

Design for Security (DFSEC)

Solutions for the Programmable World

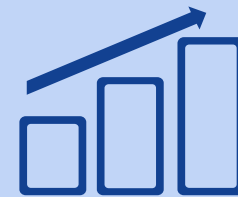
Secure. Automated. Trusted. Reliable.



Security by Design

Scalable

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



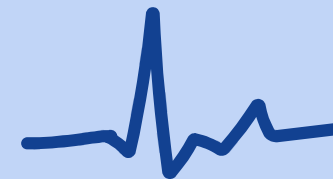
Integrated

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, machine learning and analytics.



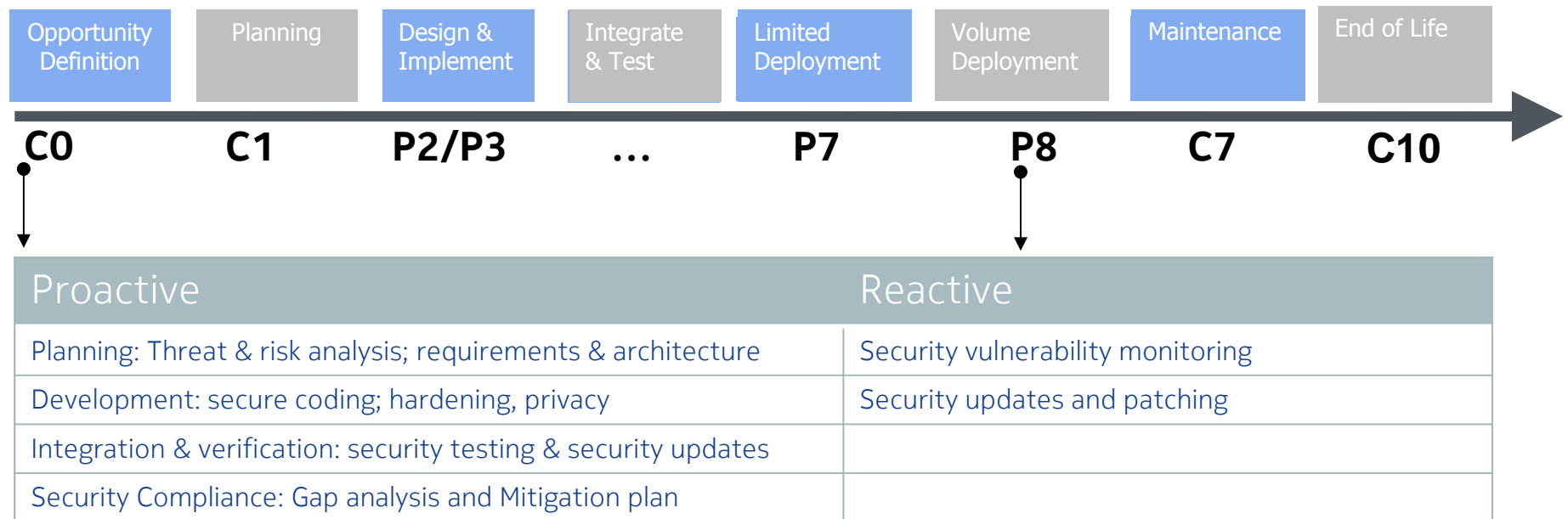
Nokia Design for Security



- 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)



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

Systems engineering

- Security requirements
- Security architecture specification

Development

- Secure coding
- Source Code security testing
- Product hardening

Integration & verification

- Security testing

Compliance: Gap analysis and Mitigation plan

Reactive:

Security vulnerability monitoring

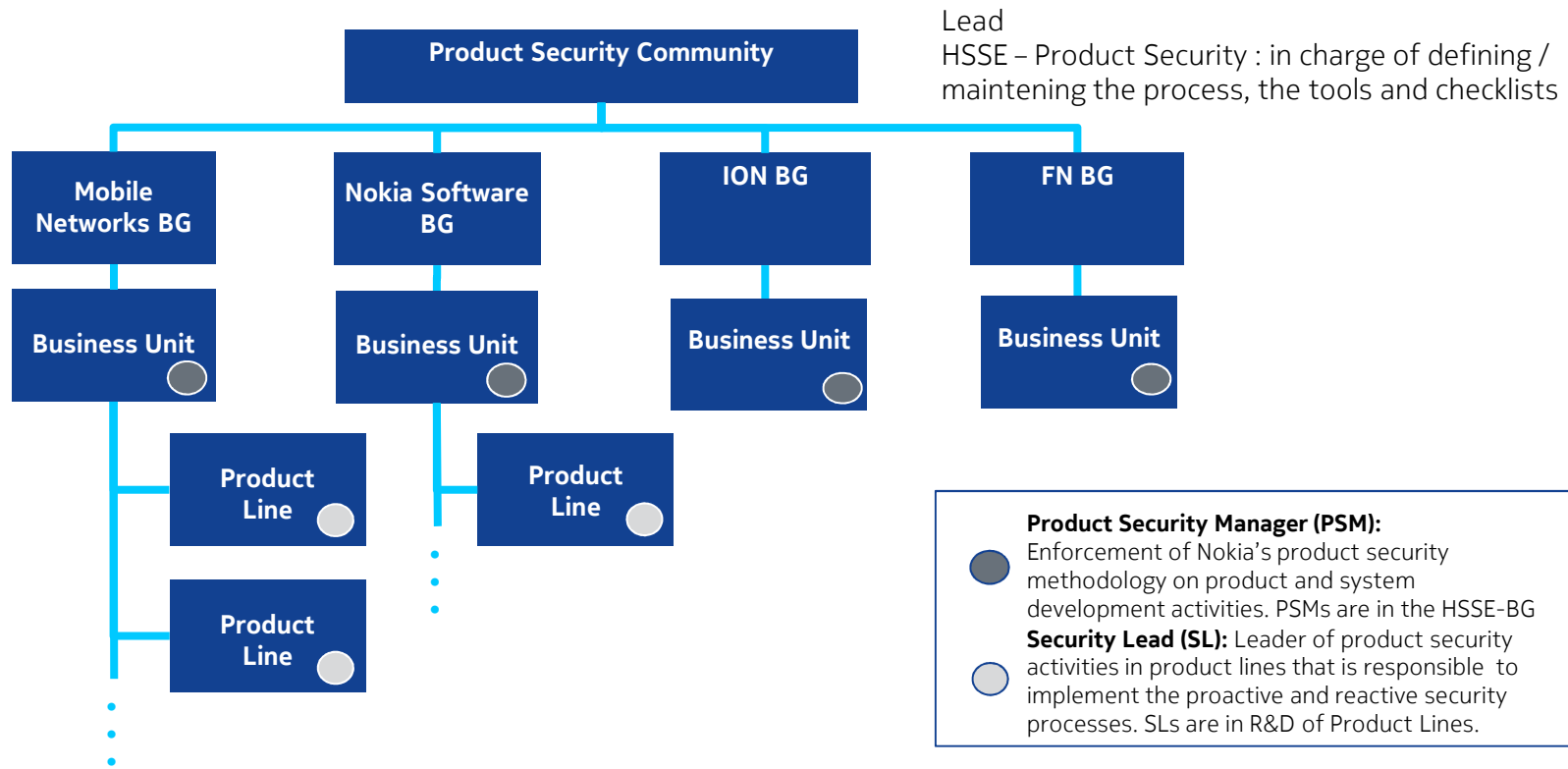
Fault management process

Vulnerability information from public sources



Design for Security process

Process supported by a virtual security organization inside Nokia



Nokia Networks Product Security internal standard

**Nokia Networks
Product Security
internal standard**
Technical issues

**Nokia Networks
Product Privacy internal
standard**

Nokia Networks Product Security Baseline

**Nokia Networks
Product Privacy Baseline**

Secure
Coding
Guidelines

Hardening
Guideline

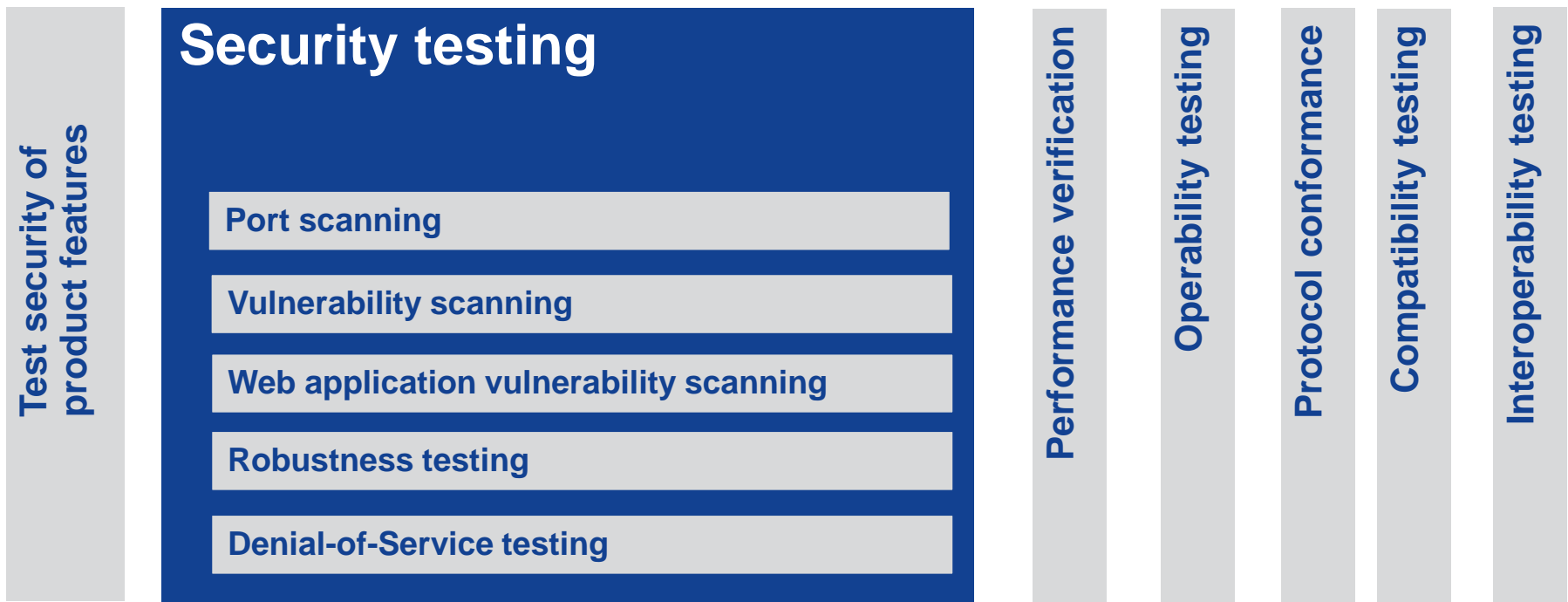
Security
Testing
Guideline

Crypto
Guideline

Virtualization
Security
Guideline

Product Privacy Process
Guideline

Security Testing as part of Integration and Verification



Security Statement of Compliance

Testing	Security Testing : analyze the security exposure and to find vulnerabilities and robustness issues
Hardening	Hardening : secure the system by removing unneeded functionality and configuring the remaining securely
Vulnerability Management	Vulnerability Management : to effectively handle relevant 3 rd party vulnerabilities
Security Baseline	Security baseline definition: Industry-standard security best practices. Security Baseline and ensures a low security exposure
Virtualization & Privacy	Virtualization & Privacy: Requirements for secure virtualized systems and for privacy respecting products

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