SARNET – ENHANCING RESILIENCE AGAINST CYBER ATTACKS

Frank Fransen | 5 October 2016

TNO innovation for life

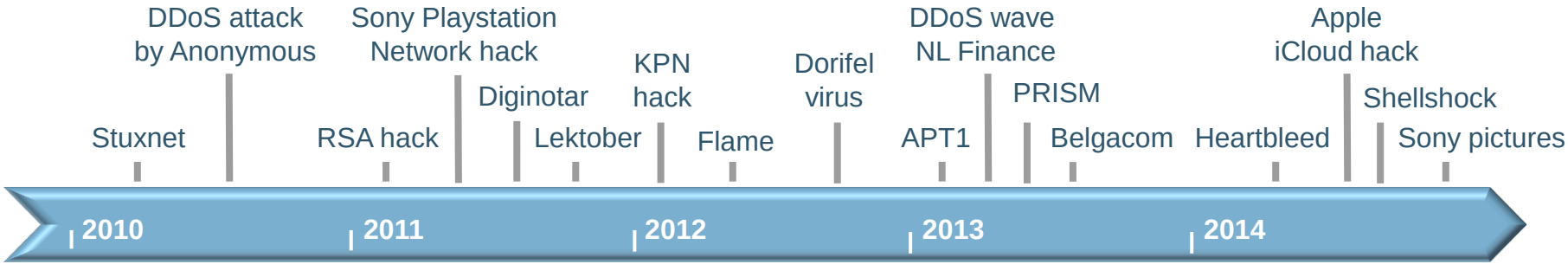
SARNET - Enhancing Cyber Resilience

Relation to NCSRA II

CYBER THREATS ARE EVOLVING…

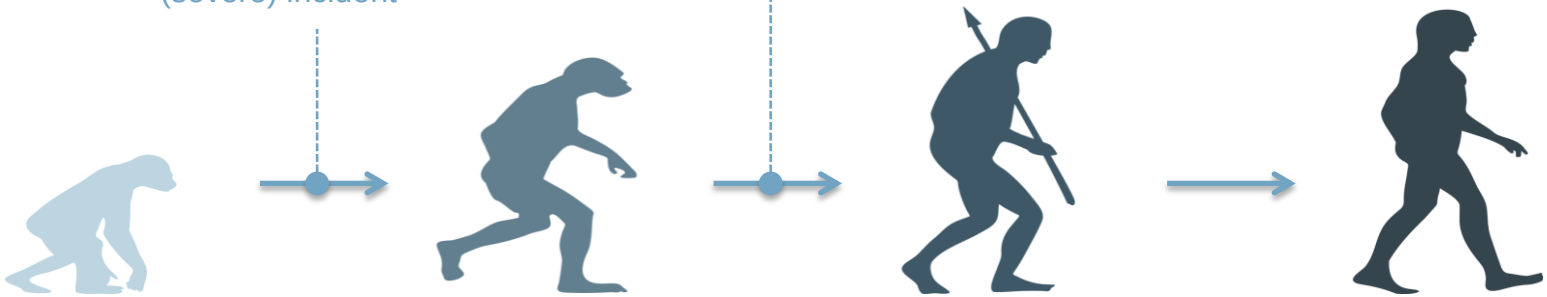
Key trends

- Magnitude of **vulnerabilities**
- **Sophistication** of attacks
- Degree of **organisation**



...AS ARE RESILIENCE STRATEGIES

often induced by
(severe) incident



Traditional prevention
put up walls and hope for the best

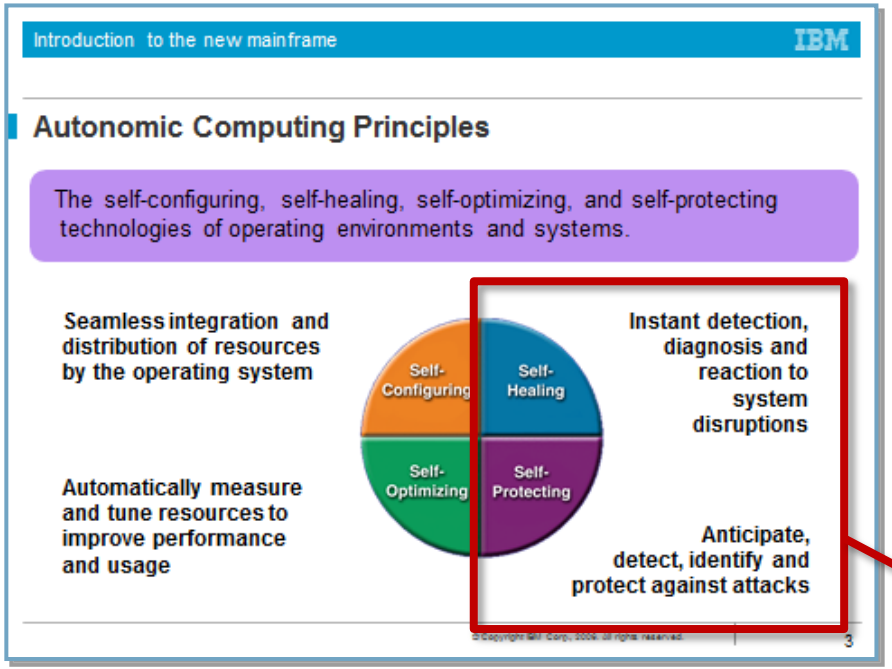
Monitoring & response construct
detect (potential) attacks and limit damage

Threat intelligence capabilities
anticipate and take proactive precautions

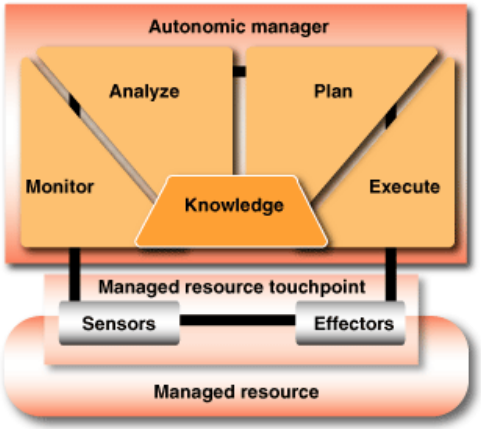
Autonomous response & recovery
reduce dependency on human operation

Automation is required to mitigate cyber threats and attacks in time

… THE IDEA IS NOT NEW



- In 2001 IBM defined Autonomic Computing with *Self-Protection* and *Self-Healing*



Autonomous Response & Recovery

… THE IDEA IS NOT NEW

Introduction to the new mainframe

Autonomic Computing

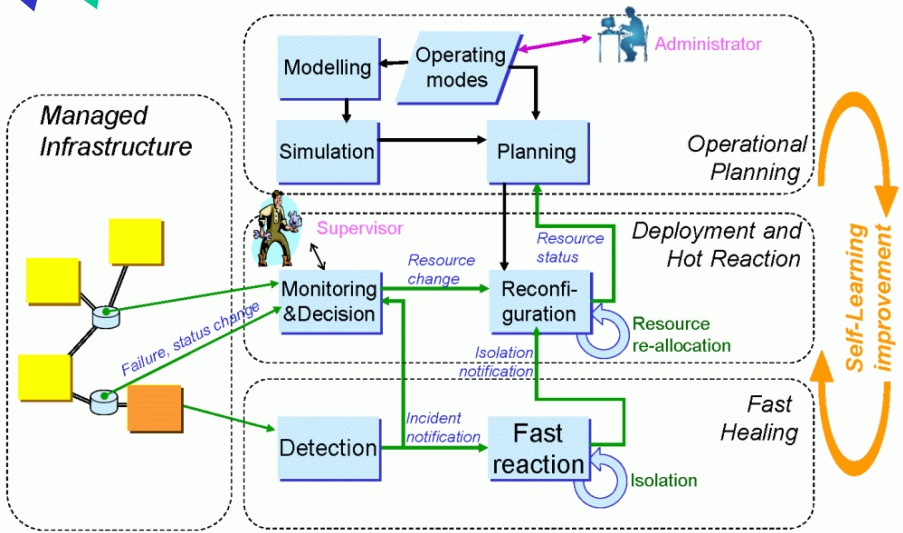
The self-configuring, self-h… technologies of operating

Seamless integration and distribution of resources by the operating system

Automatically measure and tune resources to improve performance and usage

DESEREC

Dependability and Security by Enhanced Reconfigurability



FP6 project IST–2004–026600–DESEREC

…outing with

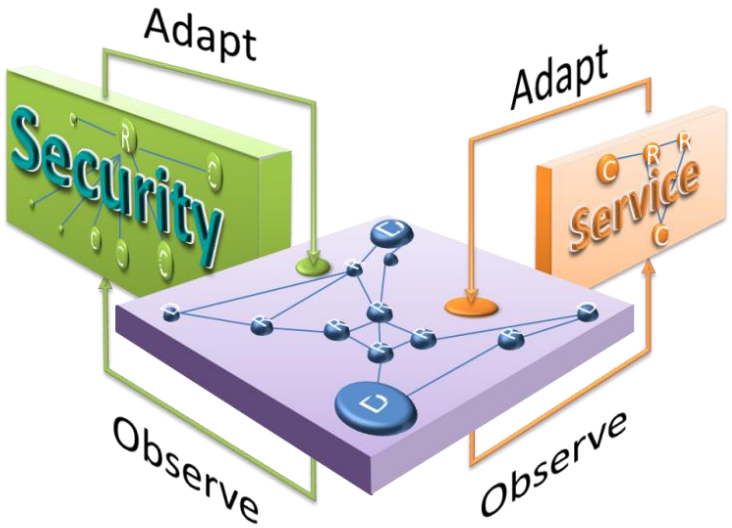
…Recovery

… BUT IT IS HAPPENING NOW

CYBER GRAND_CHALLENGE

August 2016

SARNET



Make use of SDN and NFV technology to create cyber resilient ICT infrastructures

Cyber resilience - “The ability of an ICT system to *anticipate*, *withstand*, *recover* from, and *evolve* to improve capabilities in the face of cyber threats & attacks”

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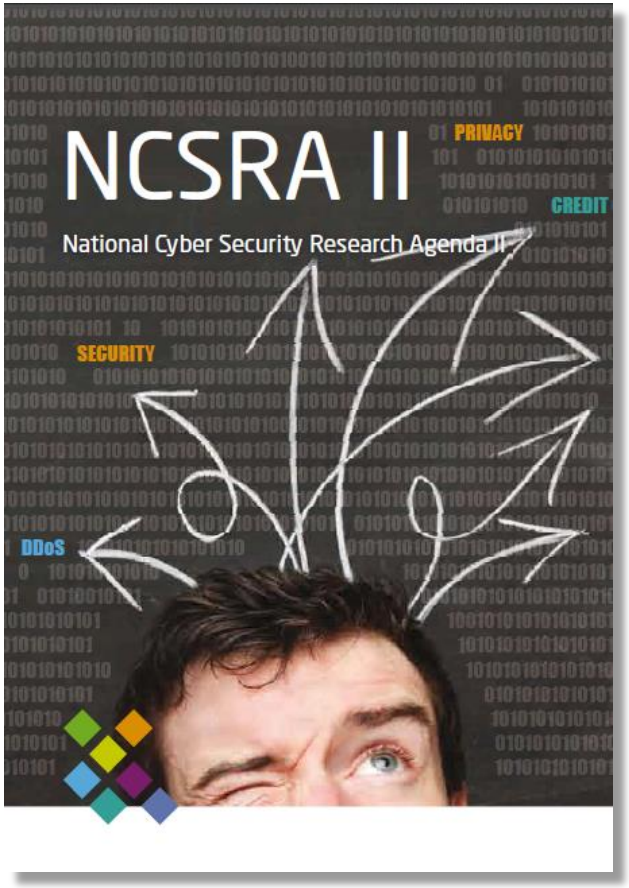
Relation to NCSRA II

NATIONAL CYBER SECURITY RESEARCH AGENDA II

- Published in November 2013
- Basis for call for proposals:
  - NWO Cyber Security
  - SBIR Cyber Security
- Produced by IIP-VV http://www.iipvv.nl

dcypher https://www.dcypher.nl/



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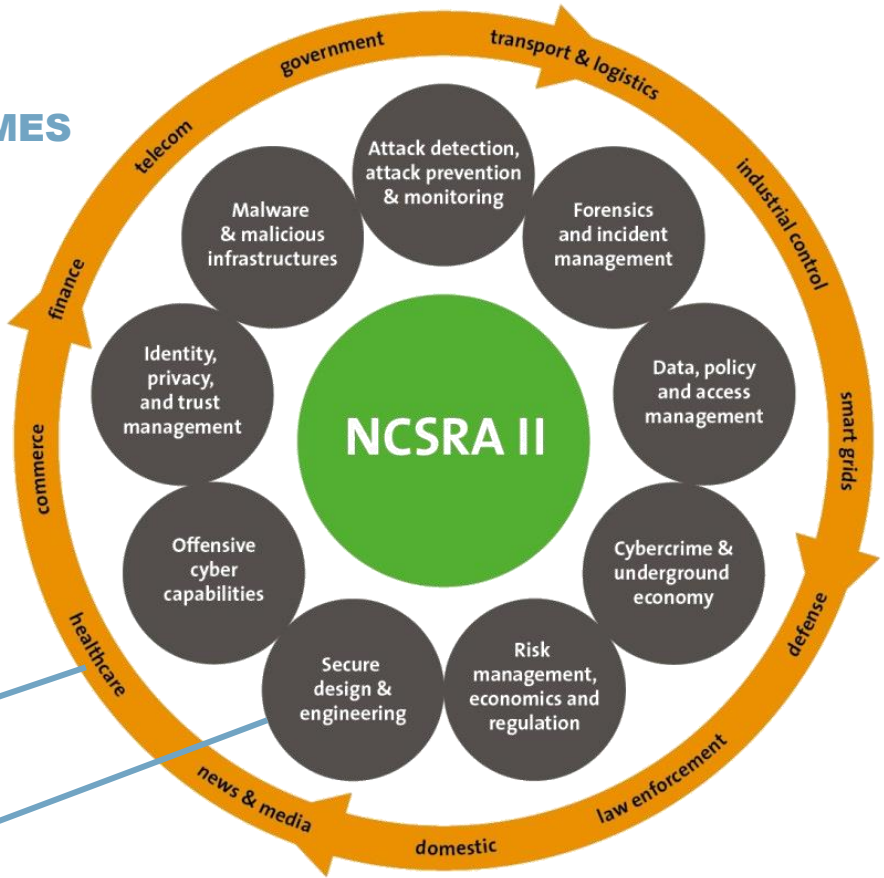
NCSRA II

APPLICATION DOMAINS & RESEARCH THEMES



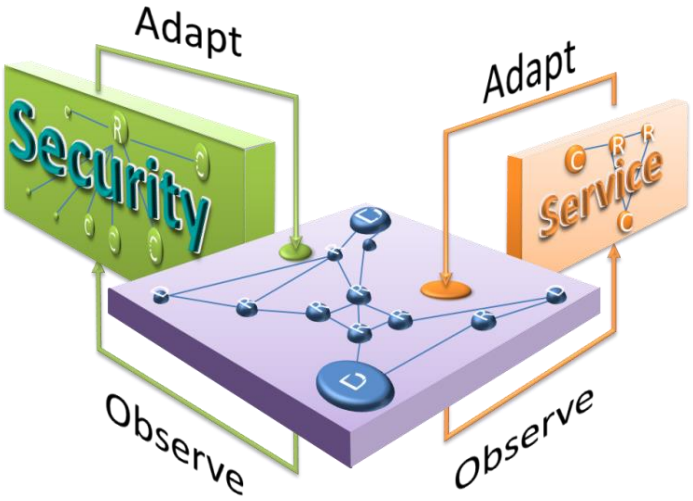
12 Application Domains

9 Research Themes

NCSRA II

Relation to SARNET

- Autonomous Response
- Self-protection & Self-healing



THANK YOU

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