
Curriculum Vitae - Timothy Cousins
MEI CFEI CFII

May 2016

I am an Engineering Systems Failure Analyst and Disaster Recovery Consultant working in this area for the last 25 years, full time for the last 22 years. I conducted this work as the principle consultant and Director/Secretary of the following Companies:

- Software Relations Pty Ltd 1990 – 1999
- ExCEL Consulting Service Pty Ltd. 1993 – 1999
- Tim Cousins & Associates Pty Ltd. 1999 – 2016
- Tim Cousins Australia Pty Ltd 2015 - Present

I am certified by the National Association of Fire Investigators as a Fire and Explosion Investigator and Instructor. (Registration Number: 10797-5274i).

I hold a Graduate Certificate in Fire Investigation (Charles Sturt University)

The majority of my work involves investigating Electronic & Electrical Engineering System failures, of which many result in a fire. This work includes determining the cause, nature and extent of the damage and the establishment of cost effective reinstatement strategies.

I have worked on matters throughout Australia, Vietnam, Indonesia, Malaysia, Singapore, Philippines, Fiji, New Caledonia, New Zealand and the USA. I typically work on about \$10M AUS in losses over a number of files at any one time. This was over \$100M AUS in 1998 and again in 2005 when a chemical contamination incident in a silicon wafer (for silicon chips) manufacturing plant in Malaysia was potentially of the same order of magnitude. The work in New Caledonia involves investigating the cause of failure of a world first design of Nickel smelting furnace which cost ~USD \$250M to re-build.

I have given expert evidence in the following Australian Courts:

Victoria:

Victorian Civil and Administrative Tribunal (VCAT)
Magistrates' Court
County Court
Supreme Court

NSW:

NSW Civil and Administrative Tribunal (NCAT)
Supreme Court

Academic Experience:

BEng (Electrical and Electronic) (Honours) Swinburne University of Technology

Expected Completion 2018

MFireInvestign – Master of Fire Investigation. Charles Sturt University

Expected Completion 2018

***GradCertFireInvestign* - Grad Cert In Fire Investigation. Charles Sturt University**

2012-2015

MEI – Master of Entrepreneurship and Innovation. Swinburne University of Technology 2002-2006. Focused on organisational dynamics, particularly in how organisation adapt and recover following a major loss or disaster.

BScApp Monash University 1988-1990 (Incomplete); Units in Systems Analysis and Design to 3rd Yr Level. I was invited to teach Systems Analysis and Design to 1st year and Post Graduate students within the department of computer science from 1990 to 1991.

BBSc – Bachelor of Behavioural Science. La Trobe University; 1981-1983

(Incomplete); Units in Statistics to 2nd year level.

BSc – Bachelor of Science. Melbourne University 1976-1979 (Incomplete); Units in Maths, Physics, Chemistry, Cell Physiology, Histology, Microbiology and Bio-Chemistry to 2nd year level.

University of Virginia, Virginia U.S.A. Short Course on Risk Assessment and Management held by the Centre for Risk Management for Engineering Systems – Mathematical modelling and optimisation of engineering systems.

ACA Certificate in Corrosion Technology

NAFI Certified Fire and Explosion Investigator. Reg: 10797-5274.

Membership to Professional Bodies:

SSIT - Society on Social Implications of Technology

IEEE - Institute of Electrical and Electronics Engineers

Member No: 80362756

MIEAust – Member Institute of Engineers Australia

Member No: 3060789

EESA - Electrical Energy Society of Australia (Engineers Australia)

Member No: 3002773

NAFI - National Association of Fire Investigators

Member No: 10797

Certified Fire & Explosion Investigator Reg: 10797-5274

FPA - Fire Protection Association Australia

Member No: 9727

BCMIE – Business Continuity Management Information Exchange (Australian Chapter of the DRIE – Disaster Recovery Information Exchange)

Member No: 0013

ACA – Australian Corrosion Association

Member No: 4687

Company Directorships:

1990 – 1999 Software Relations Pty Ltd

Software Engineering

1993 – 1999 ExCEL Consulting Services Pty Ltd

Failure Analysis of Engineering Systems and Disaster Recovery Consulting

1995 – 1997 Disaster Recovery Institute (Australia)

Disaster Recovery Training and Certification

1996 – 2002 Ideation Asia Pacific Pty Ltd

Engineering Problem Solving.

1999 – Present Tim Cousins & Associates Pty Ltd as Trustee for the Tim Cousins Family Trust

Failure Analysis of Engineering Systems, Disaster Recovery Consulting and Fire Investigation

2015 – Present Tim Cousins & Associates Pty Ltd

Failure Analysis of Engineering Systems, Disaster Recovery Consulting, Fire Investigation and Fire Investigation Training.

Panel Membership:

Sydney Water Climate Change Adaptation Program

External Expert Advisory Group (Retired)

Members:

Tim Cousins

Director Tim Cousins & Associates

Prof. Bruce Thom

Member of the Wentworth Group of Concerned Scientists, Emeritus Professor at the University of Sydney in Australia and President of the Australian Coastal Society.

Erik Maranik

National Chair of the College of Environmental Engineers of Engineers Australia.

Mike Tarrant

Adjunct Associate Professor at Queensland University of Technology

Prof. Ann Henderson-Sellers

Emeritus Professor of the Department of Environment and Geography at Macquarie University, Sydney.

Director of the World Climate Research Programme in 2006 and 2007.

Director of the Environment Division at ANSTO from 1998 to 2005.

Deputy Vice-Chancellor (Research & Development) of The Royal Melbourne Institute of Technology from 1996-1998.

Convening lead author for the IPCC SAR in 1995.

Australian Attorney General's Department

Resilience Expert Advisory Group (REAG) (Retired)

Co-Author *Organisational Resilience: A position paper for critical infrastructure* and sole author of the 7 Australian Case Studies.

<http://www.organisationalresilience.gov.au/resources/Documents/organisational-resilience-position-paper-for-critical-infrastructure-australian-case-studies.pdf>

Koniambo Nickel - DCF1 Furnace Investigation Editorial Review Board.

Lectures etc.

- 2015 April Workshop: Koniambo Nickel - Furnace Engineering Workshop – DCF1 Furnace Investigation, Presentation of Results.**
- 2015 February Workshop Convener: Koniambo Nickel - Furnace Engineering Workshop – DCF1 Furnace Investigation**
- 2014 Workshop Convener: Command and Control Integrity.** The Eighth Workshop on the Social Implications of National Security: Remotely Piloted Airborne Vehicles and Related Technologies. Participation limited to 20 invited experts. The objective of the workshop was to produce a communiqué, endorsed by the participants, which will inform the preparation of SAF05* reports and IEEE-USA CTAP position papers on the social and national security implications of RPAVs and related technologies for submission to the Australian and United States governments.
- 2013 Water Contamination Consequence Management Conference (Australian Government Attorney General's Department).** Preparing for Litigation – “The Startled Lemur Paradigm”.
- 2012 IHEA (Institute of Hospital Engineering Australia) - Forensic Investigations of Electrical Failures including, Minus 80 Freezers, Electrical”**
- 2012 Engineering Discussion Group - "Post Cyclone Yasi Electrical Damage and other curious matters"**
- 2012 Crawford's Lunch & Learn - "Post Cyclone Yasi Electrical Damage"**
- 2011 SSIT (IEEE Society on Social Implications of Technology) – University of NSW. 'Before, During and Recovering from a Disaster – Your part in making it happen”**
- 2010 IAEM (Singapore) Asia-Oceania Resilience Conference – “The Wisdom of Resilient Organizations and Interagency cooperation, misunderstandings and defensive styles.”**
- 2010 Continuity Conference – “The Wisdom of Resilient Organizations and what they sometime forget”**
- 2010 BFAAG (Attorney Generals Department Business and Finance Assurance Advisory Group) – the Wisdom of Resilient Organizations and what they sometime forget”**
- 2010 BCMIE – (Business Continuity Management Information Exchange) “Observations following inspections of telecommunications infrastructure after the Victoria Bushfires in 2009”**
- 2010 ASIC (Australian Securities and Investment Commission) – “Management in Crisis and requisite decision making”**
- 2010 Attorney Generals Department – Launch of Resilience Strategy – Key Note Speaker.**
- 2009 World Conference on Disaster Management – “Inter agency cooperation – misunderstandings and defensive styles.”**
- 2008 IAAG – Attorney Generals Department – Infrastructure Assurance Advisory Group - “Australopithecus Portentous – a tale of three totems”**
- 2007 ISTAS – New York – When Engineering Systems Fail – the disconnection between Continuity Plans and Organizational Behaviour”**
- 2007 Emergency Management Australia – “Management in Crisis & Requisite Decision Making”**

- 2007 National Organisational Resilience Framework Workshop – Attorney-General’s Department Critical Infrastructure Protection Branch and Emergency Management Australia.**
- 2006 EEEVic - SSIT Lecture - "Surviving Engineering Disasters - Notes from the Field."**
- 2006 Emergency Management Australia- Business Continuity Education & Training "Begin with the End in Mind"**
- 2006 New York, IEEE Society on Social Implications of Technology Conference - "When Engineering Systems Fail - The Disconnection between Continuity Plans and Organisational Behaviour." IEEE Catalog Number: 06CH37814C ISBN 1-4244-0479-7**
- 2006 Sydney, IIR Business Continuity Forum 2006 - "Assessing why clear decision-making may be the strongest component of your BCP"**
- 2005 Adelaide, BCMIE Information /Networking Session - "How Organisations Adapt to a Crisis - What happens when they reach the end of their contingency plan (if they have one)"**
- 2005 Las Vegas, USA, CPM 2005 West - "IT & ET shifting the focus of BCM for greater success."**
- 2004 New Zealand, New Zealand Recovery Symposium - "A Holistic Framework for Recovery: What happens when and what works best"**
- 2004 Sydney, Continuity 2004 IIR Conference - "A Holistic Framework for Recovery: Shifting the Perspective of BCM to Generate Greater Success"**
- 2003 Canberra, Australian Disaster Conference - "Patterns of Organisational Behaviour in the Recovery Phase: What Happens When and What Works Best."**
- 2002 Toronto, Canada - 12th World Conference of Disaster Management. "No Plan Survives First Contact with the Enemy"**
- 2001 San Francisco, Compaq Computers Corporation "Ionic Contamination"**
- 1999 Singapore, Insurance Industry Briefing "Y2K Preparedness and Solutions"**
- 1998 Sydney, Claims Discussion Group - "Computer Virus Infections and Protection"**
- 1997 Melbourne, Claims Discussion Group "Computer Virus Infections and Protection"**
- 1996 Melbourne, Claims Discussion Group "Recovering from a Disaster"**
- 1995 Melbourne, Eastern Business Seminar - "Disaster Recovery Planning for Small Business"**

Software Development

1987 - Nurse Rostering System

A software rostering package designed to facilitate the editing and construction of Nurse Rosters.

Commissioned by The Nursing Administration - Royal Park Hospital , Melbourne Victoria.

1988 - Student Progress Tracking System

A software product designed to track the progress of students through the Hospital's training program, including the pre-selection interviews and acceptance criteria.

Commissioned by The Metropolitan and Eastern School of Psychiatric Nursing.

1998 - Menu/Recipe System

A software product designed to manage the costing, ordering and supply of ingredients for the hospital's patient menus. Commissioned by The Hospital Catering Department - Royal Park Hospital , Melbourne Victoria.

1989 - Crisis Line Staff Rostering System

A software product designed to manage the rostering of volunteer staff and the collection of statistics from the Crisis Line telephone support service.

Commissioned by Crisis Line

1989 - CARE – Client Assessment and Reporting

A software product designed to assist with the assessment of clients of the Occupational Therapy Department within Royal Park Hospital

Commissioned by the Occupational Therapy Dept – Royal Park Hospital

1989 – 1994 VAXTRAK – Vaccine ordering and administration

A software product designed to manage the ordering and administration of Vaccines to local Councils and General Practitioners within Victoria.

Commissioned by Community Health Services Victoria.

1989 - VIRAL SCANNING – Prototype Viral Scanning Software

A software prototype designed in the early days of anti viral technology to identify the presence of computer viruses.

1990 – 1995 CAPS – Client Accounts and Payroll System

A software product designed to manage client invoicing and accounts as well as the staff payroll from a central rostering process.

Commissioned by At Home Pty Ltd.

1990 – 2002 EAN Australia – EAN Numbering Administration and Integrity Checking System

This product was commissioned by EAN Australia to maintain their Membership System, Contact Management System, Manufacturer Number Allocation System, Bar Code Scanning Validation System and Product Database. The product database contains an integrated pack dimensions and image library of the products that come in for Bar Code scanning & verification testing. ALL products on the shelves of ALL major Australian

supermarket chain stores will have had their bar codes verified through this system.

Commissioned by EAN Australia.

Note: Mr Cousins was retained by EAN Australia for 10 years from 1992 - 2002 for the original software development and for the ongoing enhancements and problem resolution support, data communications and for Disaster Recovery planning.

1992 – 2001 ANTPAGE – Alpha Numeric Paging System.

This product is a generic paging interface capable of being used in conjunction with any building automation or security system. It intercepts the alarm messages and automatically pages out the alarm to security guards or field service support staff based on key words embedded in the incoming alarm string. It has a moderately large installed base within University Campuses, Libraries and Hospitals. It is also currently in use protecting the boilers at Tullamarine Airport and the temperature of the fish tanks within the S.A. Dept of Fisheries and Wildlife.

1993 – Mobil Oil Depot Yarraville Access Control.

This product interfaced to the access control interface and was used to capture and report on the movement of road tankers in and out of the Mobil Oil Depot in Yarraville.

1994 - NSW State Rail System

A software product designed to integrate with the NSW State Rail System Computer Controlled Freight Rail System. The task involved networking 17 overhead projectors, which were used to project a computer generated image of the State Rail system onto a screen in front of the operator workstations, and poll each projector in real time for errors. The system maintained a full maintenance history including trapping and recording up to 134 of the projector variables that could be made by a remote controller. Access levels were built into the system to prevent unauthorised access to many of the projectors critical functions. Commissioned by Trident Video Systems.

1995 - Mr ANTENNA - Job dispatching and recording system.

This product provided an unusual solution to the excessive communication costs experienced by Mr Antenna on a National basis. Jobs were dispatched nationally, via an alphanumeric pager to the Antenna installer, automatically via a direct computer link to Hutchison Telecoms. On completion of the job the installer would ring the local Hutchison paging service and page a dedicated receiver back in Melbourne with the details of the completed job. The receiver would pass the details back to the system where upon the next available job would be sent back to the Installer. Commissioned by Mr Antenna

1999 BUSTER – Voice Stress Analysis (Lie Detector) – Prototype.

This product is designed to recognise the characteristic changes in voice patterns that arise when a person is stressed such as when a person lies. The product is a working prototype only.

2005 iSing – Computer Model of Organisational Dynamics.

This is a simple computer simulation of organisational behaviour designed to illustrate how the three defensive systems, Hostile-Avoidant, Directed and Dialectic Pairing can morph into one another over time. The model draws heavily from the Ising model developed in 1925 by Dr. Ernest Ising to explain ferromagnetism. This is not necessarily such a strange association. Many researchers have attempted similar formulations in the social sciences with some considerable support, although not universal.

Key Electronic Engineering

1985 – 1986 Pre-IBM XT - Computer Systems – Design, Build and Repair.

A number of projects involving the construction of simple computer systems prior to the release of the IBM XT. Whilst this initially involved wire wrapping circuit boards and designing and constructing keyboard decoders it later developed into a small (hobby) business completing board level repairs to the VIC 20, Commodore 64, BBC Micro and Microbee. Computers. This was done largely for interest and pleasure.

1990 - Alcotest – Police Breathalysers

Two products, hardware and software.

The first was to reverse engineer (under licence) the hardware and software and to rewrite the code within the breathalysers to meet Police and Legislative guidelines within both Australia and Canada.

The second was a product to interrogate and download the stored data within the Alcotest Breathalyser and to present the information in a variety of statistical reports. Commissioned by DRAGAR Ltd.

1991 - IEI – Voice Dialler/Alarm

This product involved taking over the design and construction of a project started by the Research and Development arm of IEI Australia (makers of the VESDA Smoke Alarm). The project involved a security alarm that would store digitised voice messages encoded using single bit adaptive delta modulation and to dial out and play the pre-recorded messages over the telephone in response to an alarm. There were strict requirements to meet “low power mode” power drain limits, EMF radiation limits, lightning protection, limited ROM and non-volatile RAM memory space, AUSTEL approval and voice quality standards.

Commissioned by IEI Australia.

Data Centre Recovery

2014 Grollo Aerospace - Fire
2014 Sony DADC – Water Ingress
2014 City West Water - Fire
2014 Australian Synchrotron – Electrical Fire
2013 Lycopodium – Fire
2013 Bank of New Zealand – Water Ingress (following earthquake)
2013 Gavin Research Institute – Fire
2013 Deakin University – Water Ingress
2013 RMIT Chemistry Dept – Fire
2013 St Vincent’s Hospital – Water Ingress
2013 University of New South Wales Electron Microscopy – Water Ingress
2013 NAB Data Centre – Power / Temperature
2012 Global Switch – Fire
2011 Bureau of Meteorology – Fire
2011 Kane Constructions – Water Ingress
2011 Red Cross Blood Bank – Hot Water
2011 Air Services Australia - Fire
2011 IBM – Telstra Rockleigh – Water Ingress
2011 APN News and Media – Water Ingress
2011 Global TV – Water Ingress
2011 I-MED Darwin – Water Ingress
2011 Westfield Auckland N.Z.- Tornado
2011 RMIT Nuclear Instrumentation Lab – Dust
2010 New Zealand Defence Department - (undisclosed)
2010 I-MED Armidale - Fire
2010 Murray Goulburn – Fire
2010 Digital House (Wellcom) - Water Ingress
2010 Vodaphone - Water Ingress / Flood
2010 Racing Victoria - Flemington Racecourse - Water Ingress
2010 Digital Pictures - Water Ingress
2010 Fosters Group - Water Ingress
2010 Black Cabs - Fire
2010 Perth Radiology Clinic - Water Ingress
2009 Digicell (Fiji) - Flood
2009 Commonwealth Bank UPS Room - Fire
2009 Vocational Language Centre - Water
2009 General Mills - Fire
2009 Oxley College - Fire
2008 Parasyn Controls - Water Ingress
2008 Moama Bowling Club - Fire

2008 ANZ Bank Trading Floor - Water Ingress
2008 St Johns Ambulance - Electrical
2008 The Spastic Centre - Fire
2008 Northern Metropolitan Institute of TAFE - Electrical
2008 Baker Heart Research Institute - Dust Contamination
2008 Dept Primary Industries Emergency Operations Centre
2008 Mt Baw Baw - Lightning Damage
2008 Macquarie Bank - Water Damage
2008 Computer Associates - Physical Damage to Network Infrastructure
2007 Black Cabs - Fire
2007 Meridian International School - Water Ingress
2007 Monash University - Water Ingress
2007 Plastic Wax - Water Ingress / Electrical Damage
2006 Holmesglen TAFE - Fire / Electrical
2006 Peerless Jal - Fire
2006 Livingstone International - Electrical Damage
2006 DCA Group – Pittwater Radiology - Fire
2006 Baker Institute - Water Ingress
2006 Primus Telecoms - Water Ingress
2006 Agriquality - Construction Damage
2005 Eyre Peninsular Radio - Electrical Damage
2005 Peter Stevens Motorcycles - Fire
2005 NuFarm - Fire
2005 Cypress Semiconductors - Fire
2005 Tasmanian Supreme Court - Construction Damage
2004 VPAC - Electrical Damage
2004 Alfred Hospital - Electrical Damage
2004 Roving Enterprises (Rove Live)
2004 CPM Australia - Water Ingress
2004 RMIT - Water Ingress
2004 Online 2000 - Water Ingress
2003 Ticket Master - UPS Fire in Data Centre
2003 Telstra Telephone Exchange - Fire Damage
2003 Austin (Australia) P/L ats NCR Australia P/L - Water Ingress
2002 Optus v Leighton & Ors [2002] NSWSC 327
2002 Seek Communications - Water Ingress into Data Room
2002 Bankers Trust. Accidental NAF S III (HCFC Blend A) Discharge
2002 Craig Moyston Group - Data Centre Relocation
2002 Monash Medical Centre - Water Ingress
2001 Cash Card - UPS Fire in Data Centre.
2001 Millard Design - Sulphur Dioxide contamination of Data Centre

2001 Orica - Water Ingress into Data Centre
2001 Hilton International - Water Ingress
2001 NRMA - Water Ingress
2001 Excel Digital - Water Ingress
2001 Challenger International - Electrical Damage and Contamination
2001 Nitto Deno - Fire Damage / Contamination
2001 Focus Press - Fire / Contamination
2001 AEGIS - Fire Damage
2000 Southcorp Wines - Water ingress
2000 Mail Marketing Works - Fire Damage
2000 Micro Touch - Water Ingress
2000 Sara Lee - Compromised Data Centre
2000 BAE Systems - Water Ingress
2000 Buchanan Group - Fire Damage
2000 Cybersource - Fire Damage
2000 Eastside Mitsubishi - Water Ingress
1999 Norwood Computer Type
1999 International Freight - Fire Damage
1999 David Jones - Contaminated Data Centre
1999 David Graphics - Water Ingress
1999 Elgas - Fire Damage
1999 Arlec - Water Ingress
1999 Australian Broadcast Corporation (ABC) - Water Ingress
1998 Optus Communications - Accidental Inergen Gas Discharge
1998 Optus Communications - Electrical Fire / Contamination
1998 Collie Power Station - Fire
1997 One Tel - Contaminated Data Centre
1997 Global One Communications - Water Ingress
1997 Optus Communications - Chlorine Gas Contamination
1997 Coles Myer - Water Ingress
1997 Optus Communications - Discharge of Foreign Matter