Engineering Security

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The 3 Steps to Secure Process Systems

1. **Stakeholder engagement**
   - Understanding and Vision
     Backing
     Combined Know-how

2. **A dedicated security programme**

   People, process & technology
   Standards & Tools
   Assurance/Monitoring

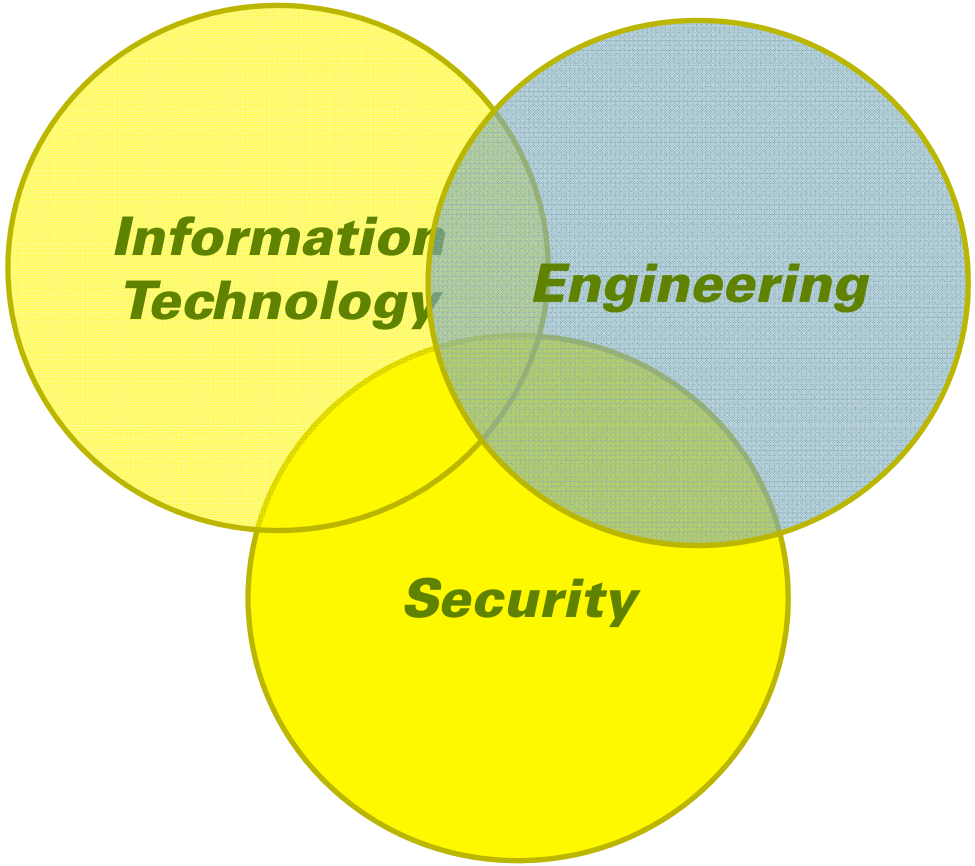
3. **A new mind-set**

   Engineering thinking in IT situations
   Get the vendors on-side
   Acting together (Industry standards, test labs, shared learning)

“Lame Excuses”

- **We do not use digital technology**
- **Its not connected to the corporate network**
- **Its never happened**
- Plus all the IT systems ‘lame excuses’ *“Writing Secure Code”, Michael Howard & David LeBlanc, Microsoft Press:*
  - No one will try that attack
  - Why would anyone do that?
  - We’ve never been attacked
  - We’re secure – we use encryption
  - We’re secure – we use ACLs
  - We’re secure – we use a firewall
  - We’ve reviewed the code – there are no security bugs
  - We know it’s the default but the administrator can turn it off
  - If we don’t run as administrator, stuff breaks.

IT Security in an engineering environment



Will organisational scope allow the right experts to work together?

Dedicated Security Programme

Segment:														
BU														
Good Segregation	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Good Three Tier Architecture	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Good AV	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No
OS Patching	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Contingency Planning	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Training	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

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**** Their emphasis***

The IT environment challenges

- Features vs. security requirements
- Cost drivers away from bespoke software & Code re-use
- Hard to predict dynamic IT vs. deterministic design
- Enormous code sizes
- ‘Re-boot’ mentality
- Dealing with legacy
- Security Entropy
- Using people who know what they are doing

Professional Security Expectations

- Security staff need to be accountable & have decision making roles.
- Professionals not just “advisors”.

- Is a bridge designed by a project manager?
- Would the surgeon wake you to ask your opinion?

Engineering Approaches

- Understand
- Analyse
- Build
- Operate/Test
- Measure

Risk Assessment/Policy

Security Techniques

Secure Development Lifecycle

Repeatable testing (ISA) /Pen Tests vs. SIL

Monitoring Systems - (Log][C)

All to standardised & repeatable processes

See: ANSI/ISA-99.00.01-2007
and ISA Security Compliance Institute
www.isa.org/ISASecure

Questions?

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