

**SAFECARE**

*Integrated cyber-physical security for health services*

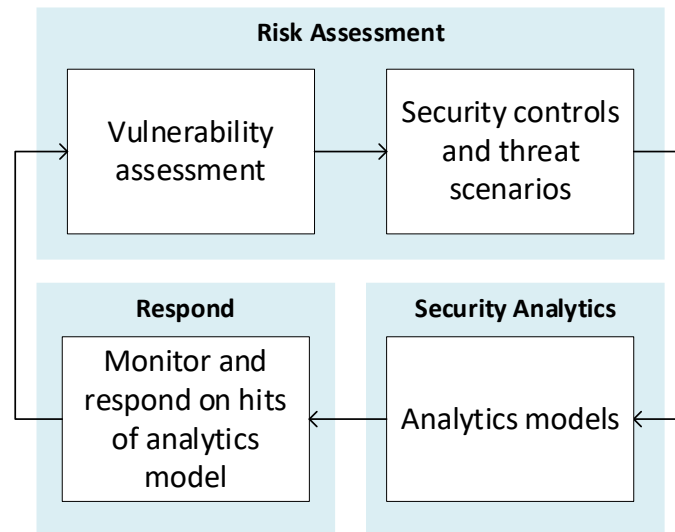
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**SAFECARE Commercial Event :  
Security Risk Management over the Medical Device Lifecycle**

Erika van Nijnatten

# Improving product security design by visual and data driven risk management

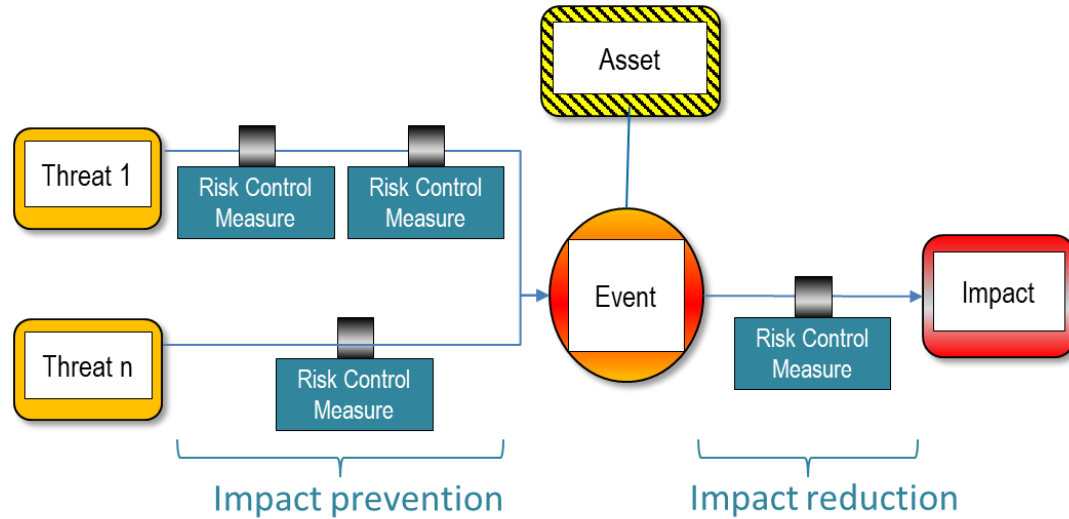
## User requirements



- Create overview in large and complex data set
- Indicate weak points
- Guide stakeholder communication

# Security Risk Management Model

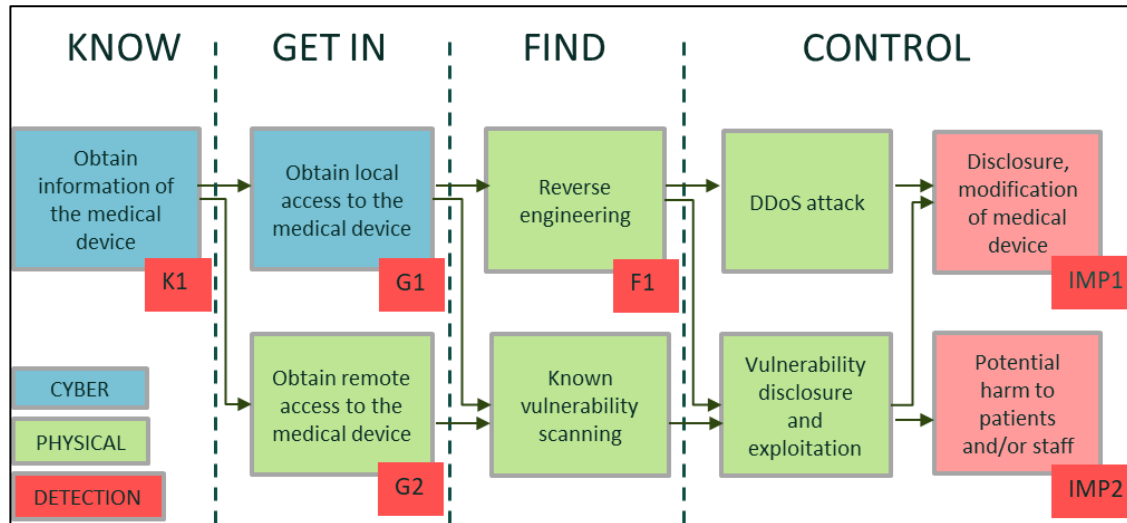
BowTie visualizes risk management



- Attacks & defenses in one glance
- Compatible with threat modelling methods (EBIOS)

# Security Risk Management Model

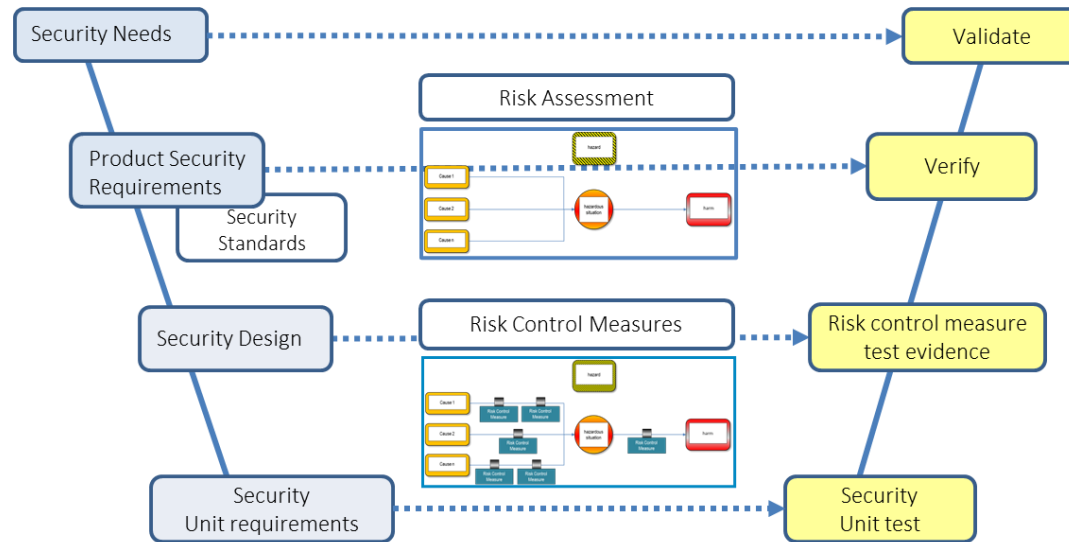
## EBIOS models attacks



- Gives detection and intervention points in the four stages
- Structures completeness review of risk mitigations

# Security Risk Management Model

Embeds security at all levels in V-model



- Decomposes measures into design
- Guarantees test coverage
- Traces security requirements

# Security Risk Management Model

Post-market surveillance driven by field data



- Monitors effectiveness of security measures
- Improves security design
- Triggers response to anomalies

# Conclusion

## Robust end-to-end risk management process



- Continuous safeguarding devices
- Responds to changing risk factors (Post-market surveillance)
- Advance product security through security services

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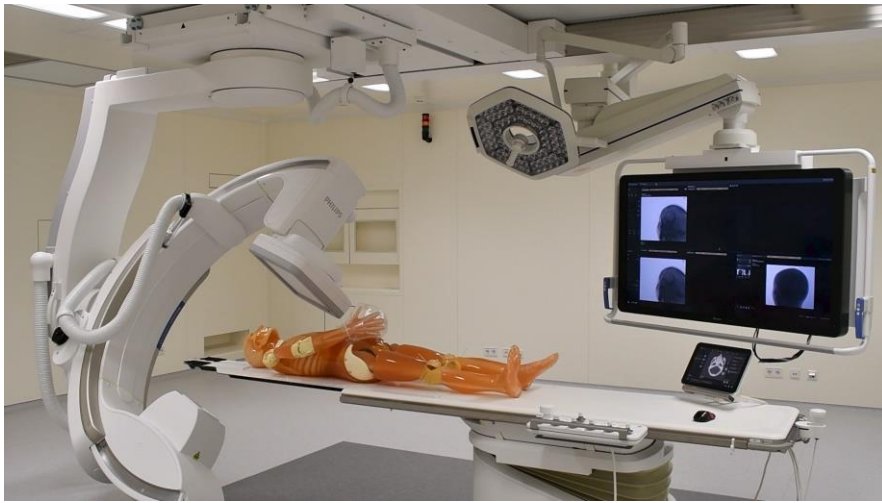
## SAFECARE Commercial Event : Medical Device Security Analytics & Monitoring

Paul Koster



# Security monitoring

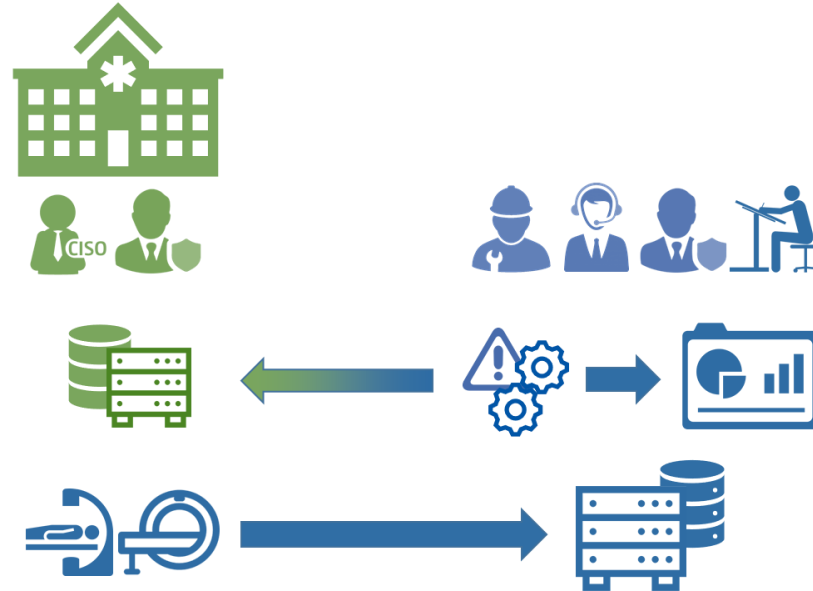
Advancing medical device security – a joint responsibility



- Legislation, regulations, norms and standards push for better security
- Bio-medical solutions sub-optimally addressed in hospital networks today
- Manage security throughout lifecycle

# Security monitoring

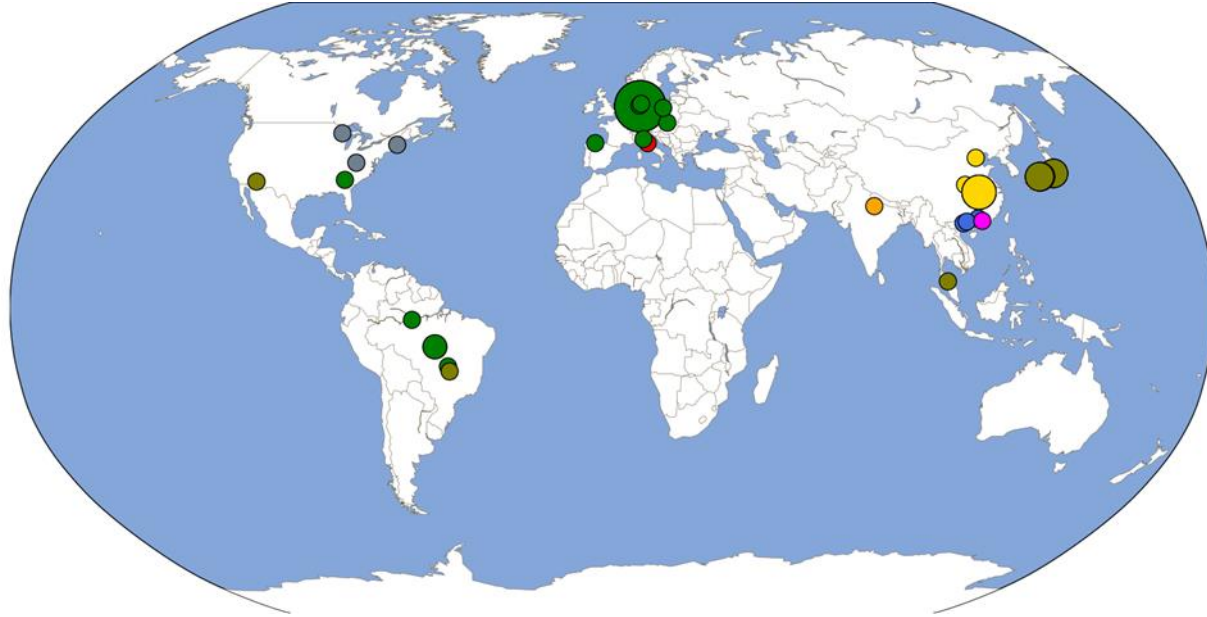
## Analytics powered pro-active security monitoring services



- Medical device as security sensor
- AI-powered security alert models
- Integration with service and security solutions (SIEM, CTMS, ...)

# Security monitoring

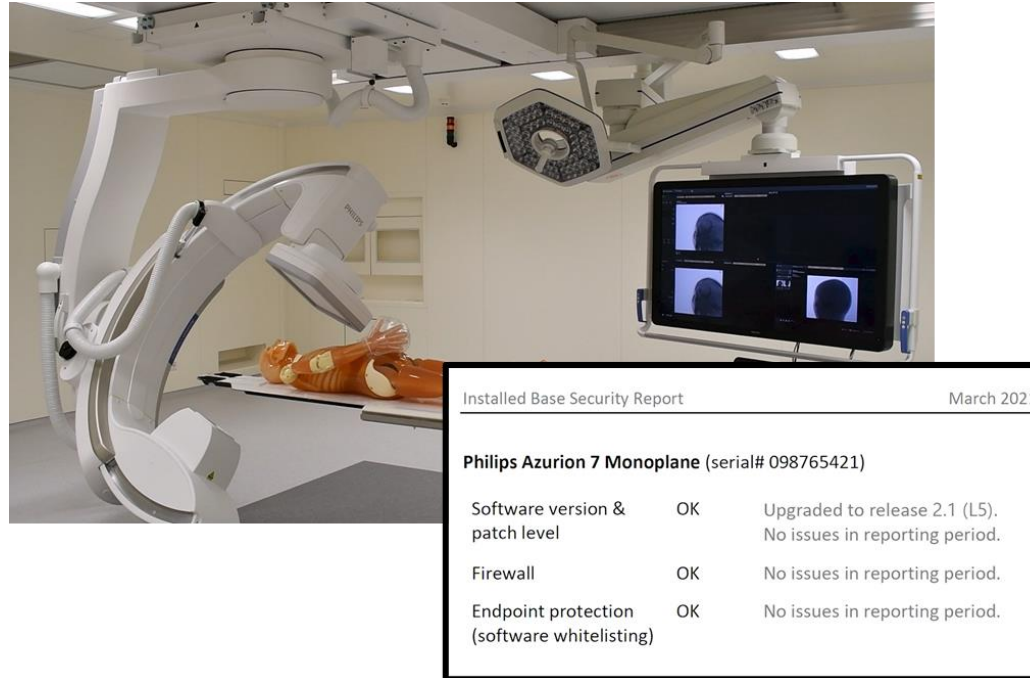
Security alerting models to detect & remediate



- Detect threats and anomalies
- Monitor security controls status
- Support product security risk analysis

# Security monitoring

Tailored to workflow & environment



- SOC analyst, SOC operator, Service Engineer, Security Manager, CISO, biomedical engineer
- Dashboards, ticketing systems, standards-based integration

# Security monitoring

## Security services to protect medical assets



### Philips Cybersecurity Services

- Philips Cybersecurity Services
- Partnerships
- Product security risk management



**SAFE CARE**

*Integrated cyber-physical security for health services*

<https://www.safecare-project.eu/> 

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SAFECARE Project 

# Thank you for your attention!

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Erika van Nijnatten

Project Manager Process Improvements  
Erika.van.Nijnatten@philips.com

**PHILIPS**

Paul Koster

Senior Scientist  
r.p.koster@philips.com