

The Future of Cybersecurity, What do we need to be prepared for?

Bits, Bricks & Behaviour 2019

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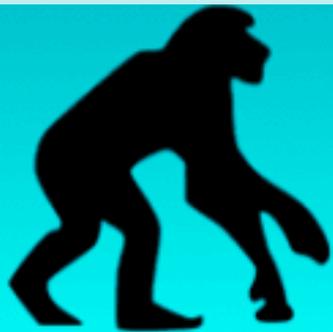
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In Digitalization – Security by Design



**Human will life change more
over the next 30 years
than in the previous 300 years.**



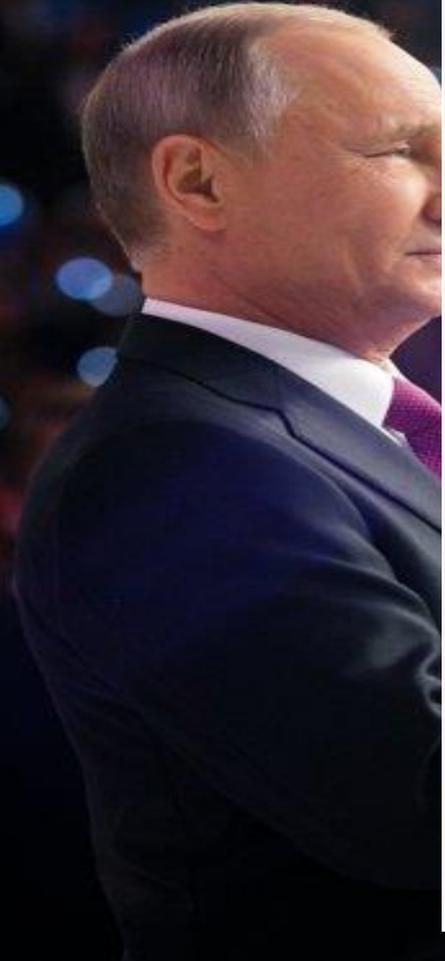
New Normal in Security



The speed of change – unpredictable instability
(physical and especially digital environment)

Complexity
(interaction of threats, “hybrid security”)

The blurring dichotomies



**NO
DRONE
ZONE**

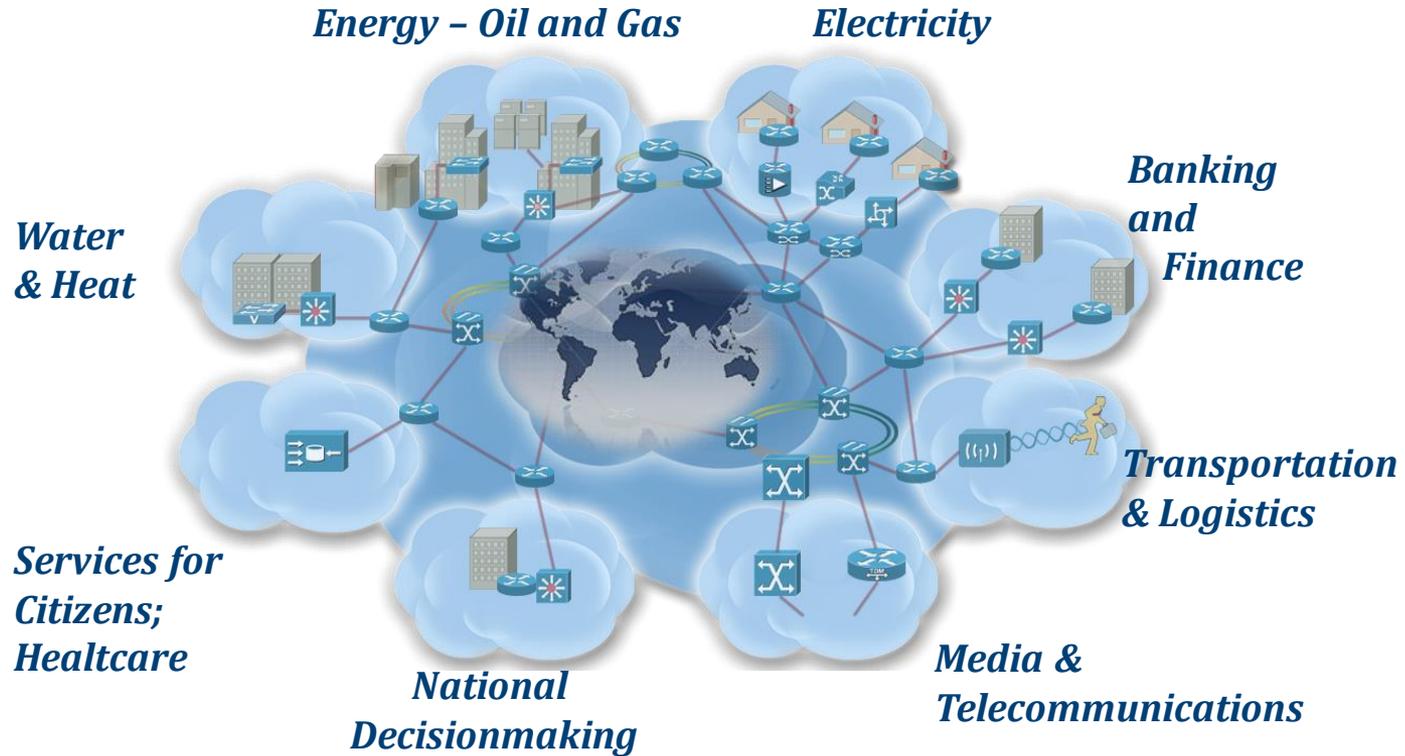


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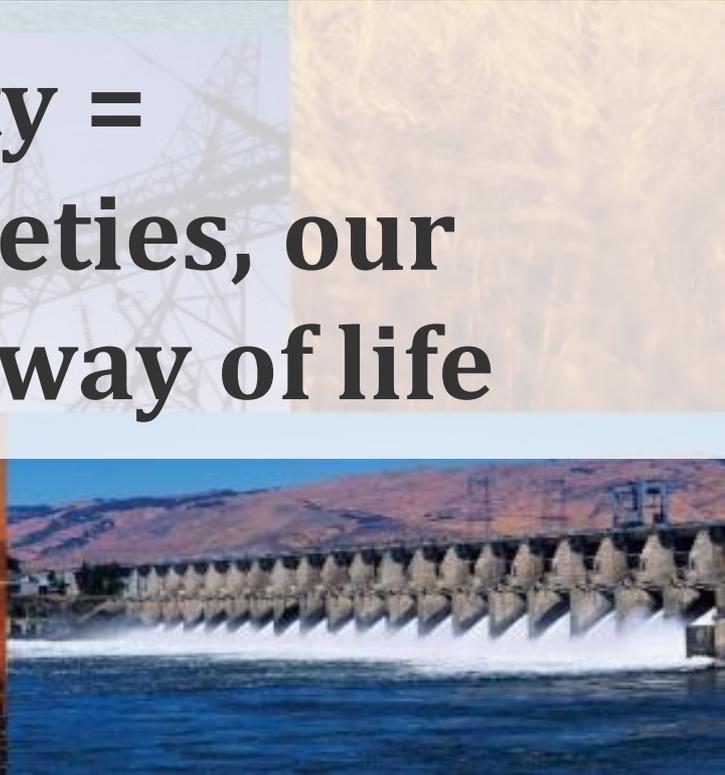
The critical functions and services of modern society are interdependent and run by software and communications



We expect to see a growth in supply chain attacks, and the evolution of such attacks to become increasingly complex.



**Cybersecurity =
Protecting our societies, our
businesses and our way of life**



**We manage security through either
leadership or crisis.**

**In the absence of leadership,
we are left with crisis.**

“Cyber security attacks can be more dangerous to the stability of democracies and economies than guns and tanks.”

President of the European Commission Jean-Claude Juncker



Cybersecurity as an enabler and added value component



Too often we have policy experts who don't understand technical complexity, and technicians who don't understand the policy challenges.

There isn't a single area of our life that won't be touched by the IoT in the next decade.





**EU coordinated risk
assessment of the
cybersecurity of 5G
networks**

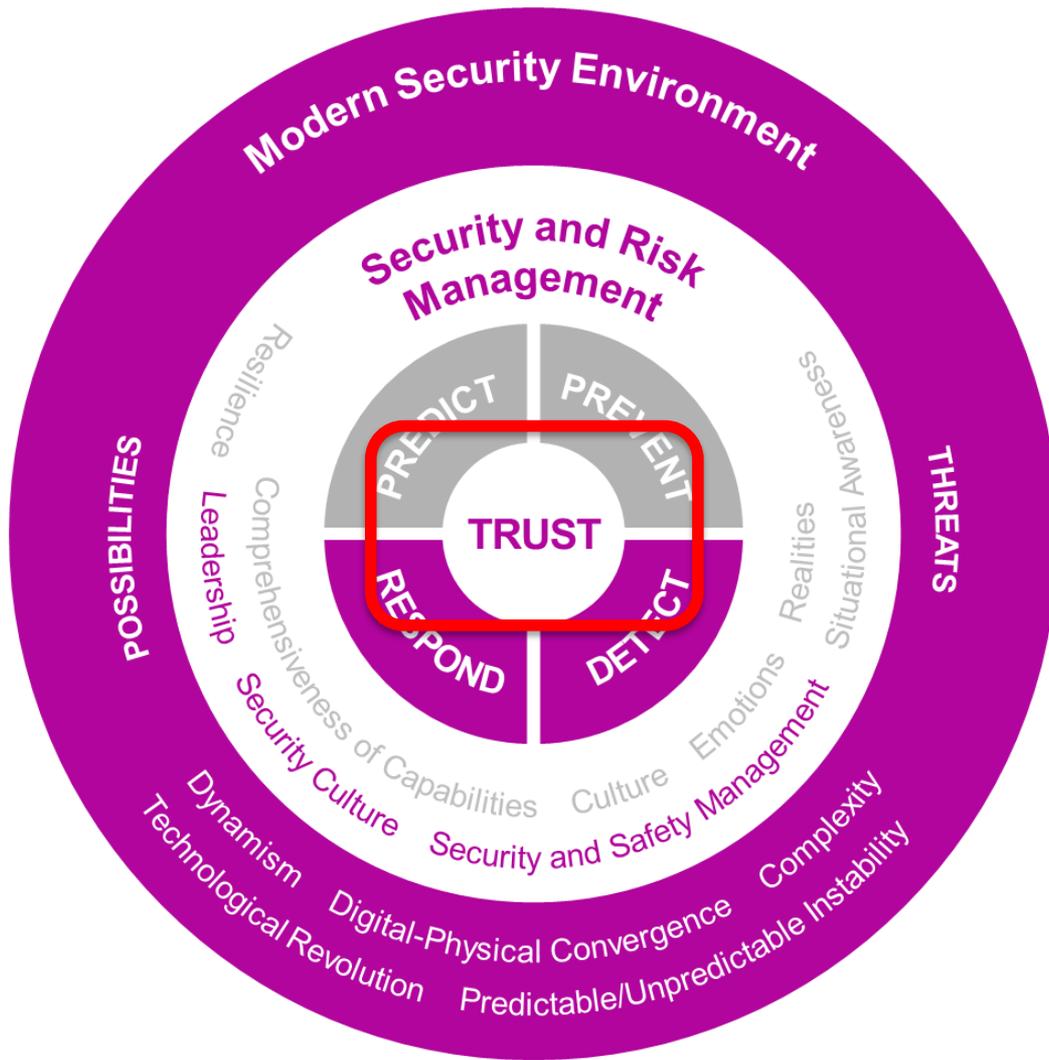
Report

9 October 2019



“The cybersecurity of 5G networks is essential to protect our economies and societies and to *enable the full potential of the important opportunities* they will bring.

It is also crucial for ensuring the *strategic autonomy* of the Union.”



EU must become self-sufficient in cybersecurity

EU has been losing its' global market share in cybersecurity in last six years from 13% down to 7%.

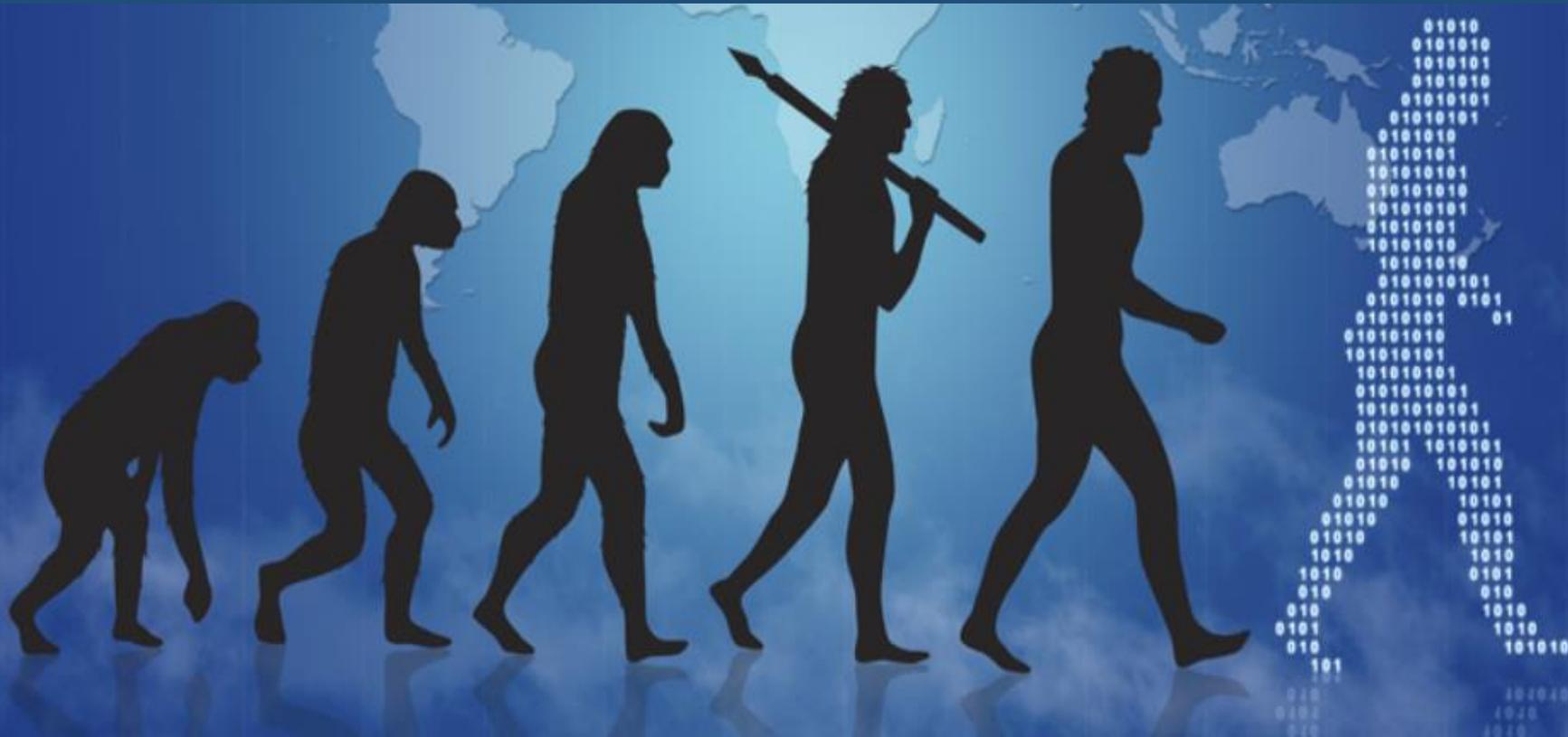
European cybersecurity industry consists mainly cybersecurity SMEs (nearly 99% of the companies) which are operating only local market.



**The primary question in technology won't be about if something can be done -
*but if it should be done.***

The importance of *ethics* in cybersecurity.

Everything that can be digital, will be.
Everything?



Complexity is the biggest enemy of cybersecurity



The best way to anticipate the future is to innovate it yourself and to create ecosystems with reliable partners

IoE



Security

Connectivity



Data



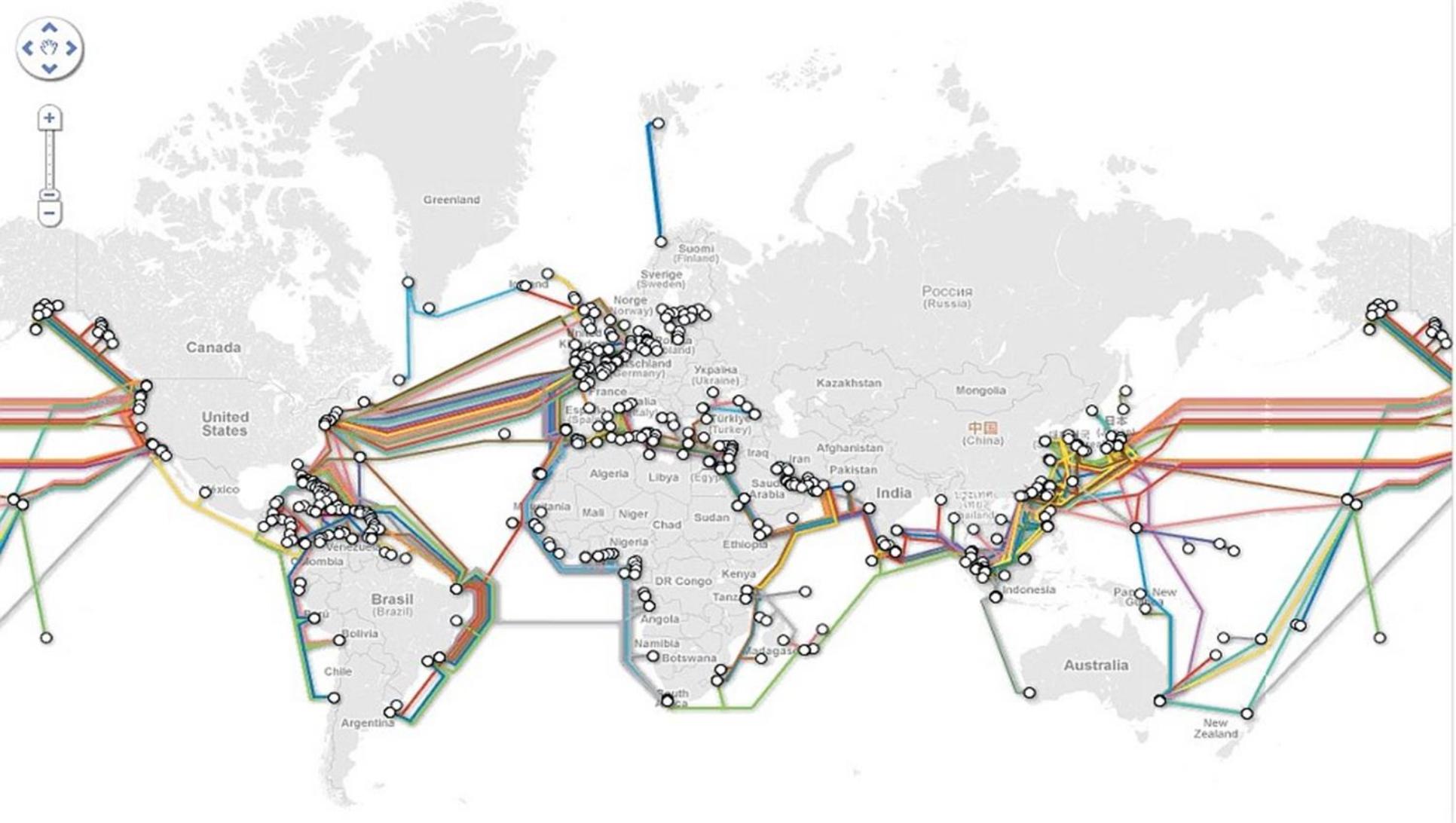
Layers of Cyberspace



Social layer
(Cognitive Cyber)

Logical layer
(Software Cyber)

Physical Layer
(Physical Cyber)



**Biggest "cyberbattles" will be fought
over our thoughts**





**Those who own the data -
own the future**

Largest Global companies in 2018 vs 2008

2018				2008			
Rank	Company	Founded	USbn	Rank	Company	Founded	USbn
1.	Apple	1976	890	1.	PetroChina	1999	728

The crucial importance of secured and trusted connectivity

7.	Berkshire	1955	496	7.	Microsoft	1975	313
8.	Alibaba (China)	1999	488	8.	Royal Dutch Shell	1907	266
9.	J&J	1886	380	9.	Sinopec (China)	2000	257
10.	JP Morgan	1871	375	10.	AT&T	1885	238

Source: Bloomberg, Google



The risk of data manipulation

INTEGRITY



SECURITY

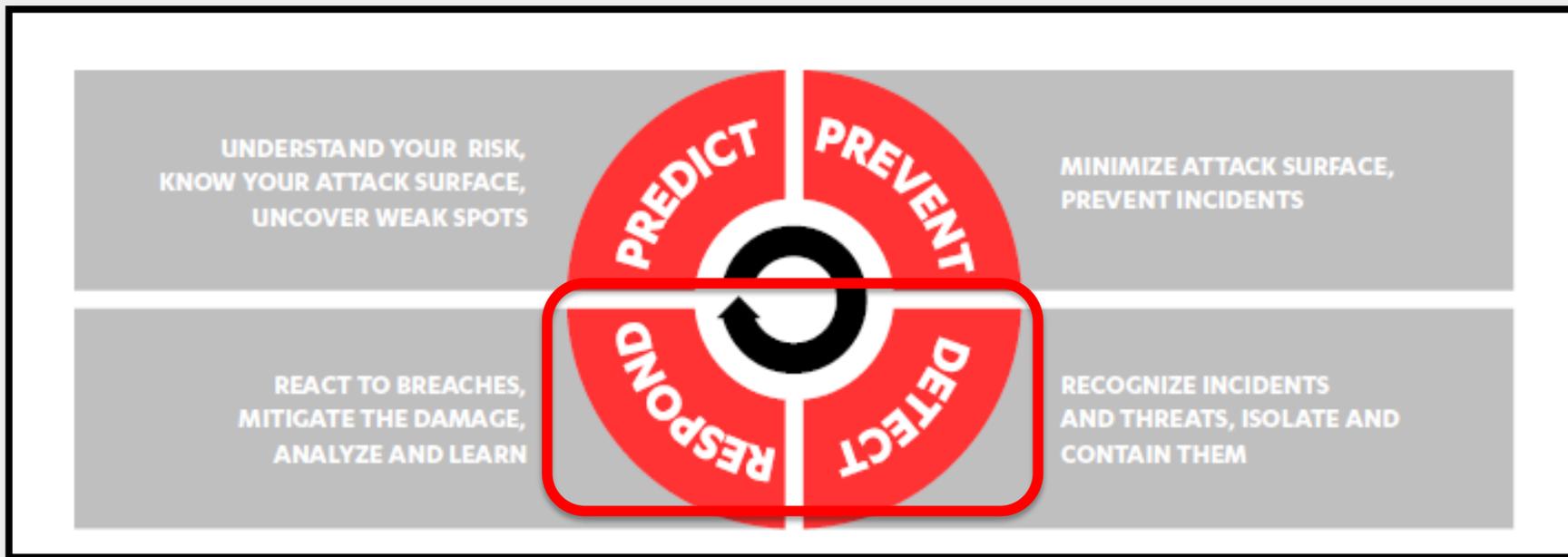
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CONFIDENTIALITY



**What
happens
inside the
walls?**



Resilience is emphasized



Israel Defense Forces

@IDF

Seurataan

CLEARED FOR RELEASE: We thwarted an attempted Hamas cyber offensive against Israeli targets. Following our successful cyber defensive operation, we targeted a building where the Hamas cyber operatives work.

HamasCyberHQ.exe has been removed.

Käännä twiitti

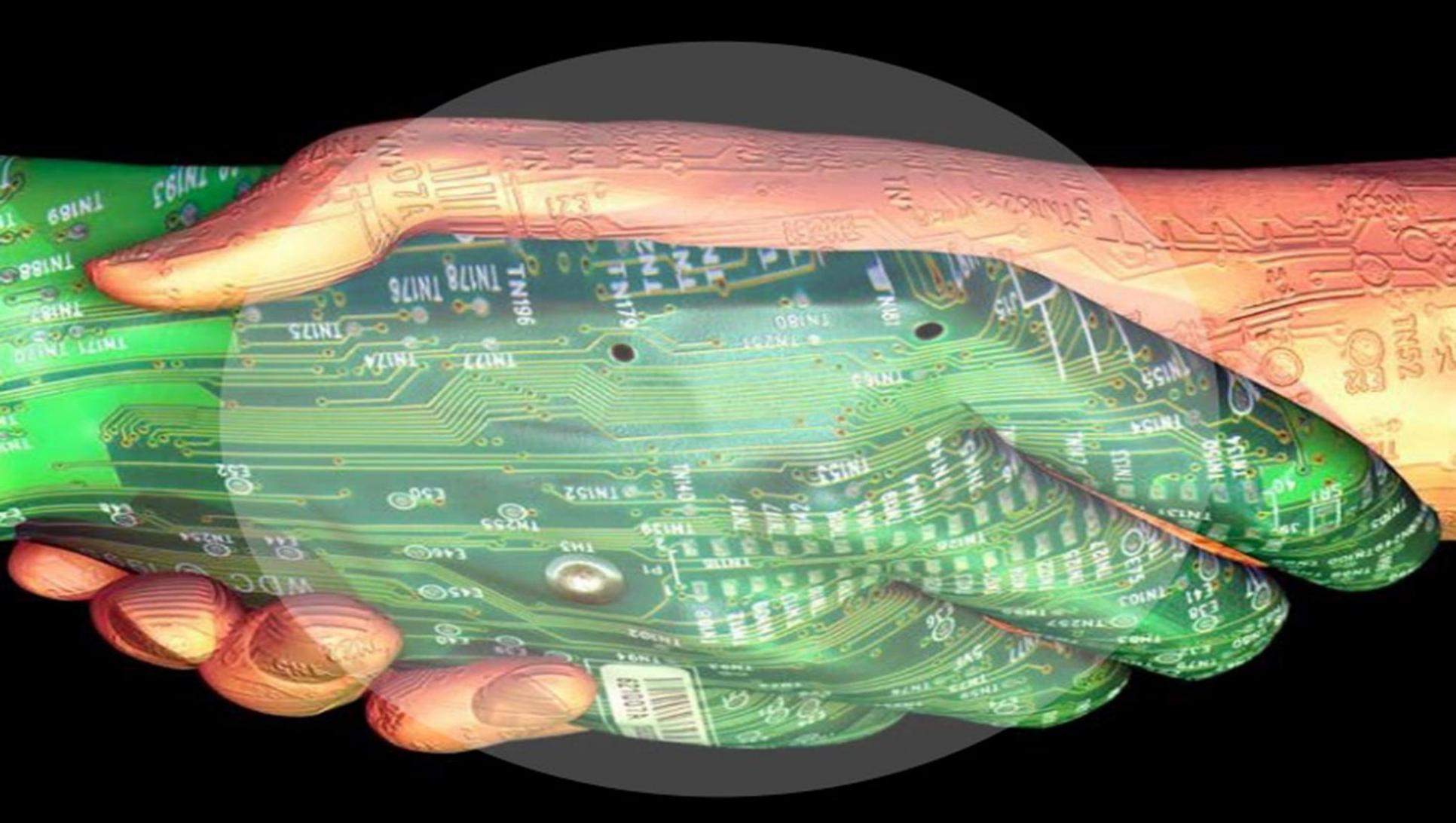


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Israel's physical response to Hamas' cyberattacks





**“It is not the strongest species that survive, nor the most intelligent, but the ones responsive to change.”
- Charles Darwin**

Thank you
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