Provenance in Engineering
Industrial perspectives on the provenance of design data

Alex Ball
UKOLN, University of Bath

20th April 2009
Outline

1. Introduction
2. Intellectual property protection
3. Forensic investigation
4. Helpful technologies
   - Watermarking
   - Lightweight Models with Multilayered Annotations
   - Design Rationale Editor
   - Topic maps
   - Media Enhanced Minuting System
   - Asynchronous transaction activity modelling
5. Conclusions
Intellectual property protection

Information flows within an engineering organization
Forensic investigation

For effective investigation, design records need to be:

- available
- genuine
- navigable

Photo courtesy: David Pritchard (CC-BY-NC)
Helpful technologies

Some relevant research from the KIM Project

- Watermarking
- Lightweight Models with Multilayered Annotations
- Design Rational Editor
- Topic maps
- Media Enhanced Minuting System
- Integrated product, process and rationale models
Watermarking

Media Enhanced Minuting System
Asynchronous transaction activity modelling
Within engineering organizations, particularly those producing long-lived products, provenance information is needed for:

- asserting authorship and ownership of particular designs
- tracking the re-use of designs within organizations
- ensuring the authenticity and authority of a design (or other engineering record)
- uncovering the reasons underlying any particular design decision

⇒ not just about the files, but the hows and whys of design
Acknowledgements

UKOLN is funded by the Joint Information Systems Committee (JISC) of the Higher and Further Education Funding Councils, MLA: the Museums, Libraries and Archives Council, as well as by project funding from the JISC and the European Union. UKOLN also receives support from the University of Bath where it is based.

The Digital Curation Centre is supported by the JISC and the UK e-Science Core Programme.

The KIM Project was supported by the UK Engineering and Physical Sciences Research Council (EPSRC) and the Economic and Social Research Council (ESRC) under Grant Numbers EP/C534220/1 and RES-331-27-0006.