

## Duncan Dowling

Systems, Software and Safety Engineer  
Specialising in complex dependable systems

## Curriculum Vitae

### Summary

Duncan is a versatile and enthusiastic Chartered Engineer whose specialities include systems, safety and software engineering of complex software/data-intensive applications in highly regulated domains. He has 20 years' experience in the UK and overseas on large and small projects – primarily in the Rail (ETCS in particular), Aerospace, and Defence sectors. He is experienced in all lifecycle phases of delivering and assessing complex, critical, software/data-intensive systems.

Duncan thrives working on challenging projects, delivering value and engaging with people at all levels both inside and outside of the organisation. He is confident working either as team leader, team member or external consultant.

### Personal

Security clearance: Yes  
Full and clean driving licence  
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### Education and Professional Affiliations

Chartered Engineer (MIET).

1992 BEng (1st Class honours) from Brunel University.

**Key Skills** - Requirements engineering; systems analysis, design and modelling (UML); safety engineering; safety management; standards (CCS TSI, 00-56, IEC 50126/8/9, DO-178B); project management (APMP); programming (Python, C, C++, PHP, SQL, HTML); foreign languages (intermediate French, rusty German, travel Chinese).

**Interests** - Travel, learning, the outdoors, mountain biking, different cultures, being challenged.

### Employment history

- 2010 – current Director and Principal Consultant with [DARD Consulting Ltd.](http://www.dard.co.uk)
- 1998 - 2010 Senior Systems Engineer with Altran Praxis (formerly Praxis Critical Systems).
- 1994 - 1996 Project Engineer with PVC Additives Limited (Hong Kong).
- 1988 - 1993 Industrial Placements with Edwards High Vacuum (BOC Limited).

### Significant past/current roles:

Duncan worked as systems assurance engineer at Network Rail on the **Western ETCS Project**. He was responsible for ensuring that necessary evidence was in place to allow the railway infrastructure, newly overlaid with ETCS Level 2 equipment, to be relied upon for protection of ETCS trains. Principally the role involved hazard identification and analysis, liaison with signalling design engineers, operators, assessment bodies, and suppliers, and presentation of results to SRP and in a safety case.

Duncan assisted Siemens in developing the **trackside ETCS signalling system for Thameslink**. He worked with domain experts in Network Rail and Siemens to demonstrate that the supplied system, consisting of integrated tailored off-the-shelf products, is able to satisfy the customer's requirements. Key activities include requirements analysis, performance analysis, development of application rules, design reviews and demonstration of compliance with the CCS TSI to the NoBo and ORR.

Duncan was **software architect for a flight-critical subsystem** for a new fighter aircraft to be certified to DO-178B. In this role Duncan worked with the Client to resolve technical issues, maintained the System Architecture and ensured software designs were produced and implemented taking into account cost, schedule, Client intent, qualification, complexity and future needs. Prior to this role Duncan formed and led the development team and defined the detailed design processes.

Duncan led a Praxis team carrying out the **safety assessment for the WATCHKEEPER UAV system**. The team carried out risk identification, analysis, safety requirements specification, and audited/assessed/supported the supply chain and produced early versions of the electronic System Safety Case (using ASCE). The role involved negotiation and liaison with numerous stakeholders within Thales, their supply chain, the MoD, the IPT and Independent Assessors.