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From PIAs to Engineering Practices

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Presentation

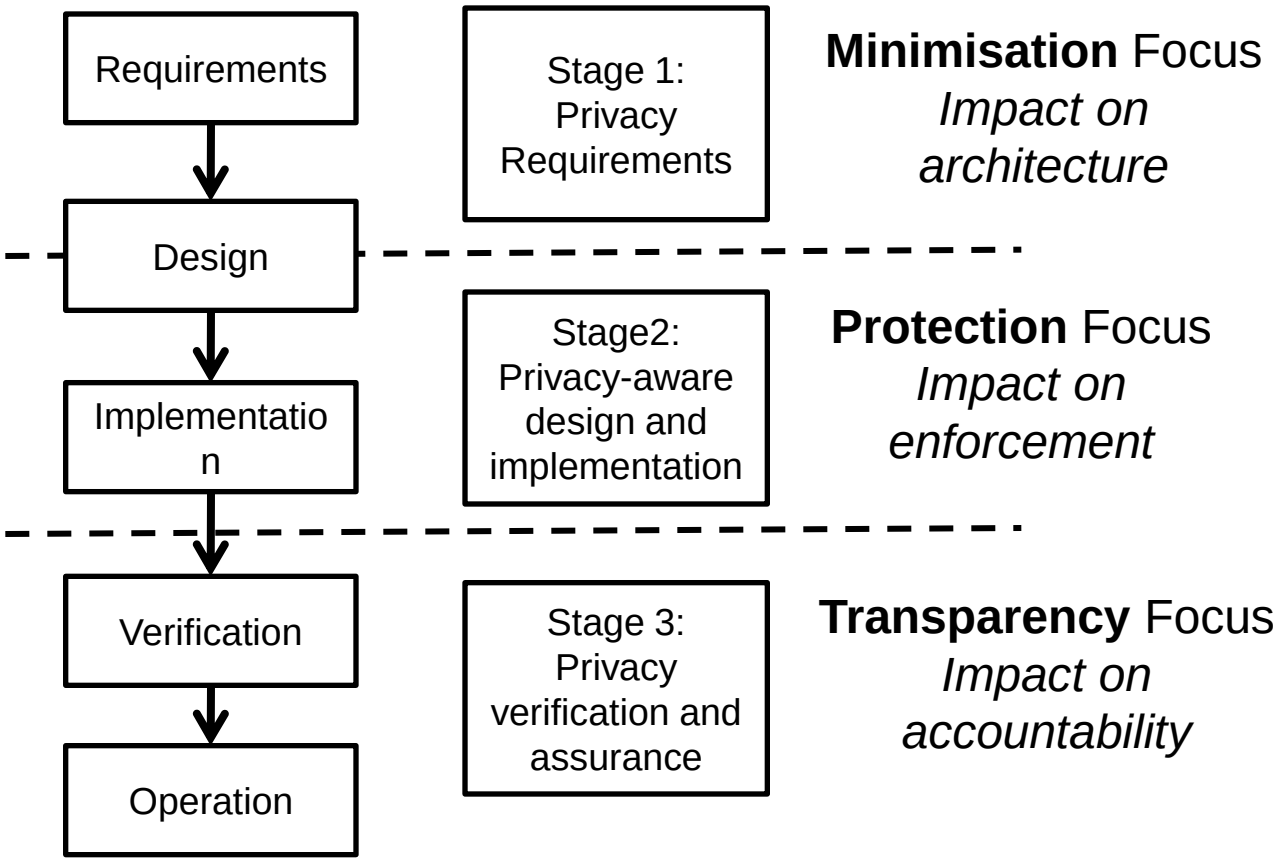
- PIAs VS PbD process
- Hurdles for engineering practices
- Measures for engineering practices

PIA vs Privacy-by-design process

- PIA
  - Process is external to main development process
  - Typically carried out by external stakeholders
  - Collects evidence that main development process will lead to a system which conforms to a data protection (legal) framework
- Privacy-by-design process
  - PdB is a requirement that impacts on the main development process
  - Involves the main engineering team
  - Produces development artifacts that will be collected as evidence for PIAs

Hurdle 1: Agreeing on Principles

- Principles are being proposed
- Consensus is needed. Example



Hurdle 2: Integration into Main Process

- PET are designed by experts
- Applications are designed by domain specific experts (smart meter, telematics systems…)
- Adapting PETs to a given application sector is not trivial
  - Smart meter metrology compliant process
  - Automotive SIL process
- Example of approach: reusable components based on model-driven engineering
  - TERESA project (www.teresa-project.org)

Hurdle 3: Impact on Standardisation

- PbD impacts on architecture
- PbD impacts on communication needs
- PbD impacts on interoperability needs
- PbD impacts on standardisation
- Solutions change all the time

- Approach: instead of standardising one solutions instance, could not we standardise the flexibility approach?

Hurdle 4: Impact of Ecosystem

- Example 1: Platform vs Applications
  - e.g. ITS use case (e.g. CVIS project)
  - e.g. Cloud computing
  - Platform PIA vs Application PIA?
  - PbD platform vs PbD application?
  - Interoperability issue?
- Example 2: P2P systems
  - e.g. 1 million systems based on 500 device manufacturers
  - Device PIA vs P2P software PIA?
  - PbD device vs PbD P2P software
- Impact on PbD process and on PIA?

Hurdle 5: Lack of Engineering Curriculum

- Situation today is appalling
  - Privacy by design impacts the whole design process
  - 99% of today engineers have no clue about PbD
  - 99% of computer science students will have followed software engineering courses without any exposure to PdD in the next years!!
- Changing the curriculum is needed

Measures

- The need to create an engineering discipline
- Creation of a community
- Creation of an Engineering Forum
  - Driving projects
    - SecFuture
    - Teresa
    - Nessos
  - Kickoff
    - Feb 2nd 2012
    - Malaga

www.securityengineeringforum.eu will open on that day

Thanks

Acknowledgement

Past projects

- Sevecom (http://www.sevecom.org/)
  - Security for C2C
- Preciosa (http://www.preciosa-project.org/)
  - Privacy for ITS
- Serenity (http://www.serenity-project.org/)
  - Pattern based engineering

Current projects

- Preserve (http://www.preserve-project.eu/)
  - Security Enabler for Field Operational Test
- Teresa (http://www.teresa-project.org/)
  - S&D engineering for resource constrained embedded systems
- SecFuture (http://www.secfutur.eu)
- Nessos (http://www.nessos-project.eu/)