Report on Session 4

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Complementary talks

- Nick Multari, "Applying Science Practices to Cybersecurity"
- Laura Tinnell, "From Infrastructure to Science"

- Broad theme – what kind of support do we need to do better science?

Debunkosaurus

Broader questions

- What is the "science of cyber security"?
- What kind of science is cyber science?
- Do cyber scientists know how to do science?
- Do engineers do science?
- Are we scientists or engineers?
- Does science lag behind engineering?
- What can we learn from scientists in other disciplines?
- What can we learn from engineers in other disciplines?

Pacific Northwest
NATIONAL LABORATORY
Proudly Operated by Battelle Since 1965

Early
Problem is poorly understood and in observational stage

Mid-point
Developing general models using specific examples to be tested

Mature
Models validated for operational use

Explore: Describe the Phenomenon	Make Predictions: Challenge the Conceptual Model	Implement: Signatures Monitoring
Develop a Conceptual Model	Falsifiable Questions Conduct Experiments	Support Assessments Decisions

Engineering perspective

- Safety case
  - "a documented body of evidence that provides a convincing and valid argument that a system is adequately safe for a given application in a given environment"

Railway safety process
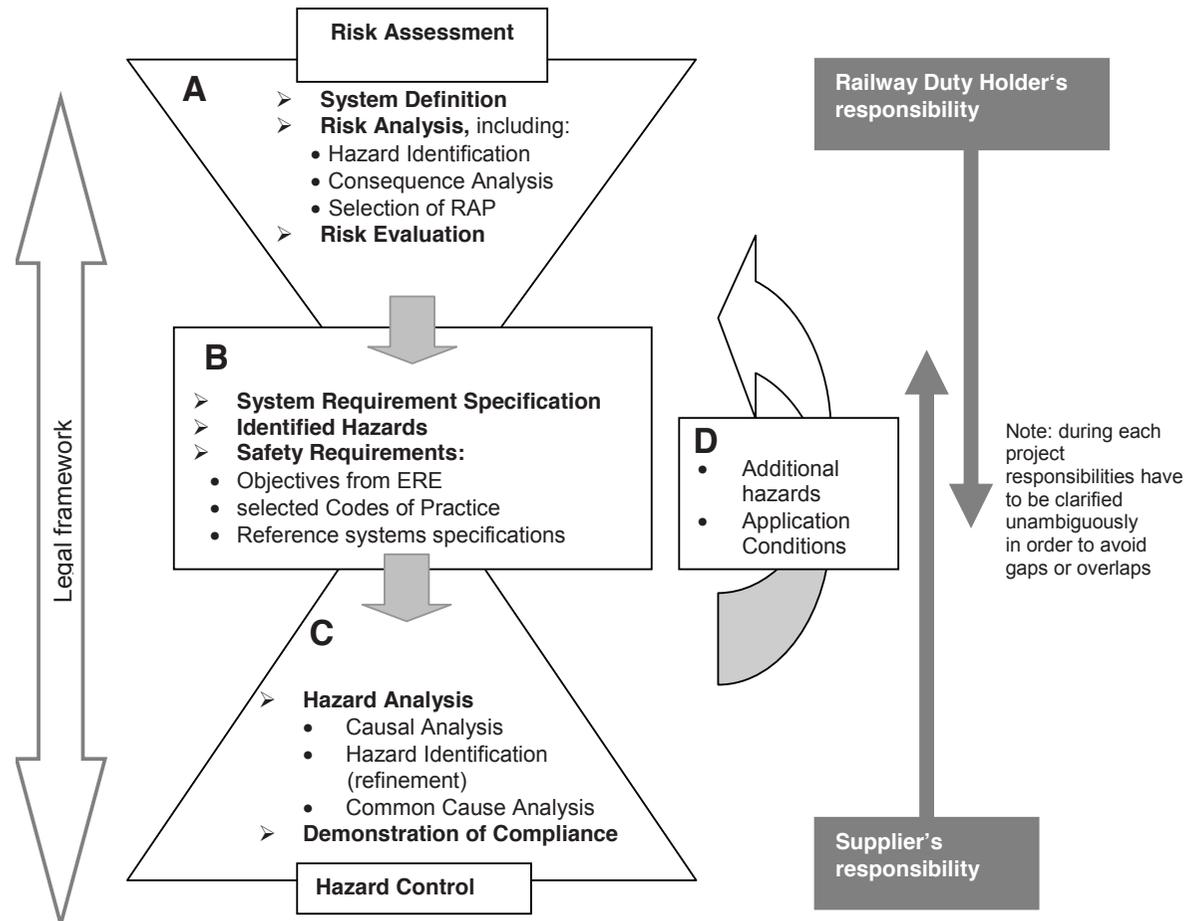
Draft BS EN 50126-2:2012 Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) – Part 2: Systems Approach to Safety

Structure of a (railway) safety case
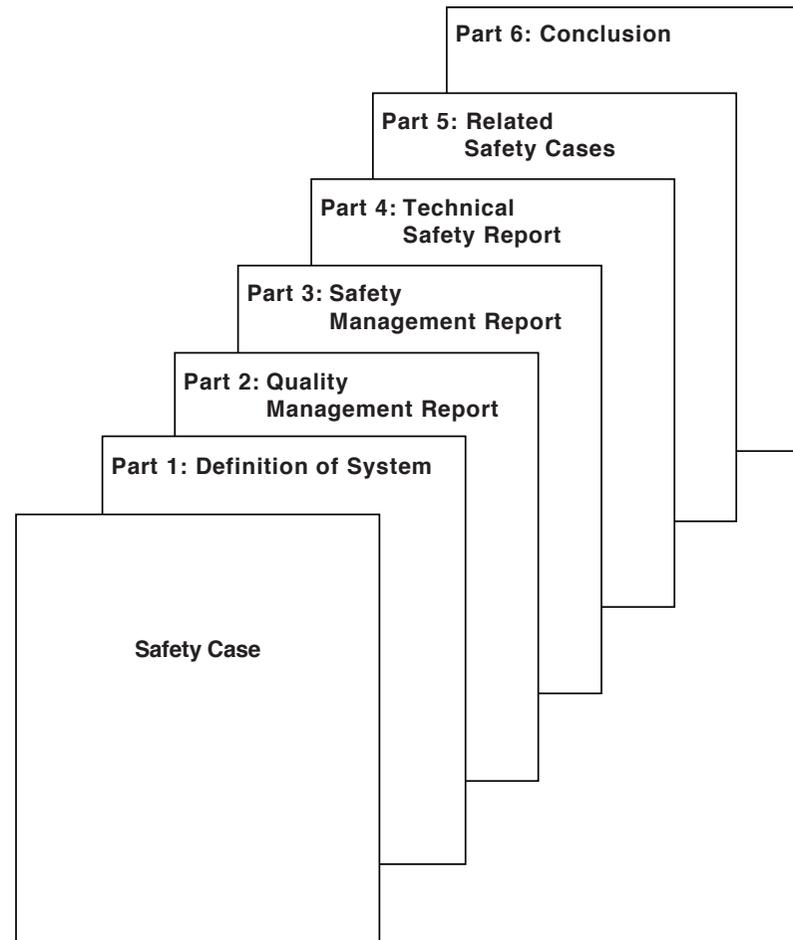
Draft BS EN 50126-1:2012 Railway applications - The specification and demonstration of Reliability, Availability, Maintainability and Safety (RAMS) – Part 1: Generic RAMS Process

A question for the scientists

- UK legal requirement - risk should be ALARP
  - "As low as reasonably practicable"
- How should we measure this?
- What are the cost/benefits of different interventions/controls?
- Where is the supporting evidence for the recommended methods and techniques in the safety standards?