



NVE

CYBER SECURITY IN THE NORWEGIAN ENERGY SECTOR

Oslo Analytics, UiO, 4 December 2017

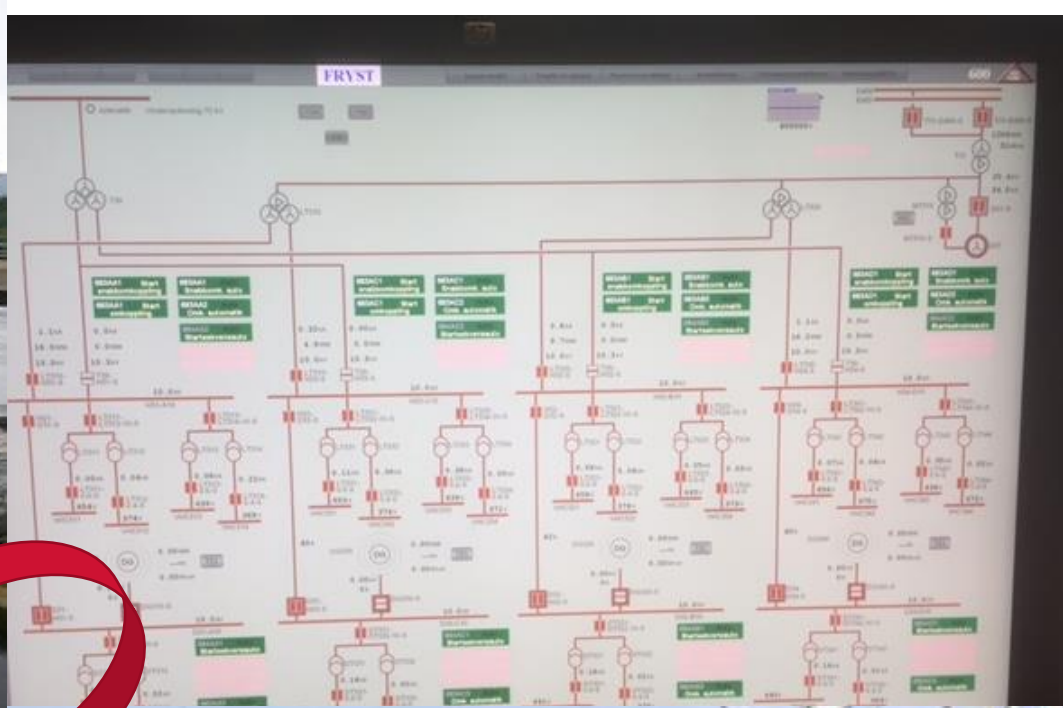
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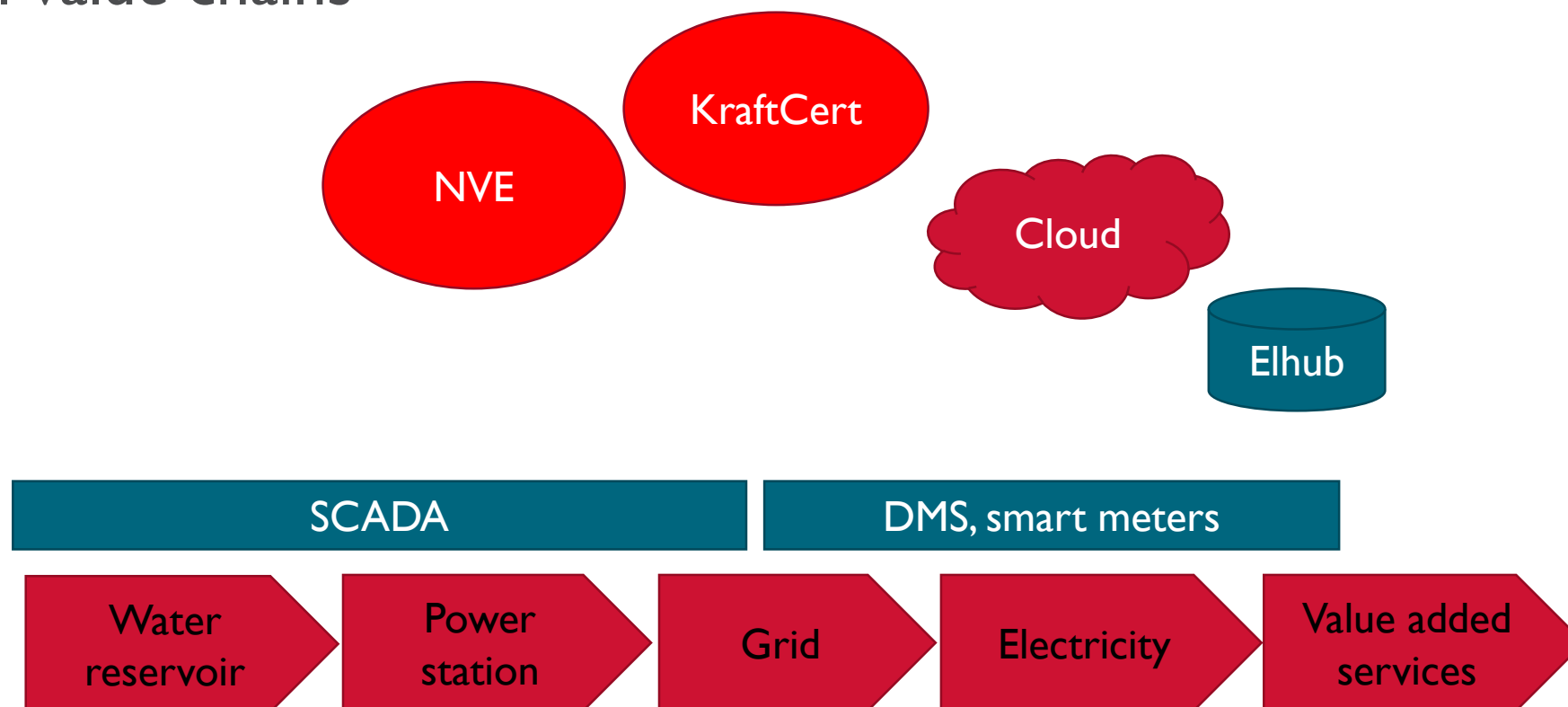
NVE

- Directorate under the Ministry of Petroleum and Energy
- Management of the nation's water and energy resources
- Flood and accident control
- Maintains the national power supply (the Energy Act 1990)





Digital value chains



12 reported cyber incidents in 2016



Cyber security incidents (n=88)

- 51% internet fraud
- 39% malware infections
- Administrative systems
- Few incidents in ICS





Why?

- Human failures 35%
- Lack of security awareness 24%



Dragonfly

Hackers attacking US and European energy firms could sabotage power grids

Cybersecurity firm Symantec says 'Dragonfly' group has been investigating and penetrating energy facilities in US, Turkey and Switzerland



11.01 BST
Symantec reports the hacking group appears to be in information-gathering mode, but warns this could prelude an attempt at sabotage. Photograph: Gareth Fuller/PA

A hacking campaign is targeting the energy sector in [Europe](#) and the US to potentially sabotage national power grids, a cybersecurity firm has warned.

The group, dubbed "Dragonfly" by researchers at Symantec, has been in operation since at least 2011 but went dark in 2014 [after it was first exposed](#), secretly placing backdoors in the industrial control systems of power plants across the US and Europe.

Now, Symantec reports, the group has resumed operations, apparently working since late 2015 to investigate and penetrate energy facilities in at least three countries: the US, Turkey and [Switzerland](#).



Wannacry mot energiselskaper

- West Bengal State Electricity Distribution Company
- Iberdrola
- Petrobas
- Gas natural
- Petro China Gas stations



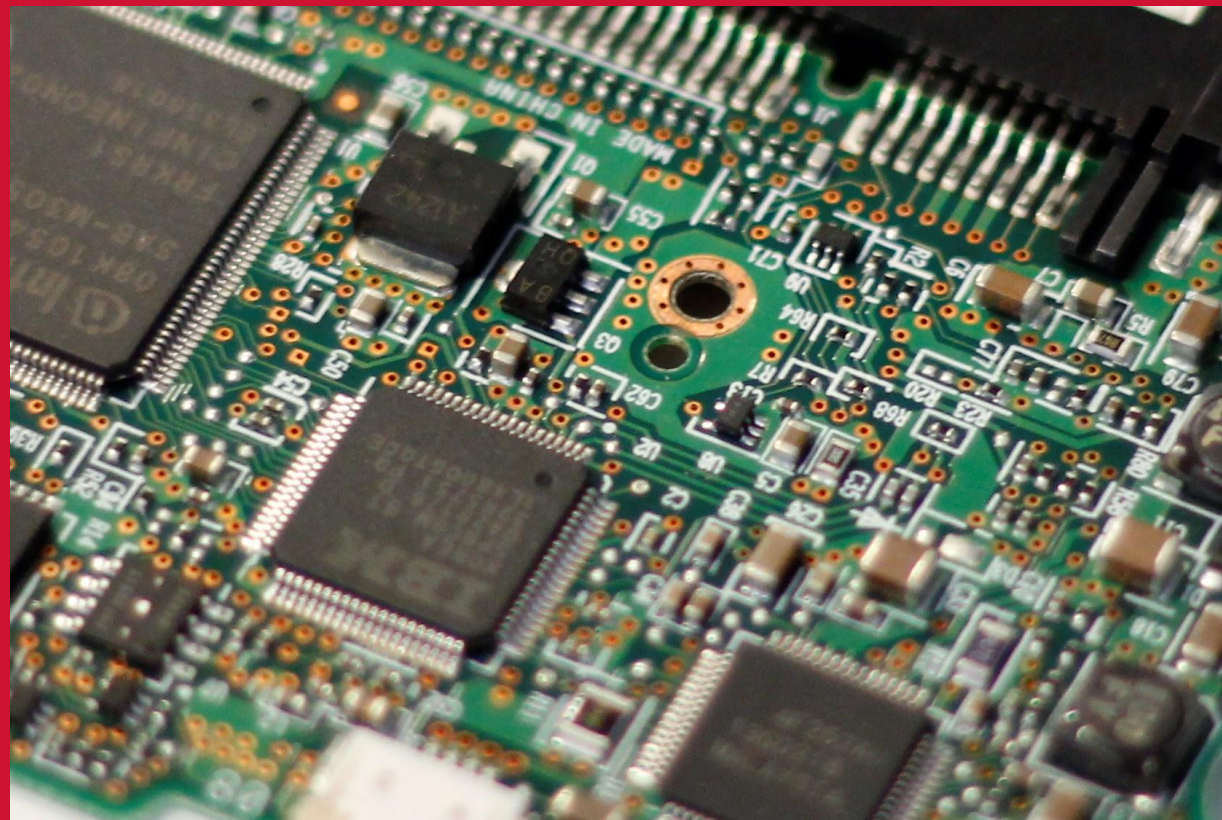
Current cyber security regulation

- The Energy Act of 1990
- Emergency preparedness regulation
- Water reservoirs security regulation
- Electricity trading and network services regulations

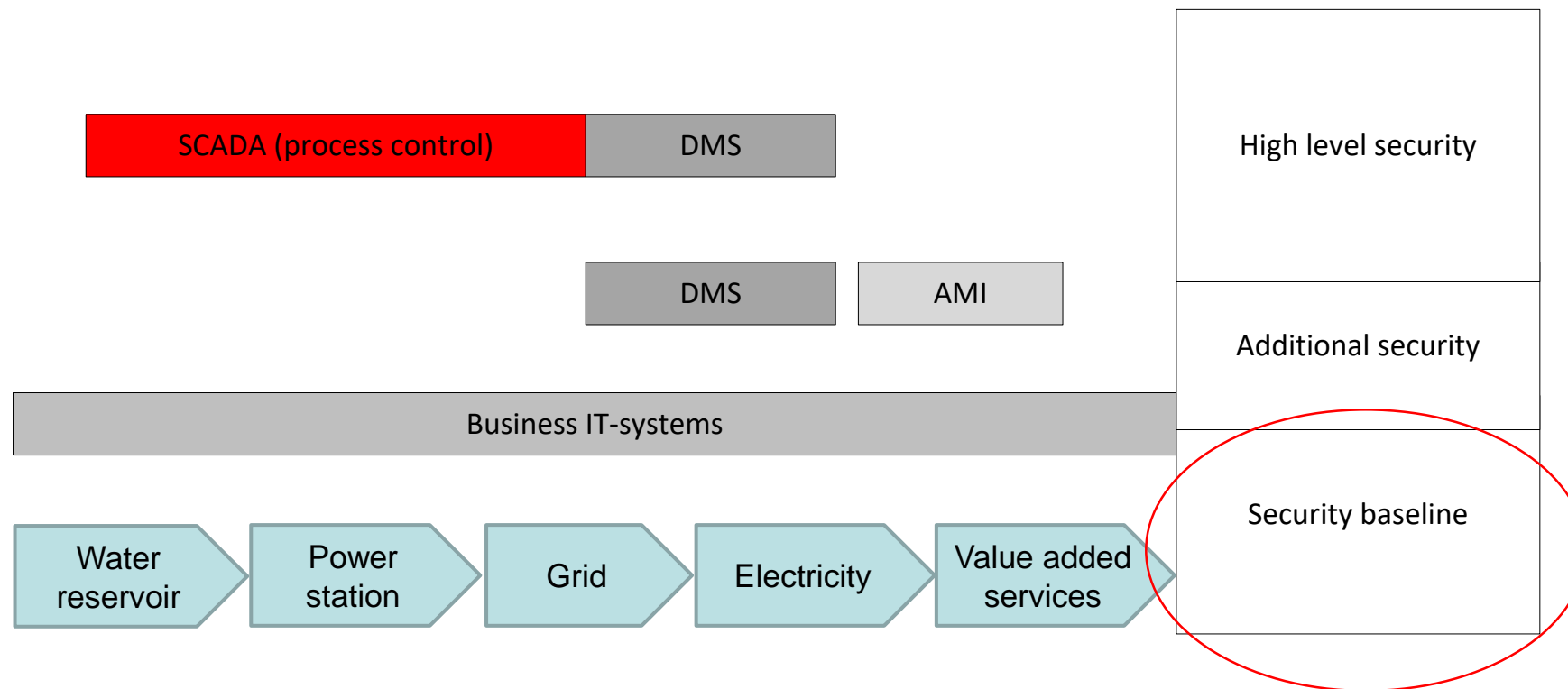


Securing the digital value chain

- Modernization
- Restructuring
- Contracts
- Vendors
- Technology innovation



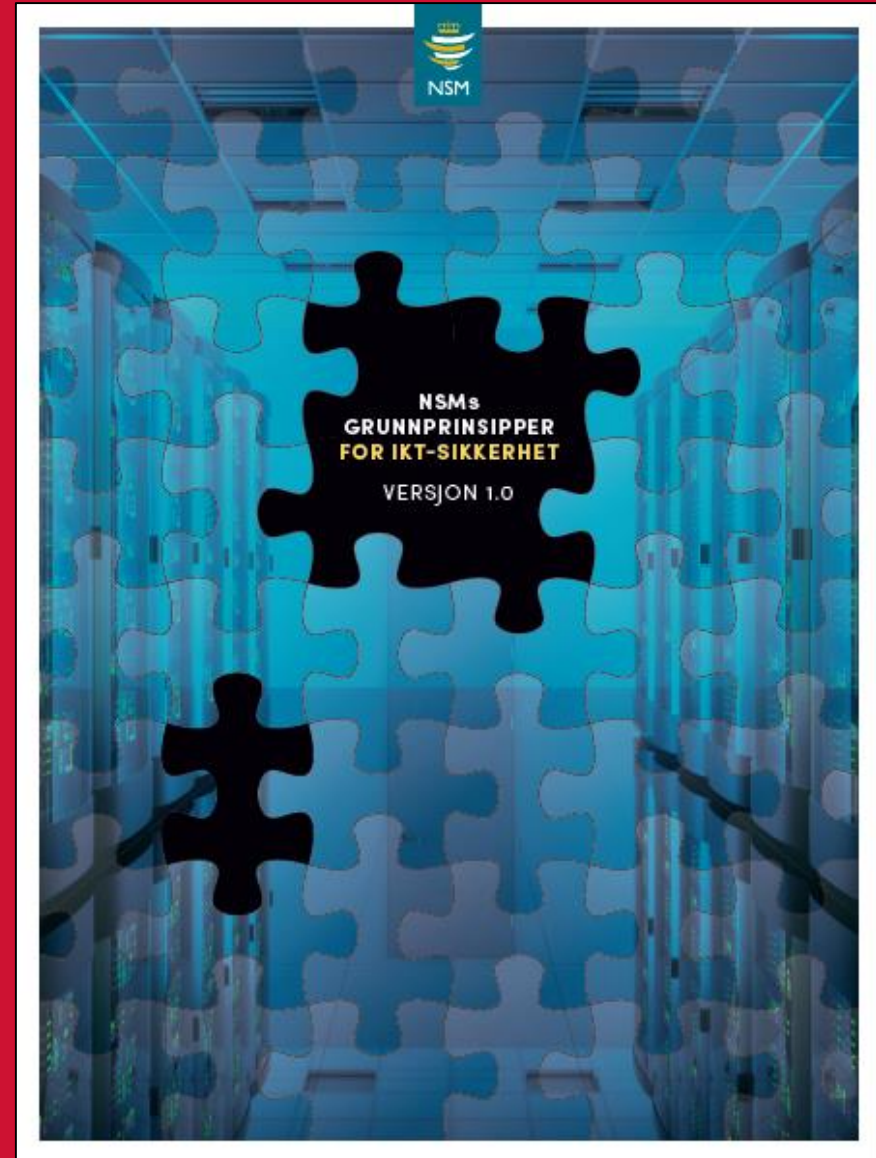
A holistic security framework





NVE and NSM

- Reviewing the regulation
- Developing guidelines





How do regulation and audits contribute to increased security?

- Research and cooperation with industry, universities, associations etc.
- Management awareness
- A dual-learning process
- Law enforcement