Design for Security (DFSEC)
Solutions for the Programmable World

Security by Design

**Scalable**
- to meet the rising security and privacy demands of 5G, IoT...

**Integrated**
- as a part of our product creation, security baked-into 100% of products as a part of our product creation

**Automated**
- through threat intelligence, efficient correlation, Continuous Integration.
Nokia Design for Security

- Scope of coverage: process, people, technology
- Implementation: proactive & reactive measures, flexible to work with new technologies & requirements
Security baked into Nokia product life-cycle “CREATE”

Nokia Design for Security (DFSEC)

Proactive

Planning: Threat & risk analysis; requirements & architecture
Development: secure coding; hardening, privacy
Integration & verification: security testing & security updates, malware scanning
Security Compliance: Gap analysis and Mitigation plan

Reactive

Security vulnerability management
Security updates and patching

A flexible framework to incorporate emerging technologies & requirements
Design for Security
Key components of Security Management Process

Proactive

Design for Security (DFSEC)
  Feature screening
  • Security threat & risk analysis
  • Privacy Impact Assessment

Systems engineering
  • Security & privacy requirements
  • Security architecture specification

Development
  • Secure coding
  • Source Code security testing
  • Product hardening

Integration & verification
  • Security testing
  • Malware scanning
  • Data Scrambling verification (privacy)

Compliance: Gap analysis and Mitigation plan

Reactive

Security vulnerability management

Fault management process

Vulnerability information from public sources
Design for Security process
Process supported by a virtual security organization inside Nokia

Product Security Community

Lead
Product Security Office: in charge of defining/maintaining the process, the tools and checklists

- Mobile Networks (MN) BG
- Network Infrastructure (NI) BG
- Cloud & Network Services (CNS) BG

Business Unit
- Business Unit
- Business Unit

Product Line
- Product Line
- Product Line
- Product Line

Product Security Manager (PSM):
Enforcement of Nokia’s product security methodology on product and system development activities. PSMs are in the BGs, but not part of the Product Lines

Security Lead (SL):
Leader of product security activities in product lines that is responsible to implement the proactive and reactive security processes. SLs are in R&D of Product Lines.
Nokia Security & Privacy Management Process (DFSEC)

Nokia Networks Product Security Baseline

Secure Coding Guidelines

Hardening Guideline

Security Testing Guideline

Crypto Guideline

Product Privacy Baseline

Privacy Engineering and Assurance Process
Security & privacy testing as part of integration and verification

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