ANCE

ITU - World Telecommunication/ICT Indicators Symposium 2017

Hammamet, Tunisia, 14 to 16 November 2017

Measuring Cybersecurity Effectiveness

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Broadband and Cybersecurity

ICT and broadband are key drivers to achieve economic growth and enhance well-being.

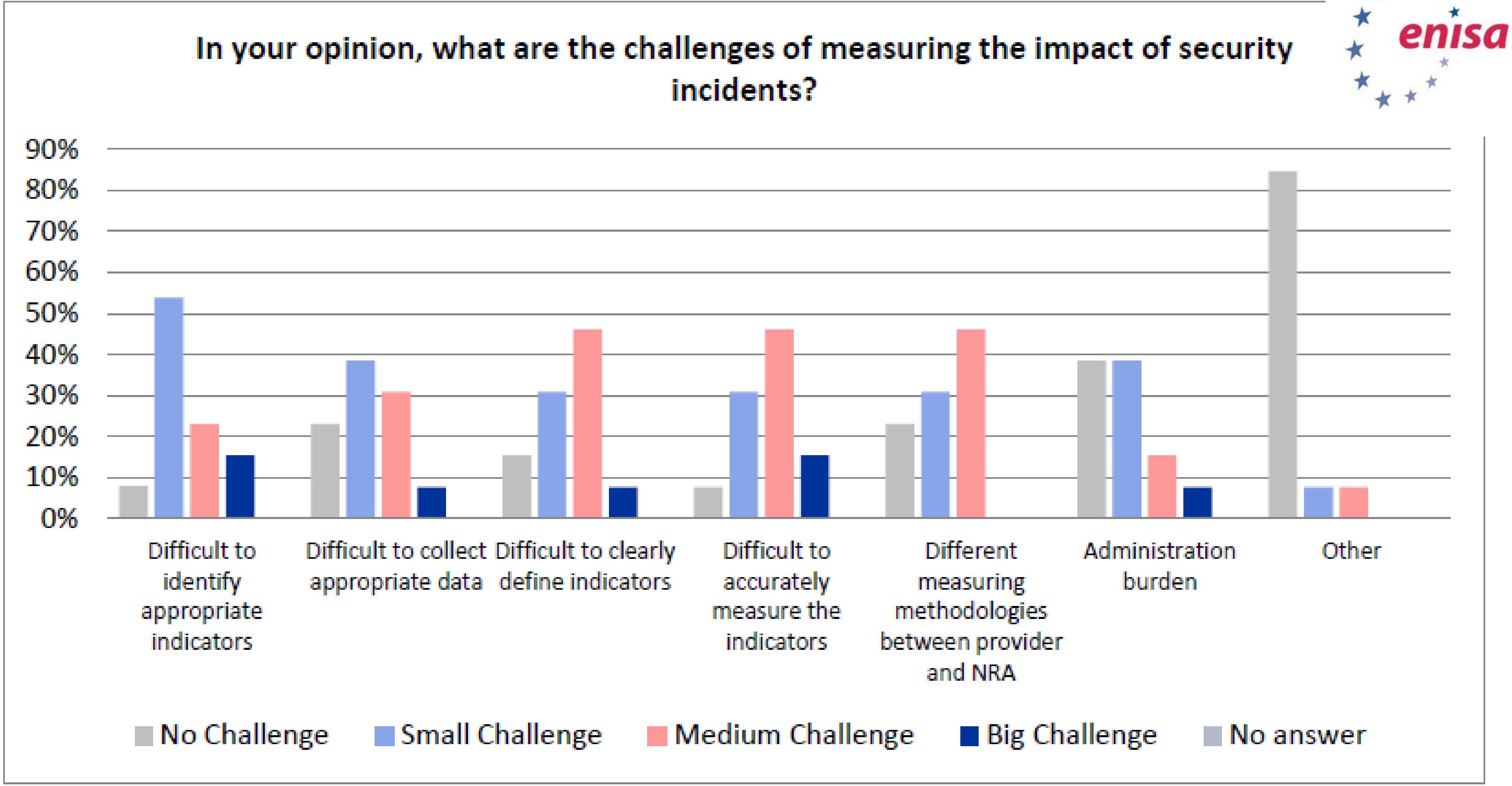
shopping, banking, water and electricity supply, social networking, health care, education, traffic management and commerce

Are we ready for this ever-growing digital world ?

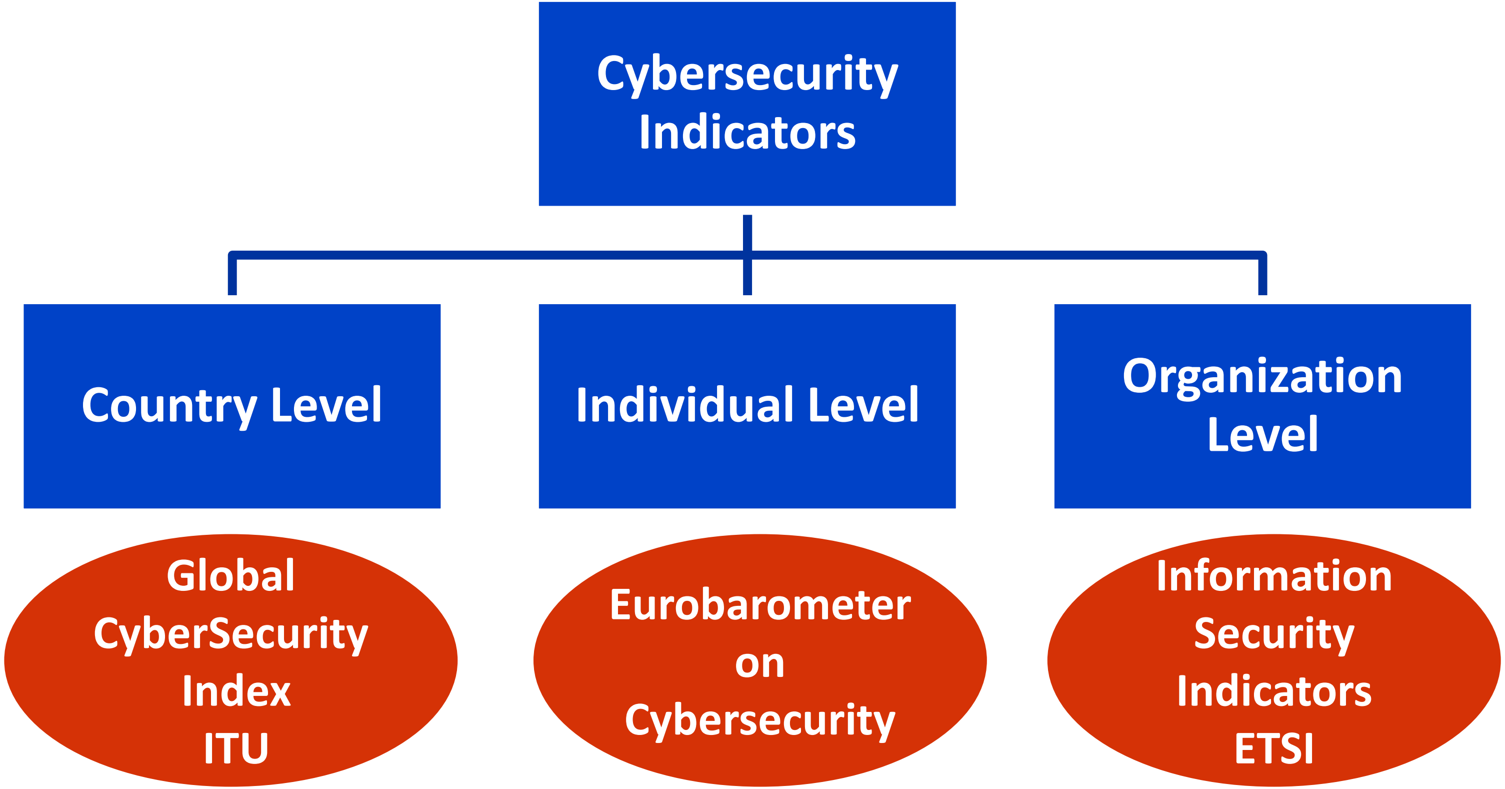
CyberSecurity Challenges

« If you can’t measure it,
you can’t manage it »

Figure 1: Challenges of measuring security incidents - NRAs



Qualitative / Quantitative Indicators



Cybersecurity Indicators

Country Level

Individual Level

Organization Level

Global CyberSecurity Index ITU

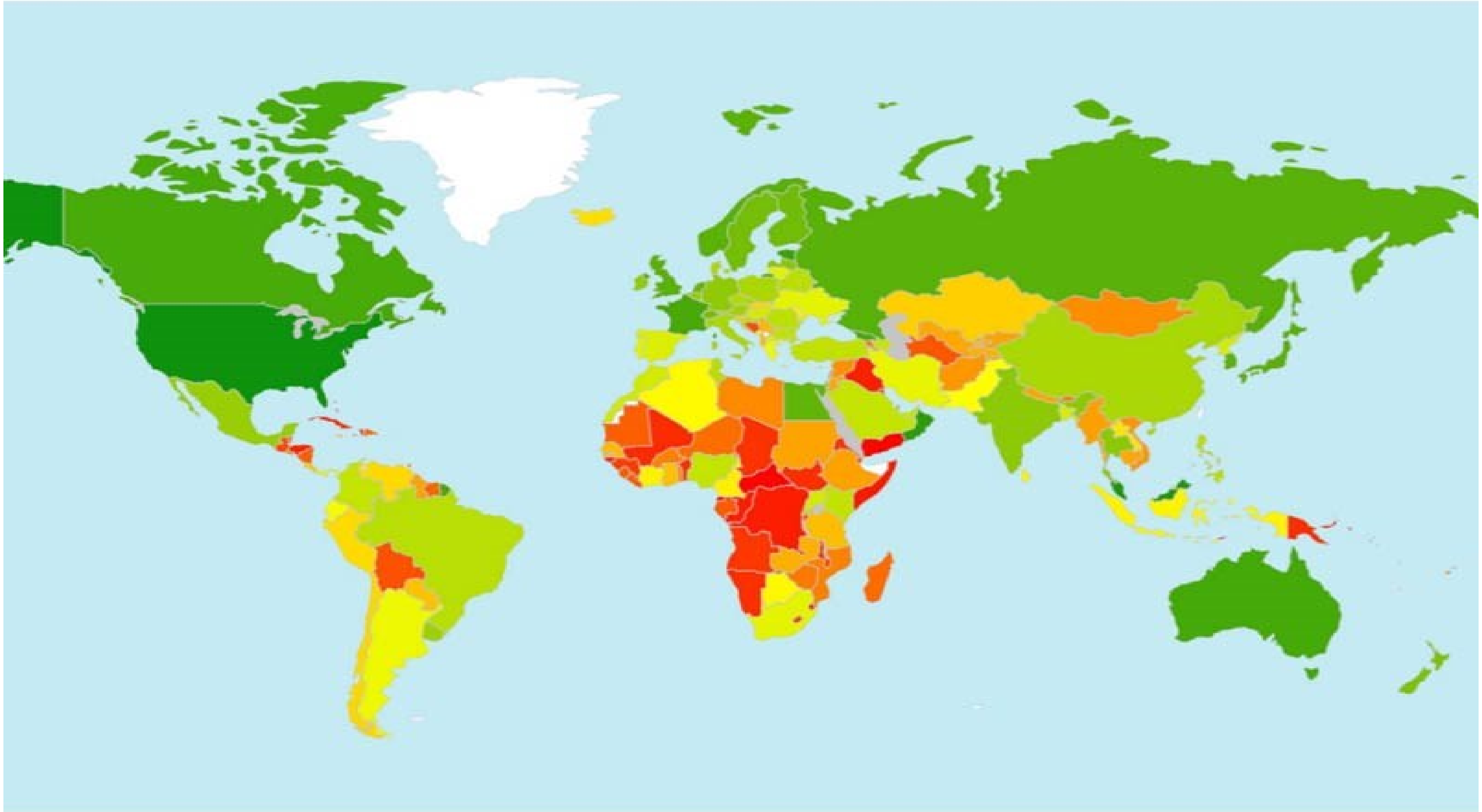
Eurobarometer on Cybersecurity

Information Security Indicators ETSI

The Global Cybersecurity Index (developed by ITU-ABIresearch)

Legal	• Existence of **legal institutions and frameworks** dealing with cybersecurity and cybercrime
Technical	• Existence of **technical institutions and frameworks** dealing with cybersecurity
Organizational	• Existence of **policy coordination institutions and strategies** for cybersecurity development at the national level
Capacity building	• Existence of **R&D, education and training programmes; certified professionals and public sector agencies fostering capacity building**
Cooperation	• Existence of **partnerships, cooperative frameworks and information sharing networks.**

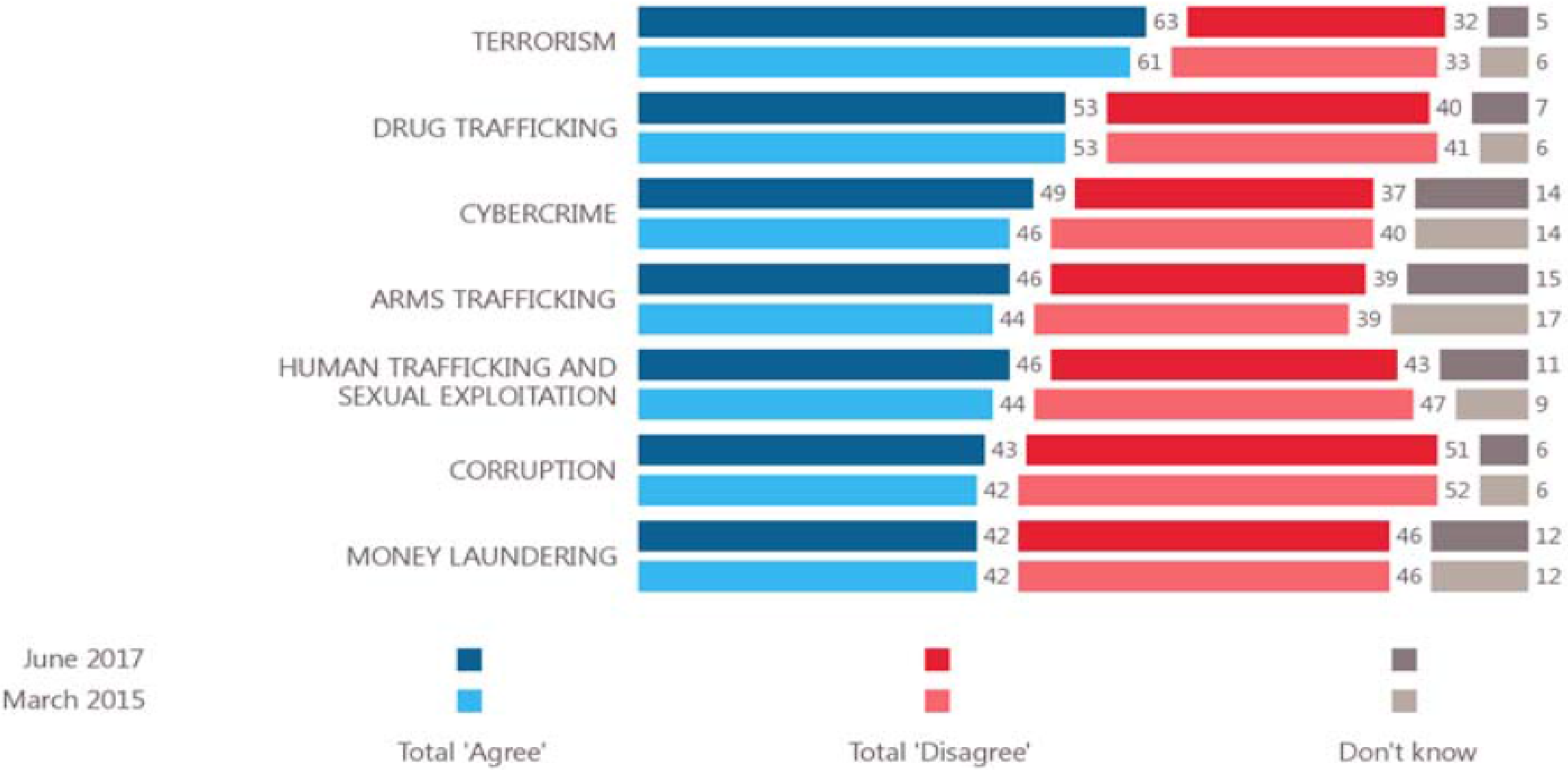
The Global Cybersecurity Index (developed by ITU-ABIresearch)



Special Eurobarometer 464a

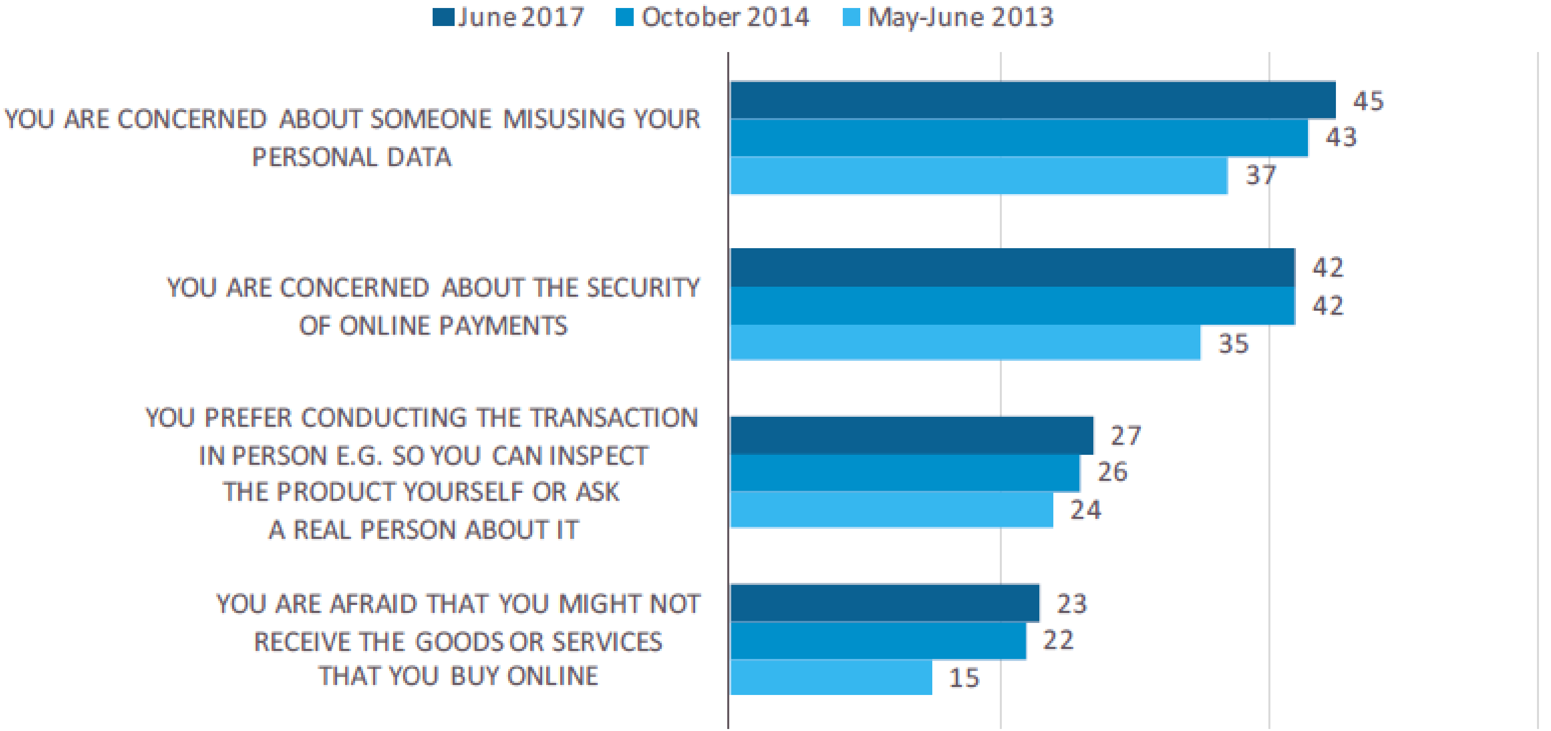
QB3 To what extent do you agree or disagree with the following statements: The police and other law enforcement authorities in (OUR COUNTRY) are doing enough to fight...

(% - EU)



Special Eurobarometer 464a

QB8 What concerns do you have, if any, about using the Internet for things like online banking or buying things online?
(MULTIPLE ANSWERS POSSIBLE)
(% - EU)



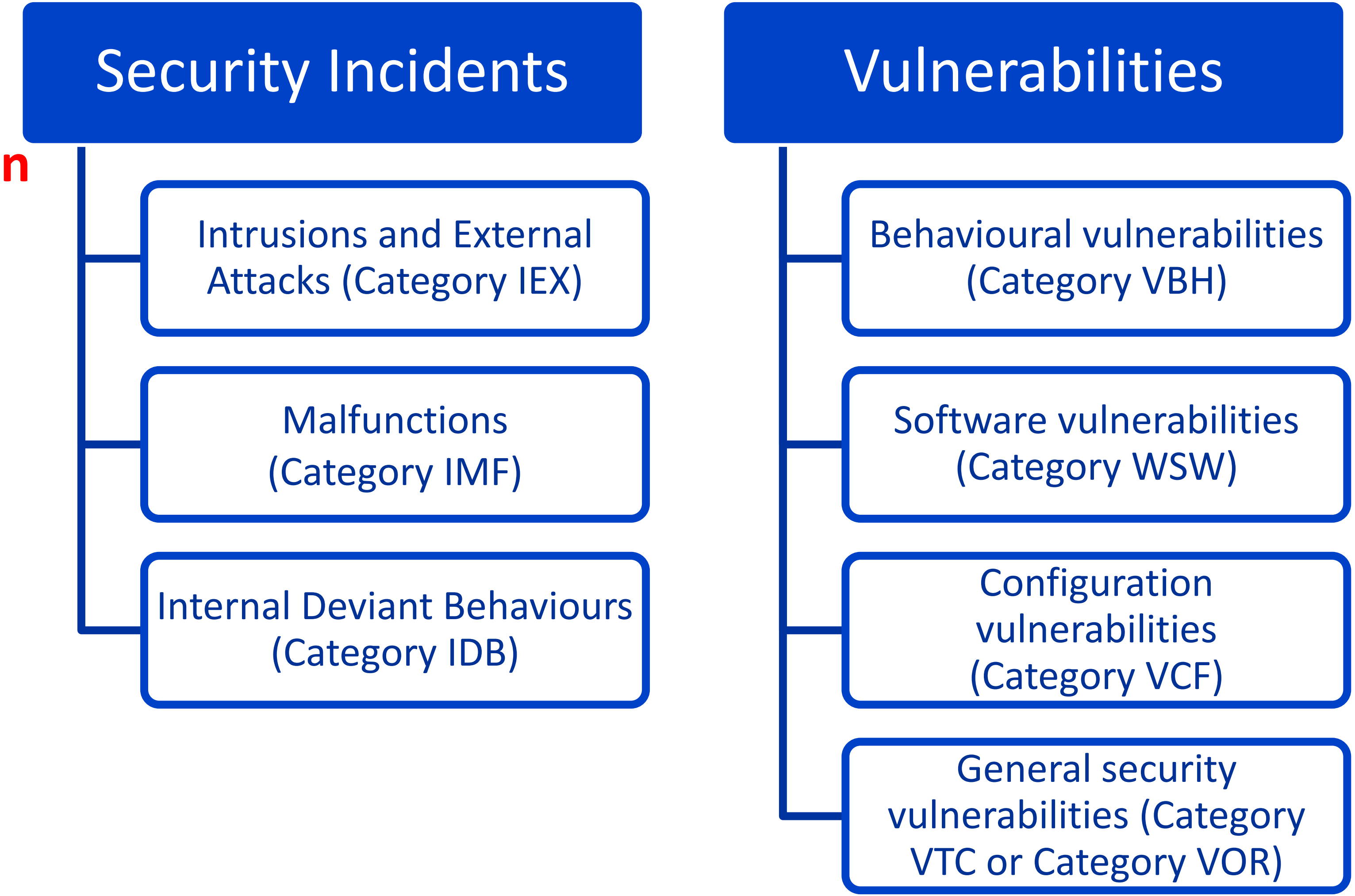
Organizations cybersecurity indicators

- From Qualitative to Quantitative Indicators
  - Assess the level of assurance
  - Measure the effectiveness of cybersecurity investments and performance
  - Benchmark the effectiveness of security measure
- The emergence of commonly recognized and reliable statistics.

ETSI Information Security Indicators

- □ ISI 001 Part 1: « A full set of operational indicators for organizations to use to benchmark their security posture »
- □ ISI 001 Part 2 : « Guide to select operational indicators based on the full set given in part 1 ».
- □ ISI 002: A security event classification model and taxonomy
- □ ISI 003 : A set of Key Performance Security Indicators (KPSI) for security event detection
- □ ISI 004 : Guidelines for event detection implementation
- □ ISI 005 : Guidelines for the testing of security event detection capabilities

ETSI Information System Indicators



Security Incidents

- Intrusions and External Attacks (Category IEX)
- Malfunctions (Category IMF)
- Internal Deviant Behaviours (Category IDB)

Vulnerabilities

- Behavioural vulnerabilities (Category VBH)
- Software vulnerabilities (Category WSW)
- Configuration vulnerabilities (Category VCF)
- General security vulnerabilities (Category VTC or Category VOR)

Examples of Vunerabilities Indicators

- **Not patched vulnerabilities VOR_VNP.2: Rate of not patched systems**
  - Not patched systems to be taken into account are the ones which are **not patched beyond the time limit defined in security policy.**
- **Passwords illicitly handled or managed VBH_PSW.1: Weak passwords used**
  - The required strength of passwords depends on the organization's security policy, but usable general recommendations in ISO/IEC 27002.
- **Workstation used without relevant usual security VBH_WTI.1:**
  - The use of workstation with a disabled or lacking update AV and/or FW.

Examples of Security Incidents Indicators

- **Denial of Service IEX_DOS.1: Denial of service attacks on websites**
  - Detection of an attack on a given website **coming from the same origin within a limited continuous timeframe**, and a significant incident defined as a user **noticeable disturbance and performance drop in the website access**
- **Malware IEX_MLW.1: Attempts to install malware on workstations**
  - Detection of a malware on workstations by organization's Antivirus and IPS
- **Phishing IEX_PHI.1: Phishing targeting company's customers' workstations spoiling company's image or business**
  - Customer reporting of a phishing attempt.

Thank you for your attention