

# Phil McKerracher

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## KEY SKILLS

Technical management, embedded real-time software development, C++, C, Symbian OS, mobile phones, binary compatibility, specifications, standards, communications protocols, ISDN, VoIP, analogue and digital circuit design, conformance testing, assembler, IADs, PBXs, ASN.1, TTCN, CSTA, SIP, ATM, ATMOS, V5, NMDS, Q.931, Q.921, DASS2, POTS, modems.



## CAREER SUMMARY

Extensive experience of real-time embedded software development and of telecommunications protocols. Currently the person in Symbian with overall responsibility for interface management and maintaining compatibility of all published interfaces. Expert in ISDN, after heavy involvement in European ISDN specification and standardisation and having developed protocol stacks used throughout Europe, North America and Australia, including the software in the BT Highway network termination unit. Also experienced in voice over IP, PBX protocols, hardware design, analogue modem design, specification and standard writing, approval testing, project management and designing for consumer, industrial, mobile and radio environments.

## EMPLOYMENT HISTORY

**Symbian Ltd** ([www.symbian.com](http://www.symbian.com)) April 2004 – present

Currently a Systems Engineer in the System Management Group, with overall responsibility for interface management and for maintaining binary and source compatibility of all published Symbian interfaces, and for liaising with licensees and partners on interface management issues. Previously a software developer and defect co-ordinator in the Security team (Crypto Services) and a line manager in the Multi-Technology Development team.

**Consulting contract** June 2003 – April 2004

A consultant employed through MiniMax marketing ([www.mmm-minimax.com](http://www.mmm-minimax.com)) to advise a German company on introducing three telecommunications products to the UK market. This involved clarifying requirements, writing specifications, extensive on-site testing, and diagnosing and resolving acceptance problems. Other consulting activities included circuit design and tendering for development and supply of telecommunications devices for the BT access network.

**TISL** ([www.tisl.com](http://www.tisl.com)) 2002 – 2003

Developed real-time voice monitoring applications for a variety of PBXs using Microsoft Visual C++, requiring a thorough understanding of CSTA, ROSE and ASN.1 protocols. Completed and tested interfaces for Siemens Realitis DX and HiPath PBXs.

**Dataflex Design Communications Limited** 1999 – 2002

Developed voice over IP integrated access devices, combining protocol stacks from RADvision (SIP Express), GlobespanVirata (ISOS, MGCP) and Netbricks on ATMOS and Nucleus operating systems, running on ARM processor cores. Specified and managed ISDN least-cost call router development projects (basic rate and primary rate) and wrote DASS2, V.120 and DTMF call routing firmware for them. Completed a feasibility study for a SIM Application Toolkit project.

**Telspec Europe Limited** ([www.telspec.co.uk](http://www.telspec.co.uk)) 1996 – 1999

Wrote the firmware for the network termination unit (NTE9) for the BT Highway service, tightly optimised for cost and power consumption. Developed an international version that could autosense Q.931 or NMDS (V5.1) signalling and support supplementary services, including caller display.

**Racal-Datacom Limited** 1988 – 1996

Worked as a hardware and software designer in the Access Products Group, initially as a modem expert and eventually as an Assistant Chief Engineer and the "ISDN Guru" responsible for ISDN

firmware in all the company's basic rate and primary rate products worldwide. This involved extended visits to the countries concerned and working from specifications in the original French and German. The ISDN firmware was successfully ported to 8051, 80386, 68000, ARM, pSOS and Windows NT environments. Gained a good understanding of international type approval and standardization issues through heavy involvement in the development of European ISDN standards on ETSI project teams. An active member of the European ISDN Type Approval Advisory Board, representing manufacturers.

#### **Dataphone Limited 1987 – 1988**

Chief Engineer of a new company, established by one of the directors of Walkbury Consultants to develop a range of modems. Responsible for all technical aspects of the company's products, including hardware and software design, BABT approval, external manufacturing, quality control, user documentation, packaging, customer support, staff training and promotion at trade shows.

#### **Walkbury Consultants 1985 – 1987**

A consultant engineer to clients such as BT and Pitney Bowes, developing hardware and software for a telephone answering device, a franking machine, a serial communications interface, a computer keyboard interface and an industrial spectrometer.

#### **Department of Aviation (Australia) 1979 – 1984**

Developed software in assembler and BASIC for a microprocessor-controlled communications card, advanced radio distance-measuring equipment and automated calibration apparatus for firefighting foam. Redesigned an analogue HF radio demodulator, greatly improving reliability. Predicted and measured propagation of NDB, DME, VOR, radar and Omega radio beacons.

#### **Telecom Australia (now Telstra) 1976 and 1977 university vacations**

Designed and constructed a light probe for blind switchboard operators and an amplified telephone for users with impaired hearing.

### **QUALIFICATIONS AND TRAINING**

2005	Symbian Ltd	Patents and IP, Performance Appraisal for Managers
2004	Symbian Ltd	Symbian OS Essentials, Application Engine Development
2001	The Phillips Group	ATM Explained
2001	Virata Limited	ATMOS Programming
1998	ARTiSAN Software Tools Ltd	Developing Real-time Systems Using Object Technology
1992	The Institute of Linguists	Intermediate Diploma in German
1989	The Microcomputer Unit Ltd	Software Engineering and Structured Design
1974–78	Monash University, Melbourne	Bachelor of Engineering (Electrical)
1969–73	Melbourne Grammar School	Higher School Certificate

### **PROFESSIONAL MEMBERSHIPS**

A member of the Institute of Electrical and Electronic Engineers and former member of the Institution of Engineers, Australia.

### **LANGUAGES**

An Intermediate Diploma in German and a working knowledge of French.

### **OTHER INTERESTS**

Many years of amateur violin playing, theatre lighting and travel. See [www.mckerracher.net](http://www.mckerracher.net) for details, also for my ISDN tutorial and Home Highway tutorial.