Roke

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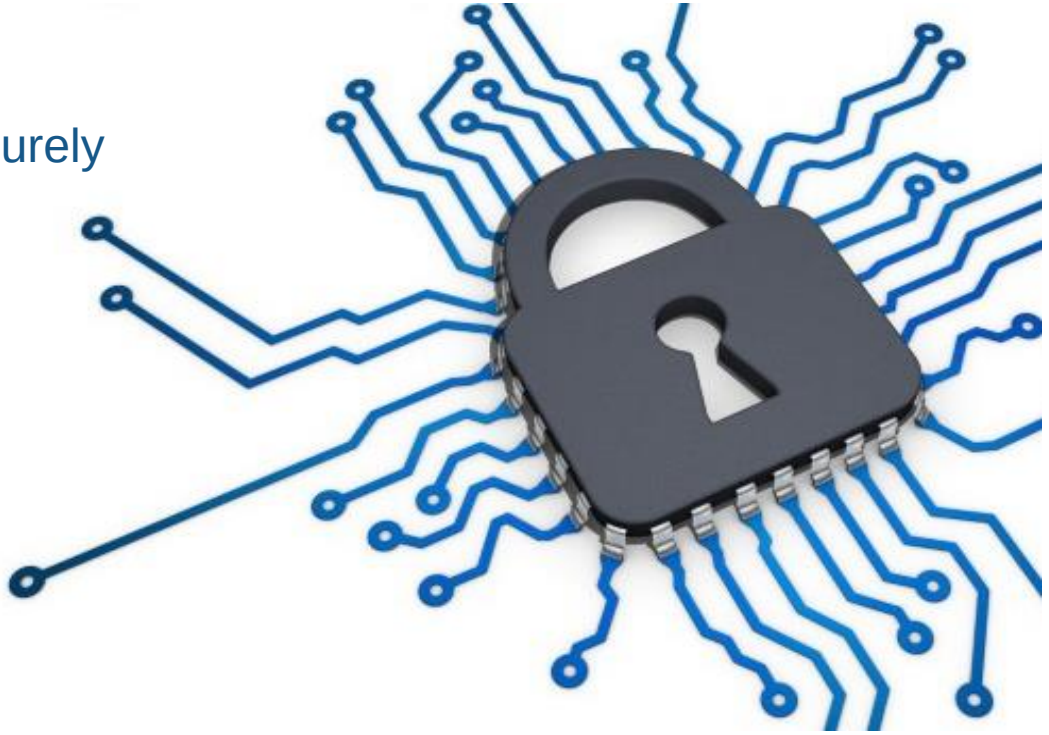
# Roke

Grasping New Technology - Securely

06 December 2016



# Background

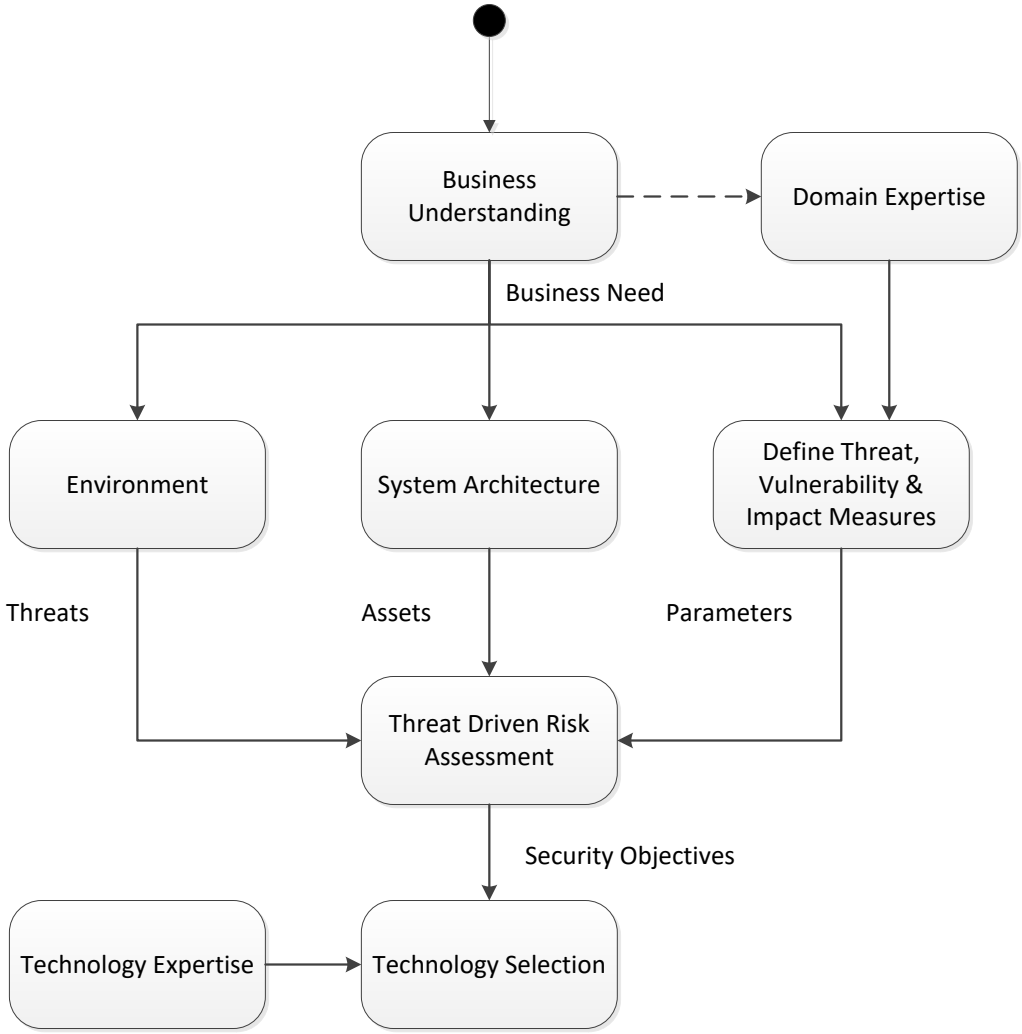
- To apply business led, threat driven risk analysis
- Underpinned by real engineering and technology knowledge
- To realise information security which is effective and fit for purpose.

# Information Assurance – Threat, Nuisance or Saviour?

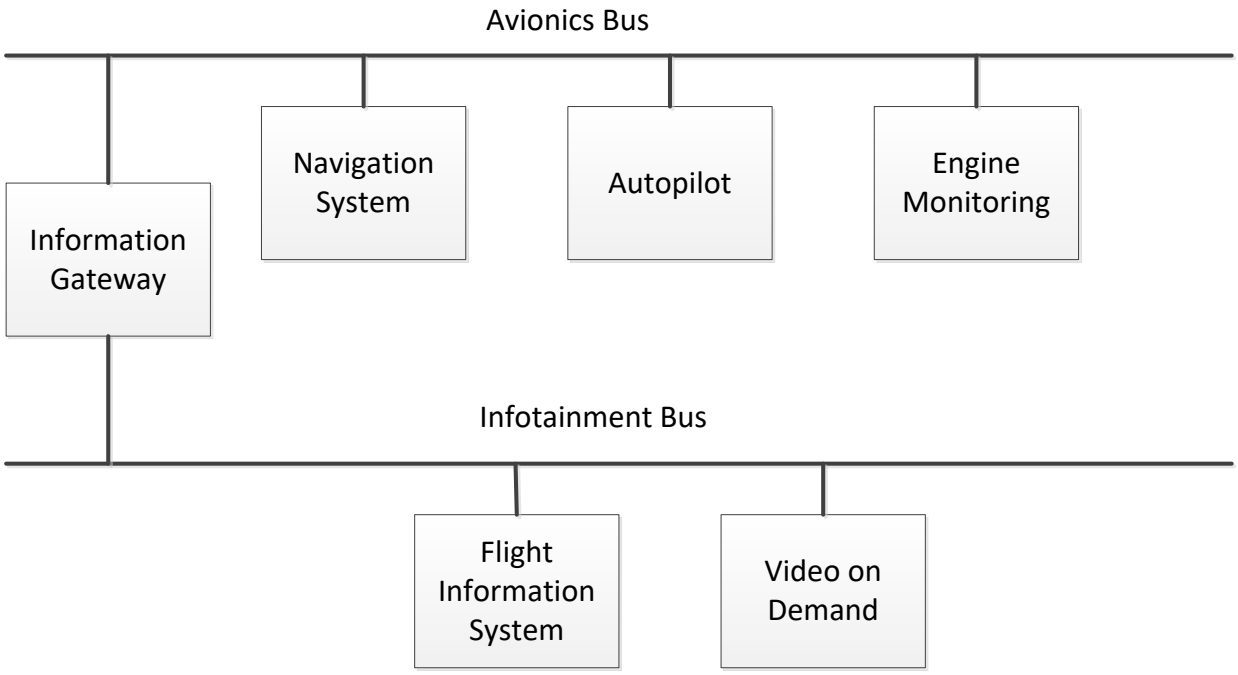
- Cyber Threats
  - Global reach of the Internet
  - Ubiquitous availability of IT resource
  - Sheer size and diversity of threats
- The need for Information Security has never been greater
- However many engineers regard Information Assurance as obstructive:
  - Locking down useful features
  - Preventing ways of working
  - Blocking technology benefits
- Yet, like all good security activities, good cooperation between experts is essential

# Approach

1. **Architecture Capture:**
   - What the system must do
   - The environment
   - How the system is designed and constructed
2. **Asset Identification:**
   - What to protect and why
3. **Vulnerability:**
   - Intelligence, Technology Analysis, Testing
4. **Impact:**
   - Confidentiality, Integrity and Availability
   - In values relevant to the business
5. **Assess Risk:**
   - Risk = Threat * Vulnerability * Impact
6. **Identify Controls:**
   - Security Objectives
   - Technology Selection

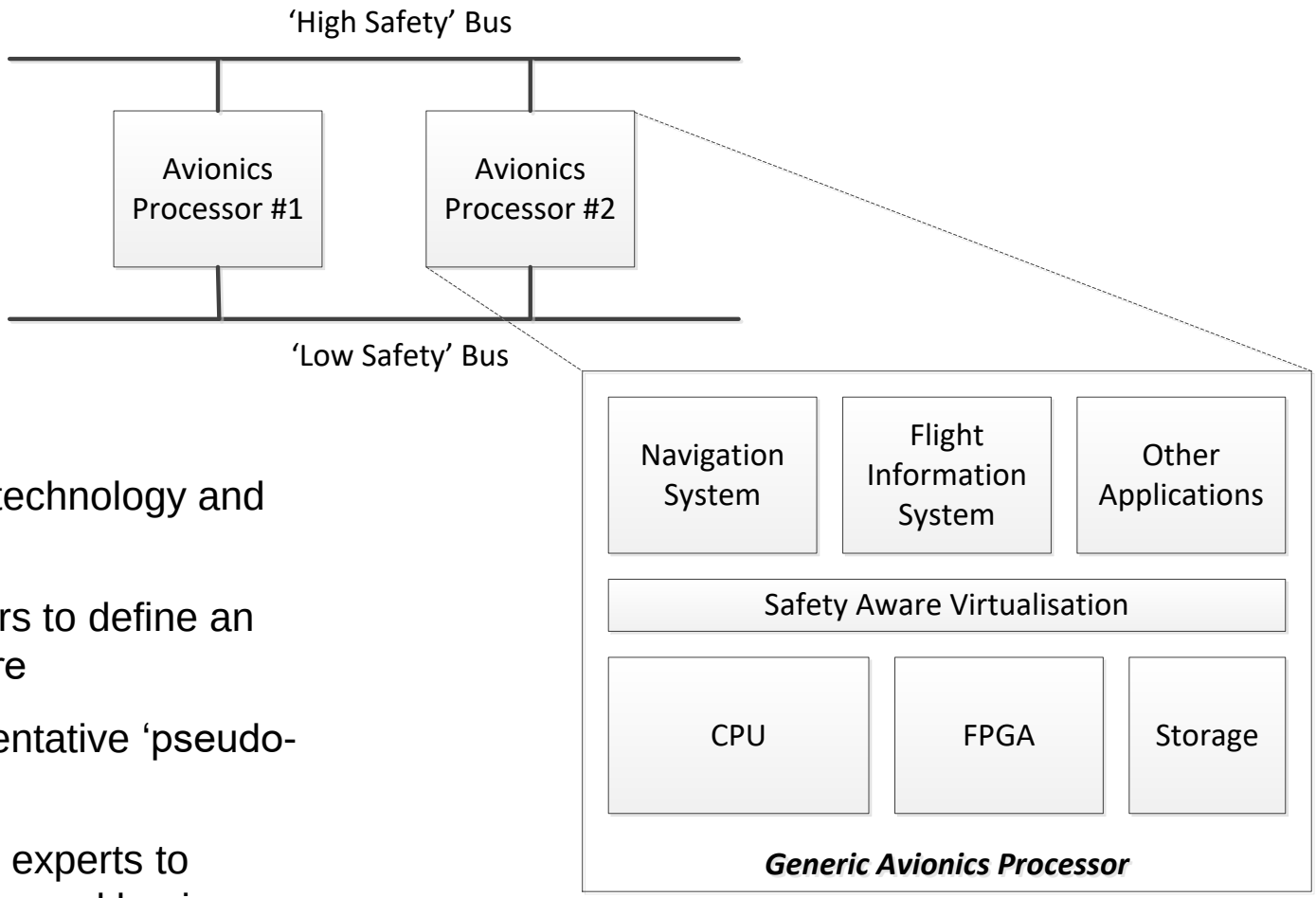


# Avionics - A Connected Challenge




- Historic Architecture:
  - Separate individual systems
  - Fixed roles and connectivity
  - Strong approvals process
  - Clear Security Architecture
- Difficult to Upgrade:
  - Cost of repeating approvals – from scratch
  - Difficult to grasp benefits of increasing technology performance

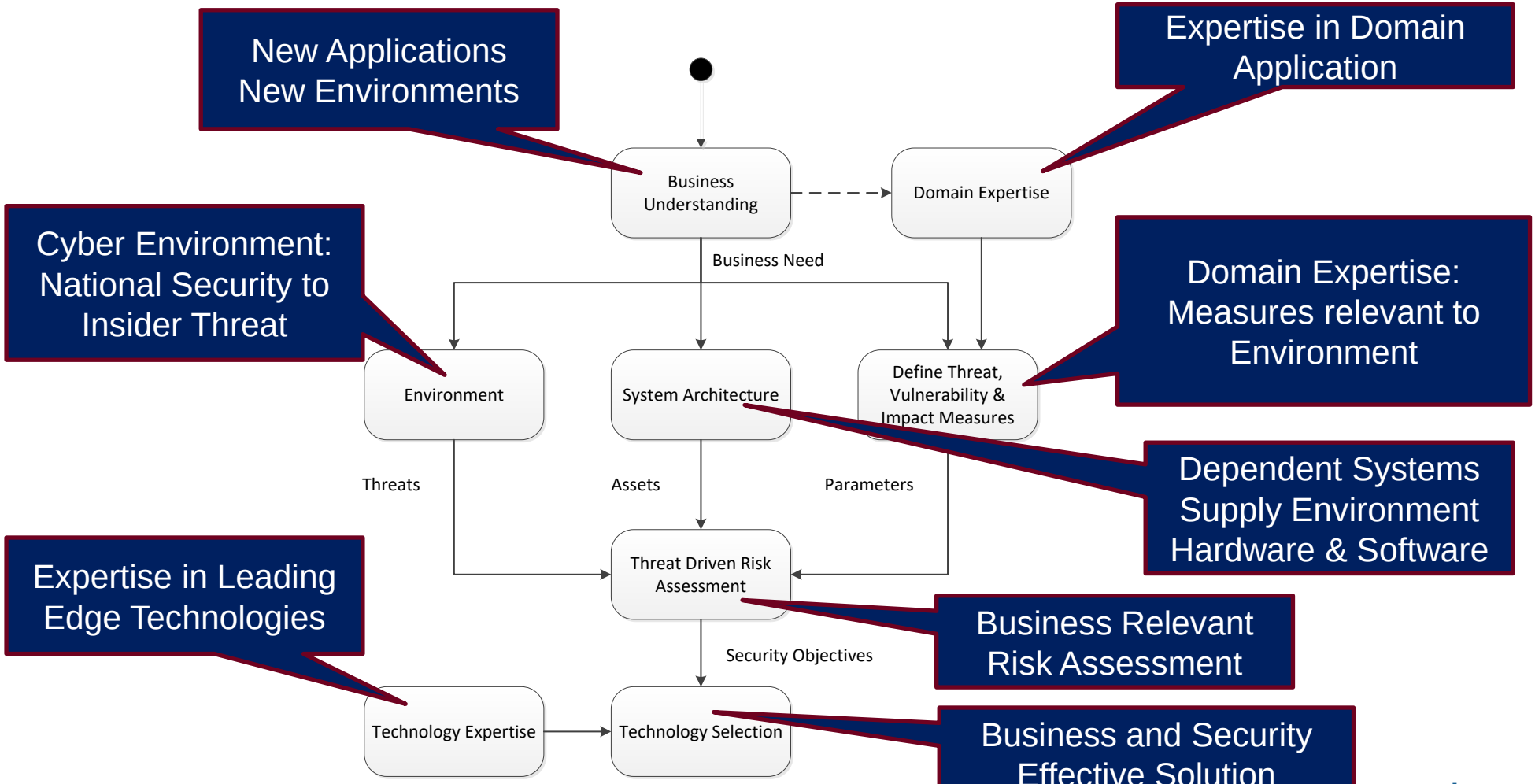
# Avionics - A Connected Challenge




New Technology:

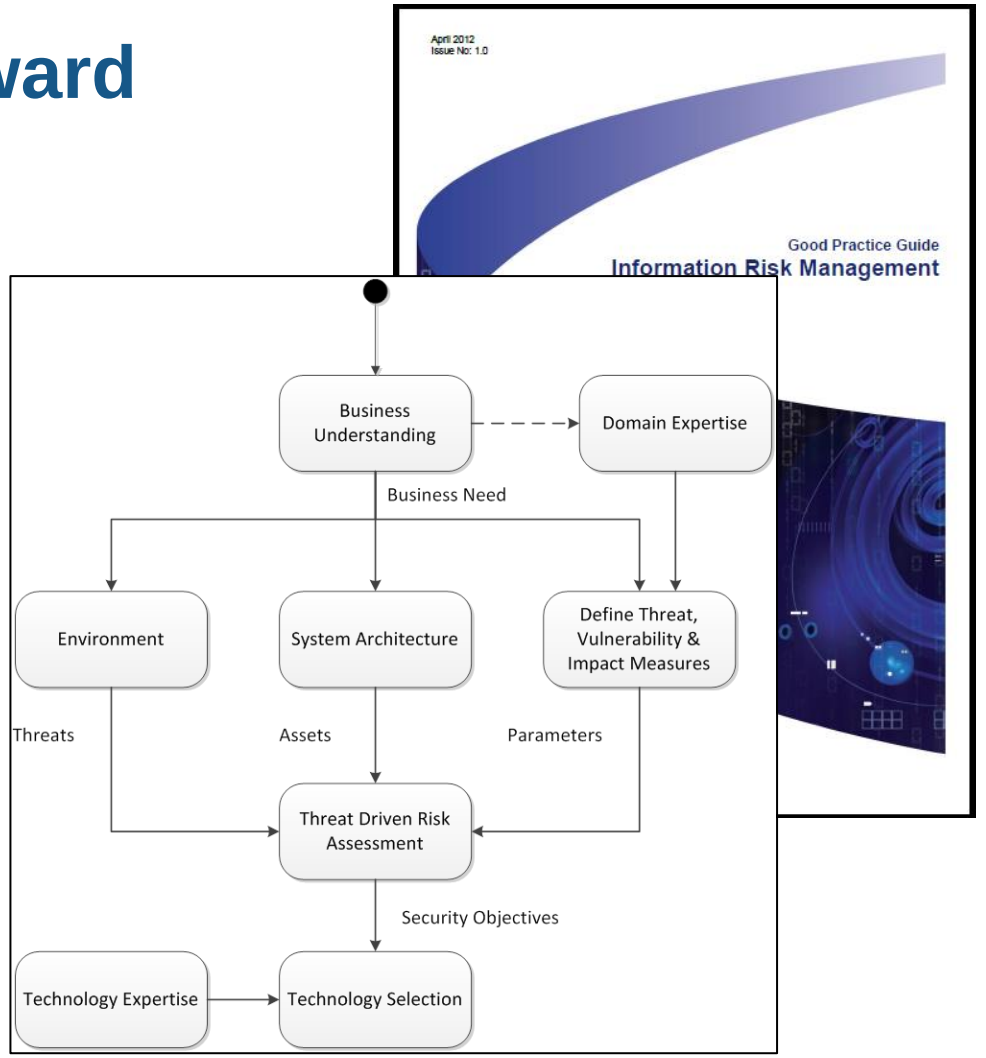
- Desire to adopt new technology and architecture
- Worked with engineers to define an 'exemplar' architecture
- Established a representative 'pseudo-physical' model
- Worked with avionics experts to understand application and business requirements

# Avionics: Information Assurance Outcomes



# Frameworks: Going Forward

- Why:
  - Provides a structure within which everyone can operate, with clear objectives and outcomes.
  - Provides effective guidance enabling others to enter and participate.
  - Can act as force multiplier pulling business and engineering into cyber protection
  - Provides a means of certification
- But this needs to be appropriate:
  - Parallels with ongoing government guidance which has moved to high level, establishing security posture, intent and engineering responsibilities.

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