



full name	Robert John Briscoe
date of birth	5th March 1962
nationality	British
languages	native English, passable French & a little German
health, family	good health, happily married, children all left home
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Professional Reputation

- 3 IETF standardization groups have developed from my research: Low Latency Low Loss Scalable Throughput (L4S; 2016-...), Congestion Exposure (ConEx; 2010-16) & Pre-Congestion Notification (PCN; 2007-12);
- Convenor and first Chair of the Security Expert Group of the ETSI Network Functions Virtualisation (NFV) Industry Specification Group (ISG);
- 70 invited talks in international fora over the last 15 years, including 21 keynotes and 6 expert panels.
- Initiated & directed CRN (Comms Research Network) - partnership between Cambridge Uni, MIT & industry;
- Incubated Qariba, a start-up based on my research (2000-3), then absorbed into BT's broadband service;
- Helped initiate various workshop series, e.g. EU FP7 Eiffel Future Internet support action, the ACM ReArch workshops, the ACM Capacity Sharing workshops;
- Reviewer for IEEE/ACM Transactions on Networking, Wiley, ACM SIGCOMM Computer Comms Review, etc.

Awards

- Special award for most patents filed (48) in BT's history (2013) (subsequently reached 50);
- Initiated the Trilogy Project (with Philip Eardley), which won the European Future Internet Award for its outstanding contribution to the Internet architecture and protocols (2011);
- BT's Gordon Radley Award for Best Author of Innovation (2007) & (2008)
- BT's Sir Alan Rudge Award for Innovation (Medal winner 2001)

Publications

Selected publications in the fields of Internet architecture, loosely coupled distributed systems, comms performance, virtualisation, traffic control, group security, protocol evolution and the economic structure of communications markets:

- **PI²: A Linearized AQM for both Classic and Scalable TCP**, Koen De Schepper, Olga Bondarenko, Ing-Jyh Tsang, Bob Briscoe, In: *Proc. ACM CoNEXT 2016* pp.105-119 (December 2016)
- **A Survey of Latency Reducing Techniques and their Merits**, Bob Briscoe, Anna Brunstrom, Andreas Petlund, David Hayes, David Ros, Ing-Jyh Tsang, Stein Gjessing, Gorry Fairhurst, Carsten Griwodz, Michael Welzl, *IEEE Comms Surveys & Tutorials* (2015)
- **Network Functions Virtualisation (NFV) Security Problem Statement**, Bob Briscoe (Ed), *ETSI NFV ISG GS NFV-SEC 001 v1.1.1* (Oct 2014)
- **Pre-Congestion Notification - New QoS Support for Differentiated Services IP Networks**, Michael Menth, Bob Briscoe and Tina Tsou, *IEEE Communications Magazine* **50**(3):94--103 (Mar 2012)
- **A Fairer, Faster Internet Protocol**, Bob Briscoe, *IEEE Spectrum*, Dec 2008 pp38-43
- **Flow Rate Fairness: Dismantling a Religion**, Bob Briscoe, *ACM CCR* **37**(2) 63--74 (Apr 2007)
- **Metcalfe's Law is Wrong**, Bob Briscoe, Andrew Odlyzko & Benjamin Tilly, *IEEE Spectrum* Jul 2006, 26-31
- **The Implications of Pervasive Computing on Network Design**, Bob Briscoe, chapter In: *Intelligent Spaces*, Computer Communications and Networks Vol.XVIII Springer Verlag (2006)
- **Policing Congestion Response in an Internetwork using Re-feedback**, Bob Briscoe, Arnaud Jacquet, Carla Di Cairano-Gilfedder, Alessandro Salvatori, Andrea Soppera and Martin Koyabe, *Proc. ACM SIGCOMM'05, CCR* **35**(4) (2005)
- **TESLA: Multicast Source Authentication Transform Introduction**, Adrian Perrig, Ran Canetti, Dawn Song, Doug Tygar and Bob Briscoe, *Internet Engineering Task Force (IETF) RFC 4082* (Jun 2005)
- **MARKS: Zero Side-Effect Multicast Key Management using Arbitrarily Revealed Key Sequences**, Bob Briscoe, in *Proc 1st Int'l W'kshp on Networked Group Comm'n (NGC'99) LNCS 1736:301--319* (Nov 1999)
- **Nark: Receiver-based Multicast Non-repudiation and Key Management**, Bob Briscoe & Ian Fairman, in *Proc 1st ACM Conf. on E-Commerce (EC'99) (3-5 Nov 1999)*

Career

Communications Systems

Jul 2015 - Jul 2017
Simula Research Lab,
Chief Research Scientist

Dec'15- ...: Low Latency Low Loss Scalable throughput: collaborating to research, test, standardize and develop **L4S** to become the new default Internet service
Nov'15-Dec'15: Simula Research Strategy
Jul'15-Nov'15: **RITE**. Collaborative project on Reducing Internet Transport Latency.

Networks & Infrastructure Research

Jul 2009 - May 2015
BT Technology & Svc Ops,
Chief Researcher

Jan'13-May'15: **ETSI Network Functions Virtualisation (NFV)**. Helped create this industry specification group (ISG) and convened and chaired (Jan-Apr'13) the Security Expert Group.
Jan'13-May'15: **Trilogy 2**. Collaborative project on compute resource pooling. Led BT team.
Nov'12-May'15: **RITE**. Collaborative proj. on Reducing Internet Transport Latency. Led BT team.
Jan'12-May'15: IETF coordinator for BT Group.
Apr'11-May'15: **Research on applying data centre technology to wide-area comms**, esp. low latency and virtualisation incl. total cost of ownership model
Jun'10-Nov'14: **IETF Congestion Exposure (ConEx) w-g**. Built over prior 4yrs.
Apr'08-Sep'09: **Global Information Infrastructure Commission**. Through BT's CTO, Matt Bross, the CxOs of many ICT corporations championed the creation of the IETF ConEx wg to change to the Internet Protocol, based on my research.
Jan'08-Dec'10: **Trilogy**. BT (P. Eardley & I) initiated and led this consortium to re-architect the Internet.
Jan'08-Dec'10: MIT Communications Futures Programme Interconnection w-g; Co-chair.
Jun'06-Jul'12: **IETF Pre-Congestion Notification (PCN) w-g**: Initiated and led.
Jun'03-'06: **Comms Research Network (CRN)**: Initiated and led this MIT-Cambridge academia-industry collaboration.
Jan'03-Mar'10: **BT's Future Comms Architecture (FCA) strategic research programme**: Initiated and led, focusing on network economics & security.

May 2004 - Jun 2009
BT Group CTO,
Chief Researcher

Jan 2003 - Apr 2004
BTexact Technologies,
Chief Researcher

The Edge Lab

Dec 2001 - Dec 2003
BTexact Technology,
Research Lab Manager
(>20 staff)

Dec 2000 - Oct 2001
Singleton Tech Grp Leader

Jan 1998 - Nov 2000
Prof'l Tech grade

Mar '00 - '03: **Qariba**. Joint BT / Scientific Generics venture incubating a start-up for bandwidth mgm't products, which BT used in its broadband service.
Jan '00 - Mar '02: **Technical Director, M3I**. Initiated and led consortium developing and validating a "Market Managed Multi-service Internet" (M3I).
'97-'03: **Internet quality-based charging**. Research and advice both for BT Group Technical Strategy and BTUK Pricing Strategy.
'97-'03: **Internet large-scale multicast applications research**. Group security, incl. IETF's multicast stream authentication protocol and the basis of successful Venation start-up.

Distributed Systems Research

Dec 1994 - Jan 1998
BT Research,
Information Systems,
Senior Professional grade

'95-'99 BT's ANSA liaison: Int'l distributed systems research consortium (incl. secondment).
'95-'97: **Web and e-commerce infrastructure research**. Integration of Web & proprietary object models. Advisor to BT Group Technical Strategy. BT's IETF HTTP/1.1 w-g rep.
'95-'97: **Technology and company evaluations co-ordination**. Particularly message-bus & e-commerce back-end platforms.

Technical Services for BT R&D

Apr 1988 - Dec 1994
BT Development,
Technical Services,
Senior Professional grade

Apr 1992 - Dec 1994 Deputy Unit Manager (concurrent)
>100 staff offered technical services to BT's R&D.
Technical Computing Support Mgr (concurrent)
Apr '88-Dec'94: **CAE system manager** eventually for whole of BT R&D. Migrated 100s of systems & networks to integrated IP-based multi-vendor system with partitioned security.
Design Office Manager (concurrent)
Apr '88-Dec'94: Led electronic product design team, then whole design office (dozen staff)

Jul 1984 - Mar 1988
Professional grade

Special Project Design Engineer Mech'l, Electronic & Optical (p-t CAD sysadmin '87-'88)

Further Education

Oct 1998 - Jun 2009
Oct 1981 - Jun 1984
Sep 1980 - Jun 1984

University College London, PhD (Computer Science, part-time)
Uni Cambridge, MA (Engineering)
BT Student (intro to comms business, technology & theory + degree sponsorship)

Personal Interests

- * Morris dancer
- * My wife & I run a medium sized arable farm
- * Historical reenactor (C15-16)
- * Secretary/trustee of Natural Energy Education charity (1988-2012)

Referees

Prof. Olav Lysne
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