REGIONAL INFORMATION TECHNOLOGY STRATEGIES
Meeting at SOPAC, Suva, Fiji

5-8 June 1995

June 1995   *SOPAC Miscellaneous Report 196*

Regional Information Technology Strategies

June 1995 Meeting

SOPAC, Suva, Fiji

5 - 8 June 1995

INTRODUCTION

The meeting brought together a group of Information Technology (IT) managers and specialists from Forum Fisheries Agency (FFA), Forum Secretariat, South Pacific Applied Geoscience Commission (SOPAC), South Pacific Commission (SPC) Noumea SPC Suva and South Pacific Regional Environment Programme (SPREP) to discuss the information technology strategies that will benefit all organisations and their respective member countries. USP was represented during sessions on training and communications.

The list of participants and the addresses of the organisations are included as Attachments A and B while the agenda is included as Attachment C. The list of island member countries by organisation is provided as Attachment D.

The participants detailed their respective IT systems and salient features which are provided as Attachment E. Following discussion of IT systems in the member countries and drawing on experiences over past ten years it was agreed that a common set of procurement guidelines was necessary which are formulated in the next section.

The dramatic increase in Internet expectations and requirements, in particular e-mail, together with costly communications within the region have led organisations to provide and promote cost effective solutions which are covered in the Communications section.

Training which is fundamental to IT is covered together with areas for future co-operation.

It is anticipated that this continuing co-operation will provide the island member countries with appropriate and cost effective solutions to meet their IT needs.

PROCUREMENT GUIDELINES

The participating organisations agreed that the adoption of a set of guidelines for the selection of computing solutions will benefit the member countries through:

- Protection of the investment in valuable information systems.

- Reliable access to accurate information.

- Capability to handle harsh environmental conditions in the region.

- Reduction in reliance on support.

- Commonality to facilitate the ease of data exchange.

- Commonality to simplify training.

Hardware

it is recommended that current proven technologies appropriate for the business functions be purchased. The following hardware is recommended where Microsoft Office Professional suite is or will be in use. It should provide a minimum functional lifetime of 3 years.

The acquisition of cheap PC computer clones is not recommended because of poor support, reliability and increased operational costs compared to name brand units (such as Compaq, Dell, DEC, Hewlett Packard, IBM, etc.).

Computers
Personal systems

Desktops

* Pentium or Equivalent.

* 16 MB memory

* 540 MB uncompressed disk space

* Colour monitor supporting 1024 by 768 resolutionnon interlaced.

* At least one PC computer per site should have a SCSI CD-ROM reader.

Portable Computers
Recognising that, for equivalent cost, portable machines are less capable than desktop systems, the minimum specifications for notebook computers are

more modest.

* 80486 50MHz CPU or equivalent

* Two type 11 PCMCIA slots

* 12 MB memory (none in PCMCIA slots)

* 340 MB uncompressed disk space

* Colour LCD screen

Servers
The highest possible reliability and performance is desirable for a network server, so once again name brands which are marketed specifically as servers are recommended.

• Pentium CPU

• 32 MB of RAM

• PC1 / ISA bus

• SCSI-2 interface to mass storage, tape backup and CD ROM sub-systems

• DDS tape backup

Physical Network

Windows for Workgroup 3.11 recognises all major networks and a good rule is to use ethernet cards, preferably 10Base-T. The choice of peer-to-peer or server based networks depends on the size of the corporate data as well as security issues. Portable computers which require connection to networks can use PCMCIA or parallel port adapters such as Xircom or employ docking stations or expansion device boxes which connect to a proprietary system bus.

Peripherals

Backup systems

Backup solutions are essential for all systems and a backup strategy is necessary, which consists of some system of full and incremental backups, as well as offsite storage policy. The preferred solution for server-based systems is either DDS, Exabyte or QIC which can serve as a backup mechanism for both server and individual computers on the network. The preferred solution for small peer-to-peer networks is a moveable tape backup device which may be connected to a parallel port on a desktop. This may also be recommended for single systems.

UPS systems

Adequate sized uninterruptable power supplies are necessary to prevent loss of data and damage to operating systems and hardware, and are especially relevant in countries with unreliable power.

Printers 1 Plotters

Hewlett Packard printers and plotters are the recommended manufacturer, and the recommended models are:

• HP Laserjet 4L for personal laser printer

• HP Laserjet 4 Plus for small workgroup printer

• HP Deskjet 1200C for small workgroup colour printer

• HP Designjet 650C for AO format color printer

Modems

Recommended models for the region are:

• US Robotics Courier external series

• Motorola Codex external series

• Megahertz PCMCIA and external series

Scanners

Recommended scanners for both colour and mono are the HP Scanjet series

Recordable CDs

This is a relatively new product area, and it is expected that product leaders will emerge by 1996. Currently recognised manufacturers include Yamaha and Sony.

Software

Operating systems

It is recommended that the operating system be fully installed and working with all video modes, interfaces (PCMCIA, SCSI, network cards..), multimedia (CDROM, sound cards) which are bundled in the computer.

DOS

DOS 6.22 is the current standard.

Windows

Microsoft Windows for Workgroups (WFW) 3.11 is the current standard.

It is understood that Windows'95 which will replace both DOS and Windows for Workgroups 3.11, will be released in August 1995. All organisations should prepare a deployment strategy, including a programme of extensive testing, before fully introducing the product. New MS Office 32-bit applications have significantly enhanced performance under Windows '95. It should be noted that some current applications may not operate under Windows '95.

Windows NT workstation 3.5x should be considered for power users who require true multitasking on a proven and reliable OS.

It is recommended that Windows NT server 3.5x be selected as the OS of choice for sites migrating from Netware, or for new sites.

Unix

Unix is recommended only for organisations with particularly demanding corporate database requirements or specific applications and peripheral devices. It should be noted that Unix has very high administrative and maintenance costs.

Applications

Off ice Suites

Microsoft Office Professional 4.3 is the current standard, which includes Word, Excel, PowerPoint and Access.

Mapping and GIS

Mapinfo 3.x is the current vector-based standard of **FFA, SOPAC and SPC,** while Arc/Info is the current standard for SPREP.

IDRISI for Windows 1.x is currently being evaluated for adoption as the raster-based standard.

Arc/Info

This application is a very complex high end GIS with a steep learning curve. However, Arc/Info may be required in some situations which deal with particularly complex GIS tasks. Where SPREP is involved in the introduction of Arc/Info training will be available.

MapInfo

ADC Digital Chart of the World

SOPAC purchased American Digital Cartography (ADC) Digital Chart of the World (DCW) in MapInfo format for the South Pacific provided on CDROM. The product was purchased through Critchlow Associates, Wellington, New Zealand, for approximately NZD 1,800.

The product, however, suffered from being centred at 02 which resulted in the South Pacific being on two separate maps. SOPAC converted the multiple layers for both the 1:1 000 000 and 1:30 000 000 maps to be centred at 1802.

ADC is interested in receiving this conversion and may allow SOPAC to distribute portions of the map, royalty free to member countries along with offshore data from SOPACMAPS, provided ADC are acknowledged.

ADC map be releasing the converted maps as a commercial product later this year.

Joint projects.

FFA and SOPAC will investigate the possibility to freely distribute to all other participating regional organisation their own set of maps in Mapinfo format.

Utilities

McAfee 2.x anti-virus products are the recommended standard. Annual subscriptions should be purchased.

Norton Utilities version 7.x are recommended for disk and file maintenance and repair.

Fastlynx or Laplink are recommended for ad-hoc file transfer across computers.

Copyright Issues

All organisations should ensure that they have legal and registered copies of their software applications. All member countries are requested to do the same.

Support

Suppliers should be asked to include service, backup and installation procedures when quoting for hardware and software.
We should expect the following when seeking quotations:
* 3 Year Warranty
* Operating System (OS) already installed properly and working.

- Application software installed properly and working.

- All documentation and manuals provided.

- Adequate technical service and support.

- Relevant training requirements if necessary.

- Hardware should be supplied with power cables and voltages appropriate to the country in which the equipment is to be installed.

Regional suppliers

Choosing a reliable and responsive supplier of information technology solutions is a difficult task. If assistance in choosing a supplier is sought, the participants listed in Attachment A would be pleased to provide further information.

COMMUNICATIONS

Internet and e-mail

Minimal e-mail access is an essential regional communications asset.

FFA supports the use of the FFAnet MS Mail postoffices for use by cooperating regional organisations.

USP authorities are encouraged to promote Internet connectivity using MS Mail, which has been or will be adopted by most regional organisations for communications amongst themselves and their member countries.

The meeting recognised that information exchange can be achieved most effectively through the use of the Internet, therefore

- All regional organisations and their member countries are advised to adopt a cooperative policy to promote and provide Internet services.

- In, the short term, the majority of member countries will benefit from use of Internet e-mail.

- Hardware and software should be selected so as to be compatible with existing Internet standards. For example mail post office software should be chosen which is compatible with Internet e-mail.

- Full Internet services are expected by member countries now but the necessary infrastructure is not in place. The development of national Internet Service Providers (ISP) are required together with an affordable high speed telecommunications link. This may require government/provider subsidies or introduction of new technologies.

Commercial carriers

The Information Service 1995 Conference, held at Forum Secretariat 22-24 March, provided a forum for telecommunications providers, ministries, and customers to discuss new technologies and service rates. During the conference the commercial carriers within the region, in particular Cable and Wireless Fiji and Kiribati Telecom, recognised the place of PEACESAT in the region for providing public access communications for non-commercial users.

At this meeting, the international carriers Cable and Wireless Fiji and Telecom New Zealand were requested to provide a no-cost or subsidised high-speed dedicated link out of Fiji for use as a full trial of the Internet service.

PEACESAT

During 1994 PEACESAT developed and promoted a site improvement plan to expand and improve existing services through the use of digital circuits. This will provide for a maximum of 8 hub sites throughout the Pacific which will feature high-speed circuits for video and multiple voice/data channels as well as concurrent Internet services.

FFA, in March 1995, applied for a 6 metre PEACESAT hub site to be based in the Solomon Islands.

SOPAC and SPC, in March 1995, applied for a 6 meter PEACESAT hub site to be based in Fiji.

Both applications were successful, and following endorsement at FFC 26, FFA is actively seeking funding for this project.

SOPAC has received funding from the US State Department to provide a PEACESAT 3 meter terminal with digital capability at SOPAC headquarters in Suva. The terminal should be delivered during the 3rd quarter of 1995.

FFA, SOPAC and SPC will keep one-another briefed with respect to developments in funding/acquisition of PEACESAT 6 meter hub sites.

Pactok

The meeting acknowledged the valuable contribution by the Pacific Sustainable Development Network in providing e-mail service in the region.

Pactok is currently being used by many Government Agencies, NG0s and Educational Institutions in the region to access Sustainable Development Information. The following observation was noted:

While Pactok is recognised as the appropriate entry level solution for single users in member countries, sites with networks would be better served to adopt MS Mail, which is a LAN-based electronic mail solution, in conjunction with an MS Mail compatible Internet gateway. A Pactok interface to MS Mail will greatly enhance connectivity.

Regional strategy

The participants agreed that the increasing requirement for Internet services must be addressed as a high priority. The most fundamental of Internet services, e-mail, should made available to the island member countries through appropriate and cost effective means.

The current solutions are PEACESAT and Pactok, which have the potential to serve a wider audience and investigations will be conducted into expanding their services through new and improved technologies.

The governments and carriers must be encouraged to cooperate in providing wider Internet services through subsidised international telecommunications circuits.

Only through a cooperative effort amongst providers, ministries and regional organisations can expanded Internet services be made available to island countries for the benefit of their communities through increased access to global information.

TRAINING

The regional organisations all provide training to their member countries. It is evident that computer training is fundamental to the successful implementation of work programmes.

The integrated tutorials and help functions found in the recommended set of software applications is recognised as a valuable training material.

Concerns were expressed at the lack of relevant computer skills of new graduates as currently required in the region.

USP Authorities are advised that regional organisations have standardised on the MS Office suite, which has been adopted by their relevant member country government departments, and they are urged to take all necessary actions.

FUTURE COOPERATION

The participating organisations discussed co-operation in the following areas.

MapBasic

It was agreed that the sharing of source code of the in-house MapBasic software would be undertaken on a continuing basis.

Training

The regional organisations will keep one another informed regarding developments in training aids and activities, such as videos and Computer Based Training (CBT).

The regional organisations will keep each other briefed on training workshops and investigate areas where training resources may be shared to provide cost savings.

Information exchange

All organisations have agreed to exchange relevant information included in their datasets.
Information relevant to the IT groups of the organisations should be exchanged and shared by the use of a common mailing list which will be accessed via e-mail. SOPAC offered to setup and maintain this service. Other organisations agreed to access and contribute to this service which would include:

• IT developments at headquarters and member countries

• Database catalogue (table of contents)

• Troubleshooting in member countries

• IT staff travel

• E-mail lists

Future meetings

It was agreed that, funding permitting, the Regional Information Technology Strategies Meeting should become a regular annual event.

SUMMARY

This meeting focused on IT standards, information access and Internet services which can be more readily realised through co-operation amongst regional organisations.

The need by island member countries for access to timely and accurate information is an on-going requirement and the investigation and adoption of new communications technologies is one of the solutions.

Information Technology group co-operation is the most effective means of achieving the necessary goals and future exchange of information will provide one of the answers.

ACKNOWLEDGMENT

REGIONAL INFORMATION TECHNOLOGY STRATEGIES

1995 MEETING
SOPAC, Suva, Fiji
5-8 June, 1995

LIST OF PATICIPANTS

Forum Fisheries Agency (FFA)

Samuelu Taufao	Information Technology Manager	samt@ffa.gov.sb
Tim Jones	Senior Projects Analyst	timj@ffa.gov.sb

Forum Secretariat

Peter Metham	Computer Services Consultant	metham @forumsec.ngo.fj

South Pacific Applied Geoscience Commision (SOPAC)

Les Allinson	Computer Systems Manager	les@sopac.orstom.fr
Michel Larue	Mapping Geologist	michel @ sopac.orstom.fr
Franck Martin	Database Development Officer	franck@sopac.orstorn.fr
Fabrice Williot	Computer Geologist	fabrice@sopac.orstom.fr

South Pacific Commission (SPC, Noumea

Russell Price	Computer Systems Supervisor Offshore Fisheries Program	tbap@bix.com

South Pacific Commission (SPC, Suva)

Ken Fakamuria	Pacific Sustainable Development Prog. (PSDP) Training/information Officer	ken @pactok.peg.apc.org

South Pacific Regional Environment Programme (SPREP)

Alex Williams	Computer Information Technology Officer	sprep@pactok.peg.apc.org

University of the South Pacific (USP)

Geoff Cleave	Analyst Programmer	cleave_g@usp.acJj

REGIONAL INFORMATION TECHNOLOGY STRATEGIES

1995 MEETING
SOPAC, Suva, Fiji
5-8 June, 1995

Participating organisation addresses

Forum Fisheries Agency (FFA)
PO Box 629 Honiara
Solomon Islands

   Tel: +677 21124   Fax: +677 23995   e-mail: postmaster@ffa.gov.sb

Forum Secretariat
GPO Box 856
Suva, Fiji

   Tel: +679 312600   Fax: +679 304089   e-mail: postmaster@ forum.ngo.fj

South Pacific Applied Geoscience Commision (SOPAC)
Private Mail Bag
Suva, Fiji

   Tel: +679 381377   Fax: +679 370040   e-mail: postmaster@sopac.orstom.fr

South Pacific Commission (SPC – Noumea)
BP D5 Noumea Cedex
New Caledonia

   Tel: +687 262000   Fax: +687 263818   e-mail: tbap@bix.com

South Pacific Commission (SPC, Suva)
Private Mail Bag
Suva, Fiji

   Tel: +679 370733   Fax: +679 370021   e-mail: spcsuva@pactok.peg.apc.org

South Pacific Regional Environment Programme (SPREP)
PO Box 240
Apia, Western Samoa

   Tel: +685 21929   Fax: +685 20231   e-mail: sprep@pactok.peg.apc.org

University of the South Pacific (USP)
Computing Services
PO Box 1168
Suva, Fiji

   Tel: +679 212081   Fax: +679 304089   e-mail: postmaster@usp.ac.fj

REGIONAL INFORMATION TECHNOLOGY STRATEGIES

1995 MEETING
SOPAC, Suva, Fiji
5-8 June, 1995

Agenda

1. OVERVIEW OF SYSTEMS
   Where we were, where we are and where we are going.
   An overview of each organisations systems, applications and hardware.

2. MAPPING & GIS

   Appropriate solutions for the region Mapinfo and MapBasic

3. COMMUNICATIONS

   We want full Internet now but we may have to settle for less. Pactok and other gateways
   PEACESAT 3 metre sites and hub sites The commercial carriers A regional strategy

4. CORPORATE DATA RESOURCES AND APPLICATIONS

   MS Access and ORACLE systems MS and other office application suites Other Applications

5. OPERATING SYSTEMS

   MS-DOS 6.x Windows 3.11, Windows for Workgroups 3.11, Windows 95 Windows NT 3.5 Server
   and Workstation Netware 3.11 and beyond OS/2, UNIX

6. HARDWARE

   Existing standards Service and support Networks.

8. TRAINING

   Workshops, in-country training and fellowships Has the Windows interface simplified things? Are
   the tutorials of Windows applications useful? Does CBT and videos work?

9. OTHER BUSINESS

REGIONAL INFORMATION TECHNOLOGY STRATEGIES

1995 MEETING
SOPAC, Suva, Fiji
5-8 June, 1995

Island Member Countries

	FS	FFA	SOPAC	SPC	SPREP
American Samoa				X	X
Cook Islands	X	X	X	X	X
FSM	X	X	X	X	X
Fiji	X	X	X	X	X
French Polynesia				X	X
Guam			X	X	
Kiribati	X	X	X	X	X
Marshall Islands	X	X	X	X	X
Nauru	X	X		X	X
New Caledonia			X	X	X
Niue	X	X	X	X	X
Northern Marianas				X	X
Palau		X		X	X
PNG	X	X	X	X	X
Pitcairn Islands				X	X
Solomon Islands	X	X	X	X	X
Tokelau				X	X
Tonga	X	X	X	X	X
Tuvalu	X	X	X	X	X
Vanuatu	X	X	X	X	X
Wallis & Futuna				X	X
Western Samoa	X	X	X	X	X

IT System Inventory Notes

This section mentions some of the salient features of the equipment and systems within FFA, Forum Secretariat, SOPAC, SPC Noumea SPC Suva and SPREP. USP provided some details which have been included. A summary of the inventory is appended to this section.

FFA
Minimum PC configuration: 386/25, evolving towards 486/66
Standard hardware includes Hewlett Packard, Toshiba and Compaq
Standard databases include UNIX-based Oracle, and PC-based Access

Accounting

Currently reviewing a Windows-based accounting package.

Client/Server

Novell and NT running concurrently.
PNG, Vanuatu, Fiji, FSM have Novell server-based networks. An IT supervisor
manages Novell installations in these member countries.
Kiribati, Solomon, Palau have WFW networks.
Kiribati has Windows NT network and will install MS Mail PO.
PNG Surveillance Centre expects to install an WFW network which may be upgraded
to Windows NT.

Database

Oracle 7.x on HP-UX 9.x

- Regional register of fishing vessels database.

- People and organisations database.

• Other corporate databases.

MS Access used for standalone databases as well as client front-end for ORACLE.

Mail and Internet

Operate MS Mail with gateway to SMTP Automatic dial-up using PEACESAT, X25, and Maritime Surveillance Communication Network (MSCN) services.

Work programme includes the provision of e-mail services to member countries.

- Vanuatu has a MS Mail PO on Novell 3.12, and connect to FFA once a day through PEACESAT. They run SMTP gateway access component for MS Mail which routes SMTP mail via FFA to Internet.

- FFA expects to implement similar arrangements as has been done for Vanuatu in all its member countries.

- Presently, all member countries use MS Mail Remote to exchange mail with FFA and the Internet using PEACESAT and MSCN resources.

Successful results from testing Point to Point Protocol (PPP) to Internet through PEACESAT.

Network topology

10Base-T with Hewlett Packard hubs.

Forum Secretariat

Two thirds of PCs are 386SX1 6. It is hoped that these will be replaced by Pentium machines in the near future.

Current laptop machines are Everex and Dell. 2 Compaq LTE Elite machines with docking stations have been ordered.

Accounting
Evaluating new accounting packages to replace current DOS-based package.

Client Server
Planning to add NT server to existing Novel] 3.10 network.

Mail and Internet
E-Mail link to USP via UUPC.
Planning to buy a uucp gateway for cc:Mail as an interim solution.

Network topology

ThinLan backbone with ethernet hubs.

SOPAC
Minimum Configuration: 386SX20, migrating to Pentium 90.
Standard hardware includes Hewlett Packard and Compaq systems.
Also operate SUN IPC Sparc workstation

Client/Server
2 Windows NT servers are used to replicate data between each other.
2 Windows NT workstations are available: one dedicated to remote sensing/GIS
applications, the other to database developments.
9 Gbytes replicated on another 9Gbytes disk are used to store corporate data.
The Sun Sparc workstation converts data from standard Unix media: Exabyte, QIC1 50,
reels.

Datasets

The datasets are either in MS Access or Mapinfo.

• Research cruises in the South Pacific.

• Aerial pictures.

• Spot images available in the South Pacific.

• Bathymetry and coastlines of the South Pacific.

• SOPACMAPS data.

• People and Organisations database.
Old CDS-ISIS datasets are planned to be converted to Mapinfo/Access.

Mail and Internet

Internet e-mail transferred to ORSTOM in Noumea via uucp dial-up. ORSTOM transfers e-mail to France via RIO

A PEACESAT station has been ordered and should be delivered by the 3rd quarter of 1995.

Mapping and GIS

SOPAC has developed an inhouse expertise in high end GIS capabilities (Arc/info, ERDAS NT, AutoCad, A3 colour scanner, AO digitiser, AO colour printer, CD-ROM Writer ...) to provide technology transfers to its member countries via midrange Windows Mapping/GIS applications which include Mapinfo, Surfer and possibly IDRISI.

Network Topology

ThinLan with Hewlett Packard 10Base-T Hubs.

SPC Noumea
Minimum configuration: PS/2 30 with MS-DOS, moving towards moving towards 486DX33 with 8Mb.

Standard hardware includes Gateway, IBM, Dell, Hewlett Packard and Compaq.

Minimum notebook 386SX20 running MS-DOS applications, moving to 486DX33 running Windows applications.

Accounting
Finance run on proprietary IBM system 36, and will move to Novell server based system in the near future.

Database
Oracle version 6.34 under HP-UX 9.01
▪ Main fisheries databases.
Foxpro for Windows 2.6 on Novel] server
▪ Summary version of main fisheries databases used for common queries.

MS Access was tested as a front end to ORACLE (client-server), but not implemented at this time due to cost considerations, and the existence of adequate database query systems developed in house under Foxpro.

Mail and Internet

MS-Mail used on both PC and Mac platforms

Internet e-mail on legacy PC system. Twice a day a technician dials up carrier via X28 line, exchanges messages, and copies inbound messages to the right mailbox in MS Mail. Operating costs moderate at about $5000 / year.

Considering a move to ISDN for Internet connection, but this may be expensive at approx. $1000 /month plus Internet Service Provider fees.

Network topology
Several programmes served by ThinLan backbone with Hewlett Packard 10Base-T hubs.

Moving to full site-wide fiber optic backbone and Hewlett Packard 10Base-T hubs.

Software

Microsoft Office Pro is standard for both PCs and Macs, which facilitates information exchange between platforms

SPC Suva
20 IBM PCs and 10 Macs in use.

Mail and Internet

Will place Pactok on the LAN when set up.

- Pacific Sustainable Development Networking Programme currently has Pactok national networks in Fiji, Vanuatu and Western Samoa. Each national network consists of a Host server (PC) to which local users are connected. Users dial up host to exchange mail.

- Hosts regularly call Australia to transfer messages. Average connection time to Australia is 3-4 minutes for 200KB, using data compression and polling costs are about USD150/month.

PSDNP phase 2 which begins in 1996 will see more Pacific Island Countries get on the Network.

Network

Use Appletalk network for Macs

Lantastic

Plan to introduce an NT server in 1996.

PEACESAT

Use PEACESAT to connect to Internet and use Internet services - E-mail, Gopher and WWW - to retrieve information.

The PEACESAT connection complements services offered via Pactok.

SPREP

Minimum configuration: 386/25 with 4MB

Standard hardware includes DELL and Toshiba.

Client/Server

LANtastic (finance department), will be extended to all the organisation. Will upgrade from V5 to V6.

Plan to move to NT next year

Database
Viridans-based biodiversity standalone database application

Mail and Internet
SPREP houses the local Pactok host node, serving 13 users in Western Samoa. Gambling consortium seeking to establish a facility in Western Samoa. Offered to provide subsidised Internet service, since the gambling offering would be Internet based.
Will move to MS Mail for internal use when fully networked.

Network topology

ThinLan, with new installations going to 1O-BaseT hubs.

Software
SPREP uses many GIS packages including ARC Info, ERDASS, IDRISI

USP

Mail and Internet
Assigned 1 Class B IP address block
Use Dec Pathworks-based system
Not everyone has Internet access. User must apply for it

Current Internet services (due to change)

4800 baud link to Melbourne with Cisco routers at each end, which provide for some compression.
E-mail component well provided for. Speed is adequate for traffic.
Growing body of users using browsers like Mosaic. Access is via a local cache machine, which reduces the traffic on the wire.

Proposed new Internet service: high speed 64KB line

USP will not necessarily be the Internet services provider at the Fiji end, but it seems likely since they already have an upgradable line installed. USP are not allowed to

resell services in any event, due to its agreement with AARNET. Name translation services would be resolved in New Zealand or Australia. Messages then would be switched by router hardware on the Fiji end without having to be directly handled by USP.

Fiji Internet Consortium are looking into a new link to New Zealand via AARNET, but details are not fixed as to providers and services at either end.

AARNET is being purchased by a commercial group, which may make it more expensive.

Ongoing dialup pilot in USP member countries

Based on %UPW software, used to provide e-mail connection. Software runs on a single PC at each site, which users share for access. System is currently available in Tonga, Samoa, Vanuatu Solomon Islands, Cook Islands, Tuvalu, Kiribati, Niue, (others?). USP calls each machine and exchanges mail in the early hours of the morning.

USP extension of dialup services into region

There are no initial plans to extend direct Internet services to USP countries via dedicated lines.

The next step will be to put small LANs into Tonga, Samoa, Vanuatu (LANtastic or WFW 3.11), to extend reach of the current "UUPC" connection.

Network topology

Use thinwire ethernet. Future installations will move to 1O-Base T

3000 or 4000 users currently on the USP network, with about 500 on-campus

Software
Software selection is user-driven, so there is a broad mix of resources
MS DOS and DOS applications
Windows with MS Office applications

	Forum Secretariat	FFA	SOPAC	SPC Suva	SPC Nouméa	SPREP
Number users/IT staff						
Users	66	52	48	30	90	45
Users networked	66	52	48	0	65	6
Users other sites	-	40	30	35 (SDN)	-	-
IT staff	1	5	3	-	3	1
Network OS						
Network peer-to-peer	(note 2)	WfW 3.11	WfW 3.11	LANtastic (note 2)	WfW 3.11	LANtastic
Network server	Netware 3.10. (note 1)	NT server 3.5, Netware 3.11	NT 3.5 server	(note 1)	Netware 3.12	-
Hardware						
Unix server	-	HP8xx	-	-	HP8xx (2)	-
Unix workstation	-	HP (2)	Sun	-	HP, Sun	-
Intel fileserver	1	2	2	-	3	-
Intel desktop	66	35	45	20	60	28
Intel notebook	10	17	9	5	18	25
Mac desktop	-	-	-	10	20	-
Mac notebook	-	-	-	-	2	-
Applications						
Office suite	MS Office	MS Office	MS Office	WordPerfect Lotus123	MS Office	MS Office
Database	MS Access, SuperBase	MS Access, Oracle	MS Access	Paradox	MS Access, FoxPro, Oracle	FoxPro
Mapping/GIS midrange	-	MapInfo	MapInfo, Idrisi for Win	-	MapInfo	IDRISI
Mapping/GIS highend	-	-	Arc/Info, ERDAS NT	-		Arc/Info, ERDAS
Library	-	CDS-ISIS	CDS-ISIS	PROCITE	CDS-ISIS	INMAGIC Plus
Accounting	IDL (note 3)	ACCPAC	ACCPAC	Lotus123	IBM System 36 based	ACCPAC/FoxPro
Communications						
Internet access method	Dial-in USP with UUPC	(note 4)	Dial-in ORSTOM (note 5)	Pactok / PEACESAT	Pactok (note 6)	Pactok
Internet services	e-mail	e-mail / Full via session	e-mail	e-mail / Full via session	e-mail	e-mail
Local mail	ccMail (note 7)	MS Mail	MS Mail	Wantok	MS Mail	MS Mail
Remote mail		MS Remote	MS Remote	Pactok	MS Mail	-
E-mail interface	-	MS Mail	MS Mail	Pactok	MS Mail	Pactok

Note 1　NT Server planned
Note 2　WfW 3.11 planned
Note 3　IDL Cobol system to be replaced. Currently evaluating replacement
Note 4　Connects via UUCP to PEACESAT at University of Hawaii, and then to Internet. Remote sites access MS Mail post office via dial-in over PSTN, X.25, Inmarsat-A and Inmarsat-C
Note 5　Connects via dial-in to ORSTOM, Nouméa, who connects to Internet via X.25
Note 6　Currently using BIX. Possible change to Pactok 3rd quarter 1995
Note 7　MS Mail planned