ENISA Work on Threat Landscape

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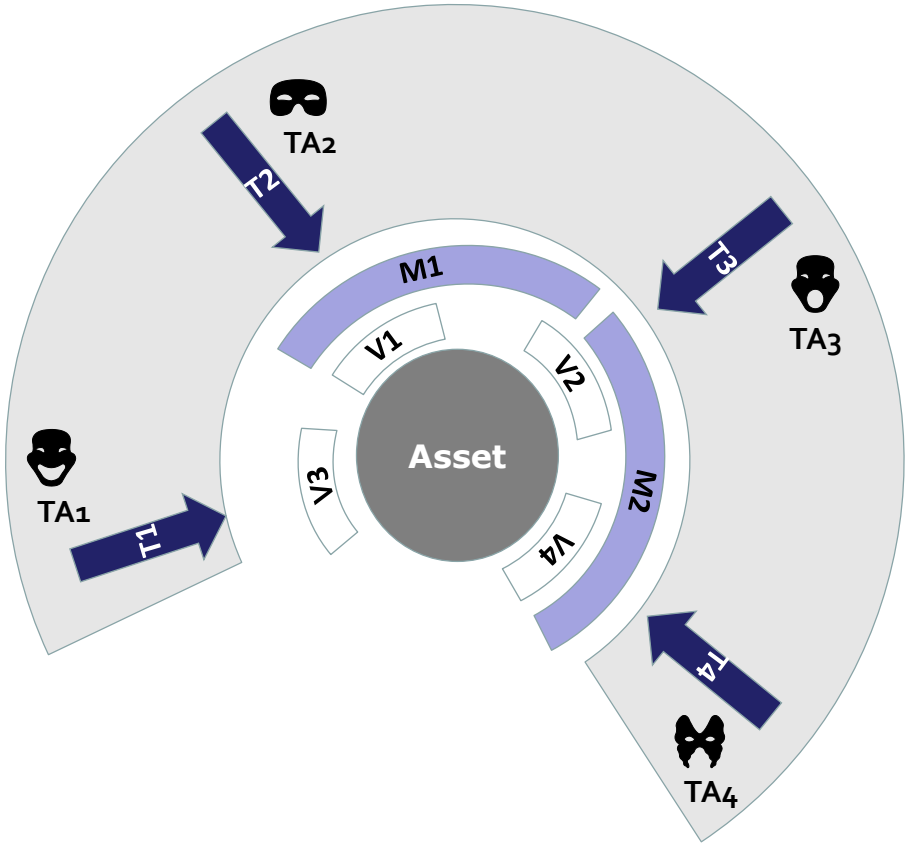
Cyber-Threats: Basic assumption



ETL Scope

TA Threat Agent

T Threat

V Vulnerability

M Measure

The exposure of an assets to threats

Threat Information vs. Intel.

Information versus Intelligence

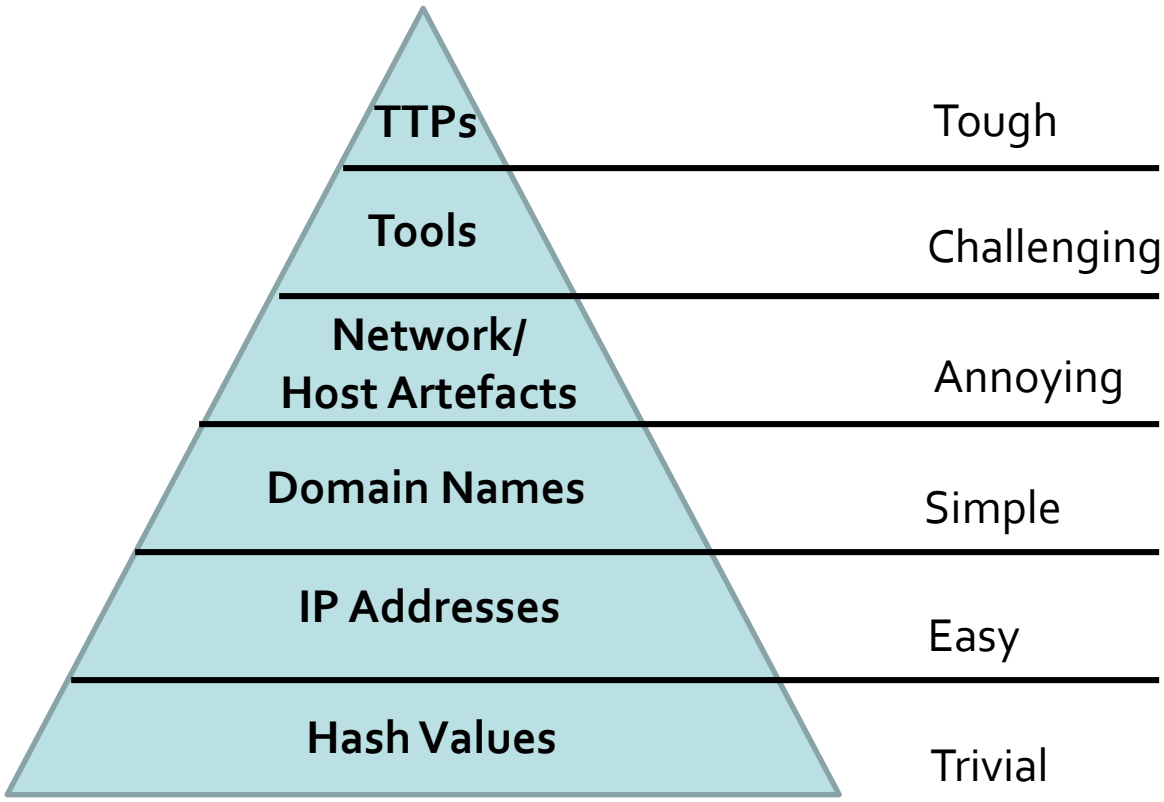
Information	Intelligence
- Raw, unfiltered feed	- Processed, sorted information
- Unevaluated when delivered	- Evaluated and interpreted by trained Intelligence Analysts
- Aggregated from virtually every source	- Aggregated from reliable sources and cross correlated for accuracy
- May be true, false, misleading, incomplete, relevant or irrelevant	- Accurate, timely, complete (as possible), assessed for relevancy
- Not actionable	- Actionable

Information types of Threat Intel.

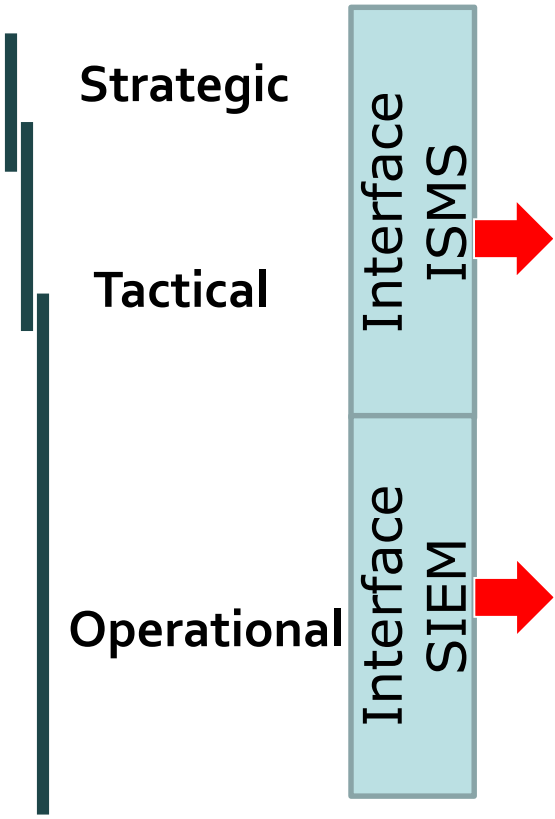
- **Strategic (S):** the **highest level information about threats**.
  - Created by humans, consumed by humans
  - Lifespan months
- **Tactical (T):** at this level, stakeholders obtain **aggregated information about threats** and their elements.
  - Created and consumed by humans and machines
  - Lifespan weeks, months
- **Operational (O):** technical information about threats, incidents, etc.
  - Created by machines, consumed by machines/humans
  - Lifespan days, weeks

Why do we need to know?

The Pyramid of Pain

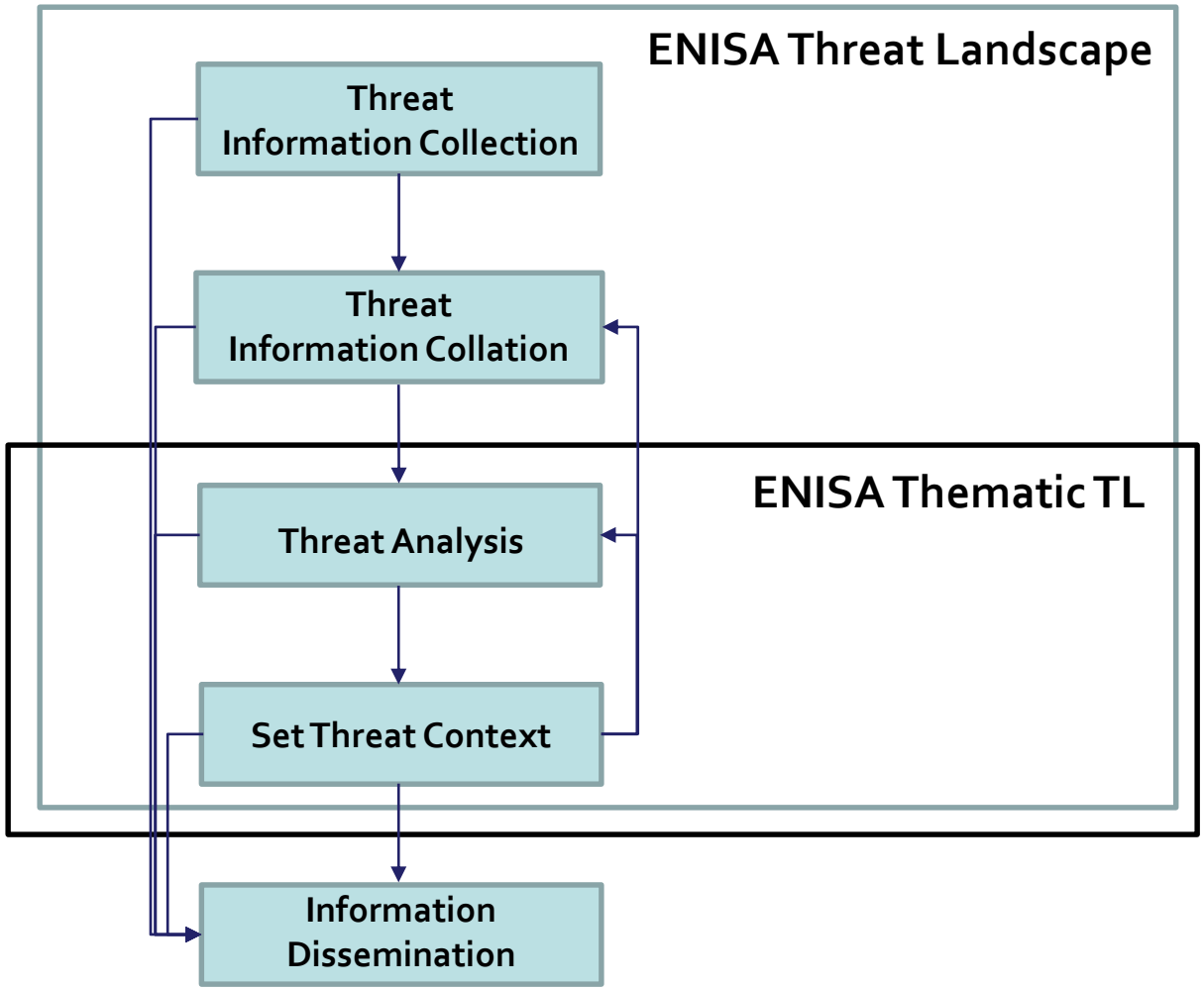


Types of information



http://detect-respond.blogspot.gr/2013/03/the-pyramid-of-pain.html

From Threat Info to Intel…



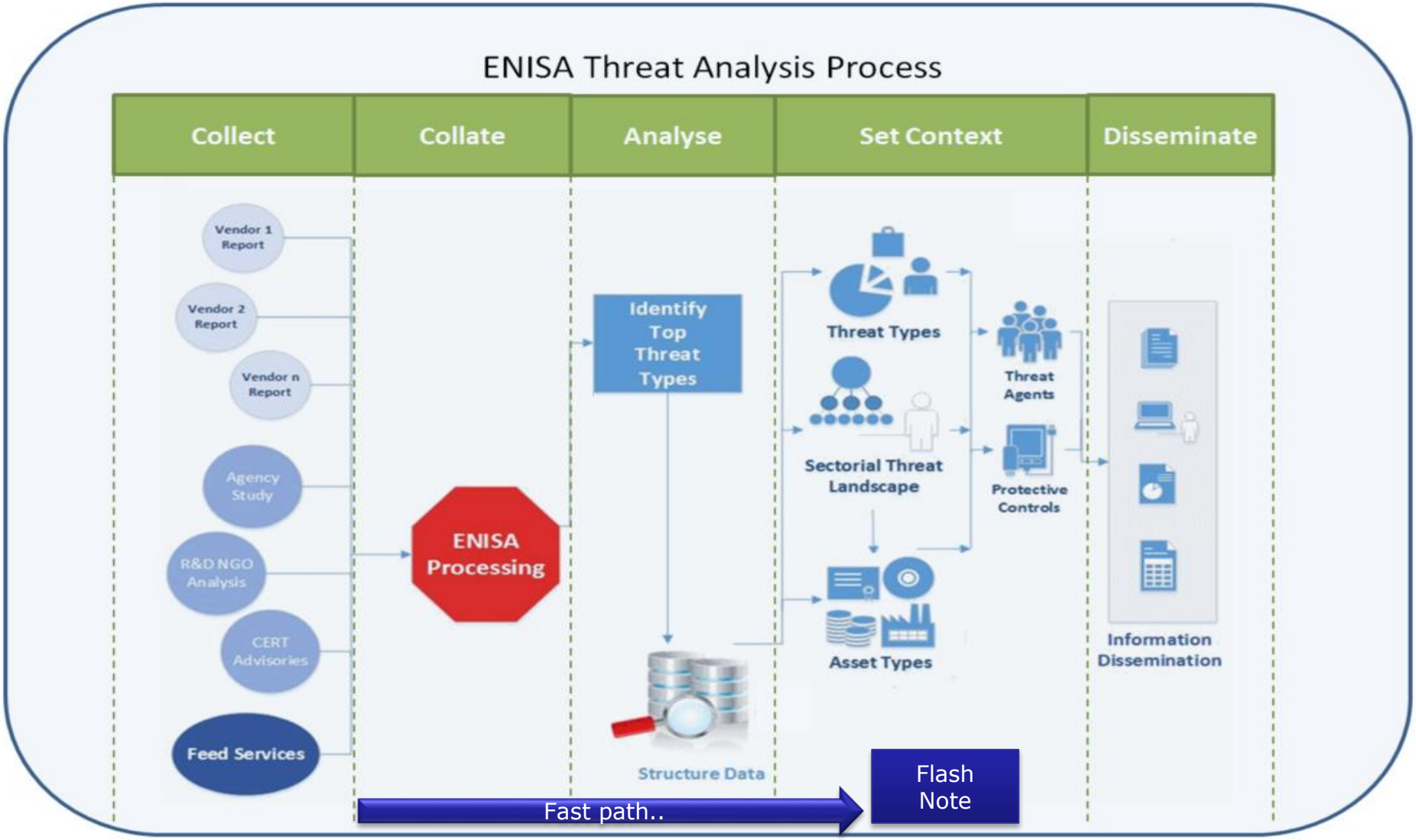
Find reliable sources

Isolate and relate similar information

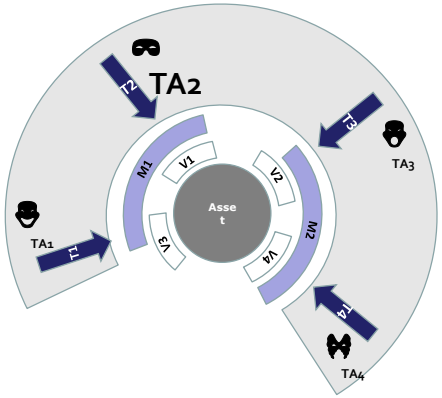
Evaluate findings and decide what to take on board

Find out practices, issues, vulnerabilities, risks, etc.

How does ENISA do it?



What are the parts?



- Threats
- Threat Agents
- Attack methods (vectors)
- Assets
- (Mostly technical) Vulnerabilities
- Controls

…**and** interconnections thereof

Our internal **Cyber Threat Intelligence!**

CAUTION: TI IS NOT REPLACEMENT OF RISK MANAGEMENT

Top Threats and Trends

Top Threats 2013	Assessed Trends 2013	Top Threats 2014	Assessed Trends 2014	Change in ranking
1. Drive-by downloads (renamed to Web-based attacks)	↑	1. Malicious code: Worms/Trojans	↑	↑
2. Worms/Trojans	↑	2. Web-based attacks	↑	↓
3. Code Injection	↑	3. Web application /Injection attacks	↑	→
4. Exploit Kits	↑	4. Botnets	↓	↑
5. Botnets	→	5. Denial of service	↑	↑
6. Physical Damage/Theft/Loss	↑	6. Spam	↓	↑
7. Identify Theft/Fraud	↑	7. Phishing	↑	↑
8. Denial of Service	↑	8. Exploit kits	↓	↓
9. Phishing	↑	9. Data breaches	↑	↑
10. Spam	→	10. Physical damage/theft /loss	↑	↓
11. Rogueware/Ransomware / Scareware	↑	11. Insider threat	→	(NA. new threat)
12. Data Breaches	↑	12. Information leakage	↑	↑

Impressive facts: clear text

Web is the most popular platform for malware distribution: "*Malicious URL is by far the first malicious object detected (72,9%)*" Ref: (Kaspersky IT Threat Evolution Q2 2014, findings overview: http://securelist.com/analysis/quarterly-malware-reports/65340/it-threat-evolution-q2-2014/)

Mail is another important channel for malware distribution: "*Of the e-mail traffic, 13.7% contained malicious URL*" Ref: Symantec Intelligence Report May 2014, http://www.symantec.com/connect/blogs/symantec-intelligence-report-may-2014

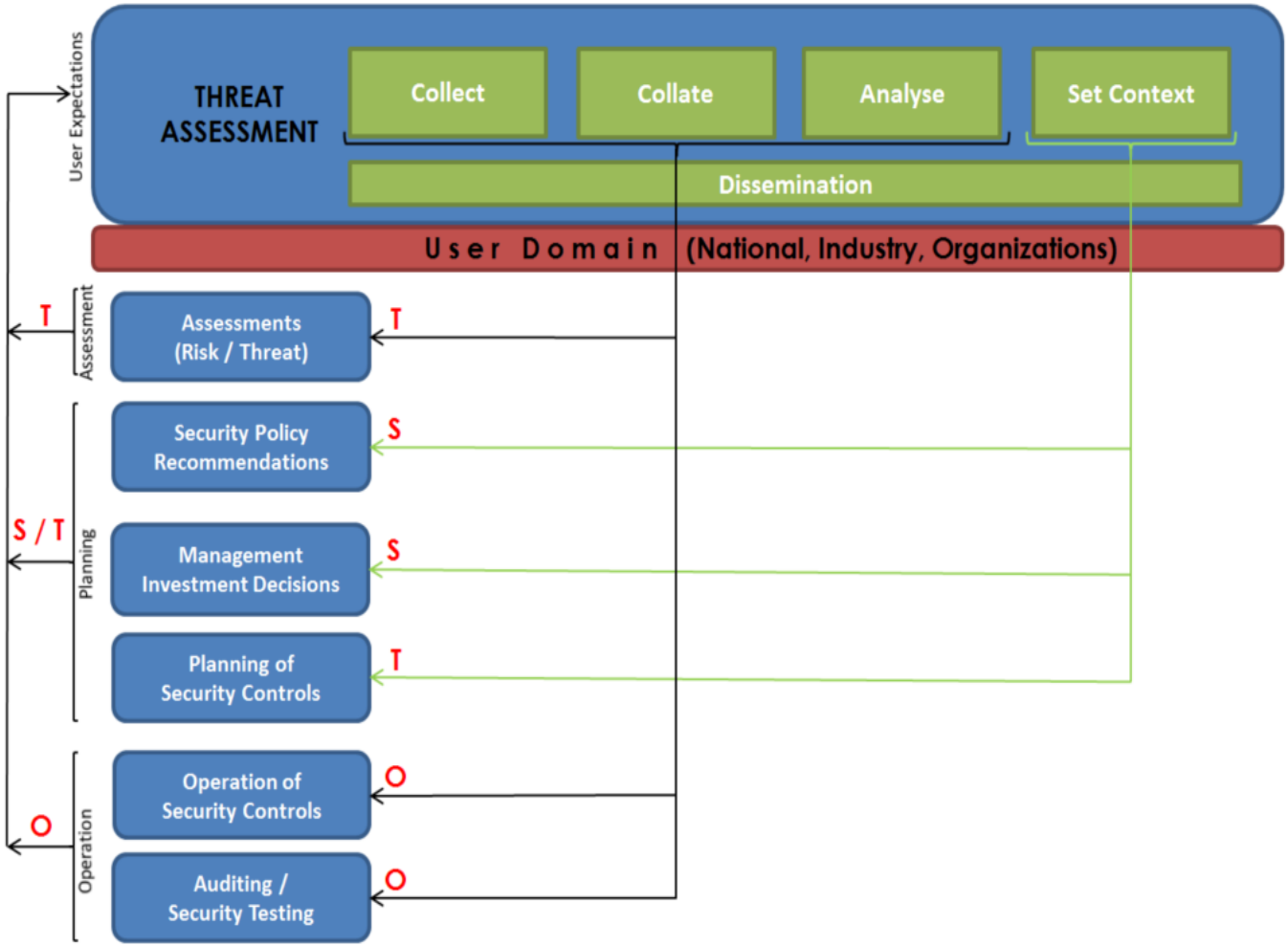
Attacks become more effective and targeted: "*Mobile banking Trojans have increased by almost factor four over the year. Since July 2012 14,5 Times*" Ref: (Kaspersky IT Threat Evolution Q2 2014, findings overview: http://securelist.com/analysis/quarterly-malware-reports/65340/it-threat-evolution-q2-2014/)

2014 the year of data breach? "*57% of the significant data loss over the past decade resulted from what could be termed sloppiness*" Ref: http://capgemini.ft.com/web-review/sloppiness-to-blame-for-more-data-losses-than-hacking-study-claims_a-41-648.html, relevant report http://cmds.ceu.hu/sites/cmcs.ceu.hu/files/attachment/article/663/databreachesineurope.pdf

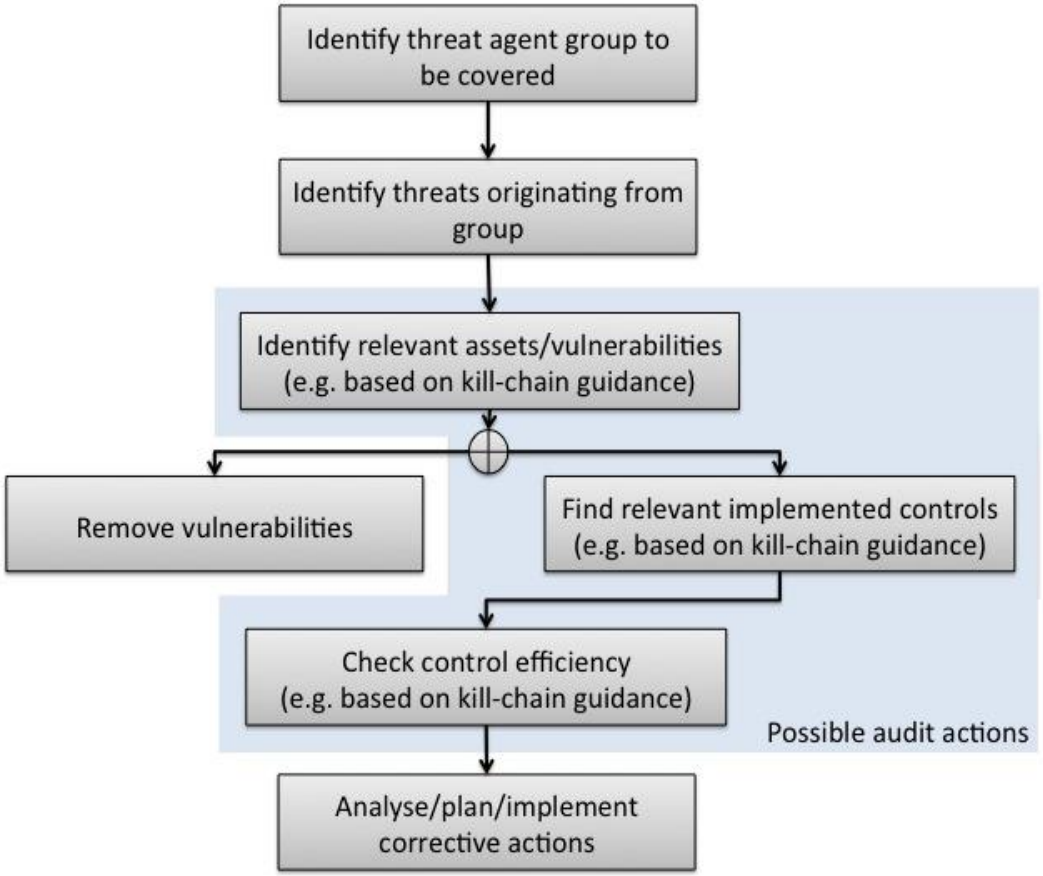
Efficiency of existing controls needs to be increased: "*54% of malware goes undetected by Antivirus products*" Ref: NTT Global Threat Intelligence Report 2014 (http://www.nttcomsecurity.com/en/services/managed-security-services/threatintelligence/)

Sophistication of malware and attacks increases: "*In 2013, 30% of malware samples used custom encryption to steal data.*", Ref: WebSence Threat Report 2014, http://www.websense.com/content/websense-2014-threat-report.aspx

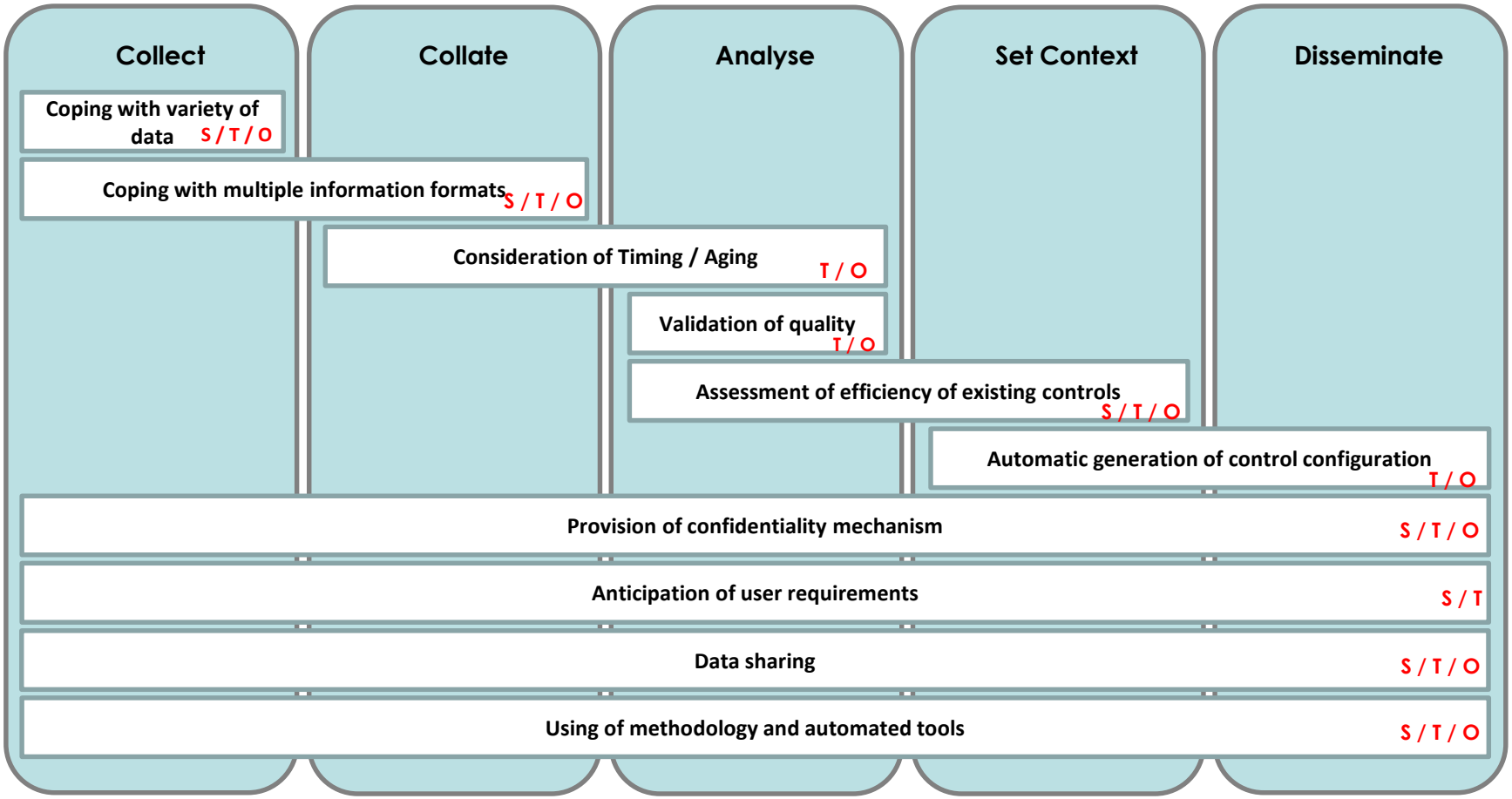
What to do with Threat Intel



A typical use-case



Threat intelligence challenges..



ENISA threat landscape and thematic landscapes 2015

- Increase the maturity of collection and analysis
- Streamline Stakeholder Group
- Mobilize/liaise with other stakeholders
- Event organisation
- Threat Landscape Big Data
- Threat Landscape Software Defined Networks

Take aways…

- Understand the scope of your assessments
- Identify threat exposure and understand what you can afford
- Build TI tool usage models according to points above
- Increase agility of assessments and ISMS
- Think that current state of TI is still initial BUT has a great potential

Concluding…

- Knowledge can be obtained by aggregating and correlating information
- Knowledge acquisition needs brain power
- Skill is an amount of knowledge on a certain subject matter
- A lot of skill is needed in the area of cyber threat intelligence
- ENISA can contribute to it by offering threat knowledge to stakeholders

Thank you for your attention….

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