Conference “measuring cybercrime in the time of COVID-19:
The role of criminal justice statistics, Strasbourg, 29-30 October 2020

The Budapest Convention and the classification of cybercrime for statistical purposes: some observations

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COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

Need for data/statistics on cybercrime

- Identify threats and trends
- Inform policy decisions
- Allocate resources
- Transparency, accountability, effectivness and legitimacy of criminal justice action
- Rule of law in cyberspace
- etc.

… in reality very little reporting on cybercrime … does not justify intrusive investigative measures or data retention …

Need for data/statistics on cybercrime

- Transparency, accountability, effectivness and **legitimacy** of criminal justice action

Example:

Access to data retained under EU Data Retention Directive (2006)

In 2008: 1.4 million requests for traffic data by LEA in 17 EU m/s but limited information on actual use of such data in criminal proceedings

► CJEU 2014: Data Retention Directive invalidated as interference not proportionate

Cybercrime: exaggerated, no data to prove that it is relevant.

The concept of cybercrime

Cybercrime?

- Extension of traditional crime but making use of new technologies [excludes conduct that is new in essence]?
- Computer as agent, facilitator or target of crime [too broad]?
- Offences against computers [too narrow?]

Need concept/definition that:

- Covers new and old types of criminal conduct
- But is not too broad to be meaningless
- Is stable even as technology evolves
- Can be operationalised for criminal justice purposes (and statistics)
- Is widely accepted

The Budapest Convention on Cybercrime offers such a concept:

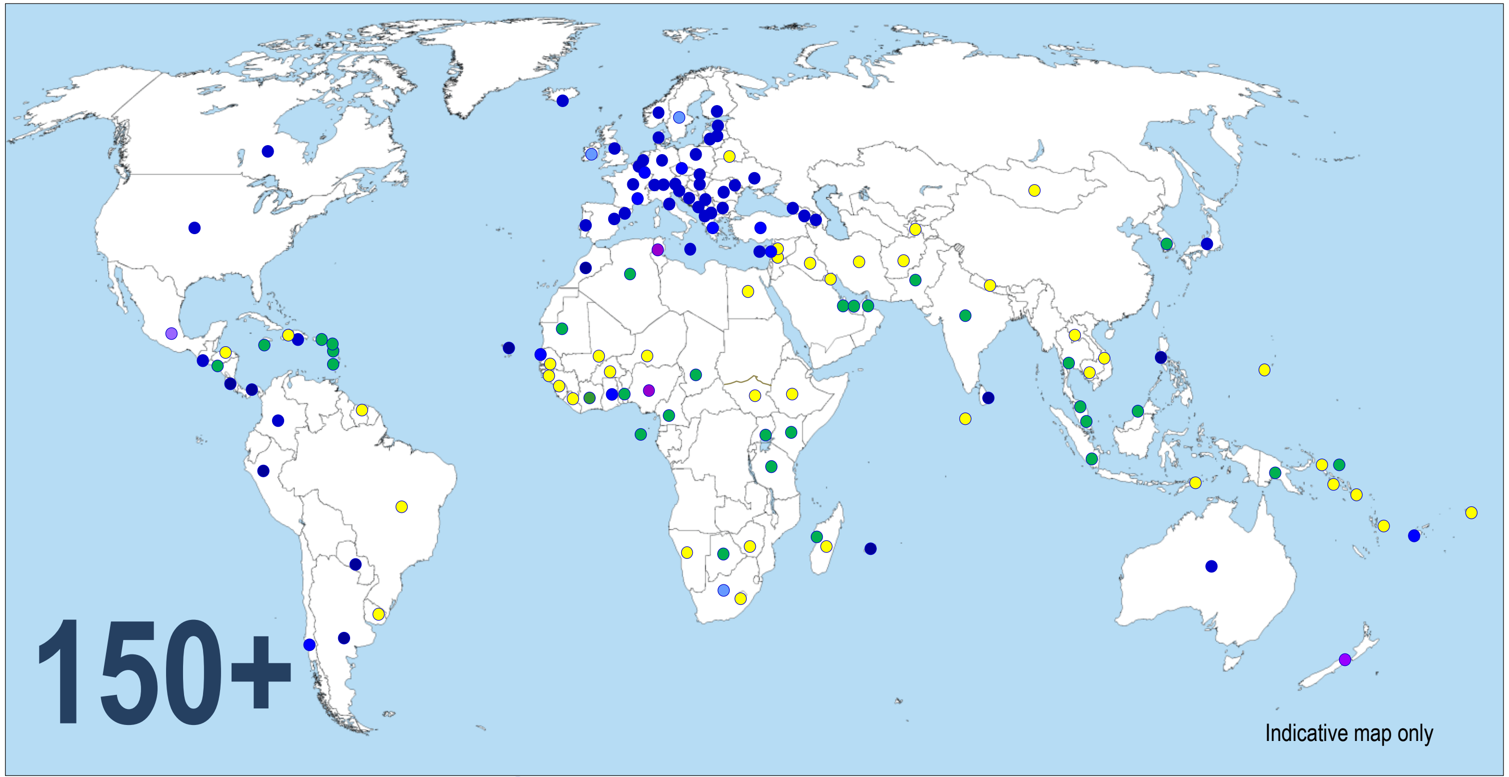
- Offences against computers
- Offences by means of computers but limited to conduct entailing a qualitative change (forgery, fraud, child pornography, IPR)
- Technology neutral
- Used by 100+ countries to criminalise conduct in domestic law (see profiles at **Octopus Community** at www.coe.int/cybercrime

Substantive criminal law provisions of Budapest Convention for classification of cybercrime?

Article	Budapest Convention	Equivalent in domestic criminal law?
Art. 2	Illegal access	
Art. 3	Illegal interception	
Art. 4	Data interference	
Art. 5	System interference	
Art. 6	Misuse of devices	
Art. 7	Computer-related forgery	
Art. 8	Computer-related fraud	
Art. 9	Child pornography	
Art. 10	IPR offences	
Art. 11	Attempt, aiding, abetting	
Art. 12	Corporate liability	

See: Octopus Community
at www.coe.int/cybercrime

Substantive criminal law provisions of Budapest Convention for classification of cybercrime?



Parties:	65	●
Signed:	3	●
Invited to accede:	9	●
=	77	

Other States with laws largely in line with Budapest Convention = 20+	●
Further States drawing on Budapest Convention for legislation = 50+	●

Substantive criminal law provisions of Budapest Convention for classification of cybercrime?

Substantive criminal (offences against and by means of computer systems corresponding to Articles 2 to 10 Budapest Convention)

See: Octopus Community at www.coe.int/cybercrime

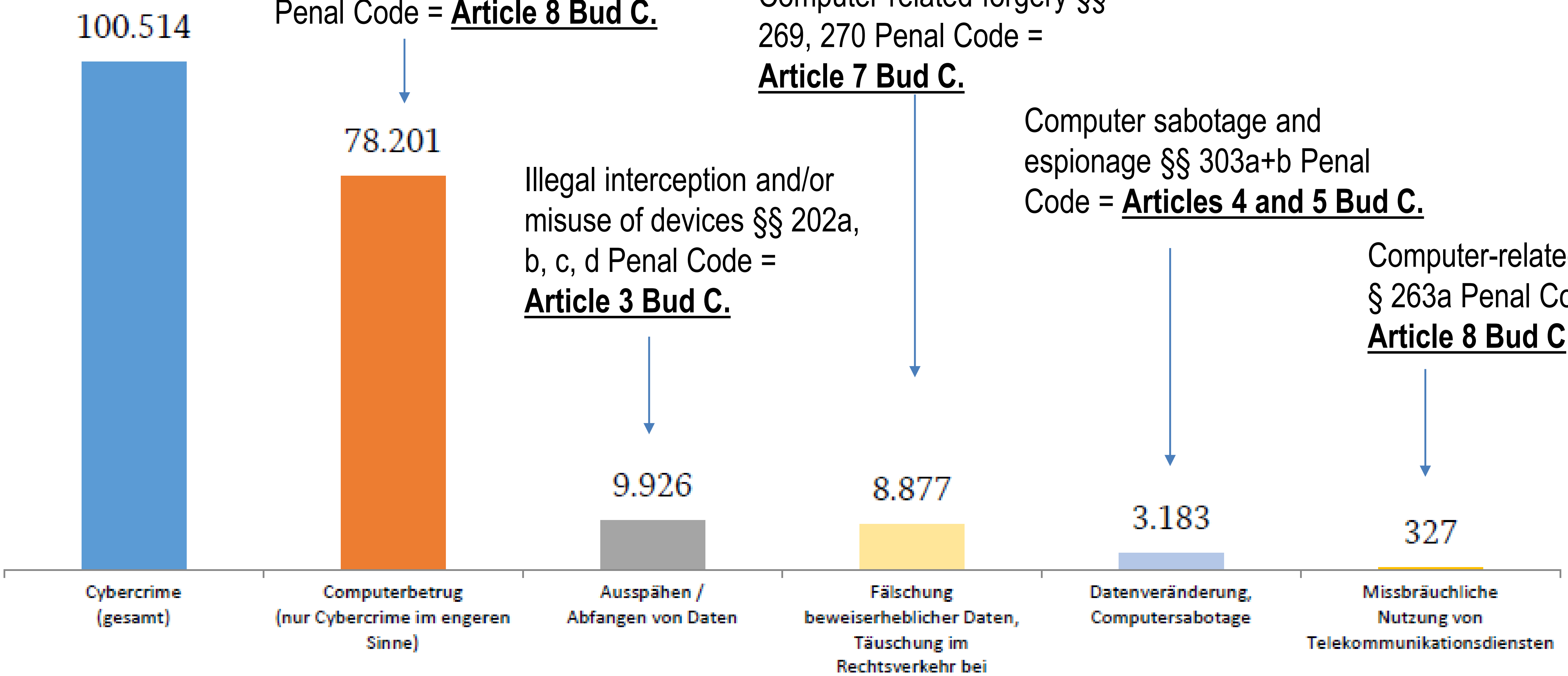
	States	Largely in place by January 2013		Largely in place by February 2020	
All Africa	54	6	11%	22	41%
All Americas	35	10	29%	17	49%
All Asia	42	13	31%	18	43%
All Europe	48	38	79%	44	92%
All Oceania	14	3	21%	5	36%
All	193	70	36%	106	55%

- By February 2020, 106 UN Member States (or 55%) had legislation in place with provisions criminalising offences against and by means of computers similar to those of the Budapest Convention.
- An increase of almost 20% since 2013.

Example: German Federal Criminal Police (BKA) – Situation report cybercrime for 2019

(Published September 2020)

Fälle von Cybercrime im engeren Sinne (2019)



Computer-related fraud § 263a Penal Code = **Article 8 Bud C.**

Illegal interception and/or misuse of devices §§ 202a, b, c, d Penal Code = **Article 3 Bud C.**

Computer-related forgery §§ 269, 270 Penal Code = **Article 7 Bud C.**

Computer sabotage and espionage §§ 303a+b Penal Code = **Articles 4 and 5 Bud C.**

Computer-related fraud § 263a Penal Code = **Article 8 Bud C**.

Example: COVID -19 related cybercrime

COVID-19 related crime in cyberspace

- Phishing campaigns and malware distribution through seemingly genuine information or advice on COVID-19 .
- Ransomware shutting down medical, scientific or other health-related facilities testing for COVID-19 or developing vaccines
- Ransomware targeting individuals through apps claiming to provide genuine information on COVID-19
- Attacks against critical infrastructures or international organizations
- Offenders targeting employees who are teleworking
- Fraud schemes offering personal protective equipment or fake medicines claiming to prevent or cure SARS-CoV-2
- Misinformation or fake news to create panic, social instability, xenophobia, racism or distrust in measures taken health authorities
- Online child sexual exploitation and abuse

Budapest Convention – Articles

- 2 – Illegal access
- 3 – Illegal interception
- 4 – Data interference
- 5 – System interference
- 6 – Misuse of devices
- 7 – Forgery
- 8 – Fraud
- 9 – Child pornography
- 10 – IPR offences

Protocol on Xenophobia and Racism

Guidance Notes on

- Botnets
- DDOS attacks
- Critical information infrastructure attacks
- Malware
- Spam
- ID theft

Procedural powers to secure evidence and identify offenders

- 16+17 – Expedited preservation
- 18 – Production orders
- 19 – Search and seizure
- 20+21 – Interception

With safeguards

- Article 15

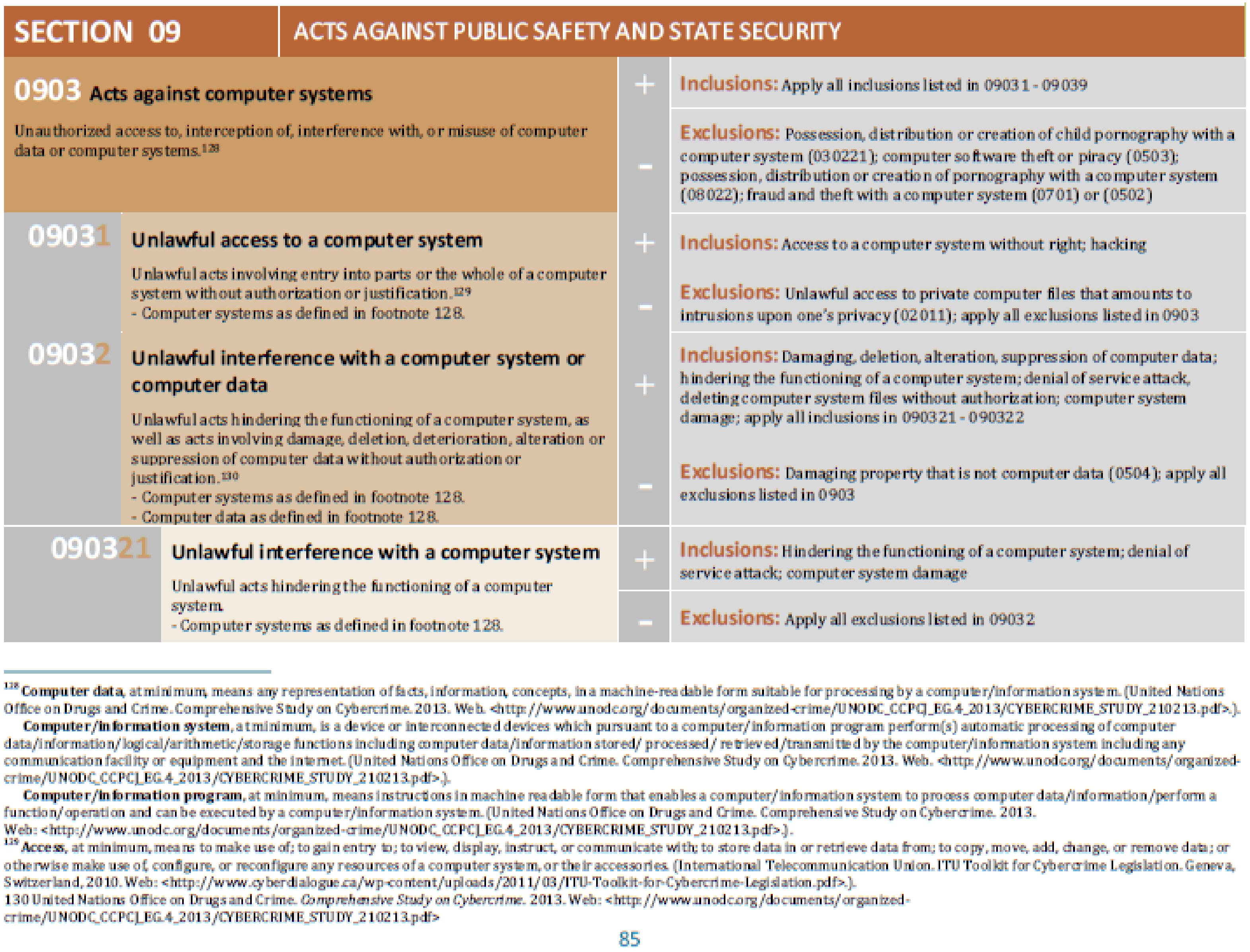
Guidance Note on

- Article 18 – Production orders

Framework for international cooperation

- Articles 23 - 35

UN ICCS – a framework for criminal justice statistics on cybercrime?



SECTION 09	ACTS AGAINST PUBLIC SAFETY AND STATE SECURITY		
0903	**Acts against computer systems** Unauthorized access to, interception of, interference with, or misuse of computer data or computer systems.[128]	+	Inclusions: Apply all inclusions listed in 09031 - 09039
		-	Exclusions: Possession, distribution or creation of child pornography with a computer system (030221); computer software theft or piracy (0503); possession, distribution or creation of pornography with a computer system (08022); fraud and theft with a computer system (0701) or (0502)
09031	**Unlawful access to a computer system** Unlawful acts involving entry into parts or the whole of a computer system without authorization or justification.[129] - Computer systems as defined in footnote 128.	+	Inclusions: Access to a computer system without right; hacking
		-	Exclusions: Unlawful access to private computer files that amounts to intrusions upon one's privacy (02011); apply all exclusions listed in 0903
09032	**Unlawful interference with a computer system or computer data** Unlawful acts hindering the functioning of a computer system, as well as acts involving damage, deletion, deterioration, alteration or suppression of computer data without authorization or justification.[130] - Computer systems as defined in footnote 128. - Computer data as defined in footnote 128.	+	Inclusions: Damaging, deletion, alteration, suppression of computer data; hindering the functioning of a computer system; denial of service attack, deleting computer system files without authorization; computer system damage; apply all inclusions in 090321 - 090322
		-	Exclusions: Damaging property that is not computer data (0504); apply all exclusions listed in 0903
090321	**Unlawful interference with a computer system** Unlawful acts hindering the functioning of a computer system. - Computer systems as defined in footnote 128.	+	Inclusions: Hindering the functioning of a computer system; denial of service attack; computer system damage
		-	Exclusions: Apply all exclusions listed in 09032

[128] **Computer data**, at minimum, means any representation of facts, information, concepts, in a machine-readable form suitable for processing by a computer/information system. (United Nations Office on Drugs and Crime. Comprehensive Study on Cybercrime. 2013. Web. <http://www.unodc.org/documents/organized-crime/UNODC_CCPCJ_EG.4_2013/CYBERCRIME_STUDY_210213.pdf>.).

Computer/information system, at minimum, is a device or interconnected devices which pursuant to a computer/information program perform(s) automatic processing of computer data/information/logical/arithmetic/storage functions including computer data/information stored/ processed/ retrieved/transmitted by the computer/information system including any communication facility or equipment and the internet. (United Nations Office on Drugs and Crime. Comprehensive Study on Cybercrime. 2013. Web. <http://www.unodc.org/documents/organized-crime/UNODC_CCPCJ_EG.4_2013/CYBERCRIME_STUDY_210213.pdf>.).

Computer/information program, at minimum, means instructions in machine readable form that enables a computer/information system to process computer data/information/perform a function/operation and can be executed by a computer/information system. (United Nations Office on Drugs and Crime. Comprehensive Study on Cybercrime. 2013. Web: <http://www.unodc.org/documents/organized-crime/UNODC_CCPCJ_EG.4_2013/CYBERCRIME_STUDY_210213.pdf>.).

[129] **Access**, at minimum, means to make use of; to gain entry to; to view, display, instruct, or communicate with; to store data in or retrieve data from; to copy, move, add, change, or remove data; or otherwise make use of, configure, or reconfigure any resources of a computer system, or their accessories. (International Telecommunication Union. ITU Toolkit for Cybercrime Legislation. Geneva, Switzerland, 2010. Web: <http://www.cyberdialogue.ca/wp-content/uploads/2011/03/ITU-Toolkit-for-Cybercrime-Legislation.pdf>.).

130 United Nations Office on Drugs and Crime. *Comprehensive Study on Cybercrime*. 2013. Web: <http://www.unodc.org/documents/organized-crime/UNODC_CCPCJ_EG.4_2013/CYBERCRIME_STUDY_210213.pdf>

The UNODC framework on:

"INTERNATIONAL CLASSIFICATION OF CRIME FOR STATISTICAL PURPOSES"

► broadly covers the offences of the Budapest Convention

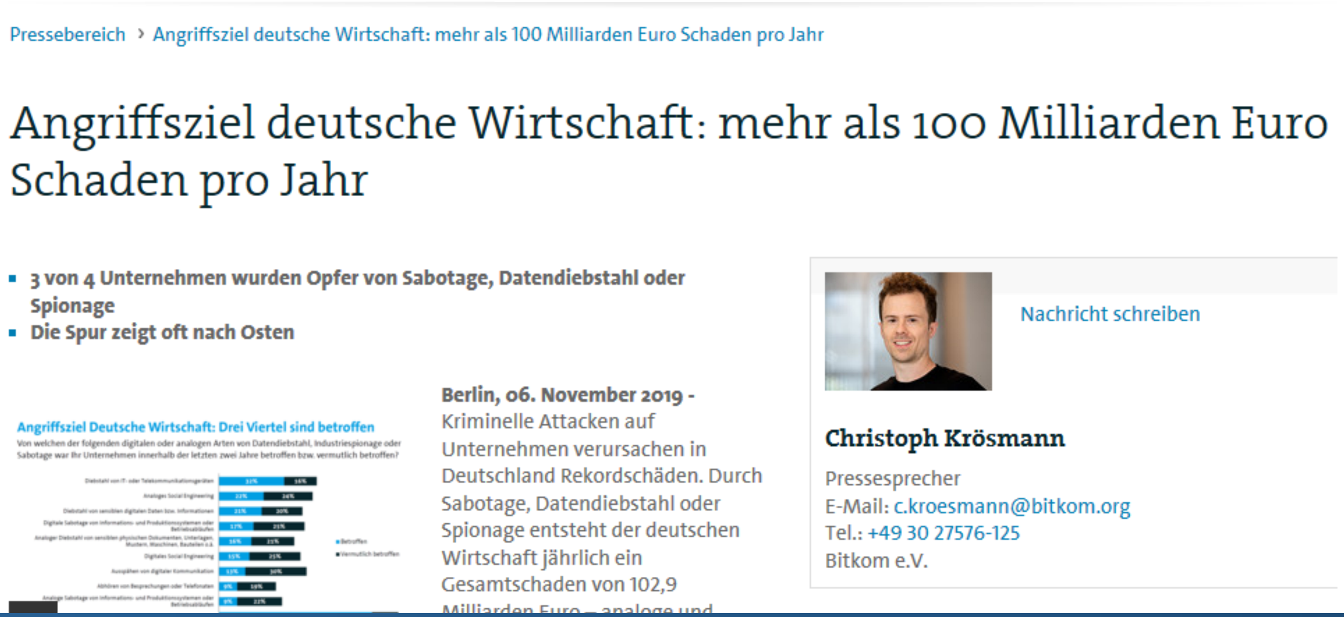
Challenges

0.1% 1%
of cybercrime reported to / recorded by LEA?

bitkom

Them

EUR 100 billion damage reported by German industry ⟷ **EUR 82 million recorded by German police**



Pressebereich › Angriffsziel deutsche Wirtschaft: mehr als 100 Milliarden Euro Schaden pro Jahr

Angriffsziel deutsche Wirtschaft: mehr als 100 Milliarden Euro Schaden pro Jahr

- 3 von 4 Unternehmen wurden Opfer von Sabotage, Datendiebstahl oder Spionage
- Die Spur zeigt oft nach Osten

Angriffsziel Deutsche Wirtschaft: Drei Viertel sind betroffen

Von welchen der folgenden digitalen oder analogen Arten von Datendiebstahl, Industriespionage oder Sabotage war Ihr Unternehmen innerhalb der letzten zwei Jahre betroffen bzw. vermutlich betroffen?

	Betroffen	Vermutlich betroffen
Diebstahl von IT- oder Telekommunikationsgeräten	32%	16%
Analoges Social Engineering	22%	24%
Diebstahl von sensiblen digitalen Daten bzw. Informationen	21%	20%
Digitale Sabotage von Informations- und Produktionssystemen oder Betriebsabläufen	17%	21%
Analoger Diebstahl von sensiblen physischen Dokumenten, Unterlagen, Mustern, Maschinen, Bauteilen o.ä.	16%	21%
Digitales Social Engineering	15%	25%
Ausspähen von digitaler Kommunikation	13%	30%
Abhören von Besprechungen oder Telefonaten	9%	19%
Analoge Sabotage von Informations- und Produktionssystemen oder Betriebsabläufen	9%	22%

Berlin, 06. November 2019 - Kriminelle Attacken auf Unternehmen verursachen in Deutschland Rekordschäden. Durch Sabotage, Datendiebstahl oder Spionage entsteht der deutschen Wirtschaft jährlich ein Gesamtschaden von 102,9 Milliarden Euro – analoge und

Nachricht schreiben

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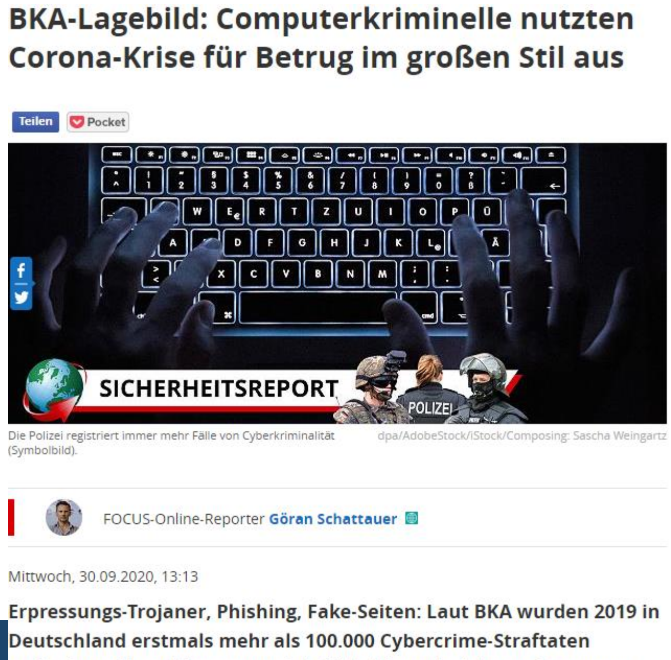


BKA-Lagebild: Computerkriminelle nutzten Corona-Krise für Betrug im großen Stil aus

Die Polizei registriert immer mehr Fälle von Cyberkriminalität (Symbolbild). dpa/AdobeStock/iStock/Composing: Sascha Weingartz

FOCUS-Online-Reporter Göran Schattauer

Mittwoch, 30.09.2020, 13:13

Erpressungs-Trojaner, Phishing, Fake-Seiten: Laut BKA wurden 2019 in Deutschland erstmals mehr als 100.000 Cybercrime-Straftaten

Challenges

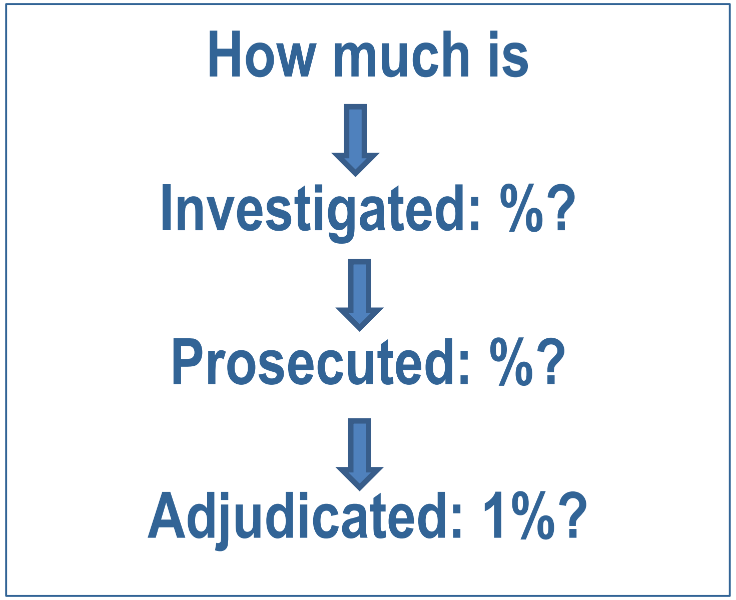
0.1% ….. 1% of cybercrime reported to / recorded by LEA?

WHY?

- Criminal justice too complicated, not efficient, “useless”?
- Attacks against industry and institutions considered matter of national security?
- Self-defence?
- Reputation?
- Insurance pays?
- Unclear legislation and responsilities of LEA (cyberviolence)?
- …..

Challenges:

From the 0.1 – 1% of cybercrime that is reported to LEA….



How much is

Investigated: %?

Prosecuted: %?

Adjudicated: 1%?

= 0.001 – 0.01 % of all cybercrime with a conclusive criminal justice response?

= From 100,000 crimes ► 100 – 1,000 reported to / recorded by LEA ► 1 – 10 convictions?

Note: this does not yet include other offences involving electronic evidence.

0.01 – 0.001%: What consequences?

- Do we have a rule of law problem in cyberspace?
- Do governments meet their obligation to protect (K.U. v. Finland)?
- Primary government response through cybersecurity, national defence and national security institutions?
- Residual response through criminal justice?
- Strict rule of law and data protection safeguards for criminal justice v. “margin of appreciation” for national security response?

Challenges:

The question of electronic evidence

Budapest Convention

Article 14 – Scope of procedural provisions

1 .....

2 Except as specifically provided otherwise in Article 21, each Party shall apply the powers and procedures referred to in paragraph 1 of this article to:

a the criminal offences established in accordance with Articles 2 through 11 of this Convention;

b other criminal offences committed by means of a computer system; and

c **the collection of evidence in electronic form of a criminal offence.**

Any type of crime may entail electronic evidence:

How to capture that in criminal justice statistics?

Challenges

Other challenges:

- Cybercrime often a combination of different offences
- Where cybercrime is a tool to commit more serious offences
  ▶ not recorded as cybercrime
- Transnational nature of cybercrime: Offenders, victims, computers, evidence in multiple jurisdictions

Example: TrickBot “takedown” by Microsoft (October 2020):

- What offence/s?
  - Data/system interference
  - Misuse of devices
  - Fraud, forgery
  - Extortion
  - Election interference
  - IPR infringements
  - Etc.
- How many offences, offenders, victims, systems, countries?
  - 2.7 million+ bot infected computers
  - 128 servers

= How to reflect in statistics?

Challenges

More challenges:

- Need and relevance of criminal justice statistics on cybercrime and e-evidence recognised but few countries have them
- Few domestic regulations requiring to keep statistics
- No common approach – no comparable data internationally

Challenges

Multiple types of data collection and statistics:

- Private sector sources of cybersecurity and -crime data
- CERTs
- Statistics extracted from general databases on crimes recorded (e.g. BKA Lagebericht)
- Platforms for reporting specific forms of cybercrime (e.g. PHAROS/France, Action Fraud/UK) or for cybercrime in general (ACORN (now ReportCyber)/Australia, Internet Crime Complaint Center/USA)

But:

No experience of integrated system of criminal justice data collection on cybercrime reported/recorded, investigated, prosecuted, adjudicated?

[Recommended in EU GENVAL evaluations on cybercrime]

Towards a more systematic approach to criminal justice data on cybercrime?

GLACY+ Project: Guide for criminal justice statistics on cybercrime and e-evidence*:

Strategic approach

- Setting objectives: Strategic but SMART
- Environmental scan: structures, institutions, regulations, factors
- Monitoring the plan

Key points for implementation

- Centralised systems to integrate data
- Common reporting methodology
- Uniform definitions of data to be collected
- Case management system
- Clarity in the definition of cybercrime

Steps for data collection

- Identify data sources
- Select categories
- Data analytics
- Communication and reporting
- Evidence-based policy

Data sharing and correlation

- Police, prosecution, courts
- Private sector, CERTs, etc.

Collate and evaluate different types of data/information form multiple sources and draw conclusions?

*Guide by GLACY+/INTERPOL (October 2020).
See also GLACY+ workshop on statistics (Ghana, 2017)

Conclusions

Better data / statistics needed to determine:

- Scale, impact, trends of cybercrime
- Effectiveness (and proportionality) of criminal justice response
- Allocation of resources

Common **international** framework for statistics:

- UN ICCS?
- Offences of Budapest Convention

At **domestic** levels:

Promote strategic approach ► Make data collection/statistics part of policies/strategies on cybercrime

- Rules for data collection
- Establish benchmarks for assessing the effectiveness of the criminal justice response
- Use as indicators for allocation of resources to specialised units for cybercrime investigations/computer forensics

COE support through capacity building projects