Mr. Angus Carrick

M.A. M.Sc. C.Eng, M.I.E.E, M.I.E.E.E

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1. Personal Details

First names:	**ANGUS RENNIE**	Family name:	**CARRICK**
Nationality:	**BRITISH**		
Date of birth:	**4th November 1956 in Greenock, Scotland, U.K.**		
Residence:	**Swiss 'C'-Ausweis since 1991, resident in Switzerland since 1986.**		
Civil status:	**Married/Separated (One son, Jonathan, born 1994)**		

2. Summary of Education

1963 – 1975	Regent House Grammar School (G.C.E. 'A' level certificates)
1975 – 1978	Peterhouse, Cambridge (**Masters Degree** in Electrical Sciences)
1981 – 1983 (*Part Time*)	University of Essex, Colchester (**Masters Degree** in Telecommunications Systems)
1986	Qualified as Member of the Institution of Electrical Engineers and Registered as a Chartered Engineer with the Engineering Council.

3. Language Skills

- English: Mother tongue.
- German: Very good spoken and translation into English, average written ability.
- French: Beginners level spoken and written ability.
- Bärndütsch: Acceptable level of understanding.

4. Most recent Professional Activities

System Engineer (RUAG AG, Berne, Switzerland)

- System engineering for combat training centres. Technology includes: radio data systems, free-space optical systems, LAN technology, mechanical and electrical installations.
- Study projects including location systems and modern radio data communications.

Independent Consulting based in Berne, Switzerland.

- Access Network Standardization (representing ADTRAN Inc. at ETSI TM6).
- German – English translations and Business English lessons
- Web-site design.

System Engineer (Technical Specialist) with KEYMILE Ltd., Berne, Switzerland.

- Representing KEYMILE/ASCOM in ETSI TM6, the European standardization group specifying DSL technology and spectrum management in the access network.
- Committee secretary for ETSI TM6 from 1996 to 2003.
- Company specialist for DSL technology support and standardization matters.
- Hardware Systems design for DSL telecommunication products (ATM SDH ADSL)
- Performance evaluation and analysis of DSL modems and DSL test equipment.
- Supporting sales and marketing with information and presentations in area of DSL.

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5. Personal Interests

- Irish and Scottish Country Dancing.
- Karate (4. Kyu – Blue Belt, intermediate level)
- Auditor for St. Ursula's English church in Bern
- Digital photography (www.carrick-photos.com)
- Web site design. (www.carrick.ch)
- Toastmasters public speaking club

6. Personality Profile (Schär AG)

ausgeglichen / even-tempered
willensstark / strong-willed
realistisch / realistic
gutmütig / docile
tolerant / open-minded
vertrauenswürdig / trustworthy
kritisch / discerning
Planer / Planner
zwanglos / informal
originell / original thinker
bescheiden / unassuming
tiefgründig / thorough
unparteiisch / impartial
heiter / cheerful
Berater / Advisor
Fragender / Questioner

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7. Employment Details (chronological order)

1978 to 1980	**Development Engineer with STC Ltd. (UK)** (STC Transmission Products Division, Basildon, Essex SS14 3BW, UK) Hardware design of telecommunications sub-systems. - digital design and implementation of multiplexer for a 68 Mbit/s digital TV Codec - analogue design and implementation of a signalling system frequency multiplexed onto the phantom of a 64 kbit/s military telephone using discrete analogue components.
1980 to 1983	**Senior Research Engineer with STL Ltd. (UK)** Research into advanced telecommunications equipment. Masters thesis on adaptive equalisation in digital optical transmission. (STL Ltd, Harlow, Essex, CM17 9NA, UK – later taken over by Nortel). - research and development of timing extraction for 565 Mbit/s copper transmission. Design of prototype phase locked loop using thick-film hybrid technology. - design and development of a 324 Mbit/s jitter reducer for trans-Atlantic digital optical systems using ECL logic, memory and phase locked loop components. - Project for masters thesis "Investigation into adaptive equalization for high capacity digital optical fibre systems" involving theoretical analysis and computer simulations.
1984 to 1986	**Systems Engineer with STC IDEC Ltd. (UK)** Hardware system design of modules for computer controlled telephone exchanges. (STC IDEC Ltd., Stevenage, Hertfordshire SG1 1YB, UK) - study of inductive powered devices for "tagging" - Requirements specifications and system design for a CAS-CCS signalling conversion module, a Recorded Announcement Unit. and requirements specifications for various tenders including Point-of-sales & optical systems.
1986 to 1989	**Development engineer with Hasler AG, Berne, Switzerland** (Hasler AG, Belpstrasse 23 CH-3000 Bern 14) - design of optical receiver for LA140FCS (140 Mbit/s short haul optical system) using discrete transistors arrays and ECL logic. - Joint Patent EP346783B1: - digital telemetry signals in a digital data flow; an efficient method of inserting signalling information onto the 140 Mbits/s data stream. (***Autophon, Hasler and Zellweger joined to form Ascom in 1987***.)
1989 to 1992	Promoted to **development group leader** (in charge of 4 engineers/technician), responsible for completion of the LA140FCS project. Following this, responsible for a project team carrying out a study for new 34Mbit/s digital optical transmission system.
1992 to 1994	**Study Project leader** (in charge of 6 engineers/marketing) for a new 2Mbit/s transmission system on metallic pair cables. Responsible for first development prototype of an HDSL system, which formed the basis of Ascom Transmission's successful xDSL product ranges. (***From 1992 onwards, responsible for DSL standardization activities – see following page for details***) - Representing Ascom in standards bodies (mainly ETSI TM6) with contact to ITU-T SG15 and other international standardization bodies. Company specialist for DSL standardization
1994 to 1998	Systems Engineer responsible for xDSL technology support and standardisation. - Studies and analysis of jitter and wander in HDSL systems. - Simulation, analysis and measurement of xDSL performance and noise environment. - Marketing support with DSL presentations to customers and potential customers. - Analysis and technical support for customer problems in the field. - Promoted to function category: "Leiter Entwicklung mit Fachverantwortung, Kaderstufe 7": (Technical Specialist at level of head of department, management grade 7.)
1998	- Study, simulation and prototype development of POTS splitters for CAP-DSL systems. - Evaluation of the performance and capabilities of a prototype MSDSL-over-POTS system

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7. Employment Details (chronological order) *continued …*

1999 to 2001	Part of system team designing an SDH over HDSL desktop modem with VC-12 termination, with specific responsibility for the defect detection/fault management part of the requirements model, as well as editorial responsibility for the entire model.
2001 to 2003	Part of system team defining an ATM-ADSL line card for a multi-service access node. - Responsible for POTS splitter (to separate DSL data from telephony) and ISDN splitter integration concept for the overall ADSL system solution, including testing and evaluation of samples, cost estimating, support for tenders, and discussions with manufacturers. - Part of the system team defining the management of the DSL modems by the DSLAM - Responsible for standards support for the ADSL development project. - Standardization support for various S(H)DSL development projects. - Evaluation of DSL test equipment, including line simulators such as the Spirent DLS 400. - Maintaining up-to-date local copies of DSL chipset datasheets and firmware with html index and email notification of updates as a support function for the development groups. - ADSL (and SDSL) standards conformance statements for ADA project

Standardization activities

1992 to-2003	In parallel with the above tasks, responsible for monitoring DSL standardization world wide for Ascom Transmission Ltd., with main emphasis on the **European Telecommunications Standards Institute**, **ETSI**, the European standardization group responsible for the physical layer specification of access transmission systems on metallic cables, and in particular Digital Subscriber Line (DSL) technology and spectrum management in the European access network. ETSI TM6 held on average four meetings a year, each lasting a five days, and often involving evening working groups. (The group was responsible for the European specifications for ISDN-BA, HDSL, ADSL, VDSL and SDSL systems, as well as spectral management reports and specifications.)
	- Promoting the interests of Ascom (recently KEYMILE) during standards meetings and offline discussions, and ensuring that the specifications fulfil the needs of the company. - Preparing and presenting technical contributions to aid in the development, evaluation and testing of DSL systems and spectrum management standardization. - DSL system Performance measurements and evaluation of DSL test equipment. - Providing DSL technical support for pre- and post-sales departments. - Carrying out DSL technology and standardization presentations in-house and externally. - Monitoring the activities of DSL and spectrum management related standards bodies, using email exploder, web and ftp access, and where appropriate participating in email discussions. (Email list memberships included ETSI TM6, ETSI EMC-CENELEC JWG, T1E1.4, ITU-T SG15 Q.4, DSL Forum, OFTEL NICC.) - Downloading and maintaining electronic copies of DSL standards, datasheets and other useful information, and disseminating the relevant information within the company by way of html web pages and internal mailing lists.
	Various official functions within ETSI: ETSI Co-editor for various clauses of the ETSI HDSL, involving chairing groups consisting of operators, and manufacturers in order to achieve consensus, and generating text reflecting these agreements.
	Committee secretary of **ETSI TM6 from 1996 to2003** - responsible for initial organisation of electronic working methods for TM6. - responsible for organisation of temporary and permanent documents - responsible initially for maintaining basic mailing list, ftp and html files. - maintenance of an MS Access data bases of document abstracts and membership / attendance information. - During meetings, responsible for taking minutes and producing the final report, including abstract of contributions and attendance reports, as well as other support functions not covered by the ETSI technical support officer. - As Ascom representative, involved with the production of ADSL, SDSL, VDSL, splitter and spectrum management specifications, but with main emphasis on SDSL, to ensure that the documents are appropriate for the needs of the Ascom DSL development groups. Voting on behalf of Ascom within ETSI technical committee TM.

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7. Employment Details (chronological order) *continued …*

2003 to 2004	**Participating in Keymile "Mobilitycentre"** - outplacement service offering seminars, workshops and coaching. - Preparing and presenting a series of Business-English lessons (within Keymile MZ) **Independent Consulting** - Representing Adtran Inc. at ETSI TM6 Access network Standardization Activities.) - German – English translations of documentation. - Web-site design.
2004	**RUAG System Engineer** - study project together with another engineer: analysis of a cost effective 3D orientation sensor system. Study of Inertial navigations systems, MEMS gyros, magnetic field sensors, Kalman filters, UWB and ultrasonic positioning systems. - frequency planning: study of frequency bands available world wide for radio data systems. Primarily ISM bands, (433MHz, 868 MHz and 2.4 GHz, but also 300 MHz bands.) Analysis of ITU-R, ERC, BAKOM and FCC regulations, as well as local national standards. - Studies and Sub-system specifications for various simulator components containing infra-red optical transmitters and radio data systems.
2005	- Systems engineering for a bid for a major international project. Analysis of customer requirements, participation in overall system design and generation of individual system specifications. System design encompassed radio data systems, free-space optical systems, mechanical and electrical installations. Co-operation with international sub-contractors.
	- Study project together with another engineer analysing potential technologies for future radio data communication systems. Systems considered were: Wireless LAN, WiMax, UWB, GSM/GPRS/UMTS, TETRA, VHF data modems, Mobitex Packet Data. ITU-R radio regulations, ETSI, ERO, BAKOM, and country specific frequency planning.
2006 To date	- Systems engineering for an international combat training centre (CTC). Analysis of customer requirements, participation in overall system design. Generation of individual system specifications. The technology includes free-space infra-red optical transmission, radio data communication, LAN and WAN technology, and covers fixed buildings, vehicles and man-worn equipment.

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