailing list and subscribe all participants at this IT-PacNet conference and to keep all subscribers fully appraised of developments.

14 NEXT MEETING: SPREP APRIL 2002

SPREP offered to host the next IT-PACNET meeting in their planned Training and Education Centre in April.2002

15 ANNEXES

15.1 Participants

NORMAN KAPUN	FFA	Norman.kapun@ffa.int
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William Ganileo	Vanuatu	wganileo@vanuatu.gov.vu

15.2 Agenda

Monday 23 April

0900-1000

Welcome

Adoption of Agenda/Chairs/Secretariat

Review of IT-PacNet 2000 report. Issues arising.

1000-1200

Statements/Status Reports from CROP Organisation (please bring digital copy)

Statements/Status Reports from Observers (please bring digital copy)

Update of the Hardware/Software inventory list in CROP organisations

1200-1230

Review of last year recommendations. Implementation and results.

1230-1100

Break for Lunch

1400-1500

Session: IT-PacNet and other groups

Chair: Alex Nicholson

Discussion of the relation of IT-Pacnet with PITA, Forum Info Sector Working Group, PICISOC, Inet2001, ICANN, ISOC...

MOUs, reports

The Noumea meeting (a more complete session is at the end)

1500-1630

Session: Pacific Nets

Chair: Herve Dropsy/Torrey B. Karlsen

SPREP feasability study Mercure UNEPNet Presentation by Torrey B. Karlsen , discussion

Other Nets (USPNET, Peacesat, Internet,.)

Tuesday 24 April

0900-1100

Session: Policy/Risk Management

Chair: Norman Kapun

Contingency planning, vulnerability assessment, data protection, viruses, intrusion, e-mail abuses, security policy,...

The state of the infrastructure (Communication/Power) in MC

1100-1230

Session: e-business

Chair: Phil Hardstaff

unified communication system (fax, voice, e-mail).

Document storing/archiving

1230-1400

Break for Lunch

1400-1500

Session: Software/Hardware standards What future?

Chair: W. Nainasa

Licensing issues, keeping the pace together with member countries.

Hardware and Software recommendations

New promising technologies

1500-1630

Session: GIS/RS, Finance and other thematic areas

Chair: Les Allinson

GIS/RS in member countries and related software

Results on the integration of SUNSystem in CROP, unified financial reporting system

Wednesday 25 April

0900-1100

Session: Education/training

Chair: Kisione Finau

Brain drain, User induction to business models. Training vs education

Professional certifications.

1100-1230

Session: Distributed Information Systems

Chair: Leone Pedro

Tele-anything

Data distribution, Replicated databases, Vessel Monitoring System

1230-1400

Break for lunch

1400-1500

Outside Session: PICISOC meeting and Noumea meeting

Chair: Phill Hardstaff

The status of PICISOC.

The status of the planned Noumea, Regional ICT Needs Assessment and Project planning, meeting

1500-1630

Review of 2001 recommendations

Other business

Next meeting

Closing

Thursday 26 April

0900-1630

Report writing and adoption of report

15.3 Terms of Reference

The Group is to assist the South Pacific Organisations Co-ordinating Committee (SPOCC) and Forum member countries by providing:

i. advice on Information Technology issues, capacities, priorities and best practice in the region

ii. a forum for technical discussion and exchange of user issues and experiences within Information Technology

iii. a co-ordinating mechanism to help harmonise Information Technology systems in the Pacific.

Membership

Membership of the Committee is open to all SPOCC member organisations. Representatives of other organisations are welcome to contribute, participate and observe.

Meeting arrangements

Once per year, or as required

15.4 Top Ten Information Security Mistakes to Avoid

Security situation is getting worse. According to CERT, 6 hacking cases were reported in 1988, 3734 in 1998, 8268 in 1999, and it doesn't account for unreported cases.

US Gvt experienced this year 300,000 attacks (probably more with the undetected attacks)

40,000 WWW site dedicated to hacking tools

One attack happens every 20 sec.

Mistake 1: Misjudge trend (i.e. it is getting worse and worse)

Mistake 2: Underestimate potential losses (Loss & corruption of data. Loss of confidence in Data, Downtime, public relation impact in unsecured site)

Mistake 3: Be complacent (Hackers have much more resources available than average IT Manager)

Mistake 4: Put tactics before strategy (Need of perimeters tactics not only a firewall, get security policy first i.e. the strategy, audit system and connection, start thinking about counter measures) **"Security is a Process, not a product"**

Mistake 5: Underestimate skill required (It is a specialist job, and will get more and more specialized. It requires a different skill set from administration)

Mistake 6: Secure company only from 9-5, during working days (protection need to match data availability, the more data available, the more security is required). A 24h/day 7days/week security team required 5 persons or about AU$60,000 a month. Hacking could happen anytime from anywhere.

Mistake 7: Assume IT wants security (There is usually no recognition for security success i.e. nothing happened if security works, it something happens IT get blamed). Security is a constant thread. Security is complex, difficult and distasteful. Security limits provision of services to users that IT could provide.

Mistake 8: Set and Forget: Security is a journey, not a destination. Security policy must be a living document, like a business plan is. At both tactical & strategic level, organisation needs to be proactive.

Mistake 9: Security Shear. Security should be everybody's problem. Between users who're not security-aware or security-minded and those who are, there is some "shear" zone where weaknesses for attack exists. Behavioural changes need to take place at all organisation level.

Mistake 10: Doing it all in-house. Must be done in house (strategy): Security policy, decide on trade-off, assess economical risk, deal with public incidents. Could be outsourced (Tactical): 24x7 monitoring, assess new threat, develop counter measures, regular techny-clerical work.

15.5 Resources

USP	www.usp.ac.fj
Forum Secretariat	www.forumsec.org.fj
SPC	www.spc.int
SPREP	www.sprep.org.ws
FFA	www.ffa.int
PIDP	http://pidp.ewc.hawaii.edu
SPTO	www.spto.org
USPNet White Paper	www.usp.ac.fj/its/sections/uspnet
Website and web page design	http://info.med.yale.edu/caim/manual/
Southern Cross Cable Network	www.southerncrosscables.com/fact.htm

15.6 System Administrator Code of Ethics

15.6.1 Background

Computers, and particularly networked systems, have become as necessary a part of life as is the telephone. The functionality they bring to home and office environments is now taken for granted as a part of daily life. As the world moves toward becoming a paperless society, the information stored and handled in the computing environment becomes more critical to that lifestyle. Proper operation, support and integrity of computing assets is regarded as being as important as that of the telephone system in most countries today.

System administrators, under any title and whether or not they are members of a professional organization, are relied upon to ensure proper operation, support and protection of those computing assets. Unlike most previous technological advances, any problem with a computer system may negatively impact millions of people worldwide, thus such protection is more crucial than equivalent roles within other technologies. The ever-increasing reliance upon computers in all parts of society has led to system administrators having access to more information, particularly information of critical importance to the users, thus increasing the impact that any miss-step may have.

The scope of the system administrator's responsibilities is wide. Users rely upon the advice, planning, maintenance and repair tasks performed, whether proactively or reactively performed. System administrators are expected to have a good understanding of what is available in the vendor world, and what the user community may require in the foreseeable future.

With such responsibilities upon the shoulders of these individuals, it is important that all computer users and system administrators understand the norms and principles to be applied to the task. A code of ethics supplies these norms and principles as canons of general concepts. Such a code must be applied by individuals, guided by their professional judgment, within the confines of the environment and situation in which they may be.

The code sets forth commitments, responsibilities and requirements of members of the system administration profession within the computing community. As used within this document, the word "users" applies not only to those computer-utilizing members of that computing community who call upon system administrators for support, but also to those system administrators, and even to management personnel who may not actually be using a computer.

This Code of Ethics has as its purposes the following:

- to provide a set of codified guidelines for ethical directions that system administrators must pursue;

- to act as a reference for construction of local site acceptable use policies;

- to enhance the professionalism and image of the Guild and of its individual members by promoting ethical behaviour;

- to act as an "industry standard" reference of behavior in difficult situations, as well as in common ones;

- to establish a baseline for addressing more complex issues.

This Code is not:

- a set of enforceable laws;
- an enumeration of procedures;
- proposed responses to situations;
- all-encompassing;
- an enumeration of sanctions and punishments.

Canon 1

The integrity of a system administrator must be beyond reproach.

A system administrator may come into contact with privileged information on a regular basis and thus has a duty to the owners of such information to both keep confidential and to protect the confidentiality of all such information.

Protecting the integrity of information includes ensuring that neither system administrators nor unauthorized users unnecessarily access, make any changes to, or divulge data not belonging to them. It includes all appropriate effort, in accordance with industry-accepted practices, by the system administrator to enforce security measures to protect the computers and the data contained on them.

System administrators must uphold the law and policies as established for the systems and networks they manage, and make all efforts to require the same adherence from their users. Where the law is not clear, or appears to be in conflict with their ethical standards, system administrators must exercise sound judgment, and are also obliged to take steps to have the law upgraded or corrected as is possible within their jurisdiction.

Canon 2

A system administrator shall not unnecessarily infringe upon the rights of users.

System administrators shall not act with, nor tolerate from others, discrimination between authorized users based on any commonly recognized grounds (e.g., age, gender, religion, etc.), except where such discrimination (e.g., with respect to unauthorized users as a class) is a necessary part of their job, and then only to the extent that such treatment is required in dealing with the issue at hand.

System administrators will not exercise their special powers to access any private information other than when necessary to their role as system managers, and then only to the degree necessary to perform that role, while remaining within established site policies. Regardless of how it was obtained, system administrators will maintain the confidentiality of all private information.

Canon 3

Communications of system administrators with all whom they may come in contact shall be kept to the highest standards of professional behavior.

System administrators must keep users informed about computing matters that might affect them, such as conditions of acceptable use, sharing and availability of common resources, maintenance of security, occurrence of system monitoring, and any applicable legal obligations. It is incumbent upon the system administrator to ensure that such information is presented in a manner calculated to ensure user awareness and understanding.

Honesty and timeliness are keys to ensuring accurate communication to users. A system administrator shall, when advice is sought, give it impartially, accompanied by any necessary statement of the limitations of personal knowledge or bias. Any potential conflicts of interest must be fully and immediately declared.

Canon 4

The continuance of professional education is critical to maintaining currency as a system administrator.

Since technology in computing continues to make significant strides, a system administrator must take an appropriate level of action to update and enhance personal technical knowledge. Reading, study, acquiring training, and sharing knowledge and experience are requirements to maintaining currency and ensuring the customer base of the advantages and security of advances in the field.

Canon 5

A system administrator must maintain an exemplary work ethic.

System administrators must be tireless in their effort to maintain high levels of quality in their work. Day to day operation in the field of system administration requires significant energy and resiliency. The system administrator is placed in a position of such significant impact upon the business of the organization that the required level of trust can only be maintained by exemplary behaviour.

Canon 6

At all times system administrators must display professionalism in the performance of their duties.

All manner of behaviour must reflect highly upon the profession as a whole. Dealing with recalcitrant users, upper management, vendors or other system administrators calls for the utmost in patience and care to ensure that mutual respect is never at risk.

Actions that enhance the image of the profession are encouraged. Actions that enlarge the understanding of the social and legal issues in computing are part of the role. System administrators are obligated to assist the community at large in areas that are fundamental to the advancement and integrity of local, national and international computing resources.

Courtesy: SAGE – System Administrator's Guild

15.7 PICISOC

PICISOC currently "sort of" has 60 members. There are 60 on the ISOC list as belonging to PICISOC in this region. Some memberships are in need of renewal and some are perhaps assumed to belong in our chapter because they may have checked the wrong box when signing up online. There are 24 members showing on the actual PICISOC list. We are again in the process of getting a better update. ISOC refurbished some of the web sites and things recently, and that might make the administrative part of being a member a little more streamlined.

We're still negotiating free membership. Particularly in this region, we are still of the opinion that if the Internet is going to be "for everyone" then we need membership availability that is truly within the reach of the average Polynesian.

As you may remember we attempted to get a seat on the ISOC board of trustees. A very healthy "thanks" to all of you who supported my nomination. We almost got there, but as in most political things, this region is shy in shear numbers, which brings me to my next and last point.

We would like to see more members in this region. It would help us have a better and bigger voice at ISOC and ICANN meetings and would strengthen our opinion amongst ourselves as well. We will be driving for more members this year, so don't be surprised if we pester you about that from time to time. Franck can give you the details on how to join, but we will be making an active effort using mailing lists, word of mouth, carrier pigeon, and hot air balloons to try and get a healthy membership increase. We think we should have at least 300 members in the pacific region. And we think it can be done.

15.8 UNEP/GRID Mercure Extension to Pacific

15.8.1 Project Management:-

UNEP/GRID-Arendal, TK-Senteret, Longum Park, Service Box 706, 4808 Arendal, NORWAY (www.grida.no)

15.8.2 Full Project Title

A Feasibility Study for the Extension of UNEPnet into the South Pacific Region Utilizing an Expansion of the Existing Mercure Satellite Telecommunicaiton System and to Develop An SoE application for SIDS, based on CEROI.

15.8.3 Objective

To efficiently and cost-effectively provide the following for the 22 South Pacific Island States with:

a) Satellite telecommunication services utilizing expansion of the existing UNEP Mercure Satellite System

b) Develop a SOE application for the SIDS, similar to the existing CEROI product.

15.8.4 Duration of the project

Phase I – Feasibility – Jan 2001 – July 2001

It should be noted that the Feasibility Study is limited to Pase 1 and that implementation of the project as Phase II should commence towards the 4th quarter of 2001 and should build out over a two year period, to care for the 22 Pacific Island States(PIC)

15.8.5 Project Costs- Phase I- Feasibility Study

The Norwegian Ministry of Foreign Affairs(MoFA) has allocated 500,000. Nok toward this project.

15.8.6 Background and Principal Objectives of this Project

There are 2 specific reasons that have led to this Feasibility Study;

In Lofoten, Norway - August 1999, the Norwegian Ministry of Foreign Affairs(MoFA) held a seminar for the SIDS representatives and they identified communications as one of their major needs to extend UNEPnet into the South Pacific Region.

In February 2001, a UNEPnet concept paper on “Considerations for Strengthening Environmental Information Servicing in the South Pacific Regional Environment Programme (SPREP) through Satellite Telecommunications” was drafted. This document envisioned expanding the existing UNEP/Mercure satellite system infrastructure to allow the SPREP members to gain direct access to UNEPnet, the UNEP global Internet, as well as providing the capabilities for capacity building, remote training and education.

This Small Island Region comprised of 22 Island States, covers 17% of the earth’s surface (approx. 1 million square miles) and includes a population of up to 20 million people.

The overall objectives of the Feasibility Study/Concept Paper are to:

- increase regional coordination and to implement environmental policy;
- increase access to as well as the usage of environmental information and data
- facilitate the involvement of the entire region in the activities of the Environment Programme.

15.8.7 Objectives of Phase I – Feasibility Study

- Evaluate Island needs for communication
- Evaluate Island needs for training capacity
- Evaluate environmental applications
- Develop financial models and identify potential contributors
- Develop technical plan
- Negotiate satellite capacity
- Develop Project Plan
- Negotiate equipment deliveries/installation/testing
- Develop proposal to adapt CEROI application for SIDS
- Deliver final evaluation

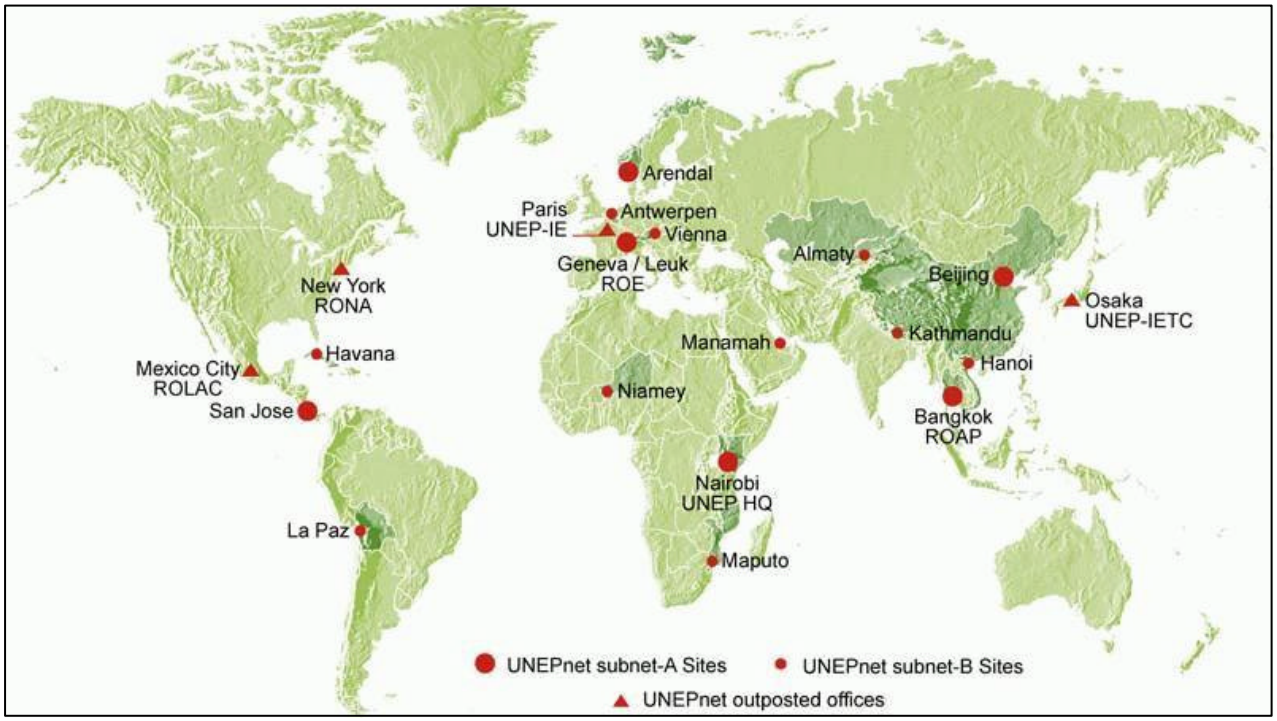
15.9 Background to UNEPnet/ Mercure

15.9.1 Mercure is an operational satellite communications system run by the United Nations Environment Programme.

UNEPnet is a suites of data and telecommunications services offered by UNEP through the Mercure system and other telecommunications facilities.

Mercure comprises earth stations in 15 countries (see map below) communicating through INTELSAT satellites over the Atlantic and Indian Oceans. Most Mercure facilities are located at national environmental ministries, and are operated by their staff.

UNEPnet nodes include all Mercure sites, as well as UNEP regional and outposted offices, and partner sites such as secretariats of international environmental agreements. See the concept diagram on the next page, which portrays the Mercure subnets, the service nodes at UNEP offices, Mercure sites and other partner centres, and the integration between UNEPnet/ Mercure and he global internet.



UNEPnet/ Mercure Network

Mercure satellite stations are only one part of UNEPnet/ Mercure, neither are they solely at the service of UNEP: most are located at national ministries or departments of environment.

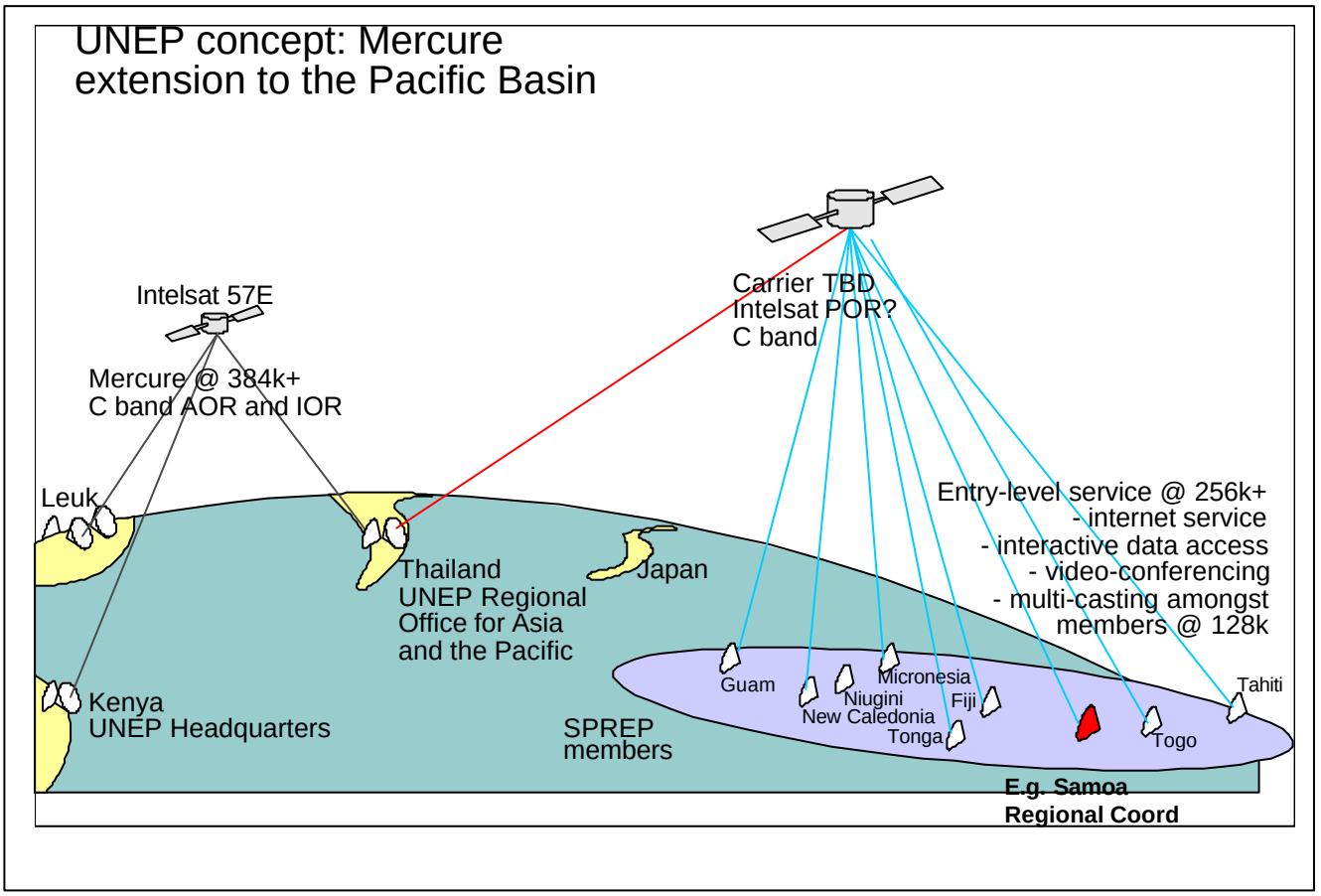
Mercure stations currently come in two "flavours" – high-capacity "Subnet-A" and smaller, more robust "Subnet-B". The SPREP extension of Mercure would require a new class of mid-range (and mid-price) stations

The Mercure system does not currently service the Pacific region at all, but can be expanded for this purpose.

Mercure is capable of further expansion. This proposal suggests that an existing earth station be relocated to Bangkok and orientated to provide service to the Pacific Basin.

UNEPnet provides services in:

- An integrated management and support structure via the UNEPnet Implementation Centre (Norway) and industry partners (NERA, Newtec, Cisco, DTI, Swisscom, RUNIT/SINTEF, Nordunett)
- A private, secure limited-access network for inter-governmental transactions
- Internet facilities such as WWW, e-mail and file transfer
- Controlled connections between the private network and the public internet
- Low-cost voice-over-internet and fax-over-internet



- Digital communications (ISDN)
- Video-conferencing, via ISDN and internet amongst multiple parties
- Toolkits for environment information location systems and managing data repositories.

UNEPnet/ Mercure can, with modest investment, service this previously unserved area. The existing facilities in South East Asia, combined with in-country development and inter-linkage with strong regional partners, can extend world-class service to these states at reasonable cost.
Satellite communications operating under a UN environmental mandate can offer obvious benefits in these circumstances. Increased frequency and reliability of interaction can increase regional coordination and cooperation while also providing improved access to reference sources of environmental information and data. It can also facilitate the States' own ability to report under their obligation to regional and global environmental conventions.

Proven environmental information technologies can be implemented in short time-frames and bring to these countries an integrated information service and support capability to meet

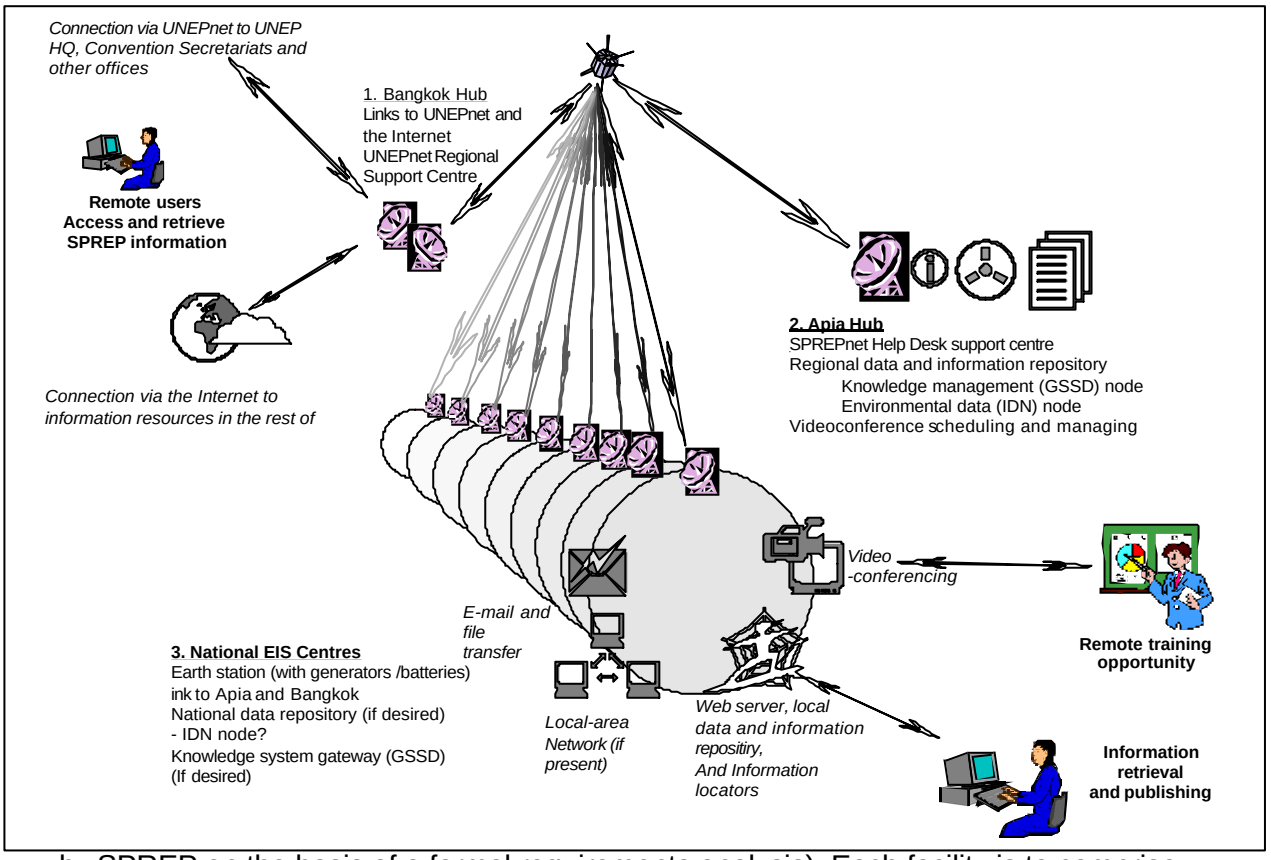
their environmental requirements. The ability of the Environment Programme to meet the priority requirements of these Small Island Developing States and territories will be improved dramatically.

15.9.2 Concept Overview

In general terms, it proposed to set up a system as portrayed in the diagram below, with the following characteristics:

A. **Mercure links SPREP to the world** by expending the existing hub at Bangkok **(1)** (using available Mercure hardware at no cost) and by establishing a SPREP regional hub at the Centre for Regional Environmental Information, Apia **(2)**. These are linked by satellite through which the SPREP hub reaches the rest of UNEPnet as well as the global internet

B. **National environmental information service** facilities (number of locations to be determined by funding; to be implemented in phases according to priorities established



by SPREP on the basis of a formal requirements analysis). Each facility is to comprise:

- a **small satellite earth station (VSAT)** with sufficient capacity for good-quality videoconferencing and effective data exchange. Associated equipment could include uninterrupted power supplies (UPS), generators or batteries for sites that need them..
- a **computer** to provide WWW and e-mail services and also to be a local web server
- **videoconference equipment** (either separate, or incorporated in the computer, according to local needs), which can communicate with up to 7 other SPREP sites simultaneously, and can also contact video centres outside the region

- Environmental information location and management toolkit to assist national users identify, locate and retrieve information on he internet, and to publish their own information most effectively

C. A **regional support hub** at the Centre for Regional Environmental Information, Apia, Samoa, to act as a coordinator for regional videoconference services (these, after all ,have to be scheduled and managed like any other type of meeting) provider of training and technical support. The regional hub would also act as the first stop for national centres needing technical support, and would work closely with the UNEPnet Regional Hub in Bangkok, and the UNEPnet Implementation Centre in Norway.
NOTE: identification of the Centre for Regional Environmental Information as the regional support hub is merely indicative at this stage. The SPREP Secretariat itself would of course nominate the appropriate centre.

A programme of **national capacity development** will also be required. It is proposed that this programme would be executed through the regional support centre, with financial and in-kind assistance from the project donors, UNEPnet Implementation Centre, and possibly Environment Programme activities such as GEO and ENRIN.

This programme would be required to address issues of:

- Management and maintenance of the earth station and indoor equipment (computers, video equipment etc.)
- Concepts and procedures for information service development e.g. locating information on the internet; publishing national data and information products such as state of environment reports
- Procedures for operating their national sites as a node of the regional and global networks of which it is part.

15.9.3 Anticipated Outputs

15.9.3.1 Substantive

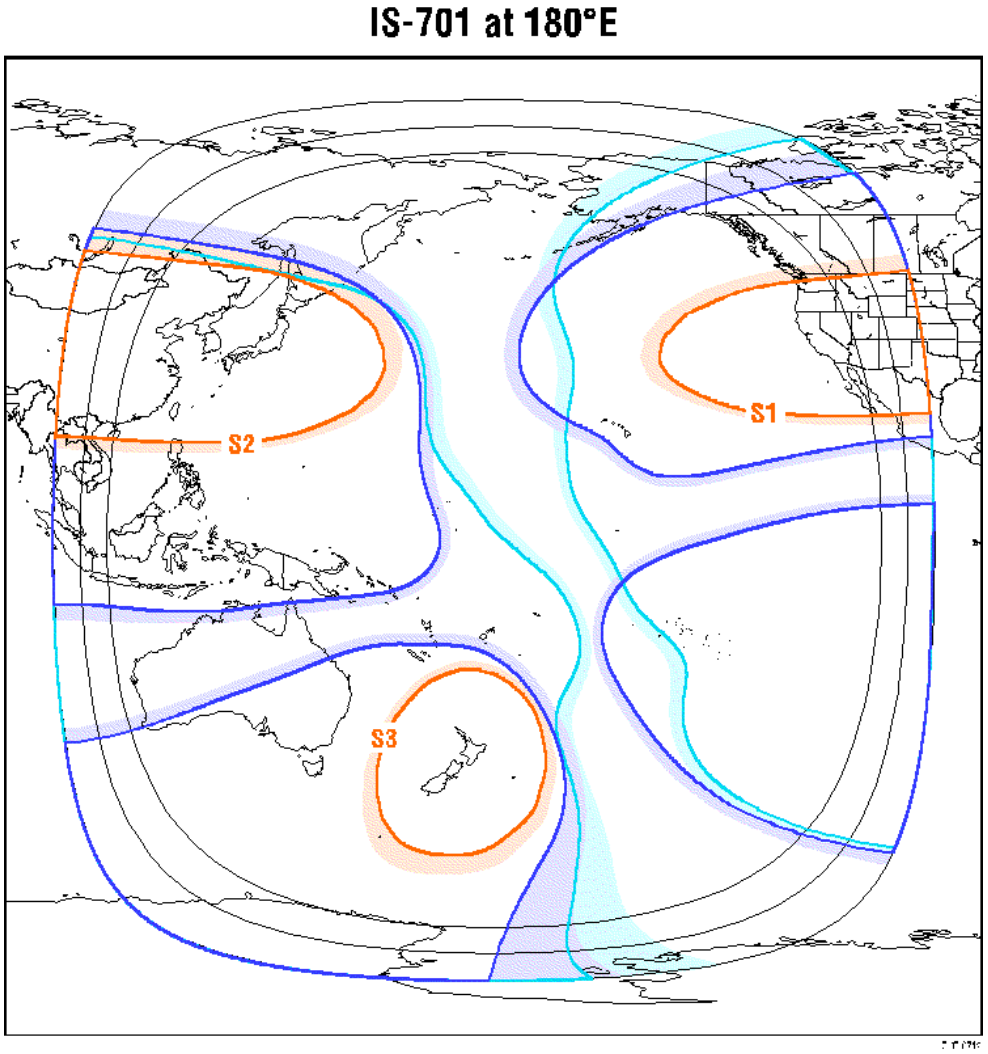
- National reports to MEAs
- State of environment reports on-line
- Monitoring and assessment data shared
- National environmental web sites and higher global profile for regional environmental concerns
- Access to remotely-sensed data
- Access to early-warning and alerts data
- Access to law reference systems

15.9.3.2 Operational

- More frequent, shorter and less expensive meetings of states' representatives
- Increased opportunity for collaboration

- Improved focus of environmental effort and less duplication
- Operational facilities for public outreach and participation

15.9.4 INTELSAT Pacific Ocean Region Global, Hemi and Spot Beam C-band Services



	Beam Peak	Extended 2 dB Contour
Hemi	39.5	33.0 - 31.0 dBW
Zone	39.5	33.0 - 31.0 dBW
Ku-Spot: 1	49.5	43.4 - 41.4 dBW
2	49.5	42.5 - 40.5 dBW
3	51.0	44.0 - 42.0 dBW

Strengthening Environmental Information Servicing in the South Pacific Regional Environment Programme through Satellite Telecommunications
Technical Annex

This Technical Annex provides the following information regarding the proposed environmental satellite telecommunications system for the SPREP region:

- Technical Statement of Requirements
- Overview of Technical Response
- Node Configurations
- AIT Bangkok Hub
- Apia Hub
- National node
- Services and Features

15.9.5 Technical Statement of Requirements

1. Link infrastructure

- Connection to all SPREP Members
- Inter-linkage to global networks
- Sufficient capacity on individual links for concurrent data and video services
- Shared link capacity and assignment on demand
- Sufficient regional capacity for up t0 8 concurrent video session plus data services to all sites

2. Meshed switching capability

- Point-to-point connectivity on demand
- Coordinating hub within region (Apia)

3. Links to global networks
4. Multi-point video services

- Participants at up to 8 different sites
- Multi-cast services to all sites
- Protocol bridging
- Session management and billing

5. Data location, access and transfer facilities

- Data repository servers

- Multi-cast services to all sites for scheduled and standard updates
- Standards-based remote search and retrieval

6. Resilient infrastructure

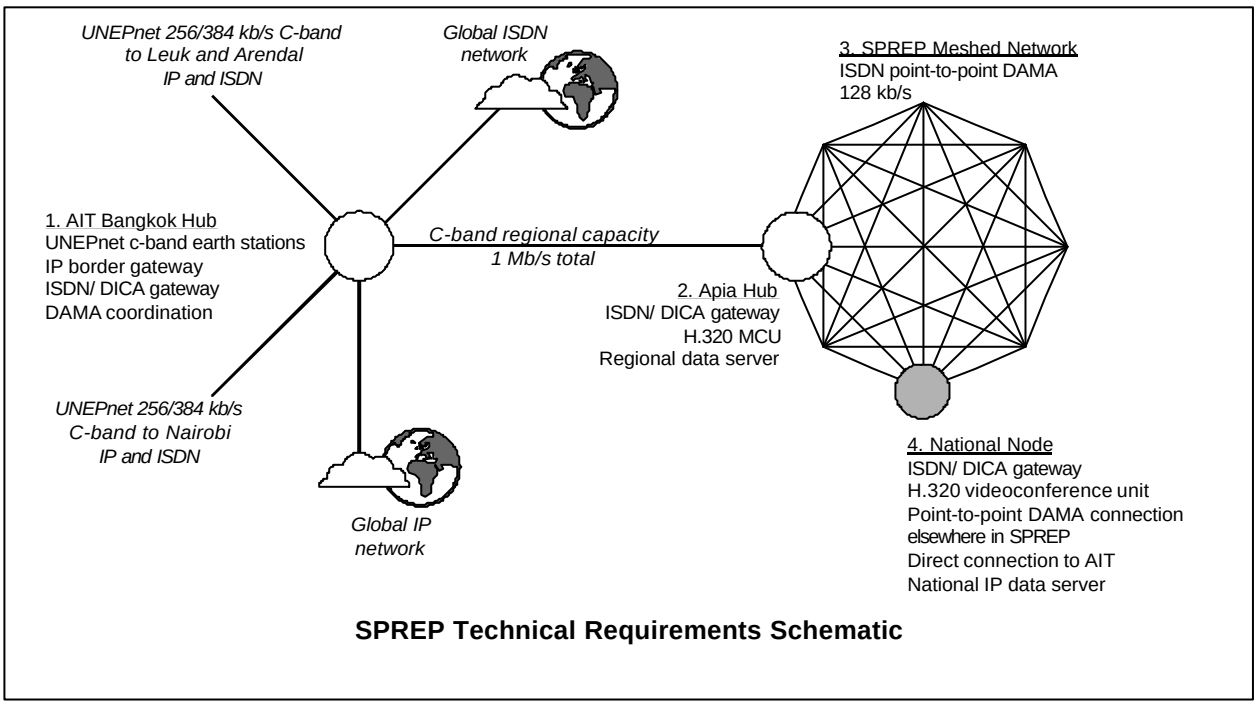
- Battery backup, two-stroke generator and/or photovoltaic systems at selected sites

15.9.6 Overview of Proposed Technical Response

Satisfying SPREP members' requirements would demands:

7. Link infrastructure = C-band VSAT facilities

- operating at national centres to provide capacity realistic data access and video services.
- Up to 256 kb/s capacity, Demand-Assigned access (DAMA)
- INTELSAT or other provider global or hemi beams regional capacity to 1Mb/s i.e. capable of supporting up to 8 concurrent video sessions (see appendix 6 for POR INTELSAT coverage)
- Bangkok hub interlinking SPREP network with
- UNEPnet (IOR links to Nairobi, Leuk and Beijing)
- Global IP networks



SPREP Technical Requirements Schematic

- ISDN networks

1. Meshed switching capability

- Point-to-point connectivity on demand (ISDN)
- Coordinating hub within region (Apia)

2. Links to global networks = both internet and digital services (IP and ISDN)

- IP trunks to a regional services node
- Border gateway facilities between SPREP network and generic internet

3. Data location, access and transfer facilities = distributed Web servers armed with management toolkits for environmental data, information and knowledge products

- IP and associated protocols (HTTP, FTP, telnet, NNTP)
- Data repository servers with local mirroring of data and automated update/ propagation
- Access nodes/ mirror sites for:
- Data locator systems such as the International Directory Network
- Scientific data-gathering systems such as TOGA (Tropical Ocean Global Atmosphere), for which few data are stored in the region
- Knowledge management systems such as the Global System for Sustainable Development
- Multi-cast services to all sites for standard updates (SAWA, SATcast)
- Standards-based remote search and retrieval (XML, CORBA, z39.50)

4. Multi-point video services = ISDN services delivered via satellite and with a regional multi-conference capability managed from Apia

- Participant by up to 8 different sites
- Multi-Conference Unit (MCU) at Apia
- H.320 –based services
- Local videoconference unit at each site. Different configurations depending on requirements:
    - Group facilities e.g. Tandberg Vision 2500, Sony XXXX
    - Stand-alone Desktop units for 1-2 people e.g. Siemens T-View
- PC-integrated ISDN e.g.
- Multi-cast services to all sites
- H.323-based services optional
- Protocol bridging
- Session management and billing

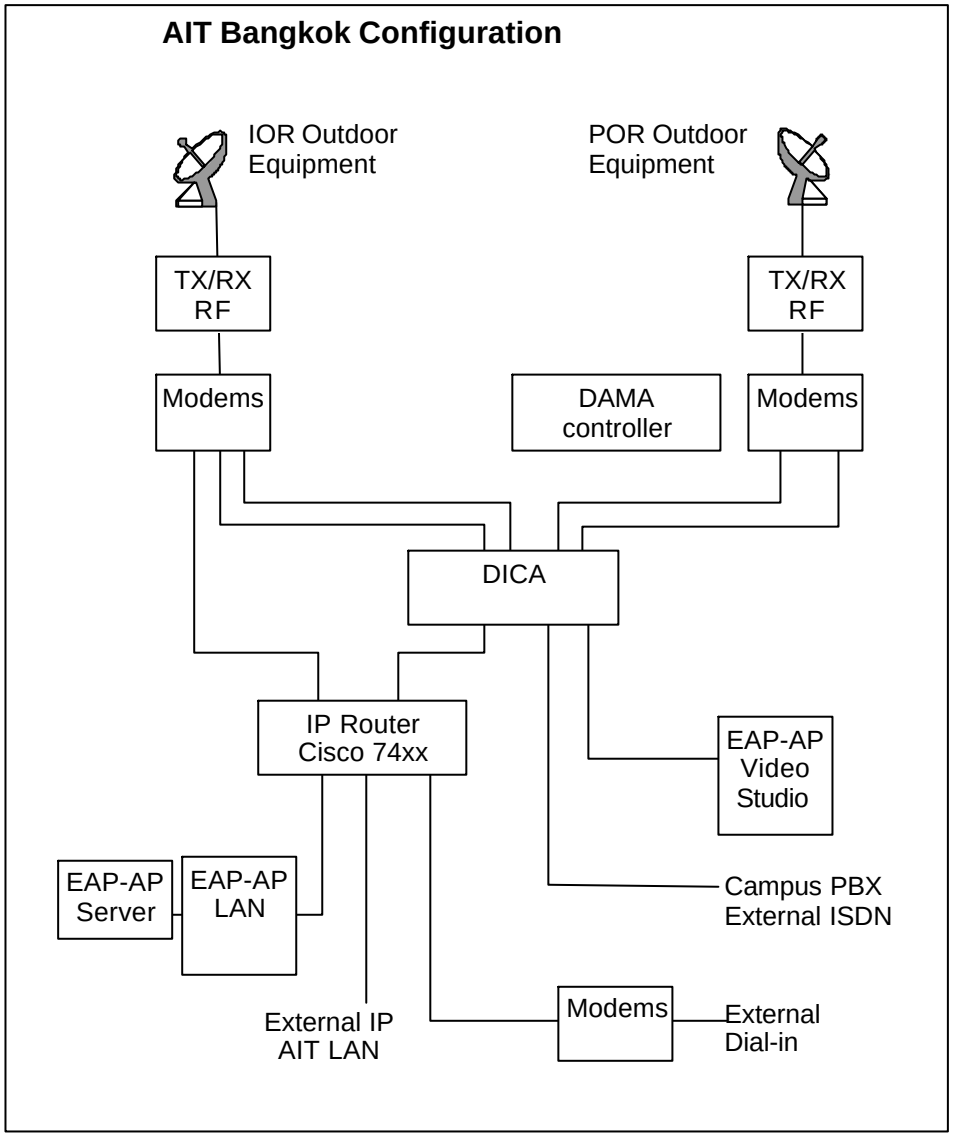
5. Resilient infrastructure

- UPS facilities at all sites (240 VAC/ 50Hz)
- Two-stroke generator and/or photovoltaic systems at selected sites

15.9.7 Node Configurations

15.9.7.1 AIT Bangkok Hub

- Maintain UNEPnet existing IOR links to Nairobi, Arendal, Leuk and Beijing
- Establish links to POR = install second earth station
- IP border gateway = install gateway router

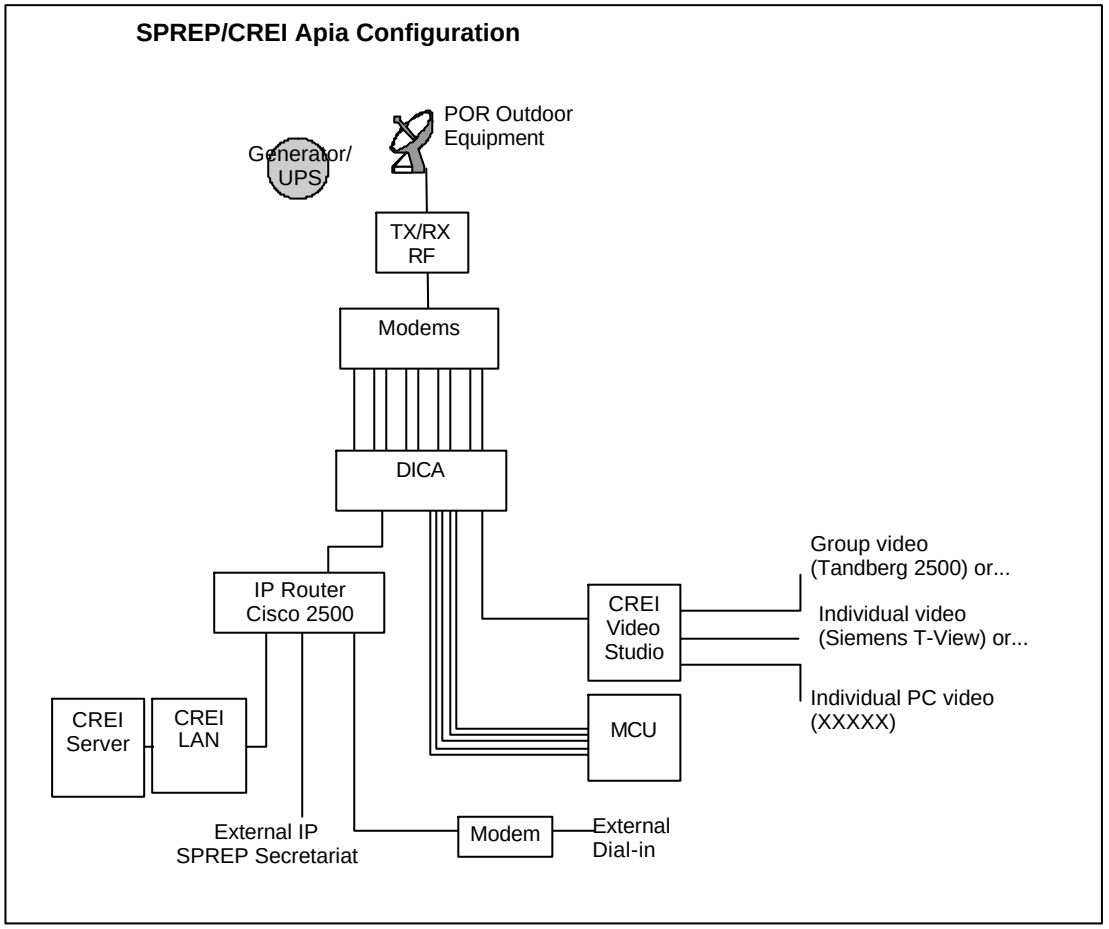


- ISDN gateway = install DICA hardware in IOR and POR
- DAMA management = install new DAMA controller hardware and software
- IP fax hardware

15.9.7.2 SPREP Apia Hub

- Establish links to POR = install earth station

- Battery backup and/or generator
- Lightning suppression?
- ISDN service = install DICA hardware
- Videoconference management = install MCU and management software
- Videoconference participation = install appropriate hardware:
- Group facility? (Tandberg 2500)
- Standalone (Siemens T-View)



- PC Integrated (XXXXX)
- Regional data server = mid-level unix server
- Solaris 4.x/ Linux
    - Apache or SQUID server
    - 20 Gb disk
- tape/CDW backup
- IP router
- Dial-in modem

- IP fax hardware

15.9.7.3 National Node

- Establish links to POR = install earth station
- Battery backup and/or generator
- Lightning suppression?
- ISDN service = install DICA hardware
- Videoconference participation = install appropriate hardware:
- Group facility? (Tandberg 2500)
- Standalone (Siemens T-View)
- PC Integrated (XXXXX)
- National data server = mid-level unix server
- Solaris 4.x/ Linux
- Apache or SQUID server
    - 10 Gb disk
    - tape/CDW backup
- IP router
- Dial-in modem
- IP fax hardware

15.9.7.4 Services and Features

Video-conferencing

- Full H.320 point-to-point call switching via ISDN
- Link assignment on demand controlled from DAMA manager at AIT Bangkok
- Call-out capability on demand via single link to AUT Bangkok hub
- Two-hop connectivity to UNEP HQ, UIC Arendal and Europe via Mercure IOR
- Multi-point sessions for up to 8 concurrent participants
- Multi-point session setup and management controlled from CREI
- Help desk support from CREI

IP networking

- Main regional feed via gateway hub at AIT Bangkok
- IP multiplexed with ISDN circuits via DICA hardware, dynamic bandwidth assignment

- IP links established on demand via DAMA manager at AIT Bangkok

Internet services

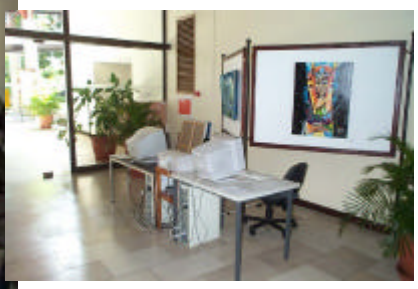
- HTTP (WWW)
- SMTP
- FTP
- NNTP

Information services

- Regional data repository (> 20 Gb) maintained at CREI
- National data repositories (>10Gb) maintained at each national node
- Scheduled and automatic propagation of content from global sources to national and regional repositories
- IP multicast to all sites for selected standard content
- Individual customized pushes
- Intelligent pre-fetch and caching based on demand profiles of local nodes
- Local mirror sites for selected environmental information and knowledge management services
    - GEO Production System
    - Global System for Sustainable Development
    - International Directory Network
- Distributed search and retrieval capability (CORBA, XML, z39.50)
- Management Utilities
    - Web authoring and management facilities
    - Metadata systems for content description
    - Automatic indexing
    - Automatic scheduled backups

15.10 Regional Information and Communication Technologies Needs Assessment and Project Planning Conference

Planning Session 1



Mon 2 – Tue 3 April 2001
SPC, Noumea

Phill Hardstaff, Senior Support Engineer, SPC
Les Allinson, Information Technology Manager, SOPAC

SOPAC Miscellaneous Report 411

15.10.1 Executive Summary

The participants at the initial planning session reviewed the documentation with attention to goal, objectives, activities as well as funding, and estimated budget in light of the rapidly evolving technology of Information and Communication Technologies (ICT) as well as the newly established technologies of Geographic Information Systems and Remote Sensing (GIS/RS).

The participants were mindful of the benefits for the member countries in developing collaboration and cooperation in projects where both organisations have proven regional specialist skills that will develop a synergy between the founding regional organisations.

The objective of the conference is to seek input from the member countries in determining what assistance is needed in building national ICT capacity through an appropriate project implemented by SOPAC and SPC.

In addition, inputs will by sought from the various programmes within the CROP organisations and other development organisations in the region where the output will be a Regional ICT Project tailored to suit the needs of the stakeholders.

The conference will provide a forum for the member countries of SOPAC and SPC to assess their needs in developing national Information and Communication Technologies (ICT) requirements and in adopting the new technologies as well as planning a project to deliver appropriate and cost effect technology solutions through a range of activities.

It is anticipated that there will be two representatives from each member country to ensure that the sectors of both SOPAC and SPC are covered while representatives will be invited from the CROP organisations. All these representatives will be funded. Other development organisations will be invited where their representatives are self-funded.

The proposed dates are Monday 27 – Friday 31 August 2001.

This report details background information that includes available where this is received, committed and possible. The budget is assessed with respect to funding where it is anticipated that there will be a possible balance of USD 6,000 that can be used for contingency.

To summarise the outcomes of this planning session:

- The name of the meeting has been changed from Workshop to Conference to reflect the venue, number of participants and the critical need to develop an appropriate strategy to address the issues.

- The funding and budget and have been reviewed to ensure that that objectives can be achieved within budget.

- The original project proposal (Annex A) has been reviewed and recast as an Information Paper (Annex C) that, subject to review by both SOPAC and SPC will accompany the invitation for participation at this pivotal conference.

In closing, the authors acknowledge the contribution to this and other regional ICT activities by both Samuelo Taufao and Al Blake where the former is re-joining SPC while the latter has left for greener pastures.

It is recommended that the contribution of Al Blake to this meeting be acknowledged during the opening address by the Secretary General of SPC or her representative.

15.10.2 Background

A proposal "**Regional Information & Communication Technologies Project, Needs Assessment and Project Planning Workshop. A joint SPC – SOPAC Initiative**" (see Annex A) was formulated in early 2000 and submitted to the French government for funding assistance of FF 650,000.

The request for funding appears to have also been submitted to Australia and New Zealand and a joint funding initiative has been adopted as shown in Table 1 where the funds have been received from New Zealand while Australia and France have committed their share.

In addition, UNDP has indicated that it could commit USD 30,000 towards the conference. This, however, is viewed as possible not probable.

Table 1 – Funding by donor

Donor	FRF	XPF	USD
New Zealand	209,021	**3,800,000**	28,571
Australia	268,152	**4,875,000**	36,654
France	**250,000**	4,545,000	34,173
Total	**727,173**	**13,220,000**	**99,398**

FRF 1 = XPF 18.18 where XPF and CFP are identical and the rate is fixed

USD 1 = 133 XPF in April 2001

15.10.3 Budget

There are 22 Pacific Island countries and territories that are members of SPC where 16 are members of SOPAC. These are listed in Annex B.

Using statistics from previous conferences this year and mindful that there will be no costs for representatives from New Caledonia, it is anticipated that there will be costs incurred for only 20 countries or 40 participants.

Funding will also be provided for participants from the CROP organisations as shown in Table 2 where there will be 8 in total, noting that the funding for the SPC participant will be for the ICT Manager from the Suva campus.

Table 2 – CROP Organisation participants

CROP Organisation	Participants
FFA	1
FORSEC	1
SOPAC	3
SPC	1
SPREP	1
USP	1
Total	**8**

Using costs from previous conferences this year, the estimated budget for member country representatives and CROP organisation representatives is shown in Table 3 while the overall costs are shown in Table 4, noting that allowance has been made for one SOPAC staff who is engaged on full cost recovery at USD 6,000 per month while an allowance of USD 1,500 has been included for printing.

Table 3 – Average costs per representative

	USD	USD	XPF
PICT Participant			
Average airfare		1,200	159,600
Per diem 8 days average	100	800	106,400
		2,000	**266,000**
CROP Participant			
Average airfare		600	79,800
Per diem 7 days average	100	700	93,100
		1,300	**172,900**

Table 4 – Overall costs

15.10.3.1	Participants	USD	XPF
Member countries			
Airfares	40	48,000	6,384,000
Per diem	40	32,000	4,256,000
Subtotal		**80,000**	**10,640,000**
CROP			
Airfares	8	4,800	638,400
Per diem	8	5,600	744,800
Subtotal		**10,400**	**1,383,200**

Resources		1,500	199,500
Printing		1,500	199,500
Subtotal		**3,000**	**399,000**
Total		**93,400**	**12,422,200**

It can be seen, therefore, that there may be a balance of some USD 6,000 that should be used as a contingency to cover possible increases in travel costs or to cover incidental conference expenses such as morning and afternoon tea and coffee.

15.10.4 Conference

See Annex C for updated information paper

15.10.5 Initial Proposal

Regional Information & Communication Technologies Project

Needs Assessment and Project Planning Workshop

A Joint SPC – SOPAC Initiative

15.10.5.1 Summary

This joint request by the Secretariat of the Pacific Community (SPC) and the South Pacific Applied Geoscience Commission (SOPAC) seeks funding support from the French Pacific Co-operation Fund for a *Needs Assessment and Project Planning Workshop*.

This workshop will analyse the needs of Pacific Island Countries and Territories in the area of information and communication technologies. The outcomes of the meeting will inform the design of a "Regional Information & Communication Technologies Project".

The workshop is suggested to be held at SPC's headquarters in Noumea, New Caledonia. It will bring together participants from all member countries and territories, and other regional organisations.

The total amount requested is CFP 11,868,000 or approximately FF 650,000.

15.10.5.2 Background

The development of the Pacific Island Countries and Territories (PICT) has traditionally been hampered by their dispersed populations and the vast ocean distances separating them, which impose large costs on service provision in education, development, social welfare, health, travel and communication. With the arrival of global communications services the PICT have the opportunity to address some of the disparities that have hindered service provision for so long.

Whilst improvements in telecommunications and information services offer the opportunity to improve service delivery across the entire social spectrum, take-up of these technologies has been patchy and generally slow.

This was recognised by the representatives at the Forum Economic Ministers Meeting 1998, where the meeting agreed to adopt a sub-theme of the Pacific Information Economy for 1999. This had been partly a result of the work of the working party on Information Technology of Council of Regional Organisations in the Pacific (CROP). Both the Secretariat of the Pacific Community (SPC) and the South Pacific Applied Geoscience Commission (SOPAC) have been key participants in this working group.

Similarly, the agenda of the first meeting of the Conference of the Pacific Community, which was held in Papeete, Tahiti from 6 to 7 December 1999, included a thematic discussion on "the upsurge of new technologies and their impact on information and knowledge" which focused on the state of information and communication technologies and their potential for the region.

15.10.5.3 Initiative for a Regional Information & Communication Technologies Project

SPC and SOPAC have been working together on a broad outline for a possible Regional Information & Communications Technologies Project (see attached document), which will provide technical assistance expertise to Pacific Island Countries and Territories to ensure that they benefit from the opportunities that new technologies offer.

This project is modelled on the work previously undertaken by the Forum Fisheries Agency in the fisheries sector but widened in scope to assist the appropriate use of information and communication technologies across a much broader spectrum of society.

As a joint proposal of SPC and SOPAC, the project will be able to address itself to the widest possible membership geographically. It will address the need for field-level technology development, rather than policy level issues, which are handled by the regional information technology-working group that the Forum Secretariat is co-ordinating.

15.10.5.4 Needs Assessment and Project Planning Workshop

The need for assistance has been become clear from regional policy statements and the direct feedback that both organisations have been receiving on their initiative. The initial work done by the organisations must now be taken one step further. The organisation of a regional planning meeting is suggested to provide the direct inputs from representatives from the region to ensure that this new initiative accurately reflects regional needs.

The planning meeting will be similar to the very successful Regional Energy Programme Planning Meeting that SPC and SOPAC organised in 1998. That meeting, which was funded by Australia and France, set the framework for future energy projects in the region and informed the design of the Regional Australia-France Rural Renewable Energy Project, whose implementation has commenced.

Without wanting to pre-empt the outcomes of the meeting, any "Regional Information Technology and Communications Project" that may be designed following the planning meeting would probably provide technical assistance to small government departments and national social development agencies where efficiency savings could be substantial and where the uptake of new technologies is currently low. Providing service on a regional basis

would give access to expertise that would not be available to smaller states within their budgets and on a longer-term basis than can be achieved by individual projects.

15.10.5.5 SPC and SOPAC

SPC and SOPAC as the leading technical regional agencies are well placed to implement a project in these areas.

SOPAC is active in the field of information technology throughout the Pacific, providing support to its contact points in its mandated areas of expertise. In addition, SOPAC provides commercial consultancies to regional telecommunications operators to address the increasing need for Internet connectivity.

Like SOPAC, SPC provides a limited information technology support service to various departments in its member countries through the focal points in its programme areas. Consultancies are undertaken in conjunction with development partners to address key limit points in the uptake of new technologies.

15.10.5.6 Organisational Details

Funding is sought to hold a four-day needs assessment and planning workshop.

15.10.5.7 Participants

Financial provision will be made for the attendance of two delegates from each Pacific Island country or territory. Delegates will also be invited from the other regional organisations (FFA, ForSec, SPREP, and USP). Their delegates, however, will be self-funding.

15.10.5.8 Location

Current plans are for the meeting to be held in at SPC headquarters in Noumea, New Caledonia. SPC has excellent conference facilities including interpretation facilities.

15.10.5.9 Outputs

If the representatives indeed support the concept of a “Regional Information and Communication Technologies Project”, the meeting will be expected to produce the outlines of a project proposal, including the

- Identification of critical ITC limiting factors
- Objectives of the Project
- Timeframe
- Milestones
- Implementation strategies

Details, in particular on funding requirements, would be developed after the meeting by the two organisations.

15.10.5.10 Funding required for Workshop

Number of island countries/territories	22		
Number of participants	2		
Number of days per diem (average)	8		
Item		Unit cost	
Airfare for participants (average)	44	150,000	6,600,000
Per diem	352	12,000	4,224,000
Video Conference Charge			944,000
Administration/printing	1	50,000	50,000
Tea and coffees	1	50,000	50,000
Total CFP			11,868,000
Total French Francs (rounded)			**650,000**

Subject to interest, the Secretariat is planning to offer a video link from Noumea to Suva for those participants who cannot attend the meeting in Noumea. The videoconference charge would be payable to the satellite company that would provide the additional bandwidth required for the video link. The videoconference would use the Secretariat's satellite facilities, which have been provided under the ComET project, through assistance from Australia and France.

15.10.6 Regional Information & Communication Technologies Project

Discussion Paper for Consideration at the

Joint SPC/SOPAC Needs Assessment and Project Planning Workshop

DRAFT

15.10.7 Introduction

The development of the Pacific Island Countries and Territories (PICT) has traditionally been hampered by their dispersed populations and the vast ocean distances separating them which impose large costs on service provision in education, development, social welfare, health, travel and communication. With the arrival of global communications services the PICT have the opportunity to address some of the disparities that have hindered service provision for so long.

Whilst improvements in telecommunications and information services offer the opportunity to improve service delivery across the entire social spectrum, take-up of these technologies has been patchy and generally slow. If wider usage of information technology and communications services could be facilitated then increased efficiencies would ensure improved service provision overall.

The Secretariat of the Pacific Community (SPC) and the South Pacific Applied Geoscience Commission (SOPAC) have prepared this paper to provide a possible framework for a 'Regional Information and Communication Technologies Project' as a joint response to the call for regional organisations to consider what actions they can undertake to assist ICT uptake in the region.

This framework is presented for consideration by workshop participants. It is not intended to pre-empt any discussions; rather its objective is to stimulate the discussions.

15.10.8 The need for technical support

Information Technology and Communications (IT&C) are widely considered major enabling technologies, uptake of which has positive effects across all areas of the economy and society. Whilst the private and/or government telecommunications companies are progressing steadily with infrastructure provision within the region, penetration into key areas such as education, health and other government departments is slow. This is due to many factors including lack of funding, training and experience in effective use of IT&C, coupled with the relatively high costs of telecommunications.

The Regional Telecommunications program, previously based at the Forum Secretariat, has been discontinued following the significant improvements that have taken place in the provision of telecommunications infrastructure within the region in recent years. It is evident that telecommunications companies are better at providing infrastructure than regional organisations, yet there remains a need to improve the penetration and appropriate use of such services in the wider community.

The Regional Information Technology and Communications initiative will target technical assistance at small government departments and social development programmes where efficiency savings from IT could be substantial and IT&C uptake is currently low. Providing such service on a regional basis would give access to expertise that would not be available

to smaller states within their budgets and on a longer-term basis than can be achieved by individual projects.

15.10.9 The tasks

15.10.9.1 Provide technical assistance to focal points in existing development programs

Even where there is adequate infrastructure it is often the case that these services are not being used by the focal points of the existing technical programmes. This can be due to a perception that the services would be difficult and expensive to install and lack of a clear perception of the benefits that would flow from the use of modern communications services.

This has a significant impact on operational capacity in all programme areas. Lack of communication capability means that information penetration is restricted in many areas and key professionals can find themselves 'out of the loop' with respect to critical information dissemination.

The Regional Information Technology and Communications initiative would provide technical assistance in conjunction with the existing SPC programmes to ensure that the in-country staffs are able to participate in the information flow critical to programme development.

The wide mandate of the two regional organisations will ensure that the synergy between existing programmes and IT&C can provide the 'reason to connect', where it may not have been evident before.

15.10.9.2 Resource for technical excellence

The IT&C initiative will provide a high-quality resource for IT & C matters through the technical specialists in the program and their contacts throughout the world. It will provide impartial (non-commercial) technical advice to stakeholders including government and development organisations, assisting them to take advantage of the benefits of efficient use of IT and communications.

15.10.9.3 Provide training and workshops

Provide capacity-building workshops and training in key technical areas, with emphasis on providing support to the small island states in areas such as:

- Network management
- Security
- Web site development
- Electronic commerce

Training would not generally be directed at IT professionals, rather technical focus points would be used to provide training to professionals in agriculture, energy, health, statistics, mineral and resources, women and youth support, and other critical areas, increasing their capacity to effectively use IT&C.

15.10.9.4 Advocate infrastructure developments

There are many groups who do not have access to communications infrastructure by virtue of high-tariffs and low rural penetration. Whilst improvements in infrastructure are rapid it is still the case that access to communications services is very restricted.

The Regional IT&C initiative would lobby on behalf of all stakeholders in the region for appropriate regulation in telecommunications services and realistic, affordable tariffs. It would provide input to regulatory bodies in member states with respect to the advantages/disadvantages of various tariff and service provision schemes from a whole economy perspective, to provide the enabling environment to assist long-term economic growth.

15.10.9.5 Independent evaluations

Provide evaluation and planning capabilities for IT&C planning to member countries and government departments and technical assistance visits for the installation of new systems and the upgrade of existing facilities.

15.10.9.6 Support local programs

Support in country developments and initiatives by adding weight to local proposals by taking advantage of existing experiences, successes and failures. This would help these programs to be realised by easing the approval process and raising the profile with potential donors.

15.10.9.7 Provide a role model and 'sell' the concept

Provide real-world examples and case studies as to how IT&C can enhance service delivery in all programs and advocate for appropriate IT&C uptake in all areas.

15.10.9.8 Building on existing strengths

15.10.9.8.1 Technical organisations

Both SOPAC and the Pacific Community are technical organisations and have contact points with specialists in all member states. They have an infrastructure that is already optimised for the provision of technical support and a substantial base of technical contacts throughout the region. Both are major users of Information Technology and Communications services and has substantially benefited from the appropriate use of IT solutions at their headquarters.

The organisations have at their disposal a core of IT professionals who can provide the basis for a Regional programme and have had extensive experience in the development of communications solutions specifically for the low-bandwidth situations commonly encountered in the Pacific region.

15.10.9.8.2 Network of existing contacts

The Pacific Community is a multi-disciplinary Regional Organisation, covering a wide range of socio-economic development areas. SOPAC is an excellent partner with its extensive expertise in the areas of mineral and resource development and energy exploitation.

All Information Technology professionals would agree that 'electronic communication' is only one side of the equation and perhaps the easiest to address. The most important component affecting the uptake of new technologies is the 'liveware' – the people that can demonstrate the benefits that will flow from the new procedures.

With professional staff members in continual contact with program officers in agriculture, mineral exploitation, forestry, plant protection, media, energy, health, marine resources, demography, statistics, rural technology, gender issues and cultural development the programme will have extensive network of contacts who will assist in the dissemination of the benefits to those groups that are unable to access such services.

15.10.9.9 Activities

15.10.9.9.1 In country visits and technical support

The primary focus of the initiative will be to provide technical support via in country visits. These will be targeted based on the advice from existing focal points of the existing technical programs, ensuring that appropriate technical assistance is provided to areas that are constraining the effective uptake and use of IT& C within the member countries.

Technical visits will be arranged to ensure that training is provided to key personnel in the target organisation or department, who will be able to further train and support their staff at completion. Personal contact between the participants and the programme staff will establish a working relationship and support network accessible long after the technical training has finished.

15.10.9.9.2 Sub regional workshops

Three sub-regional workshops will be convened annually which will build on the work carried out through the technical visits. The workshops will take a theme of particular relevance to the participants and aid them in the development of technical solutions and essential problem solving techniques. The workshops will include participants from different departments and organisations to foster interchange of ideas between different professional groups.

15.10.9.9.3 Regional Conference

An annual conference will be held which will provide a forum to discuss and develop solutions that relate to key IT&C issues on a regional, or more often a global scale. The aim will be to develop practical implementations of state of the art technologies that can be localised for use within the Pacific Region. The Information Technology area is changing so rapidly that it is impossible to predict the hot topics for future conferences, however themes of current importance, which would be likely to feature, would include:

- Network security
- Low earth orbit (LEO) satellite technology
- Web publishing

15.10.9.10 Resource needs

The initiative will require three professional and one support staff members and will utilise technical assistance of other regional organisations wherever appropriate. It will be conducted over three years, requiring funding of 1.6 million units spread over this period.

15.10.9.11 Conclusion

- The Regional Information technology and Communications Initiative will implement a program of technical support, training and expert assistance that will ensure greater uptake of appropriate Information Technology and Communications solutions.
- This will be achieved by building on the existing focal points in member states and encompass all programme areas.
- Technical assistance, training and installations will be provided to NGO and small government departments where appropriate.
- Ongoing technical support will be provided to backstop Information technology solutions in countries where there are few available support services.

15.11 SOPAC/SPC Pacific Island Member Countries

MEMBER COUNTRIES	ISO CODE	SOPAC	SPC

American Samoa	AS		?
Cook Islands	CK	?	?
Federated States of Micronesia	FM	?	?
Fiji Islands	FJ	?	?
French Polynesia	PF	? (Note1)	?
Guam	GU	?	?
Kiribati	KI	?	?
Marshall Islands	MI	?	?
Nuaru	NR	?	?
New Caledonia	NC	? (Note1)	?
Nue	NU	?	?
Northern Marianas	MP		?
Palau	PU		?
Papua New Guinea	PG	?	?
Pitcairn	PN		?
Samoa	WS	?	?
Solomon Islands	SB	?	?
Tokelau	TK		?
Tonga	TO	?	?
Tuvalu	TV	?	?
Vanuatu	VU	?	?
Wallis and Futuna	WF		?
Total		**16**	**22**

Note 1 - Associate member

15.12 ICTNOUMEA Workshop Information Paper

Regional Information and Communication Technologies

Needs Assessment and Project Planning Conference

Monday 27 – Friday 31 August 2001

SPC, Noumea

INFORMATION PAPER

15.12.1 Introduction

The development of the Pacific Island Countries and Territories (PICT) has traditionally been hampered by their dispersed populations and the vast ocean distances separating them which impose large costs on service provision in education, development, social welfare, health, travel and communication. With the arrival of global communications services the PICT have the opportunity to address some of the disparities that have hindered service provision for so long.

Whilst improvements in telecommunications and information services offer the opportunity to improve service delivery across the entire social spectrum, take-up of these technologies has been patchy and generally slow. If wider usage of information and communications technologies (ICT) services could be facilitated then increased efficiencies would ensure improved service provision overall.

The Secretariat of the Pacific Community (SPC) and the South Pacific Applied Geoscience Commission (SOPAC) have prepared this paper to provide a possible framework for a 'Regional Information and Communication Technologies Project' as a joint response to the need for regional organisations to consider what actions they can undertake to assist in greater ICT adoption in the region.

This framework is presented for consideration by conference participants. It is not intended to pre-empt any discussions; rather its objective is to stimulate the discussions.

15.12.2 The Need for Technical Support

ICT is considered a major enabling technology, adoption of which has positive effects across all areas of the economy and society. Whilst the private and/or government telecommunications companies are developing infrastructure within the region, penetration into key areas such as education, health and other government departments is slow. This is due to many factors including lack of funding, training and experience in effective use of ICT, coupled with the relatively high costs of telecommunications.

Any Regional ICT Project should target technical assistance at small government departments and social development programmes where efficiency savings could be substantial and ICT adoption is currently low. Providing such service on a regional basis would give access to expertise that would not be available to smaller states within their budgets and on a longer-term basis than can be achieved by individual projects.

15.12.3 Tasks

15.12.3.1 Provide technical assistance to programs

Even where there is adequate infrastructure it is often the case that these services are not being used by the national focal points of the programs. This can be due to a perception that the services would be difficult and expensive to install and lack of a clear perception of the benefits that would flow from the use of modern communications services.

This has a significant impact on operational capacity in all programme areas. Lack of communication capability means that information penetration is restricted in many

areas and key professionals can find themselves marginalized with respect to critical information access and dissemination.

The proposed Regional ICT Project would provide technical assistance in conjunction with the existing SPC and SOPAC programs to ensure that the national counterparts are able to participate in the information flow critical to program development.

The broad mandate of the two regional organisations will ensure that the benefits from ICT reach a wide range of existing and future programs.

Provide training and workshops

Provide capacity-building training and workshops in key technical areas such as::

- Network deployment and management
- Security
- Web site development
- Electronic commerce
- Other enabling technologies such as GIS and Remote Sensing

Training would be provided for professionals and technical staff in all sectors of government, increasing their capacity to effectively employ ICT.

15.12.3.2 Provide advocacy assistance

There are many groups who do not have access to communications infrastructure by virtue of high-tariffs and low rural penetration. Whilst improvements in infrastructure are rapid it is still the case that access to communications services is very restricted. The proposed Regional ICT Project would support and collaborate with the Forum Communication Action Plan and the CROP Information Sector Working Group in promoting more affordable and widely available access to communication services, especially the Internet.

15.12.4 Building on Existing Strengths

15.12.4.1 Technical capacity

Both SOPAC and the SPC are technical organisations and have focal points with specialist skills in most member countries. These organisations have an infrastructure that is already optimised for the provision of technical support and a substantial base of technical contacts throughout the region. Both are major users of ICT and have proven the benefits from the appropriate use of ICT.

The organisations have a core of ICT professionals who can provide the basis for the proposed Regional ICT Project and have had extensive experience in the development of solutions in member countries using appropriate and affordable technologies.

15.12.4.2 Network of contacts

SPC covers a wide range of socio-economic development areas and SOPAC complements these with expertise in areas that include mineral and resource development.

Due to these broad multi-sectoral activities, the organisations have developed a network of professional and technical contacts throughout the member countries. These contacts are invaluable in introducing or expanding ICT activities in the region that have direct national benefits.

15.12.5 Activities

15.12.5.1 In country visits and training attachments

A major focus of the proposed Regional ICT Project will be to provide technical support via in country visits. These will be targeted, based on the requirements of focal points of the SOPAC and SPC programs, ensuring that appropriate technical assistance is provided to those areas in ICT development and deployment.

In-country visits and attachments will be arranged to ensure that training is provided to key personnel in the target organisation or department, who will be able to further train and support their staff at completion.

15.12.5.2 Sub regional workshops

Sub-regional workshops could be conducted that will build on the work carried out through the in-country visits and attachments. The workshops will take a theme of particular relevance to the participants and aid them in the development of technical solutions and essential problem solving techniques. The workshops will include participants from different departments and organisations to foster interchange of ideas between different professional groups.

15.12.5.3 Regional Conference

Conferences could be held every one or two years to provide a forum to discuss and develop solutions that relate to key ICT national, regional or international issues. The aim will be to develop practical implementations of appropriate technologies that can be localised for use within the Pacific Region. The ICT area is changing rapidly and it is difficult to predict the issues that will arise for future conferences. However, themes of current importance, which would be likely to feature, could include:

- Security issues
- Advances in communications
- Geographic Information Systems
- Remote sensing

15.12.6 Conclusion

- The proposed Regional ICT Project will implement a program of technical support, training and assistance that will ensure increased adoption of appropriate and cost effective solutions.

- This will be achieved by building on the existing focal points in member countries and cover all sectors.

- Technical assistance with training and installations will be provided to government departments other stakeholders where appropriate.

- Ongoing technical support will be provided to backstop ICT solutions in countries where there are few available support services to ensure sustainability of technical solutions.

- The proposed Regional ICT Project will require additional professional and support staff within SPC and SOPAC and will utilise technical assistance of other regional organisations wherever appropriate.

15.12.7 Proposed Agenda

15.12.7.1 Summary

1. Registration
2. Opening
3. Needs Assessment
4. Project Planning
5. Other Business
6. Adoption of Record
7. Closing

15.12.7.2 Detailed

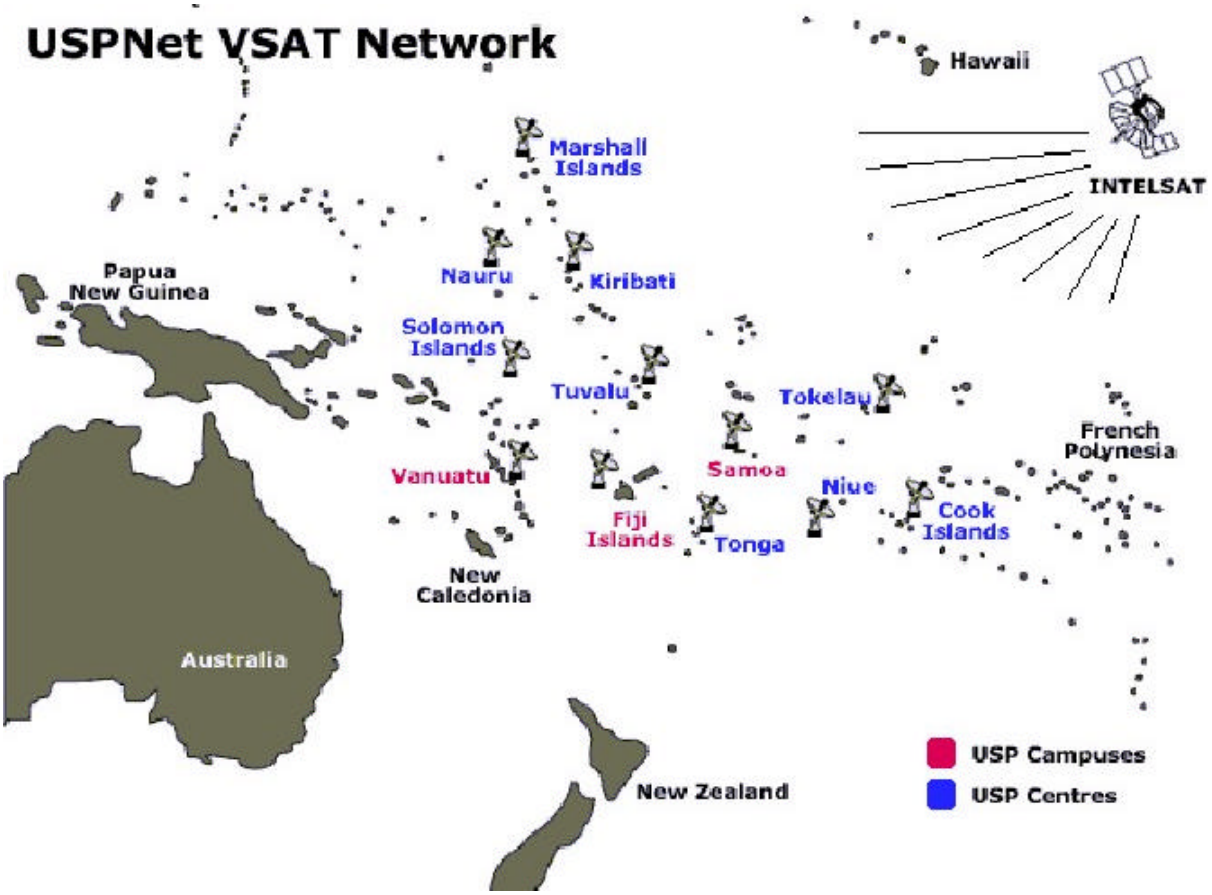
Day	Time	Item
Monday	0900-0930	Opening – SG, USP
	0930-1000	Election of chair and drafting committee
	1000-1030	Break – group photo
	1030-1200	Member country statements (6)
	1200-1330	Lunch
	1330-1500	Member country statements (6)
	1500-1530	Break
	1530-1700	Member country statements (6)

Tuesday	0830-1000	Member country statements (6)
	1000-1030	Break
	1030-1200	CROP agency statements (6)
	1200-1330	Lunch
	1330-1500	Observer statements (6)
	1500-1530	Break
	1530-1700	Observer statements
Wednesday	0830-1000	ICT Sectoral issues
	1000-1030	Break
	1030-1200	ICT Sectoral issues
	1200-1330	Lunch
	1330-1500	Observer statements (6)
	1500-1530	Break
	1530-1700	Observer statements
Thursday		To be planned
Friday		To be planned

15.12.8 Notes

- Linkage to CROP Information Sector Working Group
- Presentation of IT-PACNET report
- Objectives – what do we want / an early announcement
- SPC to provide rapporteur subject to availability
- SPC sectoral – stats, demography, health, …
- Gender balance issues
- IT Policy specialists
- National IT strategies
- Policy and regulatory frameworks

15.13 USPNet


USPNet VSAT Network
Hawaii
INTELSAT
Marshall Islands
Nauru
Kiribati
Papua New Guinea
Solomon Islands
Tuvalu
Tokelau
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Niue
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