

Stephen KINGHAM

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Career Summary

During my career I have become an internationally recognised leader with in-depth experience of a broad range of areas within the telecommunication sector. My skills and qualifications range from technical, engineering, design, architecture, project management, research and trainer within the telecommunications field.

I am an expert in Quality of Service (QoS), VoIP, IP telephony, video conferencing, and experience and trained in IP and PABX Networks. I am also an accomplished UNIX system administrator, programmer, and certified Prince2 Practitioner.

I have worked full time in the field of Information Technology and Telecommunications since 1980. A highlight was the development of the business case, engineering designing, and managing the VoIP (started 1998) and VIDEOoIP services (started 2002) for CSIRO and the Australian Higher Education Sector. These initiatives were internationally regarded as leading edge show case VoIP and VIDEOoverIP services.

In 2006 I was one of the senior design engineers for Centrelink's Data Network and completed a significant component of the end to end performance and QoS, requiring exceptional knowledge of Cisco switches and routers hardware and configuration.

I have proven to have exceptional leadership and foresight in technology and personnel. I am respected by CSIRO and University users, management and support staff of data networking, voice networking, and video users. I created the successful VoIP and VIDEOoIP Working Groups in AARNet to enable like minded people within the sector to act as a community. I am also a respected person within the international community, as founding chair of the APAN SIP-H323 Working Group, past Member of the Internet2 Real Time Communications Advisory Group, and several other National and International Working Groups in VoIP and VIDEOoIP.

I also had proven procurement (including Government Tenders) and management experience. I have formal qualifications including technical and trade certifications, in addition to a Masters in Information Technology.

As part of a team, I have a demanding role in Centrelink's initial Managed Voice Service (MVS). His responsibilities and functions included co-authoring the requirements for the tender, evaluation of the tender submissions, and implementation of the successful solution.

I am accomplished trainer and presenter. I regularly developed and led full day tutorials and workshops on the latest innovative technologies within the corporate and government sector. I also undertook these functions within the Higher Education and Research sector, in Australia and Intentionally, which often adopt technology that is more leading edge and have very limited specialists or case studies with which to utilise.

Whilst working at DFAT I applied my communication, documentation, business analysis, and contract management skills together as Service Delivery Manager, I undertook a crucial role overseeing the migration from legacy PABX to IP Telephony. The areas of accountability covered contract management, technical delivery and project management.

Business Specialities

- Project Management
- Instructor and Presenter of VoIP/QoS

- Tenders
- Network Design
- Troubleshooting
- Service Management
- Management of Voice and Data Networks, PABXs, Call Centre Networks

Technology Specialities

Specialist knowledge and experience in:

- SIP
- H.323
- ENUM
- QoS
- Cisco VoIP
- OpenSER
- Cisco Call Manager
- Cisco Unity
- Codian MCU
- Radvision MCU and Gateways

Also experienced in PERL, CGI, UNIX and Video Conferencing.

Educational Qualifications

- 2011 **Prince2 Practitioner**
Number PR2/A072982
- 2009 **TOP SECRET Security Clearance**
Department of Foreign Affairs and Trade, was briefly transferred to Defence
- 2009 **Certificate on cruising onshore skipper**
Yachting Australia
- 1998 **Masters of Information Technology**
University of Canberra
- 1995 **Masters of Computing** (50% completed due to relocation)
University of Western Sydney
- 1992 **ACMA General Premises Cabling License (including Fibre)**
Australian Communications Authority
- 1991 **Bachelor of Science**
Macquarie University, Sydney
- 1982 **Certificate in Electronics and Communications**
North Sydney Technical College

Professional Associations

Member **System Administrators Guild of Australia**

Previous Associations

Secretary **SIP-H323 Working Group, Chair Person, for APAN (Asia Pacific Advanced Network) www.apan.net. Was founding Chair Person. ENUM Trial**

ACMA ENUM Discussion Group

Member International Internet2 SIP.edu Working Group
www.internet2.edu/sip.edu

Founding Member International Internet2 VoIP Working Group

Founding Member / Steering Committee

Video Working Group for The Australian Academic and Research Network (AARNet). <http://www.aarnet.edu.au/engineering/wgs/video/>

Founding Member / Steering Committee

IP Telephone Working Group for The Australian Academic and Research Network (AARNet). <http://www.aarnet.edu.au/engineering/wgs/iptel/>

Employment History

Aug 2010 – Present Telephony and Video Technical Team Lead (EL 2) - DHS

Primary role was the ongoing design for Centrelink's Video Conference Service and successfully implemented four Cisco Tele Presence Units connected to the DoFD Ministerial Communications Network.

Stephen then went on to being the Team Leader for DHS Technical Transition Team to migrate the DHS network of 800 sites with 40,000 IP Telephones, LAN, WAN, 6,000 Contact Centre agents and backend systems to a Managed Service.

Achievements and Duties:

- Project Management for the implementation of very high profile Cisco Telepresence into DHS Portfolio, requiring superior co-ordination and liaison between DoFD, Security, CEOs, Executive Support, and Property.
- Co author of tender documents.
- Evaluation of tender documents.
- Statement of Requirement development, Tender evaluation, and Transition Planning.

Jan 2010 – Aug 2010 Design and implement Secure Video Conference Service – DFAT Project

Primary role was to design and implement an international Secure Video Conference Service at DFAT that also provided service in the Secure Briefing room in the Australian Parliament House.

Achievements and Duties:

Responsible for and has been a significant driver for the successful design and implementation in accordance with ITIL change processes.

- Strict adherence to ITIL change control processes to install integrated services with DFAT systems. Stephen's use of the change control processes was used as a positive example to other projects.
- Detailed design which included every parameter of the SIP Proxy, back-end management and the endpoints.
- Clearance to TOP SECRET with DFAT.

July 2007 – Mar 2009 Service Delivery Manager and Consulting Engineer Integ (a UXC Company) – DFAT Project

Primary role is the Service Delivery Management of the deployment and on going support for an IP Telephony replacement of all of DFAT's PABXs.

Achievements and Duties:

Responsible for and has been a significant driver both within UXC/Integ as well as DFAT to develop processes in accordance with ITIL for the support and deployment of new PABXs.

- Detailed procedures for the on going support based on ITIL between the UXC and DFAT Service Desks.
- Been a significant driver of standardisation and design.
- Analysis and design of ITIL categories and services for DFAT's Marval Service Desk Application.
- ACFE qualified on the Alcatel OmniPCX PABXs.
- Clearance to SECRET with DFAT.

**July 2006 – Jun 2007 Design Engineer
Data Network Replacement Project, Centrelink**

The purpose of the project is to design and implement an extremely high availability data network to support general business applications as well as VoIP and VIDEOoverIP. The network is Australia wide supporting over 400 offices and fully encrypted to allow endorsement as a "Classified" level of security.

Achievements and Duties:

I was a main driver behind the design and testing of network configurations ensuring network efficiency and any issues are identified and resolved before deployment. I also completed the QoS design achieving two main objectives:

- Network shaping to ensure traffic was maintained within the bandwidths contracted from the network carriers; and
- 11 Class QoS design and templates including Classification, Policing, and Scheduling.

Technologies used:

- | | |
|-------------------------------------|-------------------------|
| ▪ Cisco 7609, 3845 and 2821 Routers | ▪ MVPN |
| ▪ Cisco 6500 Switches | ▪ Cisco 3750 and 3750G |
| ▪ IPSEC | ▪ smartbits data tester |
| ▪ OSPF | ▪ iperf traffic tester |
| ▪ GLBP | |

**Jun 2004 – Jun 2006 Consulting Engineer and Manager
Australian Academic Research Network (AARNet)**

Achievements and Duties:

- Responsible for the AARNet VoIP and VIDEO Service;
- Started a project in AARNet to integrate SIP based technologies into the existing PSTN, PABX, VoIP, IP Telephone and Video conferencing Services;
- The founding chair of the SIP Working Group in APAN;
- Wrote and presented full day workshops in Australia, Asia and Europe on SIP and the impact of this technology;
- Led several responses to government papers on telecommunications relating to VoIP; and
- Founding member of the Australian Government's ENUM discussion group and gave many of the original briefings on ENUM before the group started.

Technologies used:

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|---|---|
| ▪ SIP to a very high level of understanding | ▪ SIP IP Telephones from Cisco, Polycom, and Zultly |
| ▪ ENUM | ▪ Sipura 3000 ATA and Analogue Gateway |
| ▪ OpenSER (Open source SIP Proxy) | |

- Presence technologies. SIP/SIMPLE Protocol and familiarity with XMPP
- Video Hardware based SIP implementations from Codian, Radvision, and Aethra
- SIP Software from Xlite (eyeBeam), Polycom, MS Windows Messenger
- Familiarity with Asterisk

**Jun 1998 – Jun 2004 Project Manager and Consulting Engineer
Commonwealth Scientific and Industrial Research Organisation
(CSIRO)**

Achievements and Duties:

- Project Manger and Consulting Engineer for a toll bypass Voice over IP network to carry business telephony traffic for all the Universities of Australian and CSIRO;
- Design engineer behind making VoIP work as a PSTN bypass on a very large scale to the same quality as PSTN without QoS functioning across the network. This involved nearly 12 months of development work with Cisco and many Beta programs;
- The Business Analyst that created the billing Model and Business Case to deploy technology across CSIRO and the Universities in 1999. The Service is still in use and connects on average 10,000 telephone calls per day without the users being aware they are using VoIP;
- Manager and Consulting Engineer for the continued operation of the VoIP Service for CSIRO and the AARNet VoIP Service for all Australian Universities. This included the budget as well as operation;
- Wrote and presented full day workshops on how to deploy VoIP to Australian Universities;
- Published detailed templates on how to configure various PABXs, VoIP Gateways and Cisco Call Manager to peer using H.323 VoIP;
- Invented and wrote a QoS Monitoring application that feeds the network status to the H.323 VoIP Gatekeeper which uses this information to make Telephone routing decisions. This application was a Client Server model and was/is still in use today called [VoIPMonitor](#). It was this invention that enables the VoIP Service to run reliably with very little support staff;
- Provided engineering and consulting to Australian Universities to design, implement and fault find VoIP Implementations;
- Designed the CSIRO IP Telephone architecture and started the deployment of it based on Cisco Call Manager and Cisco Unity Voice Mail;
- Piloted the VIDEOoverIP project within CSIRO and wrote a Business Case for CSIRO and AARNet to interconnect all the Australian Universities;
- Developed the Video Service deployed (and later expanded) by CSIRO and the core Universities in Australia and then linked them internationally via the GDS;
- Manager and Consulting Engineer responsible for the budget and operation of the Video Service;
- Wrote and presented full day workshops around Australia and several conferences on Video over IP conferencing;
- One of the founders and management team for the International Root Gatekeepers, as well as running one of the three in the world (some acronyms include GDS and NASM) that provide a way to peer the worlds Gatekeepers and is very popular within the Academic Community; and
- The GDS and the resulting peering of thousands of Video Terminals and MCUs around the world gave birth to the MegaConference, which I was a very active member. This conference is still run annually and exists only as a huge videoconference.

Technologies used:

- Voice over Internet Protocol (VoIP)
- H.323 Gateways/Gatekeepers/Proxies/Terminal
- Cisco IOS Based VoIP Gateways
- VIDEOoverIP
- MCUs from Codian
- Radvision (Cisco3540)
- Polycom (old Accord) and Tandburg

- Cisco Call Manager and Unity networks
- TCP/IP, ATM, Quality of Service (QoS)
- ISDN, Q.Sig PABX Signaling
- Ericsson and NEC PABX Programming, fault finding with GPT/Plessey, Nortel and Avaya PABXs
- CISCO
- UNIX
- Tool Command Language (TCL programming)
- CGI with Javascript
- Access Grids
- SNMP
- Hard Video Terminals from Polycom, Tandberg, and Aethra
- Software based H.323 Video Terminals from Polycom and VCON
- Etiquette and Human communication behaviors with conferencing
- PERL programming with SQL
- T.120, H.239 and VNC based application and presentation sharing within multi party meetings
- Presentation Skills, Project Management, and Business Management

**Nov 1996 – Oct 1999 Consulting Engineer
Interactive Voice Response application for Customer Payments
Centrelink**

Achievements and Duties:

- Developed business requirements, evaluated and developed tender for 23 fully networked Call Centres. In total 3,500 Agents and 1,000 IVR ports, plus 30,000 general telephony phones;
- Designed and implemented procedures for the project that encompassed the implementation of 30,000 general telephone ends in 300+ sites nationally; and
- Contract Management and Compliance of the project, worth \$40 Million dollars per annum.

Technologies used:

- World Wide Web
- CGI Forms
- HTML
- EMAIL
- DNS
- Simple Firewall, UNIX (LINUX)

**Apr 1996 – Present Enthusiast, Unix Administrator
Datsun Sports Owners Association**

Achievements and Duties:

Development of a Home Page for the Datsun Sports Owners Association from inception to completion, including

- The registration of the domain name;
- Web design;
- Development of standards;
- The development of the search engine; and
- Ongoing maintenance of Unix System.

Technologies used:

- Linux Red Hat Fedora Core
- Apache
- Postfix
- Bind
- Cisco Router

**Nov 95 – Nov 96 Communications Consultant / Manager
Australian Quarantine and Inspection Service (AQIS)**

Achievements and Duties:

- Replacement of existing Wellfleet IP network and MegaPAC X.25 network with a multi-protocol Cisco network including a secure TCP/IP network using encryption;
- Two-month rollout involving a backbone of seven, ISDN connected, CISCO routers, plus another seven routers overlaid on top of the backbone using X.25 RANDATA encryption;
- HP Openview on a SUN Sparc 20 with CISCO Works for the Routers and UB Netdirector for the HUBs;
- Security authentication and authorisation for the routers using TACACS+;
- GWTRAFFIC to gather and report on link utilization;
- Organised a channel of communications between AQIS and Telstra to implement cost savings plans for the existing data services;
- Supported and upgraded the X.400 MTA and EDI software by ISOCOR used to process huge quantities of messages to and from the Australian Customs Service; and
- Disaster recovery planning.

Technologies used:

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|-----------------------|----------------------|
| ▪ X.400 and X.435 EDI | ▪ TCP/IP |
| ▪ ISOCOR Products | ▪ X.25 |
| ▪ RETIX Gateway | ▪ EIGRP Routing |
| ▪ CISCO Routers | ▪ RANDATA Encryption |

**Mar 1995 – May 1996 Communications Support Consulting Engineer
Australian Department of Foreign Affairs and Trade (DFAT)**

Achievements and Duties:

- Worked on a number of separate projects at DFAT, After completing the contract Stephen returned on a needs basis for maintenance and general assistance on their network and Timeplex equipment;
- Completed the system integration and implementation phases of a packet switching billing system spread over two operating systems, including INFORMIX SQLs, SunOS and HP-UX UNIX scripts, TCP/IP communications and an Ingress database using Vision forms;
- Provision of Operating Systems Support for several Sun Microsystems computers running dedicated Network Management Applications for an International Packet Switching Network.
- System support for several HP 9000 Servers used in application testing over the network, and responsible for solving complex network faults; and
- Evaluation of various networking technologies to ensure the department stay abreast of current advancement, including Jtec ISDN Terminal Adaptors, Frame Relay and SCITEC Fastlane.

Technologies used:

- | | |
|---------------------------------|-----------------------|
| ▪ INFORMIX | ▪ SNA |
| ▪ SQL | ▪ X.25 |
| ▪ HP-UX | ▪ X.400 and X.435 EDI |
| ▪ TCP/IP | ▪ ISOCOR Products |
| ▪ SunOS | ▪ RETIX Gateway |
| ▪ SNMP | ▪ CISCO Routers |
| ▪ Frame Relay | ▪ EIGRP Routing |
| ▪ SCITEC FASTLANE | ▪ RANDATA Encryption |
| ▪ TIMEFLEX Routers and Switches | |

May 1989 – Mar 1995 Senior Data and Voice Network Support

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Stephens's primary role, in essence, was chief architect and project manager of the technologies implemented in CSIRO's Data and Voice network, on local, regional and national scales. In addition to this role, Stephen held the position of Voice Network Manager for some months, whilst the incumbent was on maternity leave.

Achievements and Duties:

- As the regional support of NSW, and a major member of the voice and data network decision-making team, Stephen assisted in the strategic planning of the most cost effective and efficient technologies on the market. In addition to the planning, he implemented the agreed technologies throughout the network;
- Introduction of other communications methods within the same cost structure as part of a revision and more efficient use of existing equipment. Due to his experience with both voice and data, Stephen was key in identifying new technologies and documenting their implementation and maintenance;
- Management, analysis, business case development, testing and implementation of CSIRO's metropolitan voice/data network. This included microwave links and some innovative use of communications facilities. Equipment included ERICSSON and NEC PABXs and CISCO routers;
- Responsible for the efficient running of TIMS, CSIRO's Telephone Information System;
- Preparation and evaluation of CSIRO's \$3M PABX replacement program tender, including evaluation, site inspections, vendor interviews and final recommendations;
- Involved in the evolution of AARNet and the implementation of a TCP/IP network in CSIRO. With engineering design skills Stephen was able to assist CSIRO to move from a DDN 9600bps X.25 network to a 64kbps ISDN network;
- Key member of the team that implemented CSIRO's own national data network, replacing a vendor provided implementation. The network comprised of SNA and X.25 protocols and involved over fifty X.25 nodes (J.N.Almgren MegaPACs), with over 250 connections. The entire national network was installed within a year;
- Backup support for administrators in NSW as well as the senior Network Administrator for the CSIRO North Ryde Site. Responsibility for services in the region included Domain Name Service and Address Resolution, TCP/IP, DECNET, Appletalk and IPX Routing, World Wide Web, NEWS Server, SMTP, Sendmail and POP mail.
- Directly responsible for the system administration of a UNIX SunOS Server that serviced 50 users, some of which were some of the most senior in CSIRO. This includes all the standard LAN and WAN services including printer, electronic mail (SMTP IDA sendmail and CC:mail) and Internet Address resolution (Domain Name Server).

Technologies used:

- Cisco Routers
- ISDN
- DPNSS/BTNR188 protocols
- X.25
- Voice and Data Integration
- TCP/IP
- AppleTalk
- DEC Net
- SNA and X.25
- DOS, Apple MAC System 7
- SUN UNIX
- DECs VMS and X11
- SNA using QLLC over the JNA MegaPAC X.25 Network
- Engineering SL/IP connections over the X.25 Network
- Interfacing VAX PSI into the X.25 Network
- Connected SUN SPARC Stations, NGENs and PCs to the X.25 Network
- PC-Anywhere and the X.25 Network provided access to various CD-ROM based databases that were not able to be networked

Apr 1987 – May 1989

**Senior Technical Officer, Data Services Section
Overseas Telecommunications Commission (OTC)**

The Data Services Section was responsible for Australia's International Packet Switching service (X.25 and X.75). Stephen was part of a team responsible for the entire Packet Switching Service, new customers; billing; enhancements and CCITT recommendations.

Achievements and Duties:

- Liaison with customers who wanted to directly connect to OTC's Packet Switching Network (i.e. direct competition to Austpac). The section determined all of the necessary parameters for new connections and instructed the shift staff accordingly;
- Responsibility for major fault analysis that was beyond the extent of the shift staff;
- Maintenance of the billing system. This required constant liaison with the FUJITSU System Programmers, and the ability to write JCL Programs and FOCUS (4th generation reporting language) programs;
- Administration of OTC's Data Access Network User Identifiers (passwords), requiring a very professional approach and understanding of data network security;
- Investigate customer complaints and tracing "hackers"; and
- Filling the Principle Technical Officer Position.

**Jan 1986 – Apr 1987 Technician Officer Grade 1
Overseas Telecommunications Commission (OTC)**

I was promoted to Technician Officer Grade 1 within the International Switching and Telegraph Centre of OTC.

Achievements and Duties:

- Maintenance of data switching exchanges, This facility was one of the two places that all of Australia's International Leased Data, Leased Voice, and Leased Telex services went through. It was also where one of only two International Telex Exchanges; and, at that time, Australia's only International Packet Switching Nodes (a TYMNET Engine) was maintained.
- This facility dealt directly with both customers and overseas carriers including AUSSAT & Telecom and national network of other countries (North America in particular).
- Maintained two Stored Program Controlled Exchanges, a HASLER T202 Telex Exchange, and an ERICSSON AXB-20 Telex Exchange.

**Feb 1980 – Dec 1985 Technician
Overseas Telecommunications Commission (OTC)**

Starting as a trainee technician within OTC's International Data Test Centre and the International Switching and Telegraph Centre, Stephen completed the Electronics and Communications Certificate at North Sydney Technical College, achieving a Credit Pass.

As part of his initial training Stephen spent set periods in many sections of OTC, gaining a broad understanding of all aspects of an international telecommunications carrier including data communications, voice switching, training and network management.

**Oct 1980 – Mar 1986 Communications / Bombardier
Australian Army Reserve 7th Artillery Field Regiment**

During my career with the Australian Army Reserve, I obtained the rank of Bombardier (Corporal) in an Artillery Regiment.

Achievements and Duties:

- I filled the position of Regimental Signals Supervisor, even though this position is the rank of Sergeant or higher, my lower rank was accepted due to my ability;
- Responsible for managing the communications for the Regiment and two Artillery Batteries;
and
- With the high regard gained from fellow ranks, I was elected to be the President of the "Gunners Mess". I carried out this role for several years before resigning in 1986.