

Curriculum Vitae : Tony Kerr

BORN: 1953
EDUCATION: Honours degree (B.Sc.) in Physics & Electronic Engineering (1974), Higher degree (Ph. D.) in radio astronomy (1978)
IT EMPLOYMENT STARTED: 1966

CAREER OVERVIEW

Tony obtained his Ph.D. in 1978 for his research work in radio astronomy. The work had involved him acquiring in-depth knowledge of real-time operating systems and efficient programming.

He joined ICL as a customer-facing communications software support specialist. He achieved the grade of Senior Diagnostician and was the technical design authority for a number of ICL's communication products.

In 1982, Tony was recruited by LDR Systems / Sydney Communications as a System Designer, where he worked on a number of data communication projects, notably in the financial sector, and developed his project management skills.

He worked overseas for a number of years, managing a communications support team in Sweden and a networking and middleware project to provide a "New Terminal Generation" for a savings bank organisation in Norway. Major technical responsibilities included a communications gateway product, enabling networked support of financial terminals by IBM mainframes. Other responsibilities included: technical design authority, international negotiations with vendors, clients and end-users, and day-to-day management of implementation, integration and support teams in Norway, Netherlands and UK. Back in the UK, he worked on the strategic development of a suite of portable Open System software. He performed a short consultancy assignment to assess the compatibility of an Oracle SQL solution with the existing infrastructure.

In 1989, Tony joined Level-7 Ltd / ECsoft UK Ltd. as a consultant specialising initially in the application of open standards in the healthcare environment. He undertook a wide range of technical assignments for a broad range of clients.

Since 1992, he has been exercising his technical and project management skills in the Civil Aviation sector, leading to the ultimate world-wide deployment of the next generation of air traffic management systems, via the Aeronautical Telecommunication Network, a private secure version of the Internet.

In 2001, he joined CIVAL Consulting Ltd., to specialise in technical consultancy and project management. He has undertaken consultancy assignments in the civil aviation sector, including requirements specification, international liaison, project management, and expert technical support.

Technical skills

Technologies:

Networks: LANs, WANs, X.25, ISDN, TCP/IP, FTP, Remote Access Services, SNA, OSI.

Aeronautical Communications: AFTN, ATN, Air-ground datalink applications, ACARS.

X.400 / MOTIS /AMHS, X.500 / Directory, Systems Management, Security, ASN.1.

Open Document Architecture, Electronic Data Interchange, Character Sets.

Hardware:

IBM compatible PCs, ICL Mainframes and terminal systems, UNIX mid-range servers, DEC, Ferranti, HP, Stratus, Sequoia, Tandem, Test equipment.

Software / Applications:

UNIX, MS-DOS, Novell Netware, MS Windows, ICL VME/DME, VMS, Pascal, C, Assembler, Fortran, PL/M, TCP/IP, OSI, SNA, WordPerfect, MS Office, MS Word, Excel, MS Project, MS Access, ASN.1, GDMO, Internet Explorer IE5, HTML, SGML, Netscape.

Previous Clients:

UK Department of Social Security, UK National Health Service, European Commission, EUROCONTROL, UK NATS, UK Meteorological Office, Banking (networks), Point of Sale, IT service providers and manufacturers.

Key Roles:

Project Manager, Technical Consultant, System Architect, Senior Diagnostician.

PREVIOUS ASSIGNMENTS

EUROCONTROL

Tony has worked since 1992 on projects for EUROCONTROL, the European Organisation for the Safety of Air Navigation, to define the scope and architecture of the next generation of European Air Traffic Management systems. This involves the development of standards and recommended practices (SARPs) for the global Aeronautical Telecommunication Network (ATN), based on an OSI infrastructure optimised for secure low-bandwidth communication links. His work has included project management of various implementation and validation projects, and technical support for development of system specifications.

ICAO Panels

Tony has participated in standardisation meetings under the auspices of the International Civil Aviation Organisation (ICAO), representing European interests and contributing to the technical development and validation of the ATN. His roles have included: Advisor to the EUROCONTROL Panel Member, technical editor for ICAO standards ("SARPs") and Guidance Material for ATN Upper Layers, Subject Matter Expert on the ATN Panel Configuration Control Board (CCB).

ATN End Systems

In the EUROCONTROL "EASIE" project, Tony was lead consultant, heading a team to provide technical and strategic support to the EASIE (Enhanced Air Traffic Management System Implementation in Europe) programme.

Then, in the follow-on ATN End Systems project, he was again selected by EUROCONTROL as lead consultant to provide continuing technical support.

He produced Call for Tender specifications and procedures for evaluation of tender responses. He provided project management and technical support for a 2.5M EUR software development for an advanced air traffic management system. He has produced detailed technical and strategy

papers for European involvement in ATN development. He performed project management of ECsoft's involvement with EUROCONTROL. He is the world-wide "Subject Matter Expert" providing support to ICAO on ATN upper layer architecture. He is expert in the ASN.1 notation and packed encoding rules for efficient electronic interchange between disparate systems.

"GACS"

Tony designed and specified the Generic ATN Communications Service (GACS) protocol standard, enabling migration of legacy aeronautical applications to the ATN environment. This is the standard for an application for communication between aircraft and air traffic control systems, including the definition of protocol data units (using ASN.1), the state machine, the service interface and the use of the lower layer protocols. He managed the procurement and execution of a project to produce GACS software for EUROCONTROL to licence to member states. He defined the acceptance criteria and performed acceptance testing on behalf of the client.

Systems Management

In another contract with EUROCONTROL, Tony supported the strategy, standardisation, development and deployment of system and network management software for the global Aeronautical Telecommunication Network (ATN). The project required in-depth technical knowledge as well as practical experience of system management solutions based on OSI/CMIP as well as Internet SNMP. Activities included specification and international harmonisation of Managed Objects (GDMO) and management communication protocols. Tony specified the "FastMIP" profile, an efficiency-enhanced version of CMIP.

Airline Communications

Tony produced a requirements specification for a software component to convey Airline Operational Control (AOC) messages between aircraft and airline host computer systems, optionally via a third party message switch. He performed software reviews, defined test criteria and performed acceptance testing of the resulting software development.

AEEC

He participated in meetings of the Airlines Electronic Engineering Committee as they developed technical requirements for digital ATN messaging, in co-existence with analogue ACARS messaging. He presented the European LINK 2000+ programme to the AEEC Datalink Users Forum.

EATMP Communications Gateway

For the European Air Traffic Management Programme Communications Gateway (ECG) project, Tony was closely involved in the development of the Common Acceptance Criteria (CAC) and Validation Framework. This utilised his detailed knowledge of X.400 protocols and AMHS SARPs defined by ICAO.

Public Sector

Tony's public sector clients include Aeronautical, Healthcare, Banking, Meteorological Office (MOD) and Social Security organisations.

NHS Information Authority

For the UK National Health Service Information Management Group, Tony performed a study into the encoding of healthcare information using standardised encoding (Abstract Syntax Notation One ASN.1). This

included an assessment of user needs by interviewing representatives from primary healthcare, hospital systems and laboratory systems, and led to a pilot implementation of an order communications protocol between pathology laboratory and hospital information system, based on open protocols.

He also performed a project to study the applicability of the ISO standards for Open Document Architecture and interchange format (ODA/ODIF) to healthcare information interchange. This led to the presentation of the findings to an open NHS workshop on ODA.

He performed an evaluation for the NHS into the implementation of the international FTAM (File Transfer, Access and Management) standard, and the practical difficulties that were being encountered by various NHS IT departments.

He undertook a brief study into the definition of Managed Objects in a healthcare setting, which would allow for standardised system management using the standard CMIP or SNMP management protocols.

Under a tasking contract, he prepared and edited a report on the application of Quality of Service (QoS) requirements to healthcare information interchange.

NHS Network Studies

He performed networking studies and delivered presentations of the findings for Southampton and South West Hampshire Health Authority (SSWHHA) and Southampton University Hospitals (SUH) Trust. In doing this, he analysed current networking provision and user needs and made recommendations for migration to a LAN-based strategy, with X.25 links, which were subsequently followed by the Authority.

NHS Training

Tony prepared and presented a short training course for the Welsh Health Authority on the use of open systems standards in healthcare.

Social Security – Directory Strategy

Tony performed an in-depth study into Naming and Addressing policies and practices within the IT division of the UK Government Department of Social Security. This included a survey of current network provision and TP applications. The successful study led to the formation of a Directory task force. He specified the X.500 Directory schema requirements for the DSS. This study was a prerequisite to the introduction of new computer technology based on open systems, and dealt with the specific organisation structures of the department.

NHS - NWTRHA

He provided consultancy to North West Thames Regional Health Authority, to define the architecture of an EDI messaging infrastructure to support NHS contracting data flows. The recommended infrastructure was at the time based on X.400 (1988) standards.

Healthcare GIS

Tony was selected by the NHS Information Management Group to act as lead consultant and project co-ordinator for an international project being undertaken as part of the Global Information Society (GIS) initiative of the group of seven (G-7) industrialised nations. The aim was to contribute to the development and use of effective healthcare networks and help to construct a global information society for health by

addressing specific tasks in the areas of standardisation, access tools, linguistics, privacy, security and regulatory issues. He worked closely with representatives from the G-7 nations and the European Commission to define requirements, resolve political differences and technically to determine what obstacles stand in the way of global healthcare interchange and what enabling mechanisms are needed to overcome these obstacles while at the same time addressing the absolute requirement for patient confidentiality. He conducted interviews with key players in the healthcare informatics sector, and questionnaires were used to solicit requirements from other GIS projects and from the G-7 healthcare ministries. He organised a number of international meetings, and produced a report which summarised the results of the findings and presented a roadmap for the way ahead, giving the long-term strategic view as well as the short-term provision of networking support to the other G-7 Healthcare projects. He also co-ordinated with the European Commission's Telematics Applications Programme and prepared a funding proposal on behalf of the project.

East Anglian RHA

Tony performed a study for East Anglian Regional Health Authority on the application of Open Systems standards to healthcare information systems. The study covered such issues as standard encodings for healthcare-related data structures, appropriate interchange mechanisms (including EDI approaches such as Health Level Seven, and the Object Oriented approach of IEEE MEDIX, using OSI management protocols CMIS/CMIP), a survey of suppliers, the current state-of-the-art of open healthcare standards, etc. This was then applied to the Authority's PAS Interfacing project.

Meteorological Office

For the UK Met Office, Tony performed a feasibility study for the Weather Information Network (WIN), a high-performance distribution network for meteorological information from simple telex-like reports to satellite images, based on the X.400 (1988) messaging standards, including end-system design, MTA topology and bearer network requirements. This led to the production of a detailed procurement specification and the subsequent selection of a supplier to implement this nation-wide messaging system, which is now in operational use.

He performed an evaluation of how systems management standards could be applied to the management of the Weather Information Network.

He performed a naming and addressing study for an enterprise-wide directory schema.

For an extended period, he provided technical support to the UK Met Office WIN project, answering detailed technical questions on the implementation of standards-based systems.

Commercial	Tony has carried out a number of assignments for commercial organisations in various sectors.
<i>X/Open</i>	Tony evaluated supplier tenders for OSI message handling and API conformance testing systems on behalf of X/Open.
<i>Marconi</i>	Tony performed a project to specify, using the formal ASN.1 notation, a cut-down interoperable version of the OSI system management protocol CMIP, and a number of Managed Object definitions to assess the feasibility of the remote control of radio transmitter sites. This included a mapping from CMIP over X.25 WAN to SNMP over TCP/IP LAN at the transmitter sites. The specification was used as the basis of a successful implementation for the Royal Navy.
<i>Telecomms – clients not disclosed</i>	<p>In the X.400 field, Tony was involved with analysing the requirements of a major UK communications service provider, formulating a strategy and producing a procurement specification in order for the company to go to open tender for its internal message handling system using X.400 standards to unify various disparate in-house messaging systems.</p> <p>For another client, Tony produced a functional specification for the public MHS service to be offered by a large telecommunications service provider. This was used as the basis for a call for tender for the implementation of the service.</p>
<i>AA Training</i>	He prepared and presented a training course on the ISO file transfer protocol FTAM for the Automobile Association.
<i>Y-NET</i>	Tony performed detailed evaluation of a potential FTAM file transfer service for Brussels-based Y-NET consortium.
<i>Banking protocols</i>	Tony was responsible for a team developing portable terminal device emulations and protocol converters for microcomputer systems, including a project to support the BACSTEL EDI protocol over ICL and IBM bisync protocols, allowing applications on ICL mainframes to obtain on-line access to the Bankers Automated Clearing Service.
<i>Ericsson Information Systems</i>	He performed the system design and led a project developing software to convey network management and diagnostic information from an OSI-based network to an IBM management centre, using SNA protocols. The non-IBM equipment could then be managed centrally using IBM Netview network management tools. He was the Project Leader responsible for interfacing an SNA node to an X.25 Packet Switched Data Network, using IBM's QLLC and PSH protocols for logical link control.
<i>S.W.I.F.T.</i>	Tony evaluated supplier tenders for OSI message handling and API conformance testing systems on behalf of the Society for Worldwide Inter-bank Funds Transfer (SWIFT).

CEC	Tony has undertaken several projects on behalf of various directorates within the European Commission, both as single company assignments and in collaborative projects.
SAPiENS	The SAPiENS (Support for Application Pilots in the CEC's European Nervous System initiative) project was an infrastructure project arising out of the "European Nervous System" activity, with the purpose of supporting the ENS projects through specialist technical input. Tony was one of a number of experts whose services were provided through SAPiENS to the Telematic pilots. Tony was responsible for monitoring the EC healthcare pilots CARE and TECN.
EPHOS	Tony participated in Level-7 project to provide text for the European Procurement Handbook for Open Systems (EPHOS). He worked on the Character Repertoire and Documentation Processing sub-projects. This work involved negotiation with the CEC and its team of technical and procurement experts to produce an acceptable text – one which was short, precise and easily comprehensible to non-technical readers.
Standardisation	On behalf of clients, Tony has participated in the national and international standardisation arena since 1992.
OSI Efficiency	For EUROCONTROL, Tony participated in the development of efficiency enhancements to the standards for Open Systems Interconnection (OSI) within the International Organisation for Standardisation (ISO) and British Standards Institute (BSI). He has been Principal UK Expert at several ISO/IEC working group meetings, and at one meeting he represented the Belgian standards authority.
BSI IST/21	He was also a panel member of the UK standardisation committee IST/21, concerned with OSI Upper Layer standardisation, and participated in international meetings of ISO/IEC JTC 1 SC21.
SPAG	The Standards Promotion and Application Group was formed by a number of European IT companies to accelerate the take-up of international standards for IT systems. For the Brussels-based SPAG consortium, Tony developed a detailed FTAM Product Profile, specifying the services to be provided to end-users by FTAM file transfer products.
CEN/CENELEC	CEN Technical Committee 251 on Medical Informatics. Tony was a member of the extended CEN project team TC251 PT4-0019 developing standards for Medical Image Interchange, and the extended CEN project team TC251 PT4-0020 developing standards for Medical Data Interchange between HIS/RIS and PACS systems
EWOS	In the late 1980's, the European Workshop for Open Systems was established. Tony was a founder member of Healthcare Expert Group (EWOS/EG MED), which was concerned with developing a methodology and profiles for healthcare IT systems. This was closely co-ordinated with CEN Technical Committee 251 on Medical Informatics. Tony was a key contributor to the Technical Guide "Method for defining profiles for health care." He is thoroughly familiar with ISO and de facto standards

in many areas, including DICOM, HL-7 in healthcare, IPI, JPEG, JBIG, MPEG, MHEG, SQL, RDA ODP and FTAM.

Tony was a Core member of an EWOS project team to define functional profiles for medical image interchange. He also provided core technical expertise to an international project investigating requirements for standardisation in the Healthcare sector for Multimedia Information Interchange. He performed an assessment of present and future user requirements for multimedia communication in the international healthcare environment, and a study of how current standards (both de jure and de facto), products and standardisation projects would satisfy user needs. The project team findings were published as an EWOS Technical Guide and CEN Report (EWOS/ETG-068; Multimedia Medical Data Interchange).

PUBLICATIONS

Tony has published several scientific papers on the polarisation of radiation emitted by extra-galactic radio sources, Monthly Notices of the Royal Astronomical Society.

Tony has written major articles for the Users' Open Systems Handbook, on Local Area Networks (LANs) and on Integrated Services Digital Networks (ISDN).

He produced text for the ODA procurement profile for the European Procurement Handbook for Open Systems.

He produced text for the Character Repertoires and encoding procurement profile for the European Procurement Handbook for Open Systems.