# **Personal Profile/Career Objectives**

Currently looking for a new position in a team where my efforts can go towards achieving organisational goals. In my previous roles I worked with C/C++ on 2-way radio, trunked radio networks and cellular mobile test systems.

My time at Qualcomm saw me progress from pure engineering through team leadership and final hands-on management position. My last technical projects (2015/6) included implementation of fuzz test system (C++) and setting up an over the air test system (Perl) consisting of a bank of PC’s(Windows). As a Manager I gave a course on C++ (2015) focusing upon its object oriented side (linked with test systems).

Recently I have been studying C++11 (threading, memory management and templates), C# (ASP.NET) and Web technologies (HTML, CSS and Javascript).

# **Academic Qualifications**

2017 MTA Certification Software Development Fundamentals, C# (Microsoft)

2009 Degree Foundation Using Mathematics (Open University, 85%).

1987 BSc (2.2 Hons) Computer and Communication Systems (Greenwich University).

# **Career Summary**

2002- 2016 Qualcomm Senior Staff Manager

1999 - 2002 Anite Telecoms Senior Engineer

1991 - 1996 Motorola PLC Engineer / Senior Engineer

1989 - 1991 BNR (Standard Telephone & Cable) PLC Senior Engineer

1987 - 1989 Redifon (Rediffusion Radio Systems) Ltd Engineer

**Technical/Computing Skills**

• GSM Air Interface (15+ years) • W-CDMA /LTE Air Interface (3 years) • TTCN 2/3 (5 years)

• Anite Platforms (15+ years) • C/C++ (10+ years) • C# (1 year)

• Visual Studio (8+ years) • HTML, CSS, JavaScript, ASP.NET, PHP

# **Achievements**

* Led team developing first industry wide GSM packet data (GPRS) industry tests.
* Established an integration wireless modem test team across multiple international sites.
* Wrote and implemented test plans for series of modems for System on a Chip (SoC).
* Encouraged GSM team members to develop LTE (4G) training program.
* Led quality improvement program for GSM modem development team.
* Developed and integrated test cases for wireless devices in C, C++ and TTCN.
* Led and implemented GSM protocol security generation-based fuzz testing program.
* Gained a better understanding of C++11(Lambda, Threading, and Smart Ptr).
* Gained Microsoft MTA certification (98-361 Software Development Fundamentals, C#).

# **Work Experience**

**2002 - 2016 Qualcomm (UK) Ltd Senior Staff Manager, Staff Manager**

**(https://www.qualcomm.com/) Staff Engineer, Senior Engineer**

Established an integration wireless modem test team across multiple international sites.

* This allowed for an increase in test capacity and test coverage.
* Increase in testers (5 to 14) and time field testing across London, Rome and Hyderabad.

Gained experience in motivating various individuals through difficult periods.

* Introduced team rotation and personal development programmes.
* Promoted test automation to free engineers from simple test execution roles.
* Reduced staff turnover (40% to 10% per year).

Managed Site £2 million annual test equipment expenditure and maintenance budget.

* Ensured that local teams were able to meet testing requirements in a low cost manner.
* Increased maximum number of chip sets tested in parallel from 1 to 4.
* Held joint development of new features with test equipment suppliers.

Carried out in depth test systems evaluation.

* In depth analysis of architecture, pricing structures and expansion possibilities.
* Allowed for the long term determination of cost (including running cost) between systems.

Interfaced with demanding smartphone customers.

* Allowed customers to meet early product release timescales (e.g. Samsung and HTC).
* This included joint operations in customer labs and on drive routes.
* Allowed modem to meet cellular operators (e.g. Vodafone) performance targets.

Organised the introduction of 15 in-house development training programmes.

* Individuals became multi skill between all of the test roles.
* This reduced the need for external courses while improving the skills of the team.
* Also covered basics and advanced areas of LTE wireless technologies.
* Led to team covering LTE interoperability test programs for other parts of company.

Wrote and implemented test plans for a series of GSM modems within System on a chip (SoC).

* Led the testing GSM modems for Snapdragon SoC (From S1 to 810 series).
* GSM modem helped Qualcomm SoC reach No.1 position in the smartphone market.

Introduced formal practices for integration and system testing of the modem stack.

* Developed spreadsheet templates for sanity and regression testing.
* Improved the quality of the team's deliverables.

Introduced online working areas for the GSM modem test team.

* Made extensive use of SharePoint to store, distribute material covering testing devices.
* This helped the test team gain a structured archive (now accessed by other teams).
* Developed a "thin management" process for GSM modem test team.
* Released significant time (3 hours to 30 mins.) for individuals to focus upon main tasks.

Opened the GSM modem test team to new development processes.

* Introduced Agile to the test team.
* Giving training and workshops that included User Stories (Jeff Patton), Kanban and Scrum.

Led quality improvement program for GSM modem development team.

* Covered of static, dynamic checks and testing.
* Included Layer 1 host, over the air testing (network) and continuous integration (CI) testing.
* Initiated a local program of sanity test automation on an over-the-air system.
* Measured reduction non operation software builds arriving at the test team (5 per week to 0).

Introduced new GSM modem performance testing techniques.

* Completed a mathematics course to gain an accurate picture of the mobile limitations.
* Resulted in better measurements through the use of larger sampling size.

Through self-study gained a better understanding of C++

* Gave test team 3 day training course to refresh programing skills.
* Increased number of engineers (2 to 6) developing scripts on C/C++ based test platforms.

Developed and integrated test cases in C, C++ and TTCN.

* Supported developers in replicating field scenarios and new feature support.
* Includes fuzzing security checks, field call drops and throughput problems.

Led GSM modem protocol security generation-based C++ fuzz testing program.

* Developed new test architecture (Anite developer's toolset) working under automation.
* Able to prove resistance of GSM protocol from over the air hacking attacks.

Learnt the basics of TCP/IP and Wireshark to analysis test systems (IP based) and record log traces

* Implement and verification of test scenarios that help with validation of modem devices
* Expand scope of testing and reduced time wasted proving such new systems.

**1996 - 2002 Anite (Cray) Telecoms Ltd Senior Engineer**

**http://www.anite.com**

Provided GSM industry standards support to network simulation (SAS) development team

* Used standards experience to guide requirements definition for Anite SAS.
* Helped Anite SAS become industry first independent Interoperability Testing tool.

Led team developing first industry wide GSM packet data (GPRS) MS industry standard test cases.

* Allowed phone manufacturers to test 2G data on mobile devices.
* Used by customers such as Nokia, Ericsson, Motorola and Panasonic.

Joined mobile test equipment development team.

* Initially focused upon writing industry standard TTCN-2 test cases.
* Broke mobile testing monopoly previously held by Rohde & Schwarz.

**1991 - 1996 Motorola (Strono Radio Telephones) PLC Senior Engineer**

* Developed C software for 2-way radio and MPT1327 trunked systems.
* As configuration manager created SCMP based upon IEEE standards, S/W build environments with UNIX and SCCS version control.
* Helped local site meet company’s goal of Level 3 Software Engineering Institute(SEI) Capability Maturity Model Integration (CMM) and Six Sigma.
* Customer support for configurable radio systems.

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# **Industry Standards Representation**

Gained an understanding of GSM EDGE Radio Access Network (GERAN) 2G mobile technology specifications to a level needed to attend and contribute at mobile phone international standards body (ETSI and 3GPP) meetings. Contribution to following industry wide standards:

* 3GPP 51.010-1 MS conformance specification; Part 1: Conformance specification.
* 3GPP 51.010-3 MS conformance specification; Part 3: Layer 3 Abstract Test Suite.

# **Professional Memberships**

* Member of the British Computer Society (MBCS), Chartered Engineer (CEng), Chartered IT Professional (CITP).

# **References**

References are available upon request