

Some thoughts on Cybersecurity

Emmanuel Dotaro,
2nd Visions for Future Communications Summit
Technologies and Services Towards 6G,
November 28th 2019, Lisbon

www.thalesgroup.com

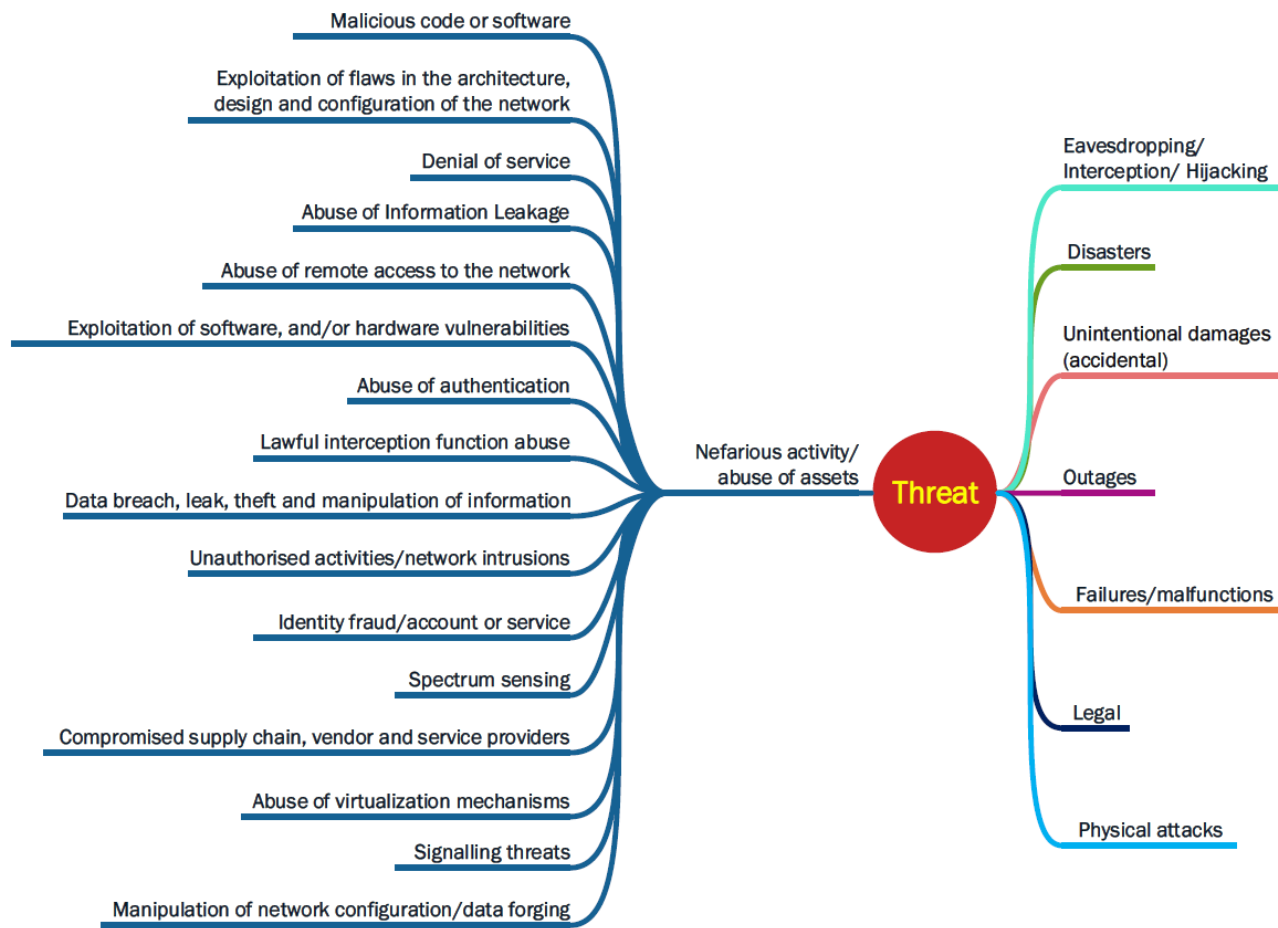
OPEN
THALES GROUP INTERNAL
THALES GROUP CONFIDENTIAL
THALES GROUP SECRET



Security: the new buzz ?

CPLX (Cybersecurity) = *f*(cplx_systems, cplx_services)

Summary from ENISA



Asset Group	CIA Triad		
	Confidentiality	Integrity	Availability
Policy	●	●	●
Management processes	●	●	●
Business applications	●	●	●
Business services	●	●	●
Protocols	●	●	●
Data network	●	●	●
Slicing	●	●	●
Data	●	●	●
Human assets	●	●	●
Time	●	●	●
Legal	●	●	●
Legacy	●	●	●
Data storage/repository	●	●	●
Physical infrastructure	●	●	●
Management and orchestration (MANO)	●	●	●
Radio access network (RAN)	●	●	●
Network functions virtualisation (NFV)	●	●	●
Software defined networks (SDN)	●	●	●
Lawful Interception (LI)	●	●	●
Transport	●	●	●
Virtualisation	●	●	●
Cloud	●	●	●
Application programming interfaces (APIs)	●	●	●
Security controls	●	●	●

Legend:

Very high relevance of asset group to maintain the property: ●

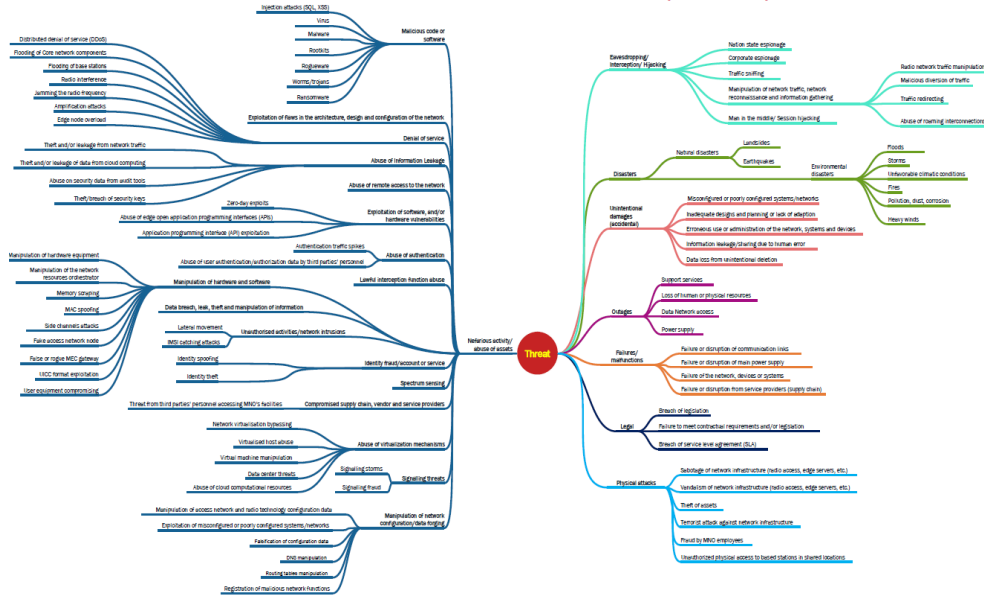
High relevance of asset group to maintain the property: ●

Medium relevance of asset group to maintain the property: ●

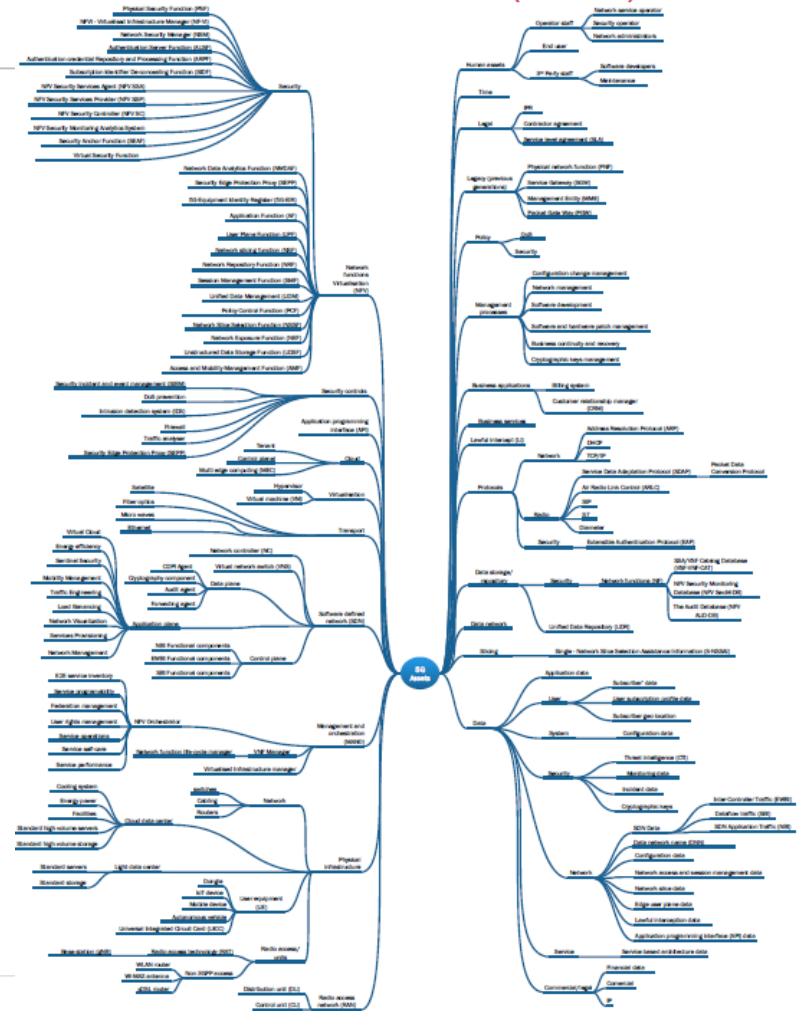
Low relevance of asset group to maintain the property: ●

Very low relevance of asset group to maintain the property: ●

Not even complete...



ANNEX A: ASSETS MAP (FULL)





Deep Tech 4 Cybersecurity

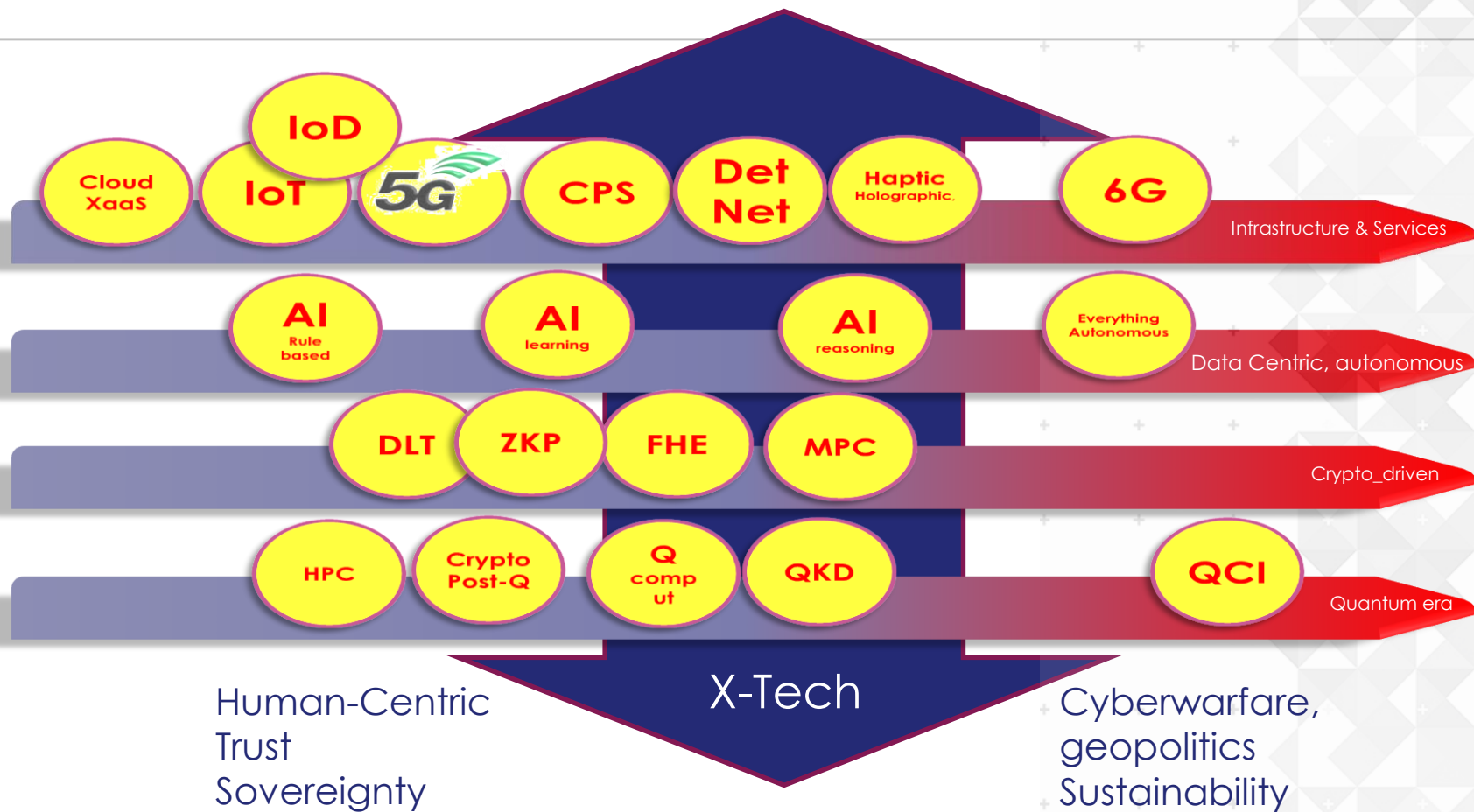


CyberSecurity 4 Deep Tech



MOVE or DIE...

$$\text{Cybersecurity} = f_{(t)}(\text{Technology Disruption})$$



Selected Areas related to Smart Networks & Services

Software Defined Security

Orchestration, configuration, updates

Smart Protection deployment

Smart Detection deployment

Innovative strategies (Deception, ...)

Security as a Service

IAMaaS, KMaaS, ...

Service composition
Workflows/interfaces
Assurance vs/ Liabilities

Security quantification

QoSec, SecSLA

Exposure

Evaluation (label, incremental-certification)
(continuous) Assessment tools

AI

Not limited to learning !

Engine of SDsec
Pattern, anomaly (zero days) detections
Multicriteria Service composition

Crypto-based

Not limited to learning !

Light for IoT
Post-Quantum
(system data & metadata) FHE, MPC,...

Mixed Criticality

Beyond QoS, including Cybersecurity

Must Have for OT/verticals
DetNet, TSN related

Universal “IAM”

AAA, Speed compliant

Roaming at handover speed

Multi-techno (*including non-3GPP*)

Any-thing/person/service/...

Quantum Era

QKD

QCI

Energy

ICT is a mess
Cybersec a contributor

Resistance

Counter-(bad)AI

Data-Jammer

Sovereignty, Autonomy, values

THALES



THANKS !

www.thalesgroup.com

OPEN
THALES GROUP INTERNAL
THALES GROUP CONFIDENTIAL
THALES GROUP SECRET

