CURRICULUM VITAE

J A I CRAIGIE

James Arthur Irvine Craigie

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Summary

I have been responsible for defining and developing electronic mail services and products since 1982. From 1982 until 1994 I worked for the UK Universities and Research Councils' Joint Network Team where I had responsibility for electronic mail and directory products and services. I have been involved with X.400 standardisation since 1985, and have been editor for four of the X.400 Recommendations since 1988, and co-chair of the X.400 standards group since 1992. My experience comes from representing the requirements of a large user community, and from co-ordinating developments of messaging and directory products. I am currently the System Design Consultant for NET-TEL Computer Systems Ltd, a software house exclusively devoted to Messaging and Directory products.

While at the JNT I was responsible for the technical specification and management of development contracts for messaging and directory software development, supervising an annual budget in excess of £1M. At NET-TEL, in addition to my continuing role in international messaging standardisation, I have been project manager for the deployment of NET-TEL products in a large and demanding user community (the Commission of the European Community), and manager responsible for the co-ordination of User Agent development. I have developed NET-TEL's implementation plan for adding cryptographic security functions to the product suite. Most recently, I designed the architecture of virus scanning gateways for secure messaging for e-Defence Australia, and I am currently Technical Design Authority and Project Manager for the implementation of these.

Education

1957-1963:	Roke County Primary School, Purley, Surrey
1963-1970:	Wallington Independent Grammar School, Wallington, Surrey
O-levels:	Mathematics (A), Additional Mathematics (A), Physics (A), English (C), Chemistry (C), British Constitution (C), Economics (C)
A-levels:	Pure Mathematics (A), Applied Mathematics (A), Physics (A)
Special paper:	Pure Mathematics (Distinction)
1970-1973:	University of Manchester, B.Sc. (Hons) in Mathematics (II(1))
1973-1974:	University of Manchester, M.Sc. in Numerical Analysis and Computing
1975-1976:	University of Manchester, research on Numerical Methods for Ordinary Differential Equations

Employment

1976: University of Manchester, Department of Mathematics, Computing Assistant

1977 – 1982: University of Reading, Department of Computer Science, Research Assistant

Various hybrid Particle-Particle/Particle-Mesh algorithms were being developed at the Department of Computer Science, University of Reading for the computational modelling of physical phenomena, especially semi-conductor devices and galactic evolution. I worked on adapting these algorithms to operate efficiently on various parallel architecture computers, and hence on the evaluation of the suitability of these various computers for such tasks. Amongst the computers I worked on were the Illiac IV at NASA/Ames, the prototype ICL Distributed Array Processor, the Cray 1 (serial 1), and the Floating Point Systems' APS. I was one of three external advisors to ICL on the design of their DAP Fortran language. I also evaluated the performance gains obtainable between my hand-crafted assembler and the vectorisation obtained from the compilers for the high-level language (Fortran) on the Cray, and similarly between assembler and use of library functions on the APS.

Accessing these novel parallel architecture computers frequently required complex ad hoc networking arrangements to be established. This aspect became more interesting and challenging than the parallel architectures themselves.

1982 – 1994: In 1982 I joined the Joint Network Team, a small unit centrally funded by the Department of Education's Computer Board to develop and implement an Open Systems Network Strategy for the UK Academic Community. In 1986 I became a senior member of the JNT, one of the three section heads reporting directly to the Director of Networking (for the UK Academic Community), managing a group of four staff. My work involves standards development,

product development management, and liaison with senior and technical management in both Universities and the Computer Industry.

My job for these twelve years gave me considerable experience in consulting widely with the user community to evaluate requirements, in evolving the user requirements into technical specifications, in writing papers for high-level committees to obtain funding to meet the requirements, in producing invitations to tender to meet the requirements, and in providing overall project management of the resultant development or purchase.

Another major component of this job was consensus-building, both within the UK Academic Community and within the international computer industry. I have been particularly involved in electronic mail standardisation, starting by leading the UK Academic Community Mail Group. In 1985 I became involved in International Standardisation, eventually becoming editor for six parts of ISO 10021 and the corresponding CCITT X.400 series Recommendations, then chairman of the BSI panel monitoring ISO Messaging standardisation, and in 1989 I became chairman of the ISO Special Working Group on Messaging. In 1992 I became a co-convenor of the CCITT/ISO Collaborative Team on messaging standardisation, and in April 1994 I was appointed Convenor of ISO/IEC JTC1/SC18/WG4.

My work in pioneering the deployment of electronic mail in the UK Academic Community in the early eighties has lead to a distributed electronic mail network serving the whole community, covering several thousand multi-user systems and perhaps some hundred thousand individual users. I was the principal architect who planned the interworking between the community's RFC 822 mail protocol and internationally standardised protocols. I have established connectivity for the community to external X.400 service providers negotiating commercial interconnection agreements with three UK ADMDs and many PRMDs, and resolving technical difficulties where they arise.

I gained considerable project management experience, with a demonstrable ability to drive projects from the initial germination of an idea through to high quality products deployed in widespread use. Amongst many others, I commissioned and managed developments for ISO 10021 products which provide highly sophisticated functionality well ahead of the market, including three high functionality User Agents and a Message Store. I was responsible within the JNT for the PP Mail system since its inception until 1994, where it was increasingly the message switch of choice in Academic Institutions world-wide.

In addition to electronic mail, my other principal interest was Directory Services. I was responsible for the UK Academic Community Name Registration Scheme from specification phase, through design, implementation and its enhancement to support the address manipulation necessary for the UK Academic Community's planned transition from Coloured Book protocols to OSI. Like the PP MTA, I held JNT responsibility since inception for the

X.500/ISO 9594 QUIPU Directory Server, which in 1994 still retained the distinction of being the only widely deployed DSA implementation. I commissioned the development of a family of user-oriented Directory User Agents. I also initiated and managed the UK Academic Community's Directory Service deployment project using the QUIPU Directory implementation.

I was the UK Academic Community 's representative on both technical and operational groups providing European co-ordination for both Messaging and Directory Services.

Besides my specialities, I gained a thorough knowledge of computer networking, both through my participation in co-ordinating and planning the UK Academic Community's networking infrastructure and from my standards work, and from my work providing general consultancy and procurement advice to Universities.

1994 – present: I am currently the System Design Consultant for NET-TEL Computer Systems Ltd, a software house exclusively devoted to Messaging and Directory products. In addition to my continuing role in international messaging standardisation, I have participated in the Internet Engineering Task Force, particularly in the S/MIME and PKIX working groups. I have been project manager for the deployment of NET-TEL products in a large and demanding user community (the Commission of the European Community) using in excess of 30,000 clients across 50 servers, and manager responsible for the co-ordination of User Agent development responsible for producing the design for NET-TEL's new generation messaging clients. I developed the company's implementation plan for adding cryptographic security functions to its product suite. I produced the implementation plan for adding support for Military Messaging protocols, and for support of multi-byte character sets as well as product localisation for the Chinese market.

More recently, I have managed the developments required by NCC to provide the Test Partner System for the NATO MMHS Security Demonstrator Programme (MSDP). I have undertaken consultancy for NATO Consultation, Command and Control Agency to set up a demonstration of their new PCT digital signature specification at JWID 2001, and to analyse interworking problems with the initial implementations from other vendors. I have advised the Foreign and Commonwealth Office on establishing secure messaging gateways.

I produced the winning design for secure messaging gateways to handle virus scanning and content filtering of encrypted messages for the large Australian Defence Messaging and Directory Environment (DMDE) open procurement, now named e-Defence. I am currently the Technical Design Authority and Project Manager supervising the implementation of these.

In July 2001, NET-TEL Computer Systems Ltd was re-branded as Clearswift Corporation.

Major Publications

ISO 10021 - X.400(88): A Tutorial for those familiar with X.400(84); Computer Networks and ISDN Systems, vol 16, 153-160, Sep 1988.

Migration Strategy for X.400(1984) to X.400(1988)/MOTIS; COSINE Eureka Project 8, December 1988.

UK Academic Community Directory Service Pilot Project; Computer Networks and ISDN Systems, vol 17, 305-310, Oct 1989.

ISO/IEC 10021 parts 1, 2, 3, 4, 6 and 7; International Organization for Standardization, 1990 (Editor).

CCITT Recommendations X.402, X.411, X.419 and X.420; International Telecommunications Union, 1992 (Editor).

ITU-T Recommendations X.402, X.411, X.419 and X.420; International Telecommunications Union, 1996/7 (Editor).

ISO/IEC 10021 parts 1, 2, 4, 6 and 7; International Organization for Standardization, 1997/8 (Editor).

ITU-T Recommendations X.402, X.411, X.419 and X.420; International Telecommunications Union, 1999 (Editor).

ISO/IEC 10021 parts 1, 2, 4, 6 and 7; International Organization for Standardization, 1999 (Editor).