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BACKGROUND DOCUMENTATION

***** All documents are hyperlinked *****

Work carried out by the European Union on AI and e-evidence

1	The European AI ACT Regulation (EU) 2024/1689 of the European Parliament and of the Council 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act)	
2	Council Decision (EU) 2023/436 of 14 February 2023 authorising Member States to ratify, in the interest of the European Union, the Second Additional Protocol to the Convention on Cybercrime on enhanced cooperation and disclosure of electronic evidence (ST/6438/2022/INIT, OJ L 63, 28.2.2023)	
3	Regulation (EU) 2023/1543 of the European Parliament and of the Council of 12 July 2023 on European Production Orders and European Preservation Orders for electronic evidence in criminal proceedings and for the execution of custodial sentences following criminal proceedings (PE/4/2023/REV/1, OJ L 191, 28.7.2023, p. 118–180)	
4	Directive (EU) 2023/1544 of the European Parliament and of the Council of 12 July 2023 laying down harmonised rules on the designation of designated establishments and the appointment of legal representatives for the purpose of gathering electronic evidence in criminal proceedings (PE/3/2023/REV/1, OJ L 191, 28.7.2023, p. 181–190)	

Other EU criminal justice documents

A) The institutional framework for criminal justice in the EU

A1) Main treaties and conventions

A1-01	Protocol (No 36) on Transitional Provisions
A1-02	Statewatch Analysis, "The Third Pillar acquis" after the Treaty of Lisbon enters into force, Professor Steve Peers, University of Essex, Second Version, 1 December 2009
A1-03	Consolidated version of the Treaty on the functioning of the European Union, art. 82-86 (<i>OJ C 326/47; 26.10.2012</i>)
A1-04	Consolidated Version of the Treaty on the European Union, art. 9-20 (<i>OJ C326/13; 26.10.2012</i>)
A1-05	Charter of fundamental rights of the European Union (<i>OJ. C 364/1; 18.12.2000</i>)
A1-06	Explanations relating to the Charter of Fundamental Rights (<i>2007/C 303/02</i>)
A1-07	Convention implementing the Schengen Agreement of 14 June 1985 (<i>OJ L 239; 22.9.2000, P. 19</i>)

A2) Court of Justice of the European Union

A2-01	Court of Justice of the European Union: Presentation of the Court
A2-02	European Parliament Fact Sheets on the European Union: Competences of the Court of Justice of the European Union, April 2023
A2-03	Regulation (EU, Euratom) 2019/629 of the European Parliament and of the Council of 17 April 2019 amending Protocol No 3 on the Statute of the Court of Justice of the European Union, <i>OJ L 111, 17 April 2019</i>
A2-04	Consolidated Version of the Statute of the Court of Justice of the European Union (01 August 2016)
A2-05	Consolidated version of the Rules of Procedure of the Court of Justice (25 September 2012)

A3) European Convention on Human Rights (ECHR)

A3-01	Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocols No. 11 and No. 14 together with additional protocols No. 4, 6, 7, 12 and 13, Council of Europe Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocols Nos. 11, 14 and 15, supplemented by Protocols Nos. 1, 4, 6, 7, 12, 13 and 16, Council of Europe
A3-02	Guide on the case-law of the European Convention on Human Rights: European Union law in the Court's case-law, Council of Europe, updated on 31 August 2022
A3-03	Case of Grzeda v. Poland (Application no. 43572/18), Strasbourg, 15 March 2022
A3-04	Case of Mihalache v. Romania [GC] (Application no. 54012/10), Strasbourg, 08 July 2019
A3-05	Case of Altay v. Turkey (no. 2) (Application no. 11236/09), Strasbourg, 09 April 2019

A3-06	Case <i>Beuze v. Belgium</i> (Application no. 71409/10), Strasbourg, 09 November 2018
A3-07	Case of <i>Vizgirda v. Slovenia</i> (Application no. 59868/08), Strasbourg, 28 August 2018
A3-08	Case of <i>Şahin Alpay v. Turkey</i> (Application no. 16538/17), Strasbourg, 20 March 2018
A3-09	Grand Chamber Hearing, <i>Beuze v. Belgium</i> [GC] (Application no. 71409/10), Strasbourg, 20 December 2017
A3-10	Case of <i>Blokhin v. Russia</i> (Application no. 47152/06), Judgment European Court of Human Rights, Strasbourg, 23 March 2016
A3-11	Case of <i>A.T. v. Luxembourg</i> (Application no. 30460/13), Judgment European Court of Human Rights, Strasbourg, 09 April 2015
A3-12	Case of <i>Blaj v. Romania</i> (Application no. 36259/04), Judgment European Court of Human Rights, Strasbourg, 08 April 2014
A3-13	Case of <i>Boz v. Turkey</i> (Application no. 7906/05), Judgment European Court of Human Rights, Strasbourg, 01 October 2013 (FR)
A3-14	Case of <i>Pishchalnikov v. Russia</i> (Application no. 7025/04), Judgment European Court of Human Rights, Strasbourg, 24 October 2009
A3-15	Case of <i>Salduz v. Turkey</i> (Application no. 36391/02), Judgment, European Court of Human Rights, Strasbourg, 27 November 2008

A4) Brexit

A4-01	Trade and Cooperation Agreement between the European Union and the European Atomic Energy Community, of the one part, and the United Kingdom of Great Britain and Northern Ireland, of the other part (<i>OJ L 149, 30.4.2021</i>)
A4-02	Eurojust: Judicial cooperation in criminal matters between the European Union and the United Kingdom from 1 January 2021, 1 January 2021
A4-03	Draft text of the Agreement on the New Partnership between the European Union and the United Kingdom (UKTF 2020-14), 18 March 2020
A4-04	Draft Working Text for an Agreement on Law enforcement and Judicial Cooperation in Criminal Matters
A4-05	The Law Enforcement and Security (Amendment) (EU Exit) Regulations 2019 (2019/742), 28th March 2019
A4-06	Brexit next steps: The European Arrest Warrant, House of Commons, 20 February 2020
A4-07	Brexit next steps: The Court of Justice of the EU and the UK, House of Commons, 7 February 2020
A4-08	The Law Society, "Brexit no deal: Criminal Justice Cooperation", London, September 2019
A4-09	European Commission, Factsheet, „A „No-deal“-Brexit: Police and judicial cooperation”, April 2019
A4-10	CEPS: Criminal Justice and Police Cooperation between the EU and the UK after Brexit: Towards a principled and trust-based partnership, 29 August 2018
A4-11	Policy paper: The future relationship between the United Kingdom and the European Union, 12 July 2018
A4-12	House of Lords, Library Briefing, Proposed UK-EU Security Treaty, London, 23 May 2018
A4-13	HM Government, Technical Note: Security, Law Enforcement and Criminal Justice, May 2018
A4-14	LSE-Blog, Why Britain's habit of cherry-picking criminal justice policy cannot survive Brexit, Auke Williams, London School of Economics and Political Science, 29 March 2018

A4-15	House of Commons, Home Affairs Committee, UK-EU Security Cooperation after Brexit, Fourth Report of Session 2017-19, London, 21 March 2018
A4-16	HM Government, Security, Law Enforcement and Criminal Justice, A future partnership paper
A4-17	European Criminal Law after Brexit, Queen Mary University London, Valsamis Mitsilegas, 2017
A4-18	House of Lords, European Union Committee, Brexit: Judicial oversight of the European Arrest Warrant, 6 th Report of Session 2017-19, London, 27 July 2017
A4-19	House of Commons, Brexit: implications for policing and criminal justice cooperation (24 February 2017)
A4-20	Scottish Parliament Information Centre, Briefing, Brexit: Impact on the Justice System in Scotland, Edinburgh, 27 October 2016

B) Mutual legal assistance

B1) Legal framework

B1-01	Council Act of 16 October 2001 establishing in accordance with Article 34 of the Treaty on European Union, the Protocol to the Convention on Mutual Assistance in Criminal Matters between the Member States of the European Union (2001/C 326/01), (OJ C 326/01; 21.11.2001, P. 1)
B1-02	Council Act of 29 May 2000 establishing in accordance with Article 34 of the Treaty on European Union the Convention on Mutual Assistance in Criminal Matters between the Member States of the European Union (OJ C 197/1; 12.7.2000, P. 1)
B1-03	Agreement between the European Union and the Republic of Iceland and the Kingdom of Norway on the surrender procedure between the Member States of the European Union and Iceland and Norway (OJ L 292, 21.10.2006, p. 2–19)
B1-04	Second Additional Protocol to the European Convention on Mutual Assistance in Criminal Matters (Strasbourg, 8.XI.2001)
B1-05	Additional Protocol to the European Convention on Mutual Assistance in Criminal Matters (Strasbourg, 17.III.1978)
B1-06	European Convention on Mutual Assistance in Criminal Matters (Strasbourg, 20.IV.1959)
B1-07	Third Additional Protocol to the European Convention on Extradition (Strasbourg, 10.XI.2010)
B1-08	Second Additional Protocol to the European Convention on Extradition (Strasbourg, 17.III.1978)
B1-09	Additional Protocol to the European Convention on Extradition (Strasbourg, 15.X.1975)
B1-10	European Convention on Extradition (Strasbourg, 13.XII.1957)

B2) Mutual recognition: the European Arrest Warrant

B2-01	Proposal for a Regulation of the European Parliament and of the Council on the transfer of proceedings in criminal matters, COM/2023/185 final, 5 April 2023
B2-02	European Parliament resolution of 20 January 2021 on the implementation of the European Arrest Warrant and the surrender procedures between Member States (2019/2207(INI)), (OJ C 456, 10.11.2021)
B2-03	Council Framework Decision 2009/299/JHA of 26 February 2009 amending Framework Decisions 2002/584/JHA, 2005/214/JHA, 2006/783/JHA,

	2008/909/JHA and 2008/947/JHA, thereby enhancing the procedural rights of persons and fostering the application of the principle of mutual recognition to decisions rendered in the absence of the person concerned at the trial (<i>OJ L 81/24; 27.3.2009</i>)
B2-04	Council Framework Decision of 13 June 2002 on the European arrest warrant and the surrender procedures between Member States (<i>OJ L 190/1; 18.7.2002, P. 1</i>)
B2-05	Case law by the Court of Justice of the European Union on the European Arrest Warrant – Overview, Eurojust, 15 March 2020
B2-06	Case C-142/22, OE, Judgment of the Court (Second Chamber), 6 July 2023
B2-07	Case C-699/21, E.D.L, Judgment of the Court (Grand Chamber), 18 April 2023
B2-08	Joined Cases C-514/21 and C-515/21, LU and PH, Judgment of the Court (Fourth Chamber), 23 March 2023
B2-09	Case C-158/21, Puig Gordi and Others, Judgment of the Court (Grand Chamber), 31 January 2023
B2-10	Case C-168/21, Procureur général près la cour d'appel d'Angers, Judgment of the Court (Third Chamber), 14 July 2022
B2-11	Joined Cases C-562/21 PPU and C-563/21 PPU, Openbaar Ministerie (Tribunal établi par la loi dans l'État membre d'émission), Judgment of the Court (Grand Chamber), 22 February 2022
B2-12	Case C-649/19, Spetsializirana prokuratura (Déclaration des droits), Judgement of the Court (Fifth Chamber), 28 January 2021
B2-13	Case C-414/20 PPU, MM, Judgment of the Court (Third Chamber), 13 January 2021
B2-14	Joined Cases C-354/20 PPU and C-412/20 PPU, Openbaar Ministerie (Indépendance de l'autorité judiciaire d'émission), Judgement of the Court (Grand Chamber), 17 December 2020
B2-15	Case C-416/20 PPU, Generalstaatsanwaltschaft Hamburg, Judgement of the Court (Fourth Chamber), 17 December 2020
B2-16	Case C-584/19, A and Others, Judgement of the Court (Grand Chamber), 8 December 2020
B2-17	Case C-510/19, AZ, Judgement of the Court (Grand Chamber), 24 November 2020
B2-18	Case C-717/18, X (European arrest warrant – Double criminality) Judgement of the Court of 3 March 2020
B2-19	Case C-314/18, SF Judgement of the Court of 1 March 2020
B2-20	Joined Cases C-566/19 PPU (JR) and C-626/19 PPU (YC), Opinion of AG Campos Sánchez-Bordona, 26 November 2019
B2-21	Case C-489/19 PPU (NJ), Judgement of the Court (Second Chamber) of 09 October 2019
B2-22	Case 509/18 (PF), Judgement of the Court (Grand Chamber), 27 May 2019
B2-23	Joined Cases C-508/18 (OG) and C-82/19 PPU (PI), Judgement of the Court (Grand Chamber), 24 May 2019
B2-24	The Guardian Press Release: Dutch court blocks extradition of man to 'inhumane' UK prisons, 10 May 2019
B2-25	Case 551/18, IK, Judgement of the Court of 06 December 2018 (First Chamber)
B2-26	CJEU Press Release No 141/18, Judgement in Case C-207/16, Ministerio Fiscal, 2 October 2018
B2-27	CJEU Press Release No 135/18, Judgement in Case C-327/18 PPU RO, 19 September 2019
B2-28	Case C-268/17, AY, Judgement of the Court of 25 July 2018 (Fifth Chamber)

B2-29	Case C-220/18 PPU, ML, Judgement of the Court of 25 July 2018 (First Chamber)
B2-30	Case C-216/18 PPU, LM, Judgement of the Court of 25 July 2018 (Grand Chamber)
B2-31	In Absentia EAW, Background Report on the European Arrest Warrant - The Republic of Poland, Magdalena Jacyna, 01 July 2018
B2-32	Case C-571/17 PPU, Samet Ardic, Judgment of the court of 22 December 2017
B2-33	C-270/17 PPU, Tupikas, Judgment of the Court of 10 August 2017 (Fifth Chamber)
B2-34	Case C-271/17 PPU, Zdziaszek, Judgment of the Court of 10 August 2017 (Fifth Chamber)
B2-35	Case C-579/15, Popławski, Judgement of the Court (Fifth Chamber), 29 June 2017
B2-36	Case C-640/15, Vilkas, Judgement of the Court (Third Chamber), 25 January 2017
B2-37	Case C-477/16 PPU, Kovalkovas, Judgement of the Court (Fourth Chamber), 10 November 2016
B2-38	Case C-452/16 PPU, Poltorak, Judgement of the Court (Fourth chamber), 10 November 2016
B2-39	Case C-453/16 PPU, Özçelik, Judgement of the Court (Fourth Chamber), 10 November 2016
B2-40	Case C-294/16 PPU, JZ v Śródmieście, Judgement of the Court (Fourth Chamber), 28 July 2016
B2-41	Case C-241/15 Bob-Dogi, Judgment of the Court (Second Chamber) of 1 June 2016
B2-42	C-108/16 PPU Paweł Dworzecki, Judgment of the Court (Fourth Chamber) of 24 May 2016
B2-43	Cases C-404/15 Pál Aranyosi and C-659/15 PPU Robert Căldăraru, Judgment of 5 April 2016
B2-44	Case C-237/15 PPU Lanigan, Judgment of 16 July 2015 (Grand Chamber)
B2-45	Case C-168/13 PPU <i>Jeremy F / Premier ministre</i> , Judgement of the court (Second Chamber), 30 May 2013
B2-46	Case C-399/11 <i>Stefano Melloni v Ministerio Fiscal</i> , Judgment of 26 February 2013
B2-47	Case C-396/11 Ciprian Vasile Radu, Judgment of 29 January 2013
B2-48	C-261/09 Mantello, Judgement of 16 November 2010
B2-49	C-123/08 Wolzenburg, Judgement of 6 October 2009
B2-50	C-388/08 Leymann and Pustovarov, Judgement of 1 December 2008
B2-51	C-296/08 Goicoechea, Judgement of 12 August 2008
B2-52	C-66/08 Szymon Kozłowski, Judgement of 17 July 2008

B3) Mutual recognition: freezing and confiscation and asset recovery

B3-01	European Judicial Network (for information on mutual recognition of freezing and confiscation orders, including on competent authorities), 14 December 2020, last reviewed on 24 July 2023
B3-02	Moneyval 64th Plenary Meeting report, Strasbourg, 5 January 2023
B3-03	Proposal for a Directive of the European Parliament and of the Council on asset recovery and confiscation (<i>Brussels, 25.5.2022, COM (2022) 245 final</i>)

B3-04	Proposal for a Regulation of the European Parliament and of the Council establishing the Authority for Anti-Money Laundering and Countering the Financing of Terrorism and amending Regulations (EU) No 1093/2010, (EU) 1094/2010, (EU) 1095/2010, (<i>Brussels, 20.7.2021 COM(2021) 421 final</i>)
B3-05	FATF, COVID-19-related Money Laundering and Terrorist Financing Risk and Policy Responses, Paris, 4 May 2020
B3-06	Money-Laundering and COVID-19: Profit and Loss, Vienna, 14 April 2020
B3-07	FATF President Statement – COVID-19 and measures to combat illicit financing, Paris 1 April 2020
B3-08	Moneyval Plenary Meeting report, Strasbourg, 31 January 2020
B3-09	Directive (EU) 2019/1153 of the European Parliament and of the Council of 20 June 2019, laying down rules facilitating the use of financial and other information for the prevention, detection, investigation or prosecution of certain criminal offences, and repealing Council Decision 2000/642/JHA
B3-10	Commission Delegated Regulation (EU) .../... of 13.2.2019 supplementing Directive (EU) 2015/849 of the European Parliament and of the Council by identifying high-risk third countries with strategic deficiencies, C(2019) 1326 final
B3-11	Regulation 2018/1805 of the European Parliament and of the Council on the mutual recognition of freezing and confiscation orders, L 303/1, Brussels, 14 November 2018
B3-12	Directive (EU) 2018/1673 of the European Parliament and of the Council of 23 October 2018 on combating money laundering by criminal law, L 284/22
B3-13	Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU (Text with EEA relevance), PE/72/2017/REV/1 OJ L 156, p. 43–74, 19 June 2018
B3-14	Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475/JHA and amending Council Decision 2005/671/JHA
B3-15	Regulation (EU) 2016/1675 of 14 July 2016 supplementing Directive (EU) 2015/849 of the European Parliament and of the Council by identifying high-risk third countries with strategic deficiencies (Text with EEA relevance)
B3-16	Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC (Text with EEA relevance)
B3-17	Regulation (EU) 2015/847 of the European Parliament and of the Council of 20 May 2015 on information accompanying transfers of funds and repealing Regulation (EC) No 1781/2006 (Text with EEA relevance)
B3-18	Consolidated text: Directive 2014/42/EU of the European Parliament and of the Council of 3 April 2014 on the freezing and confiscation of instrumentalities and proceeds of crime in the European Union
B3-19	Regulation (EC) No 1889/2005 of the European Parliament and of the Council of 26 October 2005 on controls of cash entering or leaving the Community
B3-20	Council Framework Decision of 26 June 2001 on money laundering, the identification, tracing, freezing, seizing and confiscation of instrumentalities and the proceeds of crime (2001/500/JHA)

B3-21	Council Decision of 17 October 2000 concerning arrangements for cooperation between financial intelligence units of the Member States in respect of exchanging information (2000/642/JHA)
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B4) Mutual recognition: Convictions

B4-01	Council Framework Decision 2009/829/JHA of 23 October 2009 on the application, between Member States of the European Union, of the principle of mutual recognition to decisions on supervision measures as an alternative to provisional detention (<i>OJ L 294/20; 11.11.2009</i>)
B4-02	Council Framework Decision 2008/947/JHA on the application of the principle of mutual recognition to judgments and probation decisions with a view to the supervision of probation measures and alternative sanctions (<i>OJ L 337/102; 16.12.2008</i>)
B4-03	Council Framework Decision 2008/909/JHA of 27 November 2008 on the application of the principle of mutual recognition to judgments in criminal matters imposing custodial sentences or measures involving deprivation of liberty for the purpose of their enforcement in the European Union (<i>OJ L 327/27; 5.12.2008</i>)
B4-04	Council Framework Decision 2008/675/JHA of 24 July 2008 on taking account of convictions in the Member States of the European Union in the course of new criminal proceedings (<i>OJ L 220/32; 15.08.2008</i>)
B4-05	Case C-234/18, Judgment of 20 March 2020
B4-06	Case C-390/16, Dániel Bertold Lada, Opinion of AG Bot, delivered on 06 February 2018
B4-07	Case C-171/16, Trayan Beshkov, Judgement of the Court (Fifth Chamber), 21 September 2017
B4-08	Case C-528/15, Policie ČR, Krajské ředitelství policie Ústeckého kraje, odbor cizinecké policie v Salah Al Chodor, Ajlin Al Chodor, Ajvar Al Chodor, Judgement of the Court (Second Chamber), 15 March 2017
B4-09	Case C-554/14, Ognyanov, Judgement of the Court (Grand Chamber), 8 November 2016
B4-10	Case C-439/16 PPU, Milev, Judgement of the Court (Fourth Chamber), 27 October 2016
B4-11	C-294/16 PPU, JZ v Śródmieście, Judgement of the Court (Fourth Chamber), 28 July 2016
B4-12	C-601/15 PPU, J. N. v Staatssecretaris voor Veiligheid en Justitie, Judgement of the Court (Grand Chamber), 15 February 2016
B4-13	C-474/13, Thi Ly Pham v Stadt Schweinfurt, Amt für Meldewesen und Statistik, Judgement of the Court (Grand Chamber), 17 July 2014
B4-14	Joined Cases C-473/13 and C-514/13, Bero and Bouzalmate, Judgement of the Court (Grand Chamber), 17 July 2014
B4-15	C-146/14 PPU, Bashir Mohamed Ali Mahdi, Judgement of the Court (Third Chamber), 5 June 2014
B4-16	Case C-383/13 PPU, M. G., N. R., Judgement of the Court (Second Chamber), 10 September 2013

B5) Mutual recognition in practice: evidence and e-evidence

B5-01	Regulation (EU) 2023/1543 of the European Parliament and of the Council of 12 July 2023 on European Production Orders and European Preservation Orders for electronic evidence in criminal proceedings and for the execution of custodial sentences following criminal proceedings, (<i>OJ L 191, 28.7.2023</i>)
B5-02	Directive (EU) 2023/1544 of the European Parliament and of the Council of 12 July 2023 laying down harmonised rules on the designation of designated establishments and the appointment of legal representatives for the purpose of gathering electronic evidence in criminal proceedings, (<i>OJ L 191, 28.7.2023</i>)
B5-03	REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the implementation of Directive 2014/41/EU of the European Parliament and of the Council of 3 April 2014 regarding the European Investigation Order in criminal matters, (<i>Brussels, 20.7.2021, COM(2021) 409 final</i>)
B5-04	The European Law Blog, „E-Evidence: The way forward. Summary of a Workshop held in Brussels on 25 September 2019, Theodore Christakis, 06 November 2019
B5-05	Joint Note of Eurojust and the European Judicial Network on the Practical Application of the European Investigation Order, June 2019
B5-06	European Commission, Press Release, „Security Union: Commission recommends negotiating international rules for obtaining electronic evidence”, Brussels, 05 February 2019
B5-07	EURCRIM, “The European Commission’s Proposal on Cross Border Access to e-Evidence – Overview and Critical Remarks” by Stanislaw Tosza, Issue 4/2018, pp. 212-219
B5-08	Recommendation for a Council Decision authorising the opening of negotiations in view of an agreement between the European Union and the United States of America on cross-border access to electronic evidence for judicial cooperation in criminal matters, COM(2019) 70 final, Brussels, 05 February 2019
B5-09	Annex to the Recommendation for a Council Decision authorising the opening of negotiations in view of an agreement between the European Union and the United States of America on cross-border access to electronic evidence for judicial cooperation in criminal matters, COM(2019) 70 final, Brussels, 05 February 2019
B5-10	Fair Trials, Policy Brief, „The impact on the procedural rights of defendants of cross-border access to electronic data through judicial cooperation in criminal matters”, October 2018
B5-11	ECBA Opinion on European Commission Proposals for: (1) A Regulation on European Production and Preservation Orders for electronic evidence & (2) a Directive for harmonised rules on the appointment of legal representatives for the purpose of gathering evidence in criminal proceedings, Rapporteurs: Stefanie Schott (Germany), Julian Hayes (United Kingdom)
B5-12	Proposal for a Directive of the European Parliament and of the Council laying down harmonised rules on the appointment of legal representatives for the purpose of gathering evidence in criminal proceedings, COM(2018) 226 final, Strasbourg, 17 April 2018
B5-13	Proposal for a Regulation of the European Parliament and of the Council on European Production and Preservation Orders for electronic evidence in criminal matters, COM(2018) 225 final, Strasbourg, 17 April 2018

B5-14	Non-paper from the Commission services: Improving cross-border access to electronic evidence: Findings from the expert process and suggested way forward (8 June 2017)
B5-15	Non-paper: Progress Report following the Conclusions of the Council of the European Union on Improving Criminal Justice in Cyberspace (7 December 2016)
B5-16	ENISA 2014 - Electronic evidence - a basic guide for First Responders (Good practice material for CERT first responders)
B5-17	Directive 2014/41/EU of 3 April 2014 regarding the European Investigation Order in criminal matters (OJ L 130/1; 1.5.2014)
B5-18	Guidelines on Digital Forensic Procedures for OLAF Staff" (Ref. Ares(2013)3769761 - 19/12/2013, 1 January 2014
B5-19	ACPO Good Practice Guide for Digital Evidence (March 2012)
B5-20	Council Framework Decision 2008/978/JHA of 18 December 2008 on the European evidence warrant for the purpose of obtaining objects, documents and data for use in proceedings in criminal matters (OJ L, 350/72, 30.12.2008)
B5-21	Council Framework Decision 2003/577/JHA of 22 July 2003 on the execution in the European Union of orders freezing property or evidence (OJ L 196/45; 2.8.2003)
B5-22	Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce) (Official Journal L 178/1, 17.7.2000)
B5-23	Communication from the Commission to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions ensuring security and trust in electronic communication - Towards a European Framework for Digital Signatures and Encryption (COM (97) 503), October 1997

B6) Criminal records, Interoperability

B6-01	Regulation (EU) 2019/816 of the European Parliament and of the Council of 17 April 2019 establishing a centralised system for the identification of Member States holding conviction information on third-country nationals and stateless persons (ECRIS-TCN) to supplement the European Criminal Records Information System and amending Regulation (EU) 2018/1726) (OJ L135/85, 22.05.2019)
B6-02	Regulation (EU) 2019/818 of the European Parliament and of the Council of 20 May 2019 on establishing a framework for interoperability between EU information systems in the field of police and judicial cooperation, asylum and migration and amending Regulations (EU) 2018/1726, (EU) 2018/1862 and (EU) 2019/816 (OJ L 135/85, 22.05.2019)
B6-03	Regulation (EU) 2019/817 of the European Parliament and of the Council of 20 May 2019 on establishing a framework for interoperability between EU information systems in the field of borders and visa and amending Regulations (EC) No 767/2008, (EU) 2016/399, (EU) 2017/2226, (EU) 2018/1240, (EU) 2018/1726 and (EU) 2018/1861 of the European Parliament and of the Council and Council Decisions 2004/512/EC and 2008/633/JHA (OJ L 135/27, 22.05.2019)
B6-04	Directive of the European Parliament and of the Council amending Council Framework Decision 2009/315/JHA, as regards the exchange of information on third-country nationals and as regards the European Criminal Records

	Information System (ECRIS), and replacing Council Decision 2009/316/JHA, PE-CONS 87/1/18, Strasbourg, 17 April 2019
B6-05	Report from the Commission to the European Parliament and the Council concerning the exchange through the European Criminal Records Information System (ECRIS) of information extracted from criminal records between the Member States. (COM/2017/0341 final, 29.06.2017)
B6-06	Council Framework Decision 2009/315/JHA of 26 February 2009 on the organisation and content of the exchange of information extracted from the criminal record between Member States (OJ L 93/23; 07.4.2009)
B6-07	Council Decision on the exchange of information extracted from criminal records – Manual of Procedure (6397/5/06 REV 5; 15.1.2007)
B6-08	Council Decision 2005/876/JHA of 21 November 2005 on the exchange of information extracted from the criminal record (OJ L 322/33; 9.12.2005)

B7) Conflicts of jurisdiction – *Ne bis in idem*

B7-01	Case law by the Court of Justice of the European Union on the principle of ne bis in idem in criminal matters, Eurojust, April 2020 Case-law by the Court of Justice of the European Union on the Principle of ne bis in idem in Criminal Matters, Eurojust, December 2021
B7-02	Council Framework Decision 2009/948/JHA of 30 November 2009 on prevention and settlement of conflicts of exercise of jurisdiction in criminal proceedings (OJ L 328/42; 15.12.2009, P.42)
B7-03	European Convention on the Transfer of Proceedings in Criminal Matters (Strasbourg, 15.V.1972)

C) Procedural guarantees in the EU

C-01	Report from the Commission to the European Parliament and the Council on the implementation of Directive (EU) 2016/1919 of the European Parliament and of the Council of 26 October 2016 on legal aid for suspects and accused persons in criminal proceedings and for requested persons in European arrest warrant proceedings, COM/2023/44 final, 1 February 2023
C-02	Commission Recommendation (EU) 2023/681 of 8 December 2022 on procedural rights of suspects and accused persons subject to pre-trial detention and on material detention conditions, (OJ L 86, 24.3.2023)
C-03	FRA Report, Presumption of innocence and related rights – Professional perspectives, Luxembourg, 31 March 2021
C-04	FRA Report, Rights in practice: Access to a lawyer and procedural rights in criminal and European Arrest Warrant proceedings, Luxembourg, 27 September 2019
C-05	Report from the Commission to the European Parliament and the Council on the implementation of Directive 2013/48/EU of the European Parliament and of the Council of 22 October 2013 on the right of access to a lawyer in criminal proceedings and in European arrest warrant proceedings, and on the right to have a third person informed upon deprivation of liberty and to communicate with third persons and with consular authorities while deprived of liberty, COM/2019/560 final, 26 September 2019
C-06	Report from the Commission to the European Parliament and the Council on the implementation of Directive 2010/64/EU of the European Parliament and of the Council of 20 October 2010 on the right to interpretation and

	translation in criminal proceedings, COM/2018/857 final, 18 December 2018
C-07	Report from the Commission to the European Parliament and the Council on the implementation of Directive 2012/13/EU of the European Parliament and of the Council of 22 May 2012 on the right to information in criminal proceedings, COM/2018/858 final, 18 December 2018
C-08	Directive (EU) 2016/1919 of the European Parliament and of the Council of 26 October 2016 on legal aid for suspects and accused persons in criminal proceedings and for requested persons in European arrest warrant proceedings (OJ L 297/1, 4.11.2016)
C-09	Directive (EU) 2016/800 of the European Parliament and of the Council of 11 May 2016 on procedural safeguards for children who are suspects or accused persons in criminal proceedings (OJ L 132 1; 21.5.2016)
C-10	Directive 2016/343 of 9 March 2016 on the strengthening of certain aspects of the presumption of innocence and of the right to be present at the trial in criminal proceedings (11.3.2016; OJ L 65/1)
C-11	Directive 2013/48/EU of 22 October 2013 on the right of access to a lawyer in criminal proceedings and in European arrest warrant proceedings, and on the right to have a third party informed upon deprivation of liberty and to communicate with third persons and with consular authorities while deprived of liberty (OJ L 294/1; 6.11.2013)
C-12	Directive 2012/13/EU of the European Parliament and of the Council of 22 May 2012 on the right to information in criminal proceedings (1.6.2012; OJ L 142/1)
C-13	Directive 2010/64/EU of the European Parliament and of the Council of 20 October 2010 on the right to interpretation and translation in criminal proceedings (OJ L 280/1; 26.10.2010)
C-14	C-209/22 - Rayonna prokuratura Lovech, TO Lukovit (Fouille corporelle), 7 September 2023
C-15	C-660/21 - K.B. and F.S. (Relevé d'office dans le domaine pénal), 22 June 2023
C-16	C-430/22, C-468/22 - VB (Information du condamné par défaut), 8 June 2023
C-17	C-608/21 - Politseyski organ pri 02 RU SDVR, 25 May 2023
C-18	C-694/20 - Orde van Vlaamse Balies i in., 8 December 2022
C-19	C-348/21 - HYA and Others (Impossibilité d'interroger les témoins à charge), 8 December 2022
C-20	C-347/21 - DD (Réitération de l'audition d'un témoin), 15 September 2022
C-21	C-242/22 PPU - TL () and de traduction), 1 August 2022
C-22	C-564/19 - IS (Illégalité de l'ordonnance de renvoi), 23 November 2021
C-23	C-282/20 - ZX (Régularisation de l'acte d'accusation), 21 October 2021
C-24	C-649/19 - Spetsializirana prokuratura (Déclaration des droits), 28 January 2021
C-25	Case C-659/18, Judgement of the Court of 2 March 2020
C-26	Case C-688/18, Judgement of the Court of 3 February 2020
C-27	Case C467/18, Rayonna prokuratura Lom, Judgment of the Court of 19 September 2019
C-28	Case C-467/18 on directive 2013/48/EU on the right of access to a lawyer in criminal proceedings, EP, Judgement of the court (Third Chamber), 19. September 2019
C-29	Case C377/18, AH a. o., Judgment of the Court of 05 September 2019

C-30	Case C-646/17 on directive 2012/13/EU on the right to information in criminal proceedings, Gianluca Moro, Judgement of the Court (First Chamber), 13 June 2019
C-31	Case C-8/19 PPU, criminal proceedings against RH (presumption of innocence), Decision of the Court (First Chamber), 12. February 2019
C-32	Case C646/17, Gianluca Moro, Opinion of the AG Bobek, 05 February 2019
C-33	Case C-551/18 PPU, IK, Judgment of the Court (First Chamber), 6 December 2018
C-34	Case C-327/18 PPU, RO, Judgment of 19 September 2018 (First Chamber)
C-35	Case C-268/17, AY, Judgment of the Court (Fifth Chamber), 25 July 2018
C-36	Case C-216/18 PPU, LM, Judgment of 25 July 2018 (Grand Chamber)
C-37	Joined Cases C-124/16, C-188/16 and C-213/16 on Directive 2012/13/EU on the right to information in criminal proceedings Ianos Tranca, Tanja Reiter and Ionel Opria, Judgment of 22 March 2017 (Fifth Chamber)
C-38	Case C-439/16 PPU, Emil Milev (presumption of innocence), Judgment of the Court (Fourth Chamber), 27 October 2016
C-39	Case C-278/16 Frank Sleutjes (“essential document” under Article 3 of Directive 2010/64), Judgment of 12 October 2017 (Fifth Chamber)
C-40	C-25/15, István Balogh, Judgment of 9 June 2016 (Fifth Chamber)
C-41	Opinion of Advocate General Sharpston, delivered on 10 March 2016, Case C543/14
C-42	C-216/14 Covaci, Judgment of 15 October 2015 (First Chamber)

D) Approximating criminal law and Victims’ Rights

D1) Terrorism

D1-01	EU Centre of Expertise for Victims of Terrorism
D1-02	EU’s Counter-Terrorism Coordinator
D1-03	Eurojust Meeting on Counter-Terrorism, 16-17 November 2022, Summary of Discussions, 05 April 2023
D1-04	Eurojust Casework on Counter-Terrorism: Insights 2020 – 2021, December 2021
D1-05	Regulation (EU) 2021/784 of the European Parliament and of the Council of 29 April 2021 on addressing the dissemination of terrorist content online (Text with EEA relevance), (OJ L 172, 17.5.2021)
D1-06	European Commission, EU Handbook on Victims of Terrorism, January 2021
D1-07	2019 Eurojust Report on Counter- Terrorism, 09 December 2020
D1-08	Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: A Counter-Terrorism Agenda for the EU: Anticipate, Prevent, Protect, Respond, 9 December 2020, COM(2020) 795 final
D1-09	Report from the Commission to the European Parliament and the Council based on Article 29(1) of Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475/JHA and amending Council Decision 2005/671/JHA, COM(2020) 619 final, Brussels, 30 September 2020
D1-10	Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social

	Committee and the Committee of the Regions on the EU Security Union Strategy, 24 July 2020, <i>(COM (2020) 605 final)</i>
D1-11	Council Conclusions on EU External Action on Preventing and Countering Terrorism and Violent Extremism, Brussels, 16 June 2020
D1-12	Terrorism Situation and Trend Report (TE-SAT) 2019
D1-13	Communication from the Commission to the European Parliament, the European Council and the Council, Twentieth Progress Report towards an effective and genuine Security Union, COM(2019) 552 final, Brussels, 30 October 2019
D1-14	Communication from the Commission to the European Parliament, and the Council, Towards better Implementation of the EU's anti-money laundering and countering the financing of terrorism framework, COM(2019) 360 final, Brussels, 24 July 2019
D1-15	Directive (EU) 2019/713 of the European Parliament and of the Council of 17 April 2019 on combating fraud and counterfeiting of non-cash means of payment and replacing Council Framework Decision 2001/413/JHA, L 123/18
D1-16	Commission Delegated Regulation (EU) 2019/758 of 31 January 2019 amending Directive (EU) 2015/849 of the European Parliament and of the Council with regard to regulatory technical standards for the minimum action and the type of additional measures credit and financial institutions must take to mitigate money laundering and terrorist financing risk in certain third countries, L 125/4 (Text with EEA relevance)
D1-17	Council Decision (CFSP) 2019/25 of 08 January 2019 updating the list of persons, groups and entities subject to Articles 2, 3 and 4 of Common Position 2001/931/CFSP on the application of specific measures to combat terrorism and repealing Decision (CFSP) 2016/1136, Brussels, 08 January 2019
D1-18	Proposal for a Regulation of the European Parliament and of the Council on preventing the dissemination of terrorist content online, Brussels, 12.9.2018, <i>(COM(2018) 640 final)</i>
D1-19	Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU (Text with EEA relevance), <i>(OJ L 156, 19.6.2018)</i>
D1-20	Regulation (EU) 2017/2226 of the European Parliament and of the Council of 30 November 2017 establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third-country nationals crossing the external borders of the Member States and determining the conditions for access to the EES for law enforcement purposes, and amending the Convention implementing the Schengen Agreement and Regulations (EC) No 767/2008 and (EU) No 1077/2011 (OJ L 327/20; 9.12.2017)
D1-21	Directive (EU) 2017/541 of the European Parliament and of the Council of 15 March 2017 on combating terrorism and replacing Council Framework Decision 2002/475/JHA and amending Council Decision 2005/671/JHA (OJ L 88/6)
D1-22	Council Decision (CFSP) 2016/1693 of 20 September 2016 concerning restrictive measures against ISIL (Da'esh) and Al-Qaeda and persons, groups, undertakings and entities associated with them and repealing Common Position 2002/402/CFSP, <i>(OJ L 255, 21.9.2016)</i>

D1-23	Directive (EU) 2016/681 of the European Parliament and of the Council of 27 April 2016 on the use of passenger name record (PNR) data for the prevention, detection, investigation and prosecution of terrorist offences and serious crime (OJ L 119/132; 4.5.2016)
D1-24	Council Regulation (EC) No 2580/2001 of 27 December 2001 on specific restrictive measures directed against certain persons and entities with a view to combating terrorism, (OJ L 344, 28.12.2001)

D2) Trafficking in Human Beings, Migrant Smuggling and Sexual Exploitation of Children

D2-01	European Parliament Briefing: Preventing and combating trafficking in human beings, June 2023
D2-02	European Parliament Briefing: Anti-trafficking in human beings, June 2023
D2-03	European Parliament resolution of 15 September 2022 on human rights violations in the context of the forced deportation of Ukrainian civilians to and the forced adoption of Ukrainian children in Russia (2022/2825(RSP)), (OJ C 125, 5.4.2023)
D2-04	Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims, (COM/2022/732 final, 19 December 2022)
D2-05	Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions report on the progress made in the fight against trafficking in human beings (Fourth Report), (COM/2022/736 final, 19 December 2022)
D2-06	Commission Staff Working Document Impact Assessment Report accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims, (SWD/2022/425 final, 19 December 2022)
D2-07	European Parliament resolution of 5 May 2022 on the impact of the war against Ukraine on women (2022/2633(RSP)), (OJ C 465, 6.12.2022)
D2-08	European Parliament At Glance: Russia's war on Ukraine: The risk of trafficking of human beings, May 2022
D2-09	Commission Staff Working Document Evaluation of Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support, and protection of victims of crime, and replacing Council Framework Decision (2001/220/JHA, SWD/2022/0179 final, 2022)
D2-10	European Migrant Smuggling Centre 6th Annual Report – 2022
D2-11	Europol: The challenges of countering human trafficking in the digital era, As of 6 December 2021
D2-12	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions on the application of Directive 2009/52/EC of 18 June 2009 providing for minimum standards on sanctions and measures against employers of illegally staying third-country nationals, (COM/2021/592 final, 29 September 2021)
D2-13	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the EU Strategy on Combatting Trafficking in Human Beings 2021-2025, (COM/2021/171 final, 14 April 2021)

D2-14	Eurojust Report on Trafficking in Human Beings, Best practice and issues in judicial cooperation, February 2021
D2-15	Report from the European Commission to the European Parliament and the Council, Third report on the progress made in the fight against trafficking in human beings (2020) as required under Article 20 of Directive 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims, (COM(2020) 661 final, Brussels, 20 October 2020)
D2-16	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a New Pact on Migration and Asylum, (COM (2020) 609 final, 23 September 2020)
D2-17	European Commission, Study on Data collection on Trafficking in Human Beings in the EU, September 2020
D2-18	Regulation of the European Parliament and of the Council amending Regulation (EC) No 810/2009 establishing a Community Code on Visas (Visa Code), PE-CONS 29/19, Brussels, 15 May 2019
D2-19	European Migrant Smuggling Centre - EMSC
D2-20	European Migrant Smuggling Centre – 4th Annual Activity Report, The Hague, 15 May 2020
D2-21	Report from the European Commission to the European Parliament and the Council, Second report on the progress made in the fight against trafficking in human beings (2018) as required under Article 20 of Directive 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims, COM(2018) 777 final, Brussels, 03 December 2018
D2-22	European Institute for Gender Equality (EIGE) report: Gender-specific measures in anti-trafficking actions, 17 October 2018
D2-23	UNODC – Global Study on Smuggling of Migrants 2018, Vienna/New York, June 2018
D2-24	Council Conclusions on setting the EU's priorities for the fight against organised and serious international crime between 2018 and 2021, Brussels, 9450/17, 19 May 2017
D2-25	Directive 2011/36/EU of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims, and replacing Council Framework Decision 2002/629/JHA

D3) Cybercrime

D3-01	Internet Organised Crime Threat Assessment (IOCTA) 2023
D3-02	European Parliament Legislative Train Schedule: Horizontal cybersecurity requirements for products with digital elements in “A Europe Fit for the Digital Age”, As of 20 September 2023
D3-03	European Parliament Legislative Train Schedule: Review of the Directive on security of network and information systems in “A Europe Fit for the Digital Age”, As of 20 September 2023
D3-04	European Parliament Legislative Train Schedule: Digital operational resilience for the financial sector in “A Europe Fit for the Digital Age”, As of 20 September 2023
D3-05	European Parliament Briefing: EU cyber-resilience act, May 2023
D3-06	Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive) (Text with EEA relevance), (OJ L 333, 27.12.2022)
D3-07	Regulation (EU) 2022/2554 of the European Parliament and of the Council of 14 December 2022 on digital operational resilience for the financial sector

	and amending Regulations (EC) No 1060/2009, (EU) No 648/2012, (EU) No 600/2014, (EU) No 909/2014 and (EU) 2016/1011 (Text with EEA relevance), (<i>OJ L 333, 27.12.2022</i>)
D3-08	Directive (EU) 2022/2557 of the European Parliament and of the Council of 14 December 2022 on the resilience of critical entities and repealing Council Directive 2008/114/EC (Text with EEA relevance), (<i>OJ L 333, 27.12.2022</i>)
D3-09	Proposal for a Regulation of the European Parliament and of the Council on horizontal cybersecurity requirements for products with digital elements and amending Regulation (EU) 2019/1020, (<i>COM/2022/454 final, 15 September 2022</i>)
D3-10	Internet Organised Crime Threat Assessment (IOCTA) 2021
D3-11	Regulation (EU) 2021/1232 of the European Parliament and of the Council of 14 July 2021 on a temporary derogation from certain provisions of Directive 2002/58/EC as regards the use of technologies by providers of number-independent interpersonal communications services for the processing of personal and other data for the purpose of combating online child sexual abuse (Text with EEA relevance), (<i>OJ L 274, 30.7.2021</i>)
D3-12	European Commission, Public consultation on Fighting child sexual abuse: detection, removal and reporting of illegal content online, 11 February 2021
D3-13	European Judicial Cybercrime Network 9th Plenary Meeting - 2nd Outcome report 2020, 27 January 2021
D3-14	European Commission, Study on the retention of electronic communications non-content data for law enforcement purposes, Final report, September 2020
D3-15	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU strategy for a more effective fight against child sexual abuse, (<i>COM (2020) 607 final, Brussels, 24 July 2020</i>)
D3-16	Internet Organised Crime Threat Assessment (IOCTA) 2020
D3-17	Internet Organised Crime Threat Assessment (IOCTA) 2019
D3-18	Special Eurobarometer 480, Report, "Europeans' Attitudes towards Internet Security", Brussels, March 2019
D3-19	Directive 2013/40/EU of the European Parliament and of the Council of 12 August 2013 on attacks against information systems and replacing Council Framework Decision 2005/222/JHA (Official Journal L 218/8 of 14.08.2013)
D3-20	Directive of the European Parliament and of the Council on combating the sexual abuse, sexual exploitation of children and child pornography, repealing Framework Decision 2004/68/JHA (<i>OJ L 335; 17.12.2011</i>)
D3-21	Council Framework Decision 2005/222/JHA of 24 February 2005 on attacks against information systems (<i>OJ L 69/67; 16.3.2005</i>)
D3-22	Council Framework Decision 2004/68/JHA of 22 December 2003 on combating the sexual exploitation of children and child pornography (<i>OJ L 13/44; 20.1.2004</i>)
D3-23	Additional Protocol to the Convention on cybercrime, concerning the criminalisation of acts of a racist and xenophobic nature committed through computer systems (Strasbourg, 28.1.2003)
D3-24	Convention on Cybercrime (Budapest, 23.XI.2001)

D4) Protecting Victims' Rights

D4-01	Proposal for a Directive of the European Parliament and of the Council amending Directive 2012/29/EU establishing minimum standards on the rights, support, and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA (<i>COM/2023/424 final, 12 July 2023</i>)
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D4-02	Commission Staff Working Document: Evaluation of Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support, and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA (<i>SWD/2022/0179 final, 28 June 2022</i>)
D4-03	FRA Report: "Underpinning victims' rights: support services, reporting and protection", 22 February 2023
D4-04	Proposal for a Directive of the European Parliament and of the Council on combating violence against women and domestic violence (<i>COM/2022/105 final, 8 March 2022</i>)
D4-05	D4-01 Victim Support Europe, Paper: Victim Support and Data Protection, 1st March 2021
D4-06	European Union Agency for Fundamental Rights (FRA), Report: Crime, safety, and victims' rights – Fundamental Rights Survey, 19 February 2021
D4-07	European Commission, EU Strategy on victims' rights (2020-2025), COM (2020) 258 final, Brussels, 24 June 2020
D4-08	Factsheet – EU Strategy on Victims' Rights (2020-2025), 24 June 2020
D4-09	Report from the Commission to the European Parliament and the Council on the implementation of Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support, and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA (<i>COM/2020/188 final, 11 May 2020</i>)
D4-10	European Commission, Executive Summary of the Report on strengthening Victims' Rights: From Compensation to Reparation – For a new EU Victims' Rights Strategy 2020-2025, Report of the Special Adviser Joëlle Milquet to the President of the European Commission, Brussels, 11 March 2019
D4-11	European Commission Factsheet: The Victims' Rights Directive: What does it bring?, February 2017
D4-12	Regulation (EU) No 606/2013 of the European Parliament and of the Council of 12 June 2013 on mutual recognition of protection measures in civil matters
D4-13	European Commission, DG Justice Guidance Document related to the transposition and implementation of Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA
D4-14	Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA
D4-15	Directive 2011/99/EU of the European Parliament and of the Council of 13 December 2011 on the European protection order
D4-16	Council Directive 2004/80/EC of 29 April 2004 relating to compensation to crime victims
D4-17	Website of the European Union Agency for Fundamental Rights (FRA) – Victims' rights
D4-18	Victim Support Europe
D4-19	European Commission: Victims' Rights Platform
D4-20	EC Coordinator for victims' rights

E) Criminal justice bodies and networks

E1) European Judicial Network

E1-01	European Judicial Network, The Report on activities and management 2019-20
E1-02	Council Decision 2008/976/JHA of 16 December 2008 on the European Judicial Network (<i>OJ L 348/130, 24.12.2008, P. 130</i>)

E2) Eurojust

E2-01	Eurojust quarterly newsletter
E2-02	Eurojust Guidelines on Jurisdiction
E2-03	Working Arrangement Between The European Anti-fraud Office And the European Union Agency for Criminal Justice Cooperation, 29 March 2023
E2-04	Eurojust Annual Report 2022
E2-05	Eurojust collection of anniversary essays, 20 years of Eurojust: EU judicial cooperation in the making, 8 August 2022
E2-06	Regulation (EU) 2022/838 of the European Parliament and of the Council of 30 May 2022 amending Regulation (EU) 2018/1727 as regards the preservation, analysis and storage at Eurojust of evidence relating to genocide, crimes against humanity, war crimes and related criminal offences (<i>OJ L 148, 31.5.2022</i>)
E2-07	Guidelines for deciding on competing requests for surrender and extradition, October 2019
E2-08	Regulation (EU) 2018/1727 of the European Parliament and of the Council of 14 November 2018 on the European Union Agency for Criminal Justice Cooperation (Eurojust), and replacing and repealing Council Decision 2002/187/JHA

E3) Europol

E3-01	Europol Spotlight Series
E3-02	Europol Joint Reports
E3-03	Europol Consolidated Annual Activity Report (CAAR) 2022, 7 June 2023
E3-04	Europol Strategy: DELIVERING SECURITY IN PARTNERSHIP, 6 June 2023
E3-05	The European Union Agency for Law Enforcement Cooperation in Brief, 17 January 2023
E3-06	Europol Programming Document 2023 – 2025, Europol Public Information The Hague, 20 December 2022
E3-07	Case T-578/22: Action brought on 16 September 2022 — EDPS v Parliament and Council, (<i>OJ C 424, 7.11.2022</i>)
E3-08	Regulation (EU) 2022/991 of the European Parliament and of the Council of 8 June 2022 amending Regulation (EU) 2016/794, as regards Europol's cooperation with private parties, the processing of personal data by Europol in support of criminal investigations, and Europol's role in research and innovation, (<i>OJ L 169, 27.6.2022</i>)
E3-09	Europol Report – Beyond the Pandemic – How COVID-19 will shape the serious and organised crime landscape in the EU, 30 April 2020
E3-10	Regulation (EU) 2015/2219 of the European Parliament and of the Council of 25 November 2015 on the European Union Agency for Law Enforcement Training (CEPOL) and replacing and repealing Council Decision 2005/681/JHA

E4) European Public Prosecutor's Office

E4-01	EPPO: Internal Rules of Procedure, 29 June 2022
E4-02	Commission Implementing Regulation (EU) 2022/1504 of 6 April 2022 laying down detailed rules for the application of Council Regulation (EU) No 904/2010 as regards the creation of a central electronic system of payment information (CESOP) to combat VAT fraud, (OJ L 235, 12.9.2022)
E4-03	Commission Implementing Decision (EU) 2021/856 of 25 May 2021 determining the date on which the European Public Prosecutor's Office assumes its investigative and prosecutorial tasks, (OJ L 188, 28.5.2021)
E4-04	Working Arrangement between Eurojust and EPPO, 2021/00064, February 2021
E4-05	Working Arrangement establishing cooperative relations between the European Public Prosecutor's Office and the European Union Agency for Law Enforcement Cooperation, January 2021
E4-06	Regulation (EU, Euratom) 2020/2223 of the European Parliament and of the Council of 23 December 2020 amending Regulation (EU, Euratom) No 883/2013, as regards cooperation with the European Public Prosecutor's Office and the effectiveness of the European Anti-Fraud Office investigations, (OJ L 437, 28.12.2020)
E4-07	Commission Delegated Regulation (EU) 2020/2153 of 14 October 2020 amending Council Regulation (EU) 2017/1939 as regards the categories of operational personal data and the categories of data subjects whose operational personal data may be processed in the index of case files by the European Public Prosecutor's Office, (OJ L 431, 21.12.2020)
E4-08	Council Implementing Decision (EU) 2020/1117 of 27 July 2020 appointing the European Prosecutors of the European Public Prosecutor's Office, (OJ L 244, 29.7.2020)
E4-09	Decision 2019/1798 of the European Parliament and of the Council of 14 October 2019 appointing the European Chief Prosecutor of the European Public Prosecutor's Office (OJ L 274/1, 28.10.2019)
E4-10	Opinion on the proposal for a regulation of the European Parliament and of the Council amending Regulation (EU, Euratom) No 883/2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) as regards cooperation with the European Public Prosecutor's Office and the effectiveness of OLAF investigations Committee on Civil Liberties, Justice and Home Affairs, Rapporteur for opinion: Monica Macovei, 11.1.2019
E4-11	German Judges' Association: Opinion on the European Commission's initiative to extend the jurisdiction of the European Public Prosecutor's Office to include cross-border terrorist offences, December 2018 (only available in German)
E4-12	Communication from the Commission to the European Parliament and the European Council: A Europe that protects: an initiative to extend the competences of the European Public Prosecutor's Office to cross-border terrorist crimes, Brussels, 12.9.2018, COM(2018) 641 final
E4-13	Annex to the Communication from the Commission to the European Parliament and the European Council: A Europe that protects: an initiative to extend the competences of the European Public Prosecutor's Office to cross-border terrorist crimes, Brussels, 12.9.2018, COM (2018) 641 final
E4-14	Council Implementing Decision (EU) 2018/1696 of 13 July 2018 on the operating rules of the selection panel provided for in Article 14(3) of Regulation (EU) 2017/1939 implementing Enhanced cooperation on the establishment of the European Public Prosecutor's Office ('the EPPO')

E4-15	Annex to the Proposal for a Council Implementing Decision on the operating rules of the selection panel provided for in Article 14(3) of Regulation (EU) 2017/1939 implementing enhanced cooperation on the establishment of the European Public Prosecutor's Office ("the EPPO"), Brussels, 25.5.2018, COM(2018) 318 final)
E4-16	Csonka P, Juszczyk A and Sason E, 'The Establishment of the European Public Prosecutor's Office : The Road from Vision to Reality', Eucriim - The European Criminal Law Associations' Forum, 15 January 2018
E4-17	Council Regulation (EU) 2017/1939 of 12 October 2017 implementing enhanced cooperation on the establishment of the European Public Prosecutor's Office ('the EPPO')
E4-18	Directive (EU) 2017/1371 of the European Parliament and of the Council of 5 July 2017 on the fight against fraud to the Union's financial interests by means of criminal law, (OJ L 198, 28.7.2017)

F) Data Protection

F-01	European Data Protection Board (EDPB)
F-02	European Data Protection Supervisor (EDPS)
F-03	Proposal for a Regulation of the European Parliament and of the Council amending Council Decision 2009/917/JHA, as regards its alignment with Union rules on the protection of personal data (COM/2023/244 final, 11.5.2023)
F-04	Directive (EU) 2022/228 of the European Parliament and of the Council of 16 February 2022 amending Directive 2014/41/EU, as regards its alignment with Union rules on the protection of personal data, (OJ L 39, 21.2.2022)
F-05	Directive (EU) 2022/211 of the European Parliament and of the Council of 16 February 2022 amending Council Framework Decision 2002/465/JHA, as regards its alignment with Union rules on the protection of personal data, (OJ L 37, 18.2.2022)
F-06	European Parliament Legislative Observatory, Police cooperation - joint investigation teams: alignment with EU rules on the protection of personal data, 2021/0008(COD)
F-07	EPPO College Decision 009/2020, Rules concerning the processing of personal data by the European Public Prosecutor's Office, 28 October 2020
F-08	Communication from the Commission to the European Parliament and the Council: Way forward on aligning the former third pillar acquis with data protection rules, (COM (2020) 262 final, 24 June 2020)
F-09	Council Decision (EU) 2016/2220 of 2 December 2016 on the conclusion, on behalf of the European Union, of the Agreement between the United States of America and the European Union on the protection of personal information relating to the prevention, investigation, detection, and prosecution of criminal offences, (OJ L 336, 10.12.2016)
F-10	Directive (EU) 2016/681 of the European Parliament and of the Council of 27 April 2016 on the use of passenger name record (PNR) data for the prevention, detection, investigation and prosecution of terrorist offences and serious crime, (OJ L 119/132; 4.5.2016)
F-11	Directive (EU) 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data by competent authorities for the purposes of the prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties, and on the free movement of such

	data, and repealing Council Framework Decision 2008/977/JHA (4.5.2016; OJ L 119/89)
--	---

G) Police Cooperation in the EU

G1) General

G1-01	Directive (EU) 2023/977 of the European Parliament and of the Council of 10 May 2023 on the exchange of information between the law enforcement authorities of Member States and repealing Council Framework Decision 2006/960/JHA, <i>(OJ L 134, 22 May 2023)</i>
G1-02	Council Recommendation (EU) 2022/915 of 9 June 2022 on operational law enforcement cooperation, <i>(OJ L 158, 13 June 2022)</i>
G1-03	Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions on the EU Strategy to tackle Organised Crime 2021-2025 <i>(COM/2021/170 final, 14 April 2022)</i>
G1-04	Proposal for a Regulation of the European Parliament and of the Council on automated data exchange for police cooperation ("Prüm II"), amending Council Decisions 2008/615/JHA and 2008/616/JHA and Regulations (EU) 2018/1726, 2019/817, and 2019/818 of the European Parliament and of the Council, <i>(COM/2021/784 final, 8 December 2021)</i>
G1-05	European Commission, Press Release, "Police Cooperation Code: Boosting police cooperation across borders for enhanced security", 8 December 2021
G1-06	European Commission, Factsheet, "Reinforcing police cooperation across Europe", 8 December 2021
G1-07	Commission Staff Working Document: Impact Assessment Report accompanying the document Proposal for a Regulation of the European Parliament and of the Council on automated data exchange for police cooperation ("Prüm II"), amending Council Decisions 2008/615/JHA and 2008/616/JHA and Regulations (EU) 2018/1726, 2019/817, and 2019/818 of the European Parliament and of the Council, <i>(SWD/2021/378 final, Brussels, 8.12.2021)</i>
G1-08	Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2018/1862 on the establishment, operation and use of the Schengen Information System (SIS) in the field of police cooperation and judicial cooperation in criminal matters as regards the entry of alerts by Europol, <i>(COM(2020) 791 final, Brussels, 9 December 2020)</i>
G1-09	European Commission, Inception Impact Assessment on EU Police Cooperation Code (PCC), Ref. Ares(2020)5077685, 28 September 2020
G1-10	Regulation (EU) 2018/1862 of the European Parliament and of the Council of 28 November 2018 on the establishment, operation and use of the Schengen Information System (SIS) in the field of police cooperation and judicial cooperation in criminal matters, amending and repealing Council Decision 2007/533/JHA, and repealing Regulation (EC) No 1986/2006 of the European Parliament and of the Council and Commission Decision 2010/261/EU Regulation (EU) 2022/1190 of the European Parliament and of the Council of 6 July 2022 amending Regulation (EU) 2018/1862 as regards the entry of information alerts into the Schengen Information System (SIS) on third-country nationals in the interest of the Union, <i>(OJ L 185, 12.7.2022)</i>

G1-11	Council Decision 2008/617/JHA of 23 June 2008 on the improvement of cooperation between the special intervention units of the Member States of the European Union in crisis situations, (OJ L 210, 6.8.2008)
G1-12	Council Decision 2008/616/JHA of 23 June 2008 on the implementation of Decision 2008/615/JHA on the stepping up of cross-border cooperation, particularly in combating terrorism and cross-border crime (OJ L 210/12; 06.08.2008)
G1-13	Council Decision 2008/615/JHA of 23 June 2008 on the stepping up of cross-border cooperation, particularly in combating terrorism and cross-border crime (OJ L 210/1; 06.08.2008)
G1-14	Council Framework Decision of 18 December 2006 on simplifying the exchange of information and intelligence between law enforcement authorities of the Member States of the European Union (OJ L 386/89; 29.12.2006, P. 89)
G1-15	Convention on the stepping up of cross-border cooperation, particularly in combating terrorism, cross-border crime and illegal migration of 27. May 2005 (10900/05; 27.5.2005)

G2) Joint Investigation Teams (JITs)

G2-01	Eurojust Information on JITs
G2-02	Europol Information on JITs
G2-03	JIT Evaluation Form
G2-04	Council of Europe: Guidelines on the use of Joint Investigation Teams
G2-05	Riehle, C. "20 years of Joint Investigations Teams (JITs) in the EU": An overview of their development, actors and tools. ERA Forum 24, 163–167, 29 June 2023
G2-06	Checklist for multilateral joint investigation teams, 22 June 2023
G2-07	Latest trends and novelties in JIT operations: first-hand experiences of JIT practitioners and Eurojust Eurojust European Union Agency for Criminal Justice Cooperation (europa.eu) Fourth JITs Evaluation Report, 14 June 2023
G2-08	Regulation (EU) 2023/969 of the European Parliament and of the Council of 10 May 2023 establishing a collaboration platform to support the functioning of joint investigation teams and amending Regulation (EU) 2018/1726, OJ L 132, 17 May 2023
G2-09	Guidelines on the Network of National Experts on Joint Investigation Teams, 2 December 2020
G2-10	Third JIT Evaluation Report, Eurojust, March 2020
G-11	Joint Investigation Teams: Practical Guide, 16 December 2021
G2-12	Council Resolution on a Model Agreement for Setting up a Joint Investigation Team (JIT) – 2017/C18/01, Strasbourg, 19 January 2017
G2-13	Council Document establishing the JITs Network, 08 July 2005
G2-14	Council Framework Decision of 13 June 2002 on joint investigation teams (OJ L 162/1; 20.6.2002)

ERA
Academy of European Law

Co-funded by the European Union

Painting the Cyberscape: A portrait in bits

Steven David Brown
Lisbon
26-27 September 2024

CENTRO DE ESTUDOS JUDICIÁRIOS

InZeit
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1

What is the Internet ?

Internet, a system architecture that has revolutionized communications and methods of commerce by allowing various computer networks around the world to interconnect. Sometimes referred to as a "network of networks"

<https://www.britannica.com/technology/Internet>

World Wide Web (WWW) [...] the leading information retrieval service of the Internet (the worldwide computer network). The Web gives users access to a vast array of documents that are connected to each other by means of hypertext or hypermedia links—i.e., hyperlinks, electronic connections that link related pieces of information in order to allow a user easy access to them.

<https://www.britannica.com/topic/World-Wide-Web>

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2

What is the Internet ?

Internet, a system architecture that has revolutionized communications and methods of commerce by allowing various computer networks around the world to interconnect. Sometimes referred to as a “network of networks”

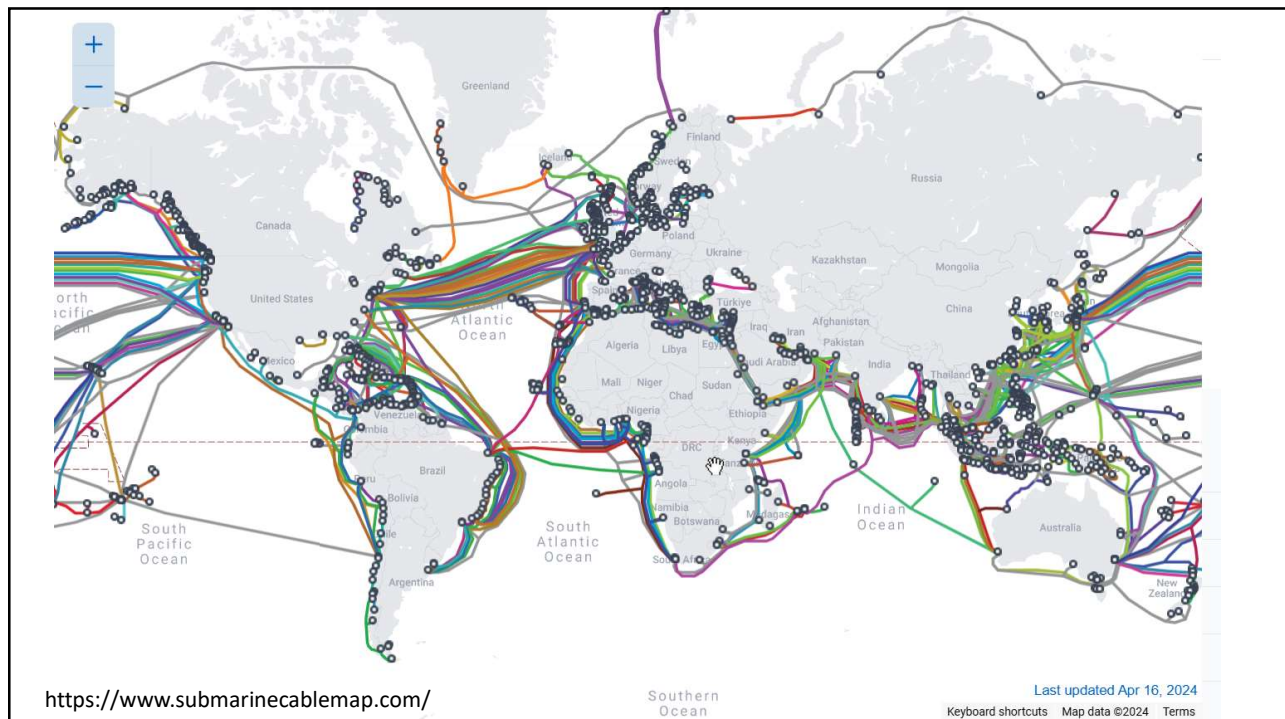
<https://www.britannica.com/technology/Internet>

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<https://www.britannica.com/topic/World-Wide-Web>

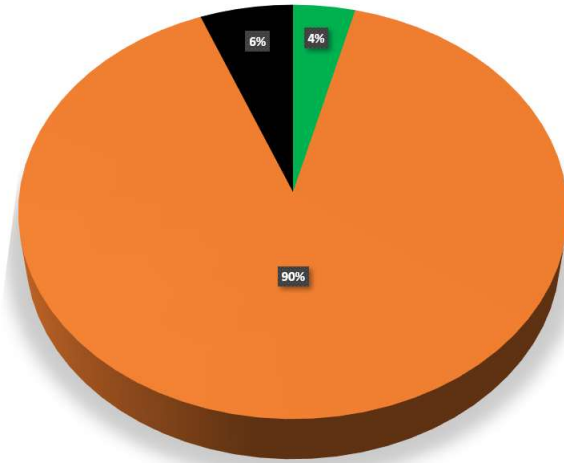


3



4

The Internet



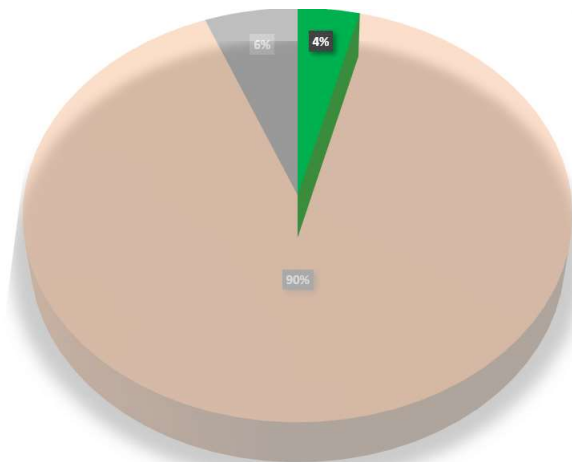
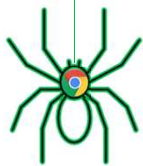
N.B. The percentages are educated guesswork.



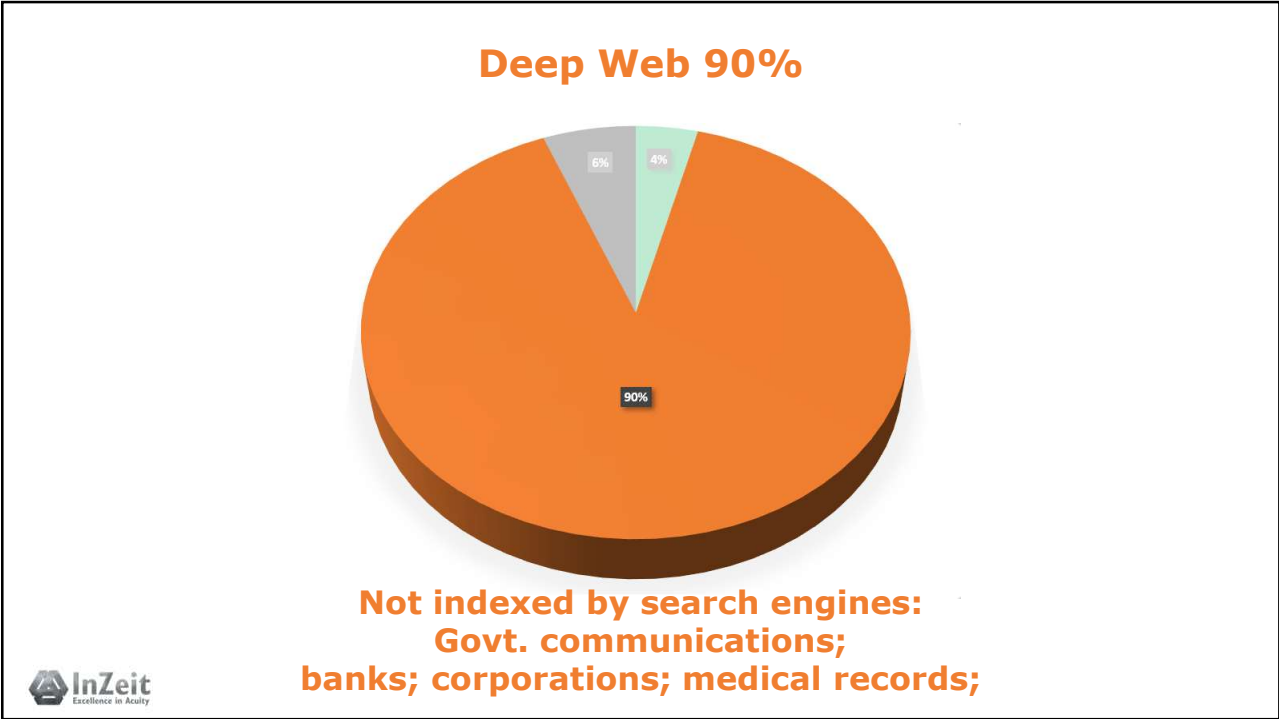
5

WWW 4%

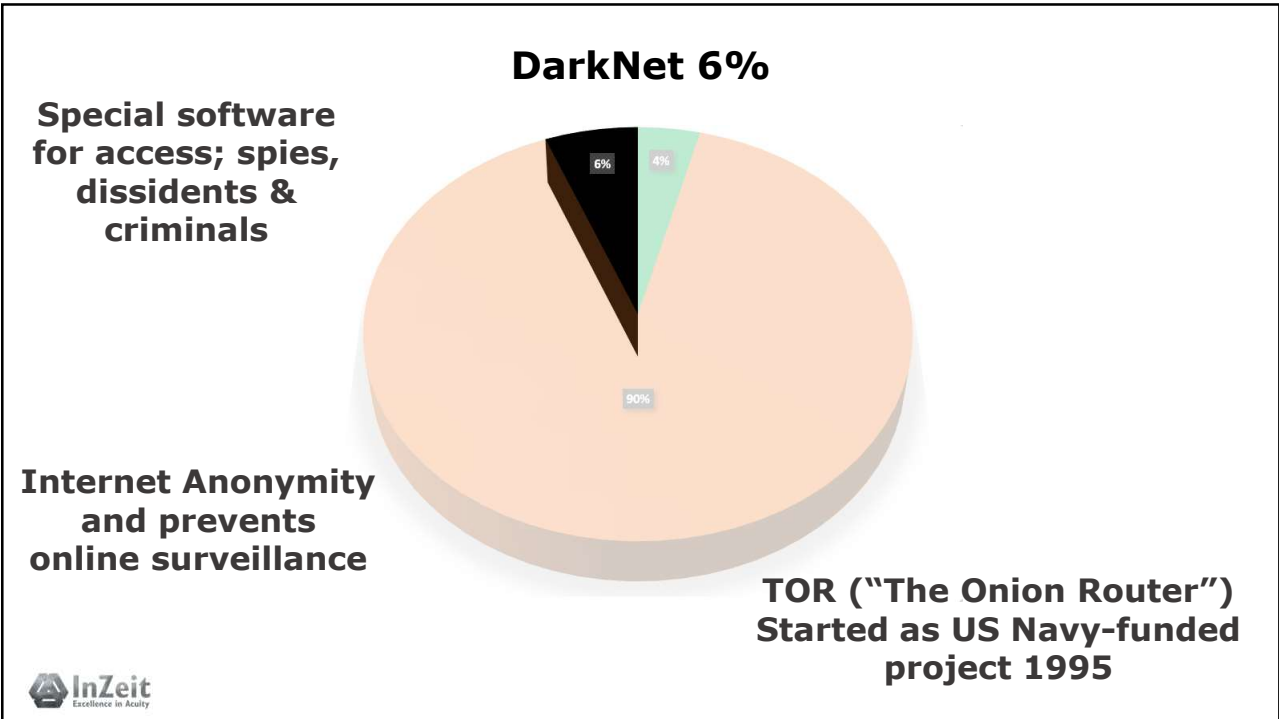
**WWW
Indexed by
search engines;
publicly
accessible**



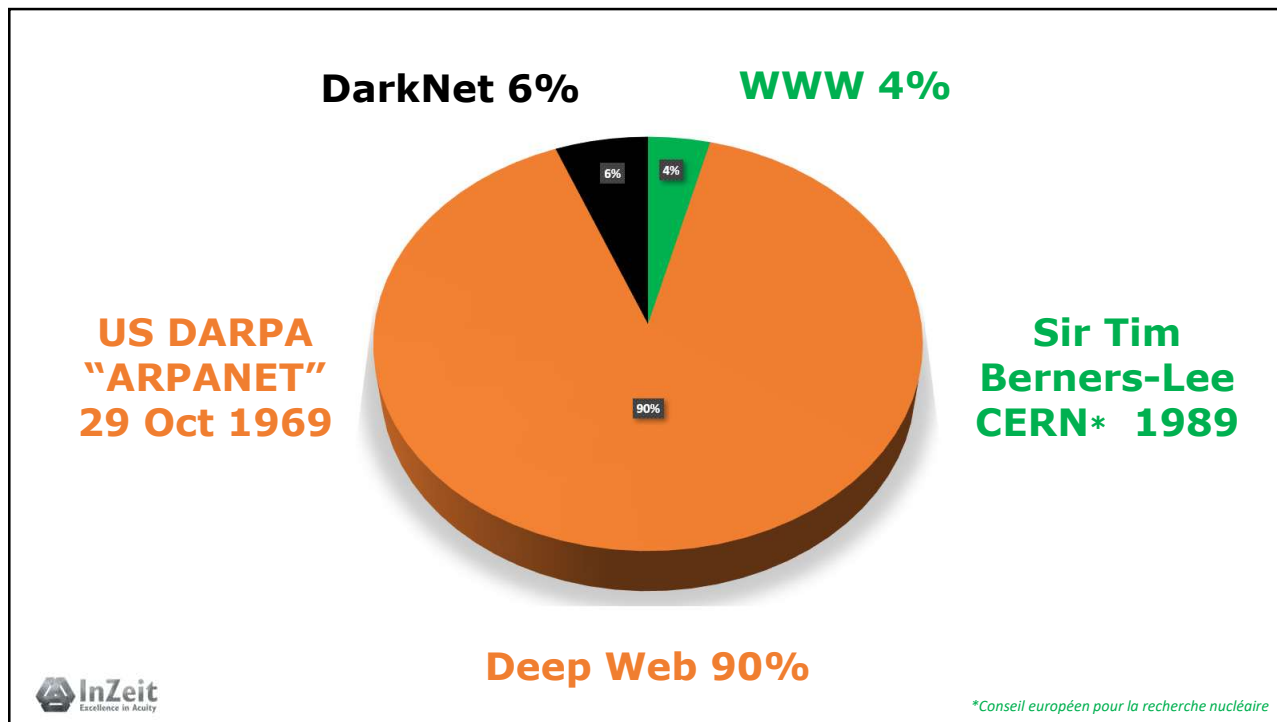
6



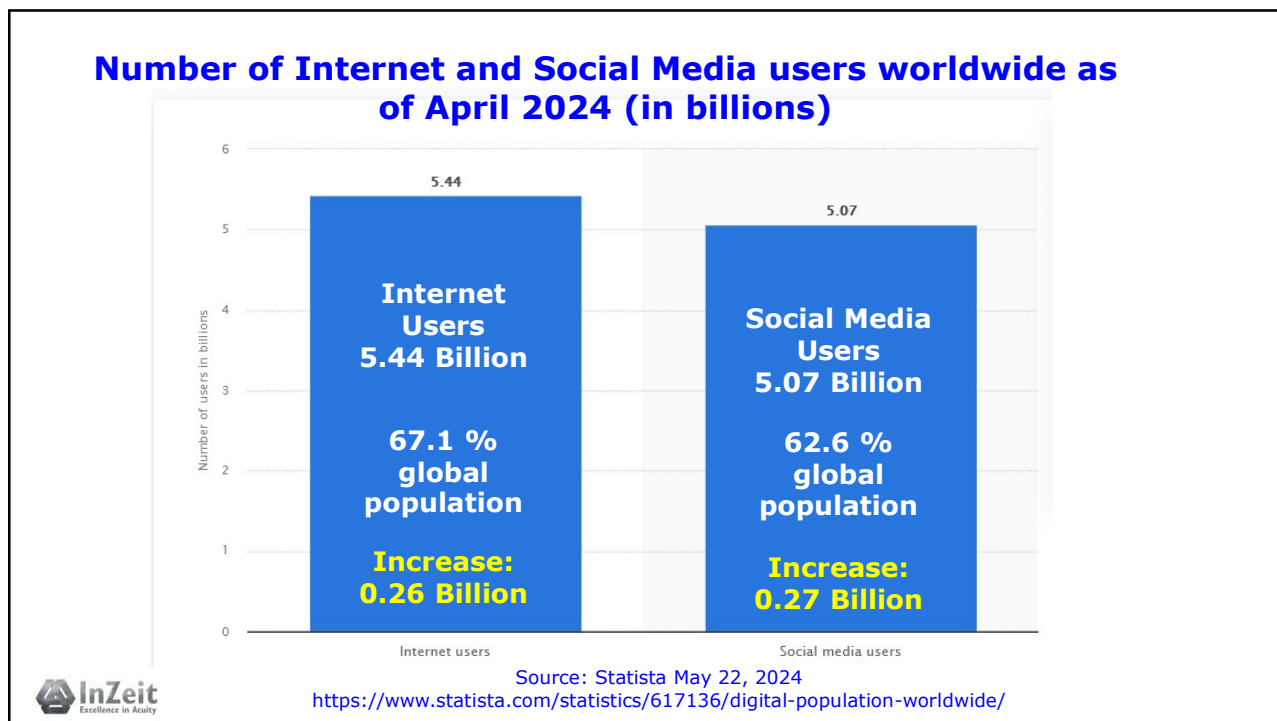
7



8



9



10



The Internet? Insecure by design

11

Must prove:

Which device used in the offence

AND

**Who was using it at the relevant time.
(traditional forensics may also help)**

Please note:
Information has been simplified to make it easier to understand and remember

Identifiers have been redacted

12

**HTTP & HTTPS
(Hyper Text Transfer Protocol (**Secure**))**

Indexed 'pages'

Collection of pages = Website

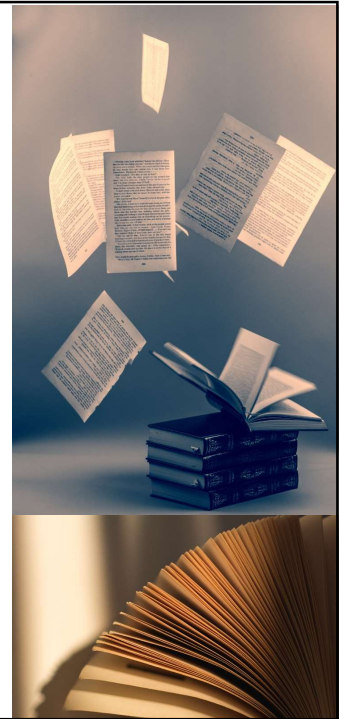
**Unique Resource Locators (URLs)
= the website address in words
(linked to IP Address)**

**Domain Name
= the name you remember + the domain
extension
(e.g. era.int)**

Domain Name System (DNS) = 'phone book'



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13

<http://www.era.int>



14

Protocol



http://www.era.int



15

Protocol



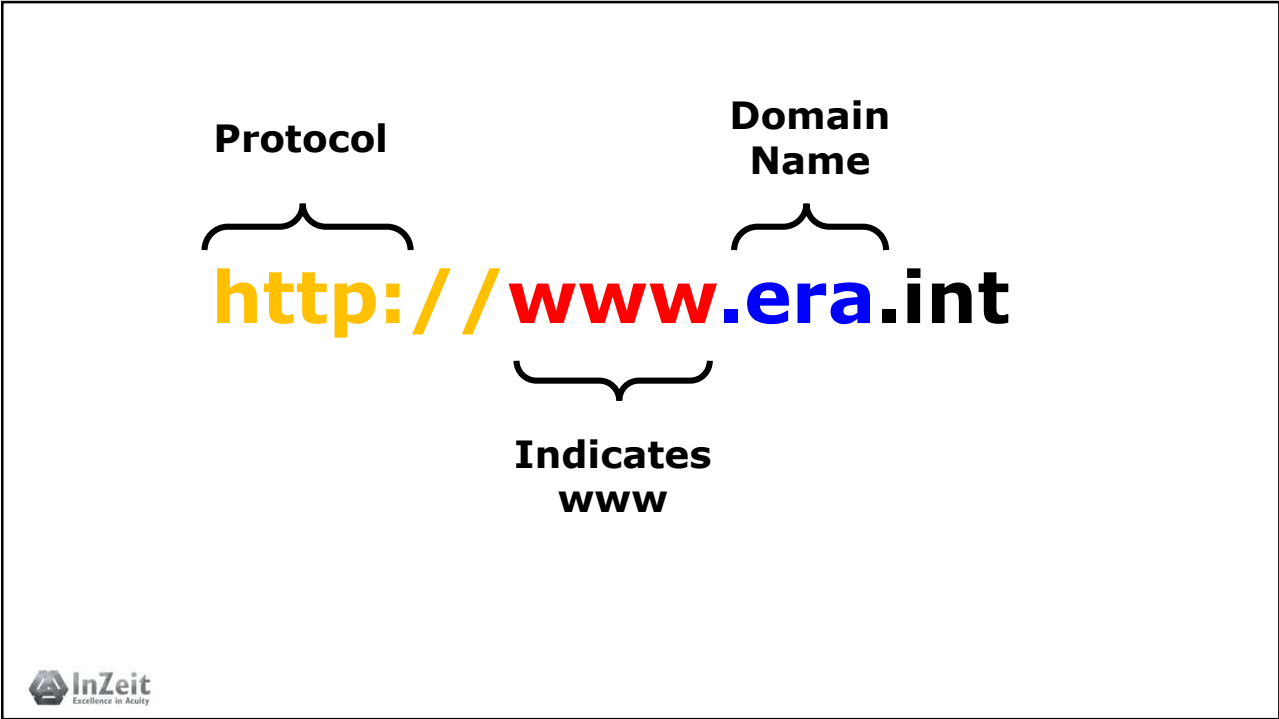
http://www.era.int



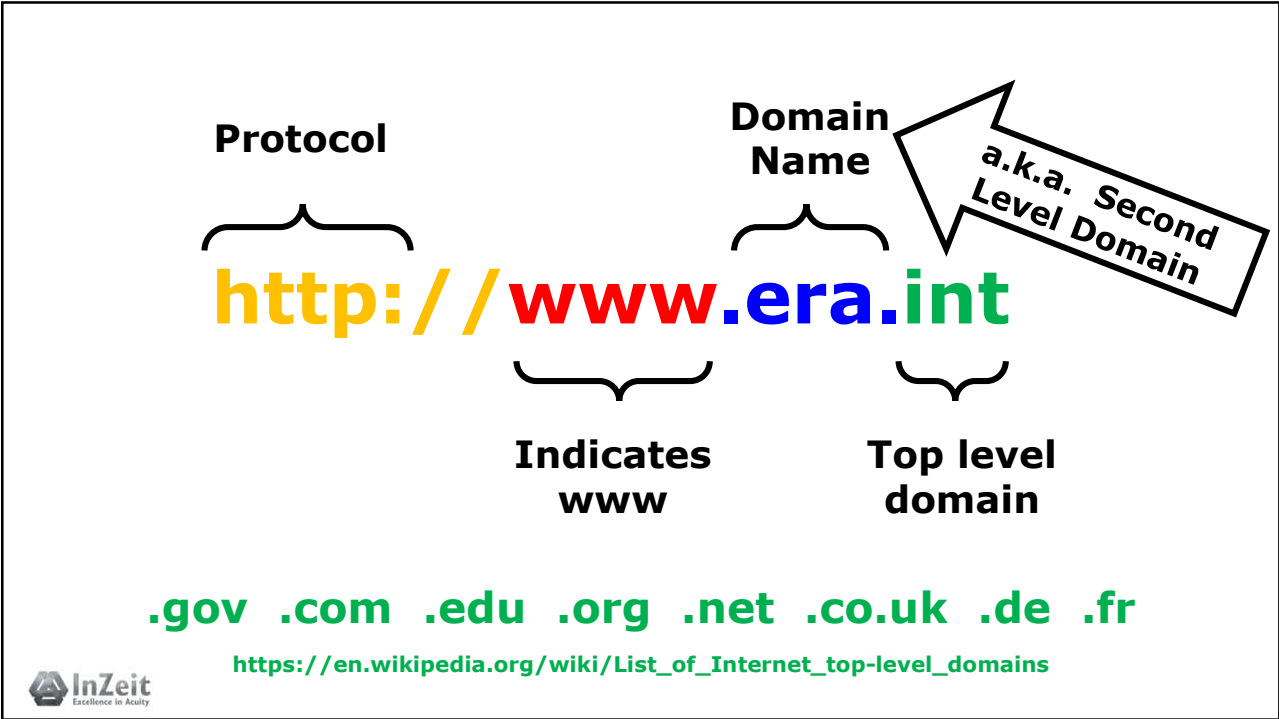
**Indicates
www**



16



17



18

Whois

Register of Internet domain name 'owners'

- Registrant data may be false
- Hidden behind a registration service
- Place to start search
- EU GDPR Rules – Whois blocked
(Authorised groups still have access)



19

Registration Data Request Service

Simplifying Requests for Nonpublic gTLD Registration Data



The Registration Data Request Service (RDRS) has officially launched! To submit a request for nonpublic gTLD registration data, click [here](https://rdrs.icann.org/). You will need to use an ICANN Account (new or existing) to access the service.

<https://rdrs.icann.org/>



20

Registration Data Request Service

Simplifying Requests for Nonpublic

Click here to
access the R

The Registration Data Request Service
gTLD registration data, click [here](#). You
service.



“The service will be used by participating ICANN-accredited registrars and requestors seeking nonpublic gTLD registration data. **It is intended for use by individuals and entities** with a legitimate interest for access to **nonpublic** gTLD registration data **like law enforcement, government agencies, intellectual property attorneys, cybersecurity professionals, and others.** Participation in the service by ICANN-accredited registrars will be voluntary

21

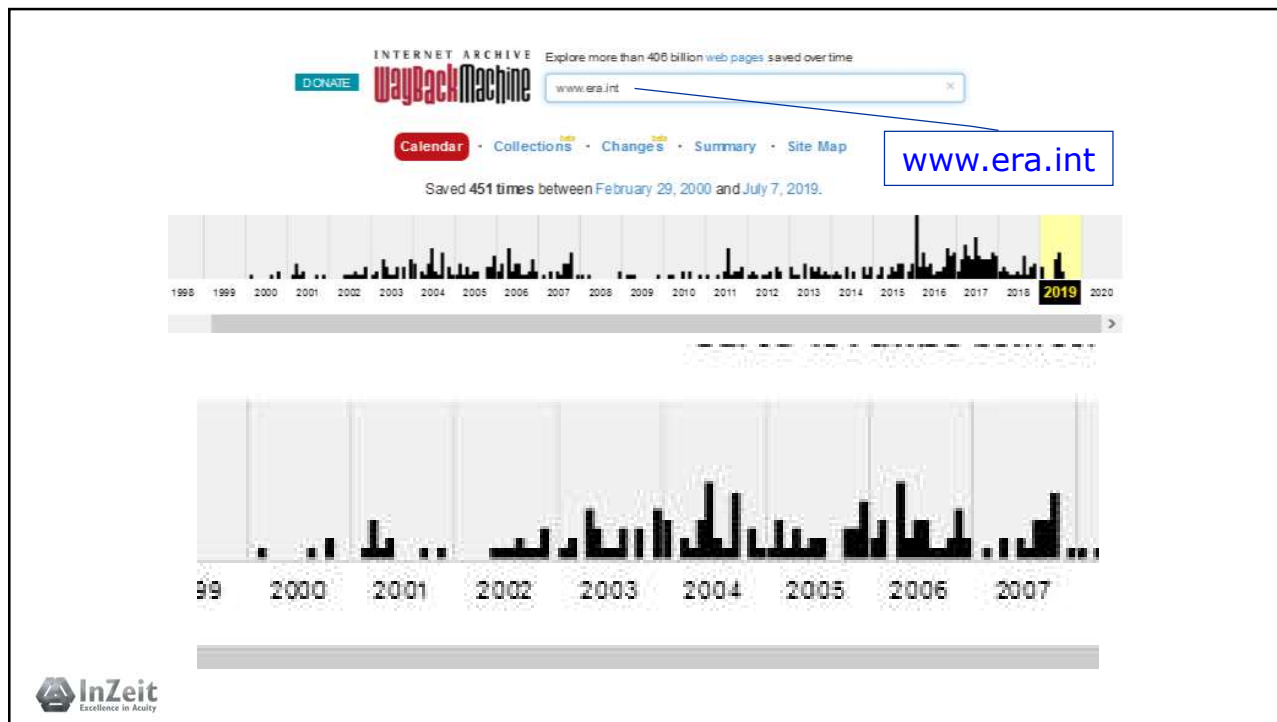
When websites change:



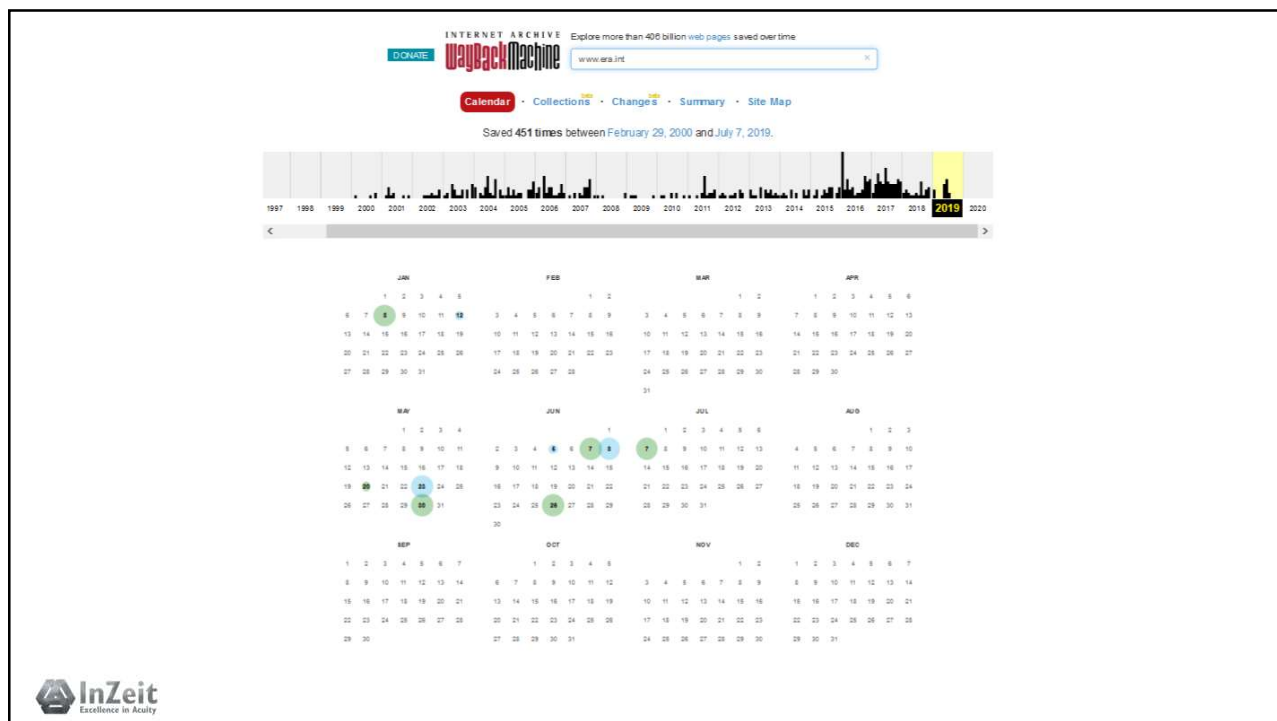
(<http://web.archive.org>)



22



23



24

Website from 23 June 2000



25

**Normally:
First step is to find
the IP Address**

**Can be faked, hidden or
'borrowed'**

An Internet Protocol (IP) address is the unique number generated by your Internet Service Provider and assigned to a connected device to identify the source & destination of messages sent across the Internet (like a postal address).

26

Example: tracking a Russian Money Launderer



2014 Tokyo Bitcoin Exchange went bankrupt

Hacked:

750,000 BTC users
100,000 BTC own
(7% of all BTC in existence)

"Loss: \$530million"

Images by Unknown Author are licensed under CC BY-SA

27



Stolen BTC tracked by Chainalysis

Eventually ended up at BTC-e Exchange



BTC-e ownership and location unknown

Images by Unknown Author are licensed under CC BY-SA

28

BTC-e Last Price: 612.001 USD Low: 607.819 USD High: 614.751 USD
Volume: 3689 BTC / 2251278 USD Server Time: 07.10.16 14:00

Trade News Terms FAQ PAMM Support

Latest news:
02/10/16 Update: Security

Company behind BTC-e:

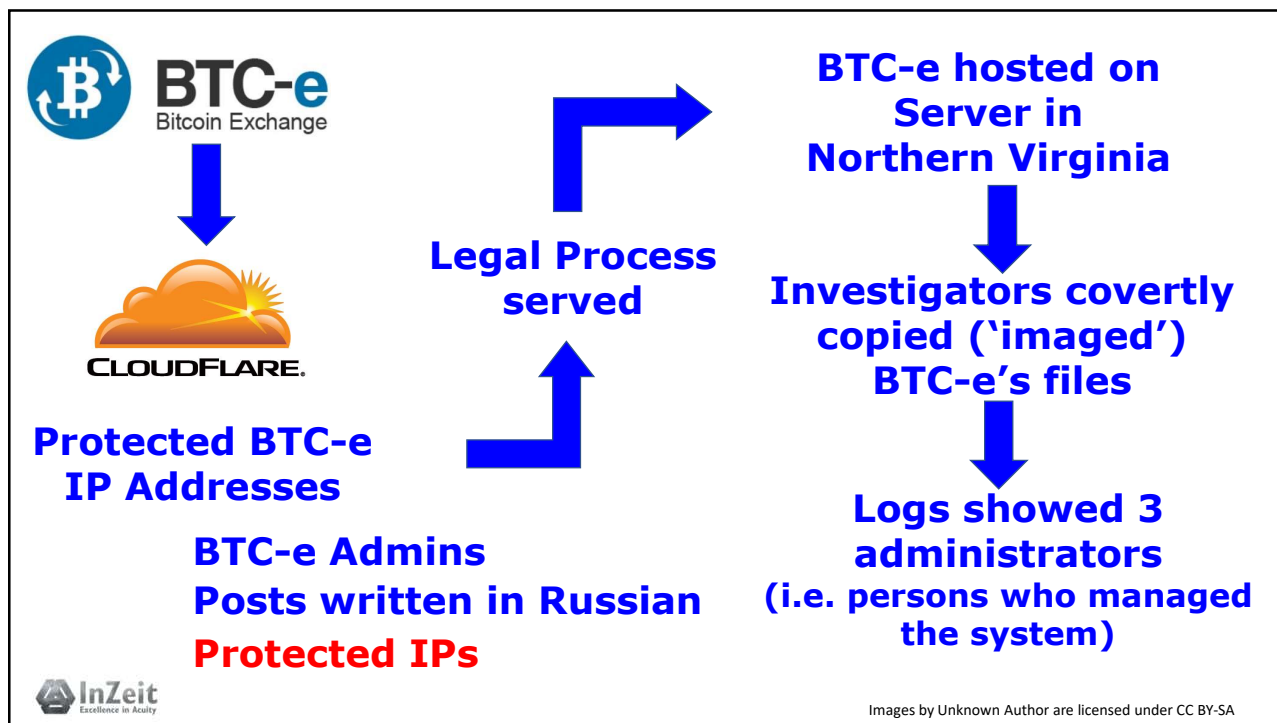
- Canton Business Corporation
- Registered in the Seychelles
- Russian Telephone number

BTC-e website stated hosted in Bulgaria, but "subject to the laws of Cyprus"

InZeit Excellence in Acuity

<https://btc-e.com/> 7 October 2016

29



30

**Bitcointalk Forum
Admin used Username:
"WME"**

(Username linked to known carder)

**Email account on
wm-exchanger.com
Web Money Exchanger**

Dispute with CryptXchange (Australia)

**2012 Posted Lawyer's letter headed
"Demand for the release of
Alexander Vinnik's funds"**




31

Re: Scam Report Against CryptoXchange \$100k USD
July 18, 2012, 06:47:03 AM #163

<http://archive.is/6cFcY>

DEUTSCH MILLER

55 MARTIN PLACE
SYDNEY NSW 2000

TEL: +61 2 9210 7777
FAX: +61 2 9210 7799
EMAIL: info@deutschmiller.com
WEB: www.deutschmiller.com

16 July 2012

Kenseycool Pty Ltd
T/as Crypto X Change
14 Sale Street
ORANGE NSW 2800

By post and email: support@cryptoxchange.com; legal@cryptoxchange.com

Responsible Partner: Zoe Hillman
Associate: Chris Stevens
Direct Tel: +61 2 9210 7771
Email: chris.stevens@deutschmiller.com
Our ref: 09268

Dear Sirs

Demand for the release of Alexander Vinnik's funds

We have still not had any response from you to our letters dated 11 April, 23 April and 4 May, 2012.





32

User WME = Alexander Vinnik

Vinnik's account
monitored

Mid-2010s
internet

Luxury hotel
outside Russia

Hotel Chain HQ in USA

Subpoena for Passport

**2020
extradited to
France**

**Sentenced to
5 years,
deported to
Greece 2022**

**5 August 2022
extradited to
USA**

**July 2017
Arrested in
Thessaloniki**

**France,
Russia, US
sought
Extradition**

**Pleaded guilty to Conspiracy to
Money Laundering
(Plea Deal) 3 May 2024**

 Further Reading : "Tracers in the Dark" (2022) Andy Greenberg

33

Internet Protocol (IP) Addresses

Two types:


- **Static** (always the same)
- **Dynamic** (only lasts as long as connected)

Two versions:

IPv4
(4.3 billion - not enough numbers for everyone)

IPv6

What's yours? www.ipchicken.com



34

**Every website (every connection to Internet)
has an associated IP address:**

www.era.int

IPv4:

195.243.153.54

IPv6:

0:0:0:0:0:ffff:c3f3:9936



35

IP Address:

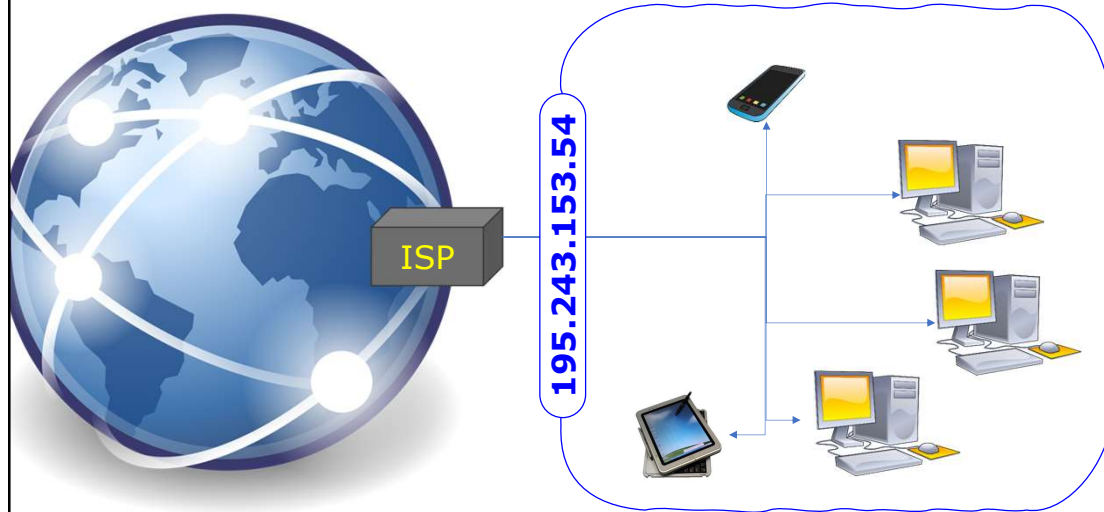
- **Geo-specific**
- **Identifies:**
 - ❖ **The country**
 - ❖ **The ISP**

ISP holds records of usage



36

MAC Address: (Media Access Control or Physical Address)



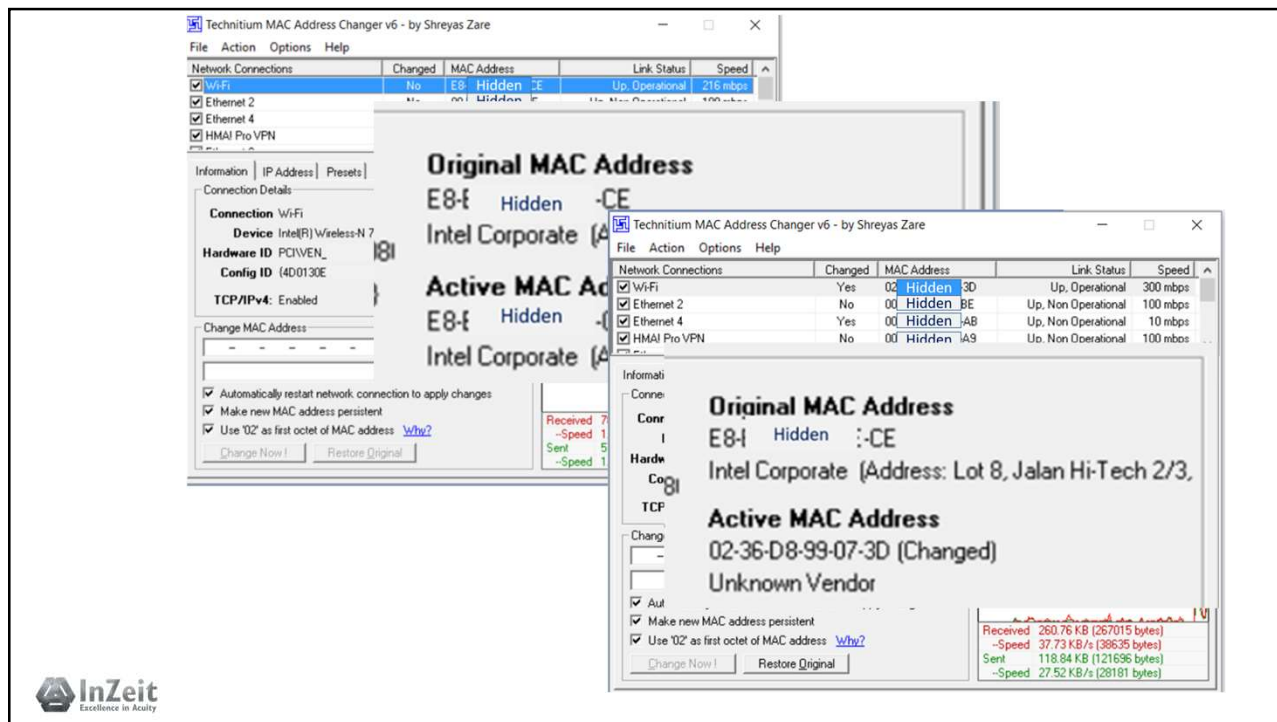
37

MAC Address: (Media Access Control or Physical Address)

- **Identifies the device on the network**
- **Built into the device by manufacturer**
- **(normally) not broadcast beyond network**
- **But can 'leak' (e.g. some IPv6 versions)**



38



39

Phones - IMEI

International Mobile Equipment Identity

- ❖ Also MEID (Mobile Equipment Identifier)
- ❖ Hardcoded into mobile device by manufacturer (make and model can be traced)
- ❖ Identifies the device to the Cell Network
- ❖ Get IMEI Number key in: ***#06#**

(Smartphone will automatically try to connect to crime scene WiFi)

<https://ro.ecu.edu.au/adf/147/>



40

Hiding an IP

- **Public Access Points**
- **Piggybacking**
- **Compromised devices**
- **Proxy servers**
- **Virtual Private Networks**
- **Anonymisers**
- **Carriergrade NAT**



October 2023 Mold Crown Court, North Wales, UK

- ❖ **Between August and October 2023, 48 year old man conducted 'sexualised conversations' online with 13 year old girl 'Leah'**
- ❖ **Discussed sex acts and requested the exchange of intimate pictures**

- ❖ **Police used IP address to find ISP customer's address**
- ❖ **Went to the address: 'Confused' householder**
- ❖ **The householder was allowing neighbour to use his wifi 'because his wasn't working'**
- ❖ **(Neighbour also had a smartphone with child porn which he threw from the window)**



43



- ❖ **Richard Wynne (already convicted sex offender)**
- ❖ **Sentenced to 3 years 10 months**
- ❖ **... 13 year old 'Leah' was an undercover police officer**



44

iplocation.io

Home All Tools IP WHOIS Lookup IPV4 To IPV6 DNS Lookup Search Tools or Enter IP

48°12'30.2"N 16°22'19.2"E
Innere Stadt, 1010 Wien

View larger map

Your Public IP is: 84.XXX.XX.XXX

- Country: undefined N/A
- City: N/A
- State: N/A
- ISP: N/A
- OS: Windows
- Processor: 64 bit
- Browser: Firefox
- Latitude: 48.2084
- Longitude: 16.3720
- Screen: 1376x774

NB NOT accurate

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45

iplocation.io

Home All Tools IP WHOIS Lookup IPV4 To IPV6 DNS Lookup Search Tools or Enter IP

10°29'16.8"N 66°52'44.8"W
Colinas de Bello Monte, Caracas, Miranda, Venezuela

View larger map

Your Public IP is: 173.244.55.132

10°29'16.8"N 66°52'44.8"W
Colinas de Bello Monte, Caracas, Miranda, Venezuela

View larger map

- Latitude: 10.4880
- Longitude: -66.8791
- Screen: 1728x972

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46

Virtual Private Networks (VPNs)

VPNs enable access to the Internet through a remote computer/server using encrypted communication channel/tunnel

VPNs can be used by criminals to hide their location

VPN Providers often cooperate with legal process ... some don't!

Check if legal to use!



47

All you need is logs

... the automatically produced and time-stamped documentation of events relevant to a particular system

(source: www.techtarget.com)



48

LOGS

- Originally created for tracing bugs & improving performance
- Billing/maintenance records
- Generated automatically
- On the device
- On servers in the network
- On service providers' servers
- Record meta-, traffic-data



49

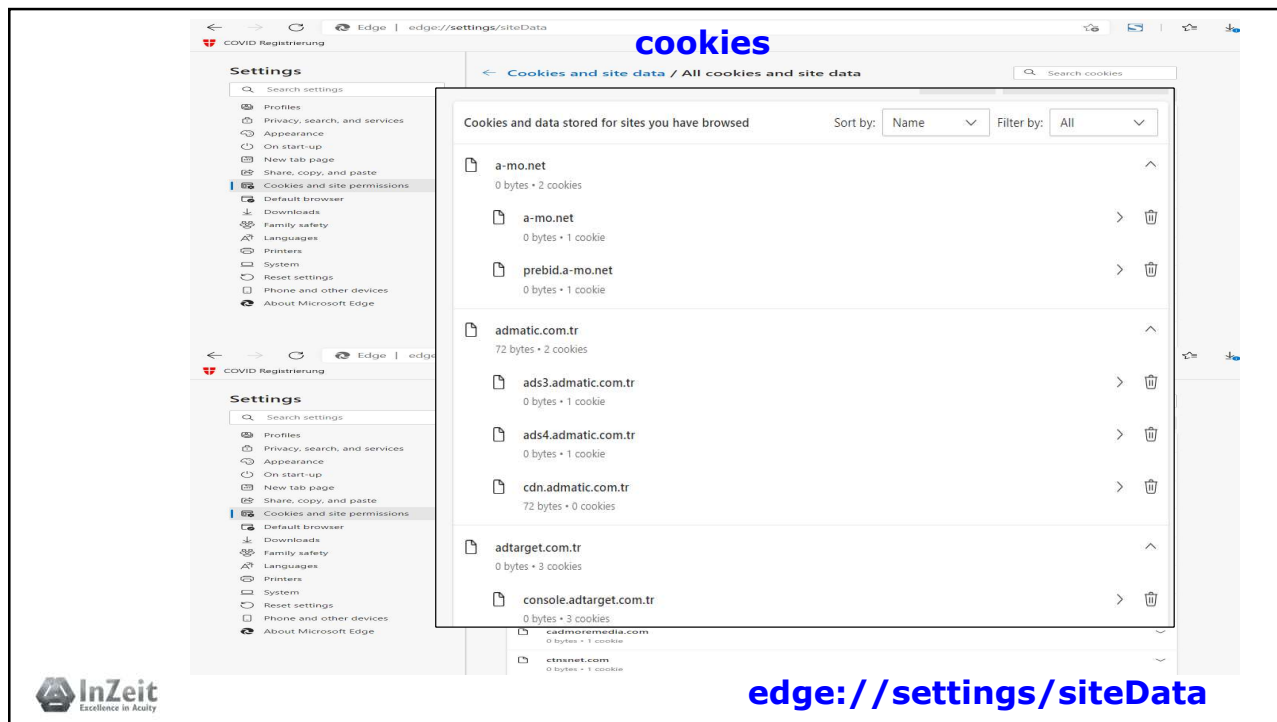
All **In Browser** Clear browsing data

Recent

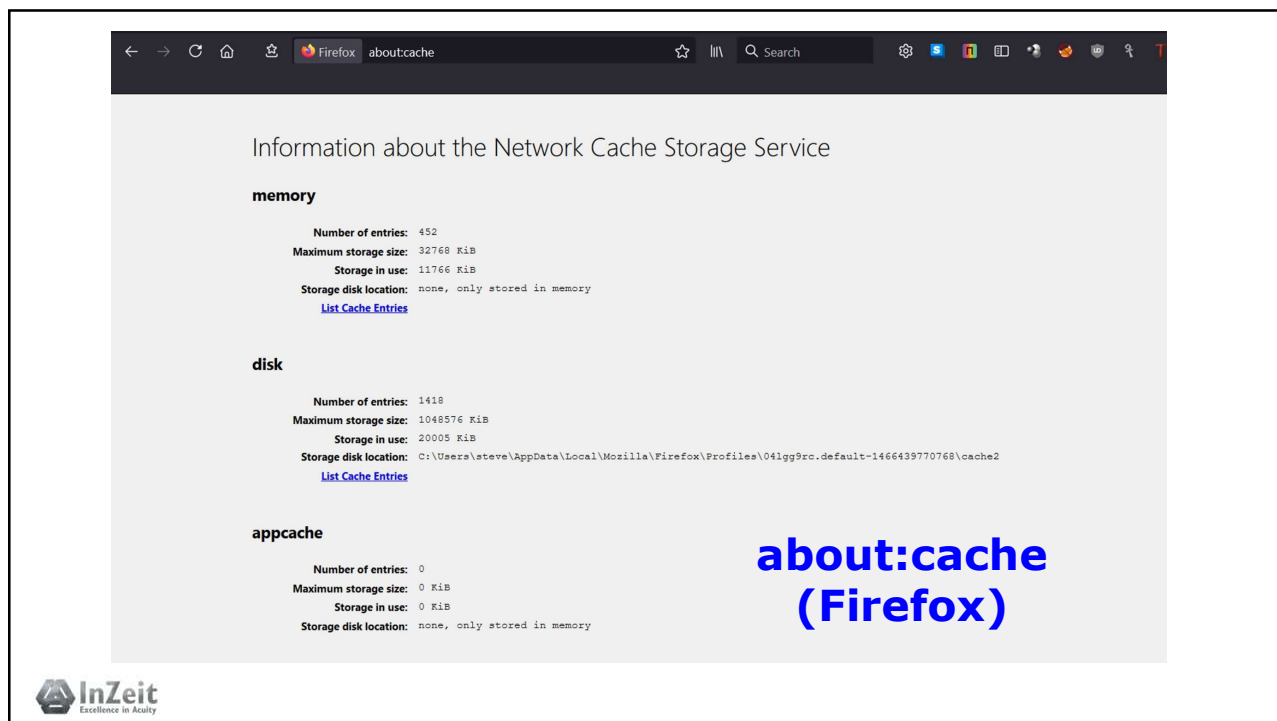
<input type="checkbox"/>		Money Laundering - Overview, How It Works, Example	corporatefinanceinstitute.com	10:37	×
<input type="checkbox"/>		An Idiot's Guide to Money Laundering Global Witness	www.globalwitness.org	10:37	×
<input type="checkbox"/>		How Money Laundering Works HowStuffWorks	money.howstuffworks.com	10:37	×
<input type="checkbox"/>		Top 5 Unconventional Ways to Launder Money	www.trulioo.com	10:37	×
<input type="checkbox"/>		How Do Drug Dealers Launder Money? - Tookitaki	www.tookitaki.ai	10:37	×
<input type="checkbox"/>		Beginner's Guide to Money Laundering	www.businessinsider.com	10:37	×
<input type="checkbox"/>		how can I launder my cash? - Google Search	www.google.co.uk	10:37	×
<input type="checkbox"/>		Money Laundering 101: Understanding the Basics - IP Services Inc	www.ipservicesinc.com	10:36	×
<input type="checkbox"/>		money laundering 101 - Google Search	www.google.co.uk	10:36	×
<input type="checkbox"/>		Google	www.google.co.uk	10:36	×

edge://history/all

50



51



52

about:cache?storage=memory

Cache Entry	Size	Count	Expiration
O*privateBrowsingId=1&partitionKey=%28https://www.fake-id.com/assets/images/flags/active/en-off@2x.png	6974 bytes	1	2021-07-16 17:25:53
HEAD:https://www.fake-id.com/assets/images/flags/active/en-off@2x.png	0 bytes	1	2021-07-16 17:25:54
O*privateBrowsingId=1&partitionKey=%28https://www.fake-id.com/assets/front/fonts/ProximaNova-Regular.woff?v=4.5.0			Expired Immediately
O*privateBrowsingId=1&partitionKey=%28https://www.fake-id.com/assets/front/			2022-07-16 17:25:51
https://www.fake-id.com/assets/			2022-07-16 17:25:52
O*privateBrowsingId=1&partitionKey=%28https://www.fake-id.com/assets/			2022-07-16 17:25:52
HEAD:https://www.fake-id.com/assets/images/flags/it-off@2x.png	1710 bytes	1	2021-07-16 17:25:53
O*privateBrowsingId=1&partitionKey=%28https://www.fake-id.com/assets/images/flags/it-off@2x.png	0 bytes	1	2021-07-16 17:25:54
HEAD:https://www.fake-id.com/assets/images/handbookCircleImg@2x.png	0 bytes	1	2021-07-16 17:25:54



53

**Mohammed Ammer Ali –Computer Programmer
Father of two, Bolton, UK
2015 ordered enough ricin on Dark Web to kill 700 -
1,400 people**

Username weirdos 0000

**500 mg for 2.1849 BTC
(then = GBP320 those were the days!!!!)**

Encrypted chats discussed with seller:

- the price of a lethal dose,
- discounts for bulk orders and repeat purchases
- ricin's shelf life

**Asked: "How do I test this ricin?"
Reply: "You must test it on a rodent."**



54

**Investigators found on Ali's Computer notepad:
To do "paid ricin guy" and "get pet to murder"**

**Searches for chinchillas, animal rescue centres, rabbits
and "pocket-sized pets"**

Google searches:

**"abrin v ricin"
"home made cyanide and ricin"
"hydrogen peroxide"**



On LG Nexus smartphone searched Yahoo for:

**"what poison kills you quick, is foolproof, easily
found/made, easily concealed and hard to detect post
mortem"**



<https://www.theguardian.com/uk-news/2015/sep/18/breaking-bad-fan-jailed-over-ricin-plot>
<https://www.bbc.com/news/uk-england-merseyside-36483593>

55

Server Logs

(Reminder: Server is a computer that provides services to other computers)



56

```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET /
HTTP/1.1" 200 8536 "-" "Mozilla/5.0 (Windows; U;
Windows NT 5.1; de; rv:1.9.2.3) Gecko/20100401
Firefox/3.6.3"
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET
/res/up.gif HTTP/1.1" 200 523
"http://members.fraudstersunion.com/" "Mozilla/5.0
(Windows; U; Windows NT 5.1; de; rv:1.9.2.3)
Gecko/20100401 Firefox/3.6.3"
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET
/res/next1.gif HTTP/1.1" 200 542
"http://members.fraudstersunion.com/" "Mozilla/5.0
(Windows; U; Windows NT 5.1; de; rv:1.9.2.3)
Gecko/20100401 Firefox/3.6.3"
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET
/res/show1.gif HTTP/1.1" 200 533
"http://members.fraudstersunion.com/" "Mozilla/5.0
(Windows; U; Windows NT 5.1; de; rv:1.9.2.3)
Gecko/20100401 Firefox/3.6.3"
```




```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET /
HTTP/1.1" 200 8536 "-" "Mozilla/5.0 (Windows; U;
Windows NT 5.1; de; rv:1.9.2.3) Gecko/20100401
Firefox/3.6.3"
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET
/res/up.gif HTTP/1.1" 200 523
"http://members.fraudstersunion.com/" "Mozilla/5.0
(Windows; U; Windows NT 5.1; de; rv:1.9.2.3)
Gecko/20100401 Firefox/3.6.3"
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET
/res/next1.gif HTTP/1.1" 200 542
"http://members.fraudstersunion.com/" "Mozilla/5.0
(Windows; U; Windows NT 5.1; de; rv:1.9.2.3)
Gecko/20100401 Firefox/3.6.3"
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET
/res/show1.gif HTTP/1.1" 200 533
"http://members.fraudstersunion.com/" "Mozilla/5.0
(Windows; U; Windows NT 5.1; de; rv:1.9.2.3)
Gecko/20100401 Firefox/3.6.3"
```



```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22  
+0200] "GET /res/next1.gif HTTP/1.1" 200 542  
"http://members.fraudstersunion.com/"  
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;  
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"
```

IP address of User



```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22  
+0200] "GET /res/next1.gif HTTP/1.1" 200 542  
"http://members.fraudstersunion.com/"  
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;  
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"
```

User log-in/full name
(if required)



```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22  
+0200] "GET /res/next1.gif HTTP/1.1" 200 542  
"http://members.fraudstersunion.com/"  
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;  
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"
```



61

Time Stamp
(to the second)



```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22  
+0200] "GET /res/next1.gif HTTP/1.1" 200 542  
"http://members.fraudstersunion.com/"  
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;  
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"
```

GMT Off-Set



62

Command request (GET or POST)

Filepath (location) of Requested file

```

XXX.XXX.254.1 - - [16/Jun/2018:16:19:22
+0200] "GET /res/next1.gif HTTP/1.1" 200
542 "http://members.fraudstersunion.com/"
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"

```

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63

Result code: (There are more)
200 = success
404 = fail

```

XXX.XXX.254.1 - - [16/Jun/2018:16:19:22
+0200] "GET /res/next1.gif HTTP/1.1" 200 542
"http://members.fraudstersunion.com/"
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"

```

Size of file in bytes

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Website where file located

XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET /res/next1.gif HTTP/1.1" 200 542
"http://members.fraudstersunion.com/"
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de; rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"



65

Platform

Type of browser

Security value

XXX.XXX.254.1 - - [16/Jun/2018:16:19:22 +0200] "GET /res/next1.gif HTTP/1.1" 200 542
"http://members.fraudstersunion.com/"
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de; rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"

Operating System
(Windows XP)



66

Language
(Deutsch)

```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22  
+0200] "GET /res/next1.gif HTTP/1.1" 200 542  
"http://members.fraudstersunion.com/"  
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;  
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"
```



67

Browser version

```
XXX.XXX.254.1 - - [16/Jun/2018:16:19:22  
+0200] "GET /res/next1.gif HTTP/1.1" 200 542  
"http://members.fraudstersunion.com/"  
"Mozilla/5.0 (Windows; U; Windows NT 5.1; de;  
rv:1.9.2.3) Gecko/20100401 Firefox/3.6.3"
```



68

Cookies, search history and device configuration create a characteristic 'browser fingerprint'

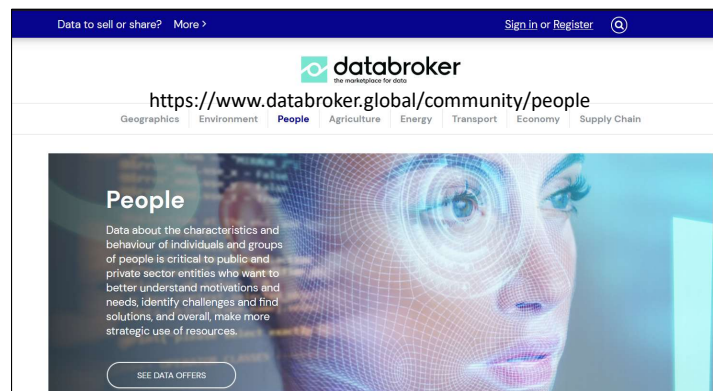
Try this out:

<https://webkey.robinlinus.com/>



69

Commercial value – profile used by Data Brokers for targeted online advertising.



'In 2017, both **Alphabet** (Google's parent company) and **Facebook** made an overwhelming majority of their **total profits** through digital advertising—**88%** and **97%**, respectively.'



<https://us.norton.com/internetsecurity-privacy-how-data-brokers-find-and-sell-your-personal-info.html>

70

The screenshot shows the EFF Cover Your Tracks website. The browser address bar displays <https://coveryourtracks.eff.org>. The main heading is "COVER YOUR TRACKS" in large yellow letters. Below it, a section titled "Your Results" provides the following information:

- Your browser fingerprint **appears to be unique** among the 250,064 tested in the past 45 days.
- Currently, we estimate that your browser has a fingerprint that conveys **at least 17.93 bits of identifying information**.
- The measurements we used to obtain this result are listed below. You can **read more about our methodology, statistical results, and some defenses against fingerprinting here**.

Below the results, there is a yellow box with the text "Test your browser to see how well you are protected from tracking and fingerprinting:" and a button labeled "TEST YOUR BROWSER". A checkbox is checked with the text "Test with a real tracking company?".

At the bottom left, the InZeit logo is visible with the tagline "Excellence in Agility".

Browser Fingerprinting
<https://coveryourtracks.eff.org/>

71

Browser fingerprint can also be faked:

The screenshot shows the Firefox Add-ons page for the "User-Agent Switcher and Manager" extension by Ray. The page features the Firefox logo and the text "Firefox Browser ADD-ONS". The extension is marked as "Recommended".

The extension description reads: "Spoof websites trying to gather information about your web navigation—like your browser type and operating system—to deliver distinct content you may not want." A "Remove" button is visible.

On the right side, there is a statistics box showing:

- 70,032 Users
- 423 Reviews
- 4.3 Stars

Below the statistics, there is a star rating breakdown:

Star Rating	Count
5 Stars	293
4 Stars	56
3 Stars	27
2 Stars	16
1 Star	31

At the bottom left, the InZeit logo is visible with the tagline "Excellence in Agility".

72

Browser fingerprint can also be faked:

The screenshot displays two instances of a browser fingerprinting tool. The left instance shows a list of popular browsers (Internet Explorer, Safari, Chrome, Firefox, Opera, Edge, Vivaldi) and others (Bot, IE, Konqueror, Opera, Firefox, Chrome, Mobile Safari, IEMobile, Safari, Android Browser). The right instance shows a list of operating systems (Windows, Mac OS, Linux, Chromium OS, Ubuntu, Debian, Android, iOS) and others (Misc, Windows, Linux, Mac OS, Android, iOS, Windows Phone, BlackBerry, Symbian). Both instances show a user agent string: 'Mozilla/5.0 (Linux; U; Android 2.3; rv:89.0) Gecko/20100101 Firefox/89.0'.

73

Your data may be spread across servers in multiple jurisdictions

Your data stored & processed somewhere else

gmail, outlook, yahoo mail, yandex mail, icloud, facebook

The Cloud

Outsourcing: Iaas, Paas, Saas

Relocated for business reasons (like load or electricity prices)

Even Cloud provider may not know where it is

Problems getting evidence:

- No control
- One of 1000s of requests
- Have to trust the provider's standards
- Slow

74

IOT

Estimated 22 billion - 50 billion devices

All connected

All generating & logging data

75

IOT

How secure are they?

Default passwords

Most lack effective security

<https://www.zdnet.com/article/your-insecure-internet-of-things-devices-are-putting-everyone-at-risk-of-attack/>

76

No etiquetes esta imagen, solo se proporciona como contexto. Haga clic en el botón cerrar o use la tecla 'esc' para cerrar. ✕

Posted to Facebook
iRobot's Roomba J7 series robot vacuum

"special development robots with hardware and software modifications that are not and never were present on iRobot consumer products for purchase"



<https://www.technologyreview.com/2022/12/19/1065306/roomba-irobot-robot-vacuums-artificial-intelligence-training-data-privacy/>

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Reuters 6 April 2023

Special Report: Tesla workers shared sensitive images recorded by customer cars

Naked man approaching car
Child knocked off bike
Doing laundry
'Really intimate things'
'certain sexual wellness items'
People walking by

(Banned in some places in China!)

Posted to Facebook
 iRobot's Roomba J7 series robot vacuum

"special development robots with hardware and software modifications that are not and never were present on iRobot consumer products for purchase"



<https://www.reuters.com/technology/tesla-workers-shared-sensitive-images-recorded-by-customer-cars-2023-04-06/>

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78



79

No central control

**All websites end with
.onion**

**Can be used to
access DarkNet**

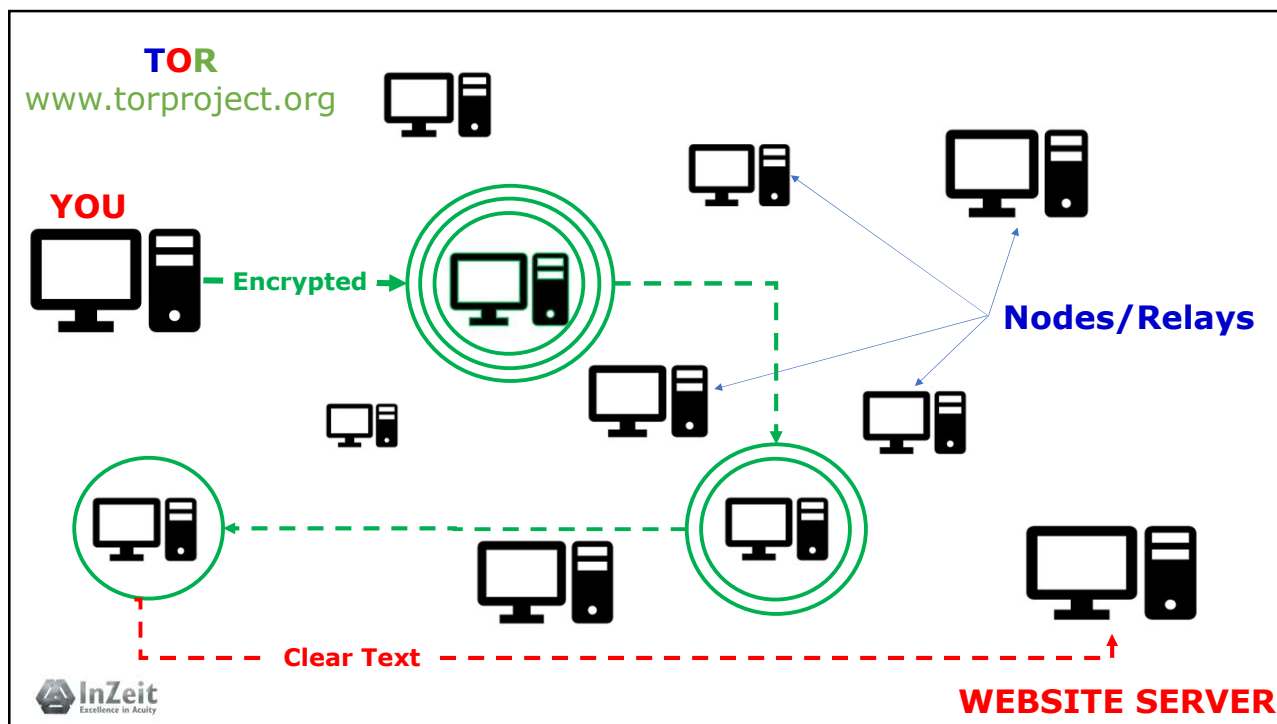
**TOR
The Onion Router**

**Peer to Peer Network
(people volunteer part of
their hard drive)**

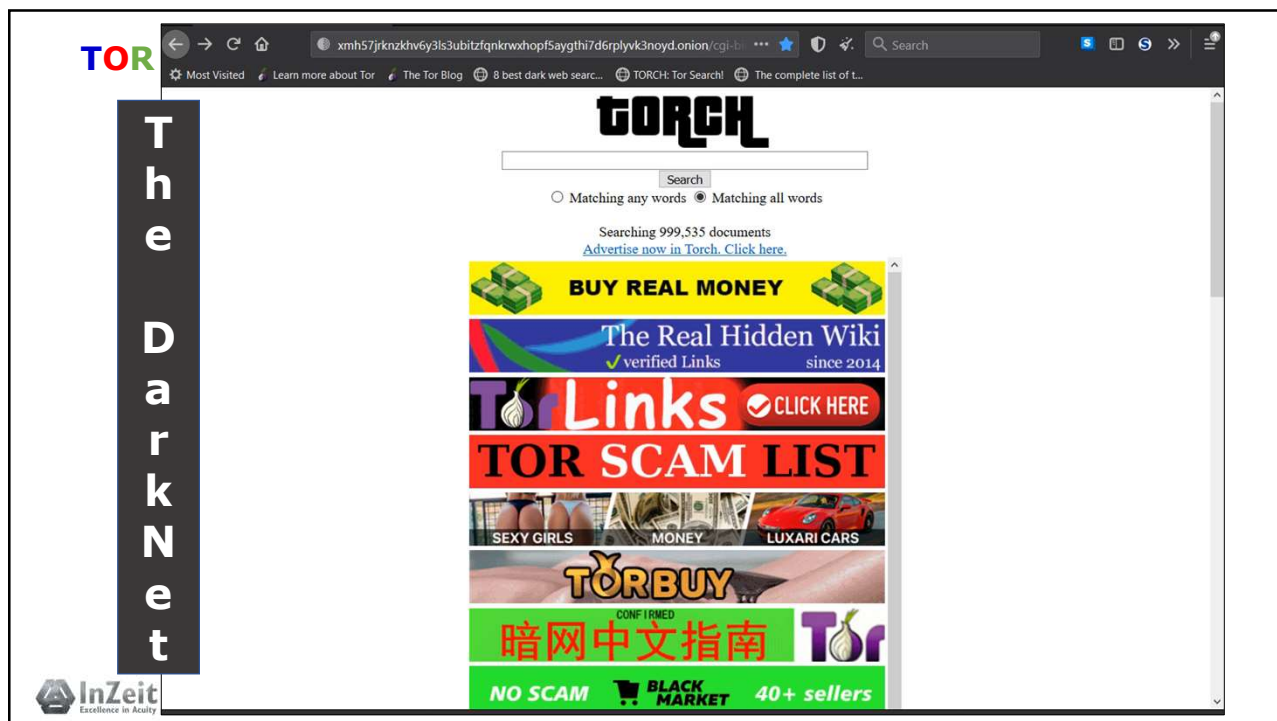
**'Anonymising technology'
(there are others)**

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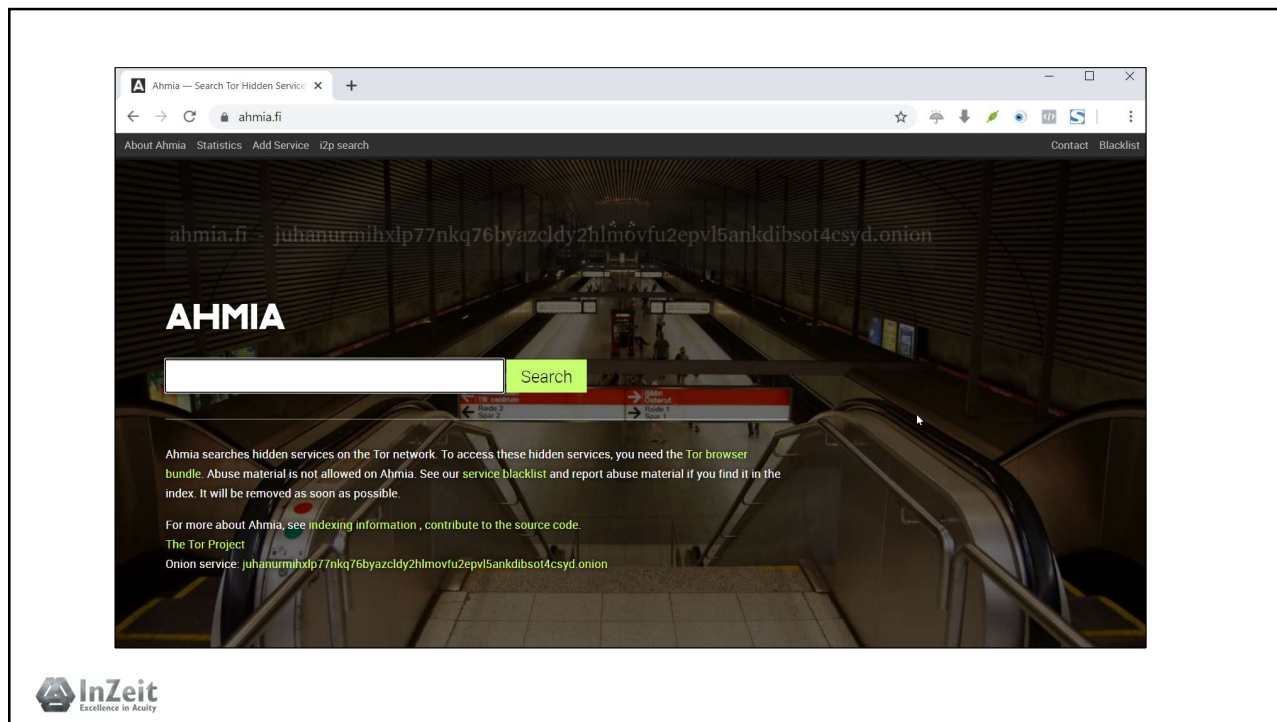
80



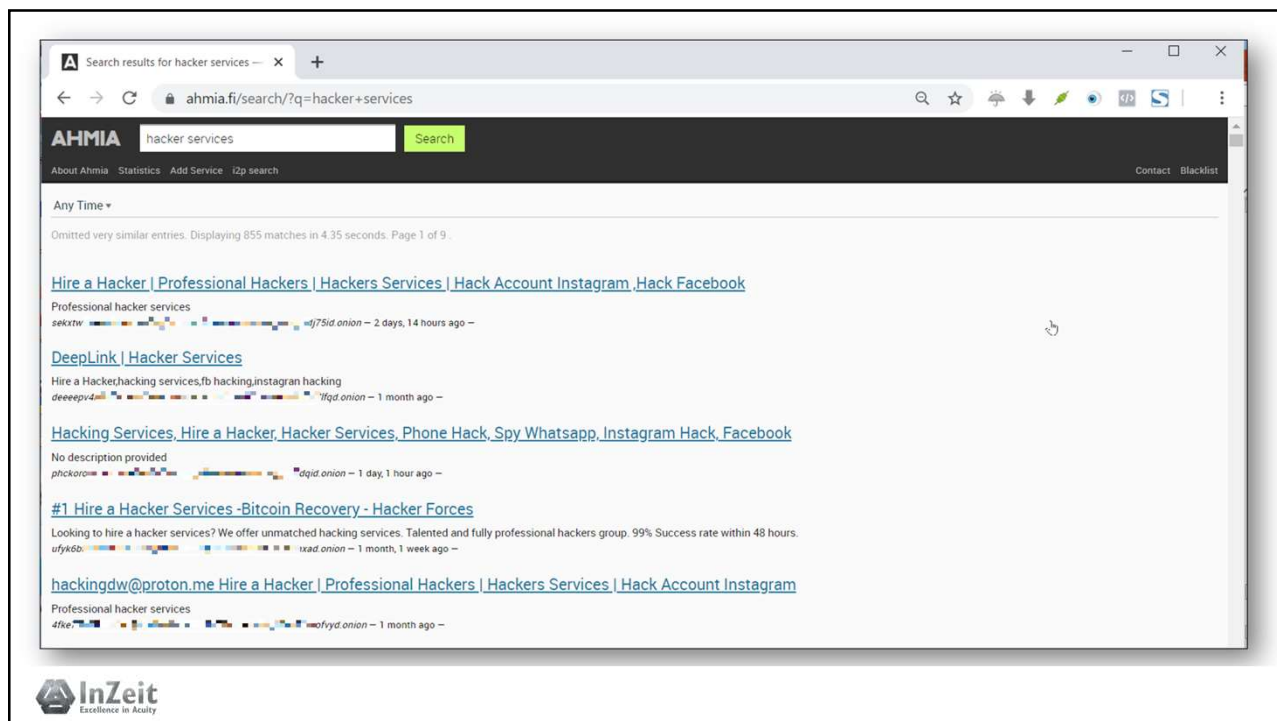
81



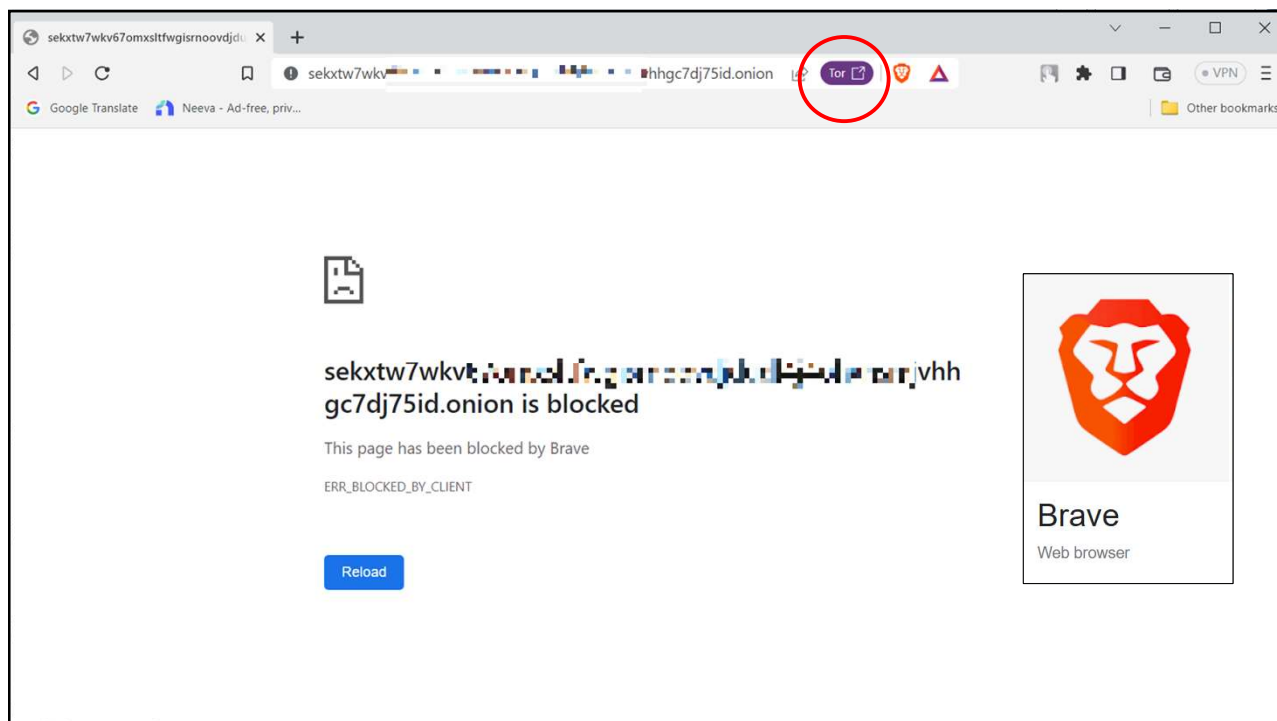
82



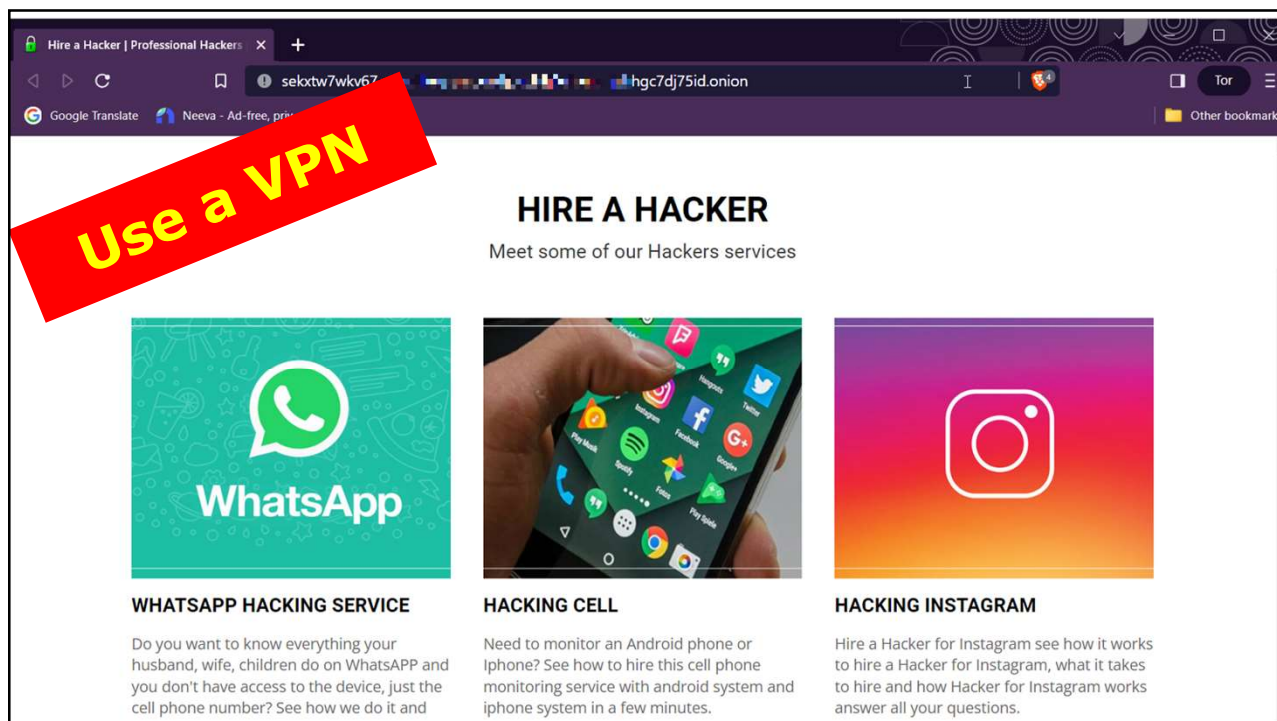
83



84



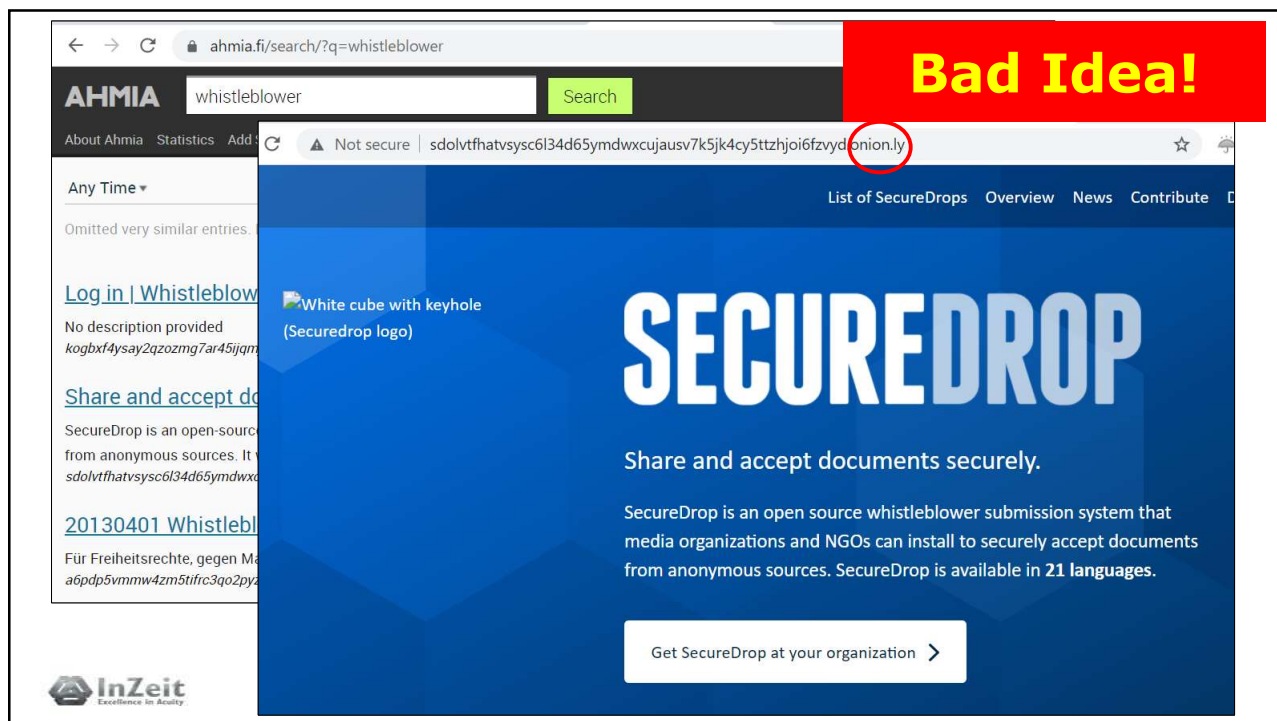
85



86



87



88

ahmia.fi/search/?q=passport

Bad Idea!

Search

gdct2ac6gse24s...iebnyh...onion.ly

General Documents Center
Buy Documents Online, Passport, Driver's License, ID Card, SSN, Diplomat, Degree, Resident Permit

Welcome To General Documents Center

Buy Passports online

InZeit Excellence in Acuity

89

Co-funded by the Justice Programme of the European Union 2014-2020

the pe: n bits

InZeit Excellence in Acuity

Photos by Unknown Authors are licensed under CC BY-ND

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90

Resources and further reading

Definition

<https://www.britannica.com/technology/Internet>
<https://www.britannica.com/topic/World-Wide-Web>

Data Estimation

<https://www.statista.com/statistics/617136/digital-population-worldwide/>
<https://www.worldwidewebsite.com/>
<https://www.the-next-tech.com/blockchain-technology/how-much-data-is-produced-every-day-2019/>

Protocols

Gross, M. (updated) 12 common network protocols and their functions explained
<https://www.techtarget.com/searchnetworking/feature/12-common-network-protocols-and-their-functions-explained>

Wayback Machine (for old website versions)

<http://web.archive.org>

Find your IP address

www.ipchicken.com
<http://www.privateinternetaccess.com/pages/whats-my-ip>

Smartphones at crime scene

Blackman, D. & Szewczyk, P. (2016) *The challenges of seizing and searching the contents of Wi-Fi devices for the modern investigator* available at <https://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1146&context=adf>

91

Bitcoin Transactions

Greenberg, A. (2022) *Tracers in the Dark*, Doubleday Publishing

Vinnik Case Study

Identifying Post On Bitcointalk Forum <http://archive.is/6cFcY>
DoJ Announcement on guilty plea <https://www.justice.gov/opa/pr/btc-e-operator-pleads-guilty-money-laundering-conspiracy>

Changes in cybercrime trends during Pandemic:

<https://rm.coe.int/presentation-fernando-miro-llinares-the-impact-of-covid-19-on-cybercri/1680a1e42f>
<https://aag-it.com/the-latest-cyber-crime-statistics/>
<https://www.itu.int/itu-d/reports/statistics/2021/11/15/internet-use/>

UK Information Commissioner's Report 2016

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/670219/IOCCO_annual_report_2016_2.PDF_p74

Technicum MAC Address Changer

<https://technitium.com/tmac/>

VPN bans

O'Driscoll, A. (2022) *Where are VPNs legal and where are they banned?*
<https://www.comparitech.com/vpn/where-are-vpns-legal-banned/>

WebRTC leaks

Vigderman, A. Turner, G. (2021) *WebRTC Leaks: A Complete Guide* <https://www.security.org/vpn/webrtc-leak/>

92

Your Browser Logs

(Enter in address bar of browser)

Google Chrome:

chrome://history/

(try this software utility:

https://www.nirsoft.net/utils/chrome_cache_view.html)

Microsoft Edge:

edge://history/all

edge://settings/siteData

Mozilla Firefox:

about:cache

about:cache?storage=memory

Ricin Dark Net case

Press Association (2015) *Breaking Bad fan jailed for trying to buy ricin* <https://www.theguardian.com/uk-news/2015/sep/18/breaking-bad-fan-jailed-over-ricin-plot>

BBC (2016) *Mohammed Ali: Breaking Bad ricin plotter's appeal turned down* <https://www.bbc.com/news/uk-england-merseyside-36483593>

Browser Fingerprinting

<https://webkay.robinlinus.com/>

<https://coveryourtracks.eff.org/>

93

Data Brokers

<https://www.databroker.global/community/people>

Rafter, D. (2021) *How data brokers find and sell your personal info* <https://us.norton.com/internetsecurity-privacy-how-data-brokers-find-and-sell-your-personal-info.html>

Internet of Things

Palmer, D. (2021) *Your insecure Internet of Things devices are putting everyone at risk of attack*

<https://www.zdnet.com/article/your-insecure-internet-of-things-devices-are-putting-everyone-at-risk-of-attack/>

Guo, E. (2022) *A Roomba recorded a woman on the toilet. How did screenshots end up on Facebook?*

<https://www.technologyreview.com/2022/12/19/1065306/roomba-irobot-robot-vacuums-artificial-intelligence-training-data-privacy/>

Stecklow, S. Cunningham, W. Jin, H. (2023) *Special Report: Tesla workers shared sensitive images recorded by customer cars*

<https://www.reuters.com/technology/tesla-workers-shared-sensitive-images-recorded-by-customer-cars-2023-04-06/>

Meta-Search Engines

Dogpile.com

Metacrawler.com

Wolframalpha.com

Metager.com

Ahmia.fi (also for .onion sites)

At your own risk:

Torproject.org

94



CONDUCTING FORENSIC ANALYSIS AT THE CRIME SCENE



Co-funded by
the European Union

Nina Tipura

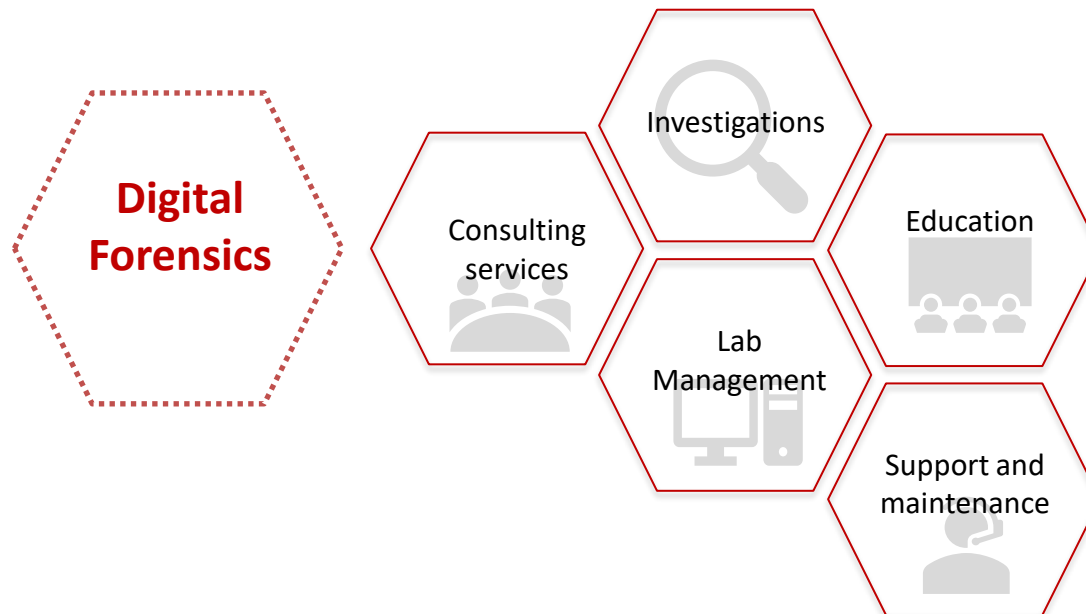
- FTS - B.Sc. IT
- Digital forensic consultant in INsig2 Ltd.



INsig2

- 🔗 Founded in 2004, Zagreb, Croatia
- 🔗 80+ highly educated employees
- 🔗 „One-stop-shop” in the field of Digital Forensics

We teach what we do!



Focus in business

Education and training in the field of Digital Forensics and Cybersecurity



E-learning platform

- ☞ Customized courses
- ☞ For legal entities, law enforcement, and private sectors
- ☞ Courses on deeper aspects of digital forensics and forensic value of the evidence while collecting, processing, and presenting digital evidence in criminal and administrative proceedings
- ☞ Website: <https://insig2-and-zyberglobal.learnworlds.com/>



Fundamentals of digital forensics for lawyers and judges

This course is intended for lawyers, judges and public prosecutors in order to help them understand the basics of digital forensics.



Fundamentals of digital forensics for private sector

This course is intended for various industry professionals working in private sector such as IT administrators, managers, IT security



Password Management

This course covers different lock security methods, guidelines on securely storing your passwords, various password managers and



Computer and mobile forensics

Computer forensics

- ☞ Branch of digital forensic science, focused on evidence found and recovered from computers and digital storage media, in legally admissible manner
- ☞ Importance of computer forensics today:
 - Vital for complex digital crimes
 - Supporting legal processes

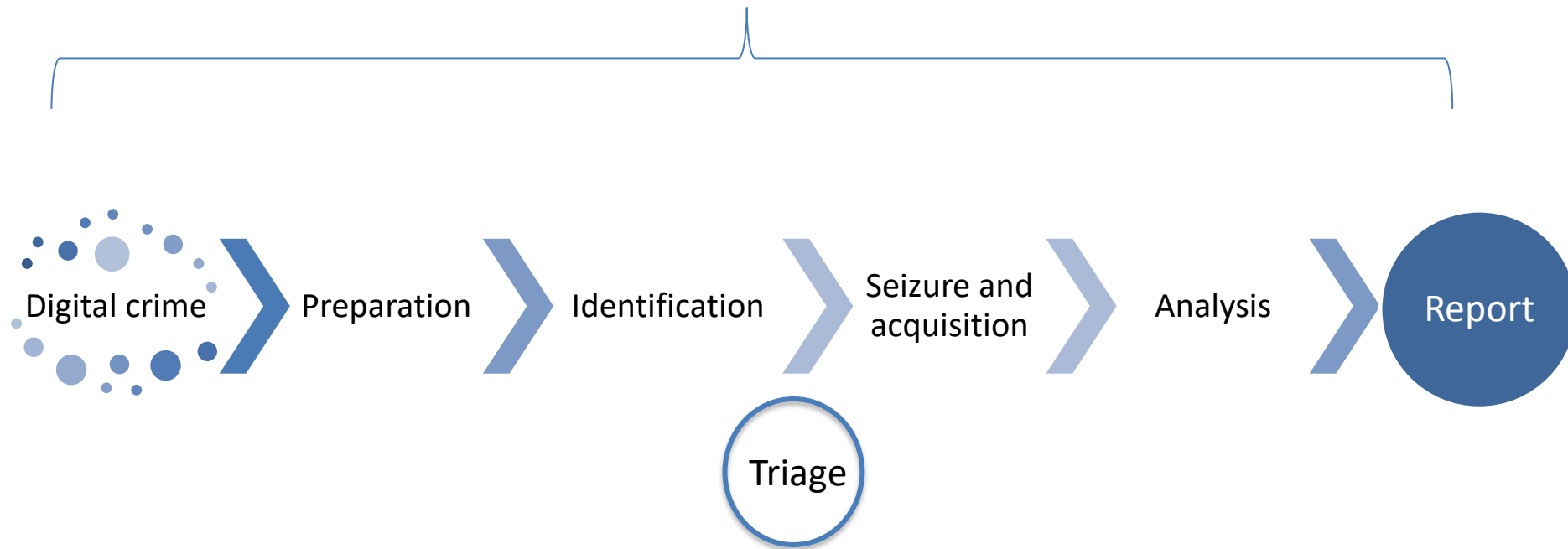




Mobile device forensics

- 🔗 Subcategory of digital forensics
 - process of recovering data from mobile devices
- 🔗 Fast-evolving field
- 🔗 Essential to investigations:
 - Mobile devices contain a wealth of evidence that can be used in any type of investigation
 - This data can be used to track down a suspect, understand a crime
 - **Often the only source of evidence and most common one**

Digital forensics



Procedures

- ☞ Standard Operating procedure(SOP)- Set of procedures to be followed when conducting an investigation
 - Steps to be taken during collection, handling, acquisition, analysis, and reporting
 - Repeating process
- ☞ Chain of Custody (CoC)- Chronological documentation that records the sequence of custody, control, transfer, analysis, and disposition of materials, including physical or electronic evidence

EVIDENCE	
Submitting Agency	_____
Date Collected	_____ Time _____
Item #	_____ Case # _____
Collected By	_____
Description of Evidence	_____
Location Where Collected	_____
Type of Offense	_____
CHAIN OF CUSTODY	
Rec. From	_____ By _____
Date	_____ Time _____
Rec. From	_____ By _____
Date	_____ Time _____
Rec. From	_____ By _____
Date	_____ Time _____

Preparation



🔗 Equipment considerations

- CAMERA, paper, pens, extension cables, Forensic Preview & Imaging tools (USB & CD), External Hard drive

🔗 Crime Scene

- Remove everyone from around the device – evidence
- If you find additional source of evidence, ask for warrant extension



🔗 Interviewing the suspect

*Prepare the questions depending on crime type





Triage of the crime scene



Triage - general procedure

Rule no.1

- If the device is off, leave it off

Rule no.2

- If the device is turned on, *it depends...*

Computer - general procedure

☞ When computer is off

- Check for attached devices and cables
- Pack it
- Transfer it to your lab

☞ When computer is on

- ☞ **If** the harmful process is in progress- turn it off
- ☞ Pack it
- ☞ Transfer it to your lab
- ☞ **If** not, you can start triage



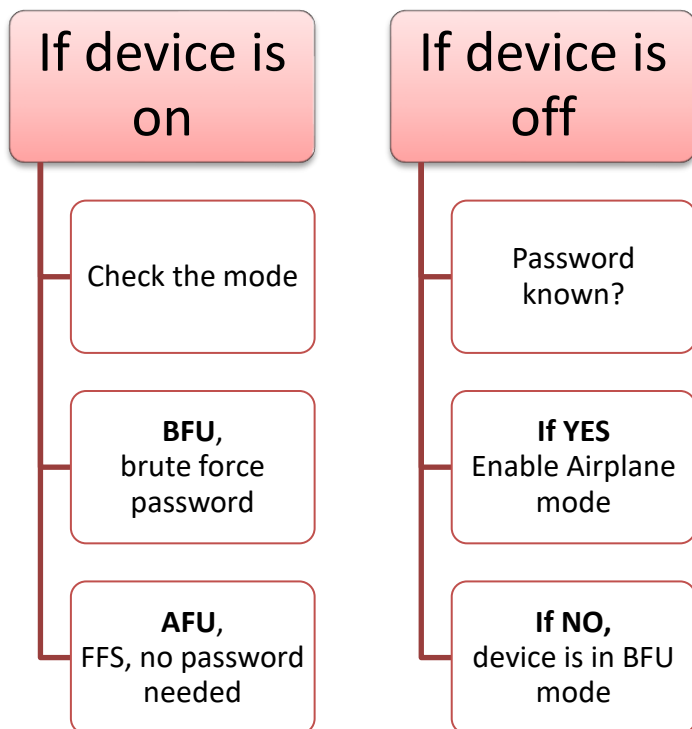
Triage - Computer access



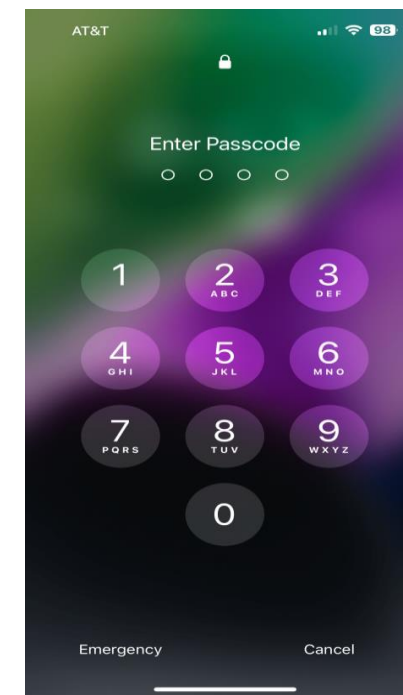
- Encryption
 - Password needed
- Tools available:
 - Detego
 - ADF
 - SUMURI PALADIN
 - ...

Triage- Mobile device access

🔗 When mobile device is on



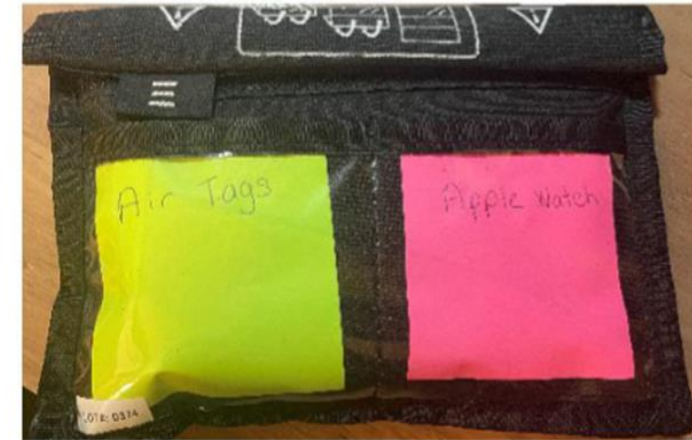
Iphone in BFU mode



Iphone in AFU mode

Mobile – general procedure

- When mobile device is unlocked
 - Airplane mode
 - Start triage process
 - Power source
 - Lock and screen settings
 - Isolate it
 - Why is so important
 - Pack it
 - Transfer it to your lab





Gathering digital evidence from live memory

Why care about live data?

- 🔗 Real-time insights
- 🔗 Some data can ONLY be found in RAM
 - Fileless malware
 - Volatile data





RAM artifacts analysis

- 🔗 Not always easy to analyze
 - Malware analysis
 - Passwords
 - Open connections
 - Unsaved files
 - Safe Browsing
 - Email and chat residue files
 - Users and their personal files
 - Pictures
 - Documents

Scripts in digital forensics

- ☞ *Most forensic tools are based on scripts*
- ☞ When do we need additional scripting?
 - When our main tools can't help anymore
 - When we deal with “hard” cases that require a lot of manual work
 - When we have to do a lot of repetitive actions on a large amount of data
- ☞ Automating the processes
 - Example: Magnet Automate tool
- ☞ Extremely important for OSINT investigations



Scripts in digital forensic

- 🔗 Example: <https://namechk.com/>
- 🔗 Under “usernames” you can check social media presence of a suspect
- 🔗 What you can get from this?
 - Contacts
 - Interests
 - Social media activities
- 🔗 *More sources will help you build stronger case*

Namechk

Domain Names ▾ Web Hosting ▾ Website Builders ▾ Name Generators ▾

CHECK OVER **30 DOMAINS**
AND MORE THAN **90 SOCIAL MEDIA ACCOUNTS**

Search





Digital forensic labs



Digital forensic labs

- ☞ Secure environment with specialized equipment for DF observation
- ☞ Essential for forensic investigations because of:
 - Crime investigations
 - Support for various cases
 - Data preservation
 - Legal Compliance

Digital forensic labs

🔗 Essential equipment for a Digital Forensic Lab

- Forensic workstations
- Imaging tools
- Forensic software
- Data Recovery Tools
- Digital evidence storage
- Training and documentation materials



Computer forensic lab



Mobile forensics lab



Conclusion

- Tools and techniques in DF evolve faster than ever before, but..
Digital crime as well



Thank you for attention!

Questions are warmly welcomed



www.linkedin.com/company/insig2
www.linkedin.com/nina-tipura



https://x.com/insig2_ltd



info@insig2.com



www.insig2.com

 **YouTube** <https://goo.gl/53FHRo>

 nina.tipura@insig2.com



AI AND CRIMINAL DEFENCE - FRIEND OR FOE?

A brief overview of the different AI applications with their risks and chances in collecting

#Digitalisation and #AI
in Criminal Justice

Lisbon, 26th – 27th September 2024

Mirjam Steinfeld, MBA, CFE
Attorney at Law | Salary Partner
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26th September 2024



AGENDA

- 1 Introduction**
- 2 What is AI?**
- 3 Legal Framework**
- 4 Application by Lawyers**
 - (1) Friend**
 - (2) Foe**
- 5 Application by Law Enforcement**
 - (1) Friend**
 - (2) Foe**
- 6 Conclusion**

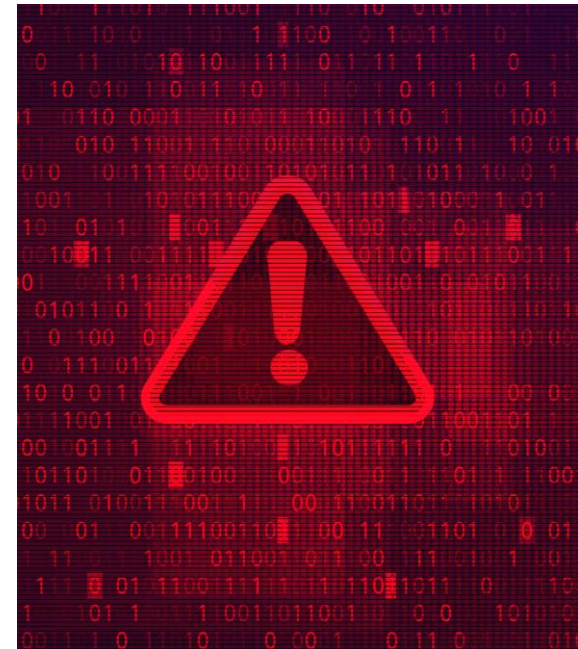
A watercolor illustration of a suspension bridge spanning a city. The bridge has two tall towers and numerous cables. The city below is depicted with various buildings and trees in shades of blue, green, and purple. A large, bright orange and yellow sun is in the sky, partially obscured by a semi-transparent white horizontal band. The word "Introduction" is written in bold black text across the center of the image, within the white band.

Introduction

1. INTRODUCTION

Disclaimer

- No specific recommendations neither on usage nor on products or services.
- National professional codes must be regarded.
- National Privacy Laws must be observed.
- National markets and quality of services may vary due to languages.



1. INTRODUCTION

Goal of this presentation

- Clarify what AI can and cannot do
- Share use cases for lawyers and law enforcement
- Discuss pitfalls and chances of implementing AI
- Discuss legal framework of implementing AI
- Share best practices
- Outlook on future developments





What is AI?

2. WHAT IS AI?

Common (mis)conception



VS.



2. WHAT IS AI?

Definitions

- Human Intelligence: is what the test tests (...), until further scientific observation allows us to extend the definition.
- Artificial Intelligence (AI): refers to the use of digital technology to create systems that are capable of performing tasks commonly thought to require intelligence.
- Machine learning: is variously characterized as either a sub field of AI or a separate field, and refers to the development of digital systems that improve their performance on a given task over time through experience.
- Deep learning: is a subset of machine learning methods based on neural networks with representation learning.



2. WHAT IS AI?

History (highly curated overview)

- 1763** [Bayes' theorem](#) and later Bayesian Networks

- 1942** Isaac Asimov: „[The Three Laws of Asimov](#)“ in Runaround

- 1950** Alan Turing: „[Computing Machinery and Intelligence](#)“
=> Turing Test

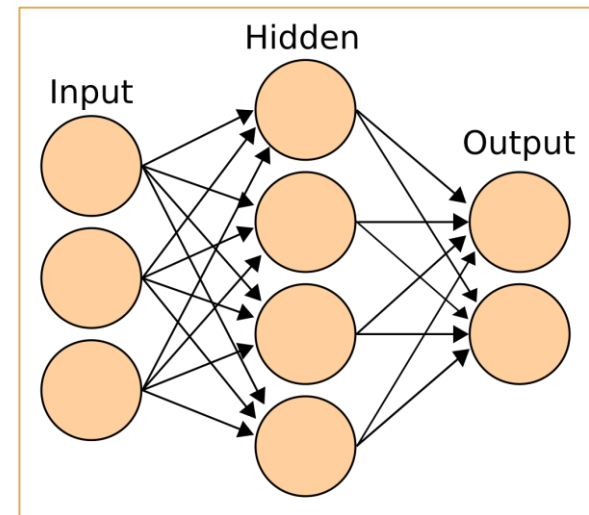
- 1956** [Proposal](#) for Dartmouth Summer Project

- 1965** [Moore's Law](#): the number of transistors in an integrated circuit (IC) doubles about every two years (later computational power)

- 1997** [Deep Blue](#)'s win against Garry Kasparov on the second occasion.

- 2016** [AlphaGo](#) beat Lee Sedol in GO (Monte Carlo tree search algorithm)

- 2022** [ChatGPT](#) is a generative artificial intelligence chatbot based on a LLM



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<https://commons.wikimedia.org/w/index.php?curid=1496812>

2. WHAT IS AI?

Applications of AI

AI	Application
Natural Language Processing (NLP) and Large Language Models (LLM): focus on the interaction between computers and humans through natural language.	language translation, text and sentiment analysis, chatbots.
Computer Vision: This branch deals with enabling machines to interpret and make decisions based on visual data from the world.	image and video recognition, facial recognition, autonomous vehicles
Expert Systems: These are AI systems that emulate the decision-making ability of a human expert.	medical diagnosis, financial services, and customer support
Speech Recognition: This branch focuses on converting spoken language into text.	virtual assistants, transcription services, and voice-controlled devices
Recommender Systems: These systems provide personalized recommendations to users based on their preferences and behavior.	movie recommendations, product recommendations
Generative AI: can create new content, such as text, images, music, or even code, based on the data it has been trained on; generative AI can produce original outputs.	creative fields (like art and music), content creation (writing articles or generating code), scientific research (like drug discovery).

A watercolor illustration of a suspension bridge spanning a city. The bridge has two tall towers and numerous cables. The city below is depicted with various buildings and trees in shades of green, blue, and purple. A large, bright orange sun is positioned in the upper center of the background, casting a warm glow over the scene. The overall style is artistic and soft, with visible brushstrokes and a blended color palette.

Legal Framework

3. LEGAL FRAMEWORK

Artificial Intelligence Act (AIA or AI Act)

- **12th July 2024** : AI Act is published in the Official Journal of the European Union
- **Art. 3** : Definitions of „provider“ (≈ developer), „deployer“ (≈ User as in implementing), etc.
- **Art. 5 : Prohibited AI practices** (Unacceptable Risk)
- **Art. 6 : Classification High Risk AI** i.e. applications for Law enforcement (Art. 6 (2) + Annex III).
- **Article 14 : Human oversight** *“High-risk AI systems shall be designed and developed in such a way, including with appropriate human-machine interface tools, that they can be effectively overseen by natural persons during the period in which they are in use.”*
- **Art. 27 : Fundamental rights impact assessment for high-risk AI systems**
Assessment Requirement: Before deploying a high-risk AI system, public bodies and private entities providing public services must assess the potential impact on fundamental rights.
- **Art. 113** : Applicability: Generally after 24 months (08/2026), Exceptions: 6 months for Prohibited systems; 12 months GPAI, Governance and 36 months for High Risk AI systems

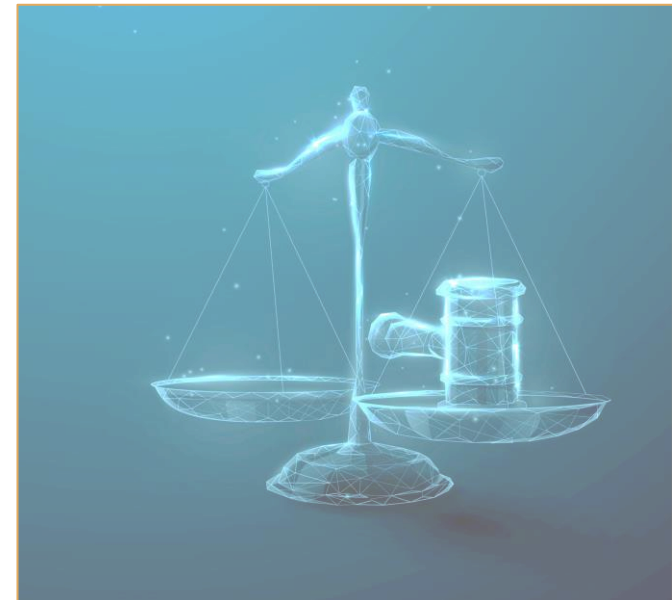
3. LEGAL FRAMEWORK

GDPR

▪ **Art. 22 (1) GDPR**

The data subject shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.

- Again human oversight and control is provisioned by the law!
- Transparency toward the subject.



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Application by Lawyers

4. APPLICATION BY LAWYERS

Friend

Problem	Help
<p>Large volume cases: For the defence, or internal investigations or any other task that requires the handling and analysis of big volumes of data.</p>	<p>NLP and LLM: There are several options on the markets already and plenty of law firms are developing their white label solutions for their national market</p>
<p>Advocatus diaboli: If only there was a way to have someone read through the statement and find the weak spots.</p>	<p>LLM and GenAI: Proof reading beyond simple spell check is possible and already offered by some companies.</p>
<p>(Legal) Searches: Try finding that one judgement of the High Court for Labour Law on criminal liability if you don't remember any details...</p>	<p>NLP and LLM: Be it through general LLMs on the market or perhaps a solution that is integrated into a legal database, it's a good place to start.</p>
<p>Graphics: an image says more than a thousand words, particularly when describing the role of the defendant in that VAT-Carousel involving 24 actors.</p>	<p>LLM and GenAI: Through the use of so-called text-to-image AI, GenAI can create images to mirror a given text.</p>
<p>Standards: Requesting case files, requesting a deadline extension, etc.</p>	<p>LLM and GenAI: With short prompts entire letters can be written to match the prompts intentions.</p>

4. APPLICATION BY LAWYERS

Foe

All applications of AI need

- **human supervision** and human quality control before products are released.
- Oversight by a **qualified person** in the subject matter.

If not properly supervised AI may

- produce sources and information contrary to reality (**hallucinations**).
- give answers correctly corresponding to **laymen terms** but not to legal terminology.
- produce results that reflect the **bias** of the training data.



A watercolor illustration of a suspension bridge spanning across a city. The bridge has two tall towers and numerous cables. The city below is depicted with various buildings and trees in shades of green, blue, and purple. A large, bright orange sun is positioned in the upper left, casting a warm glow over the scene. The overall style is artistic and soft, with visible brushstrokes and a semi-transparent white overlay across the center.

Application by Law Enforcement

5. APPLICATION BY LAW ENFORCEMENT

Friend

- Image recognition
 - i.e. CSAM
- File analysis
 - i.e. specific searches, verifications and relationships
- Probing of assumptions and hypothesis
- Preventive police action
 - i.e. customs checking freight containers for hazardous goods



5. APPLICATION BY LAW ENFORCEMENT

Foe

- Slippery slope to **mass surveillance**.
- Danger to **National Security** and Integrity if neither hard- nor software is produced in the EU.
- Use of **Deepfakes** as a trick by Law Enforcement.
- Perpetuation of **bias** with even less control.
- **Self-fulfilling prophecies**, i.e. predictive policing



A watercolor illustration of a suspension bridge spanning a city. The bridge has two tall towers and numerous cables. The city below is depicted with various buildings and trees in shades of green, blue, and purple. A large, bright orange sun is positioned in the upper center of the scene, casting a warm glow over the entire landscape. The word "Conclusion" is written in a bold, black, sans-serif font across the middle of the image, centered horizontally and partially overlapping the bridge and the city.

Conclusion

6. CONCLUSION

Best Practice

- **AI is a tool** and should therefore be regarded, placed and supervised as such.
- AI ist best regarded as the **first year Trainees** that are able to handle matters by themselves if given clear instructions but surely should not be left to their own device.
- Any use of AI within a professional context should only occur after a top to bottom evaluation resulting in a **AI-Policy** that lays out when, how and what kind of AI may be used within a law firm or institution.



6. CONCLUSION

Outlook

Tipping the scales

- in favour of shallow pockets regarding the financial burden of high-volume cases, quality control and more
- in favour of resources for all parties, acting as an equaliser to mass data, expert knowledge etc.

Requiring

- continued professional education to keep up with the possibilities and limits of new (and old) technologies.
- broad societal effort to ensure that the models, their training data will be and remain to be transparent.





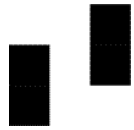
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Thank you for your kind attention!

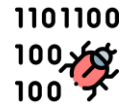
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ZLATI
Cyber & Criminal Law

Handling electronic evidence in courts



Lisbon, 26-27 September 2024



Co-funded by
the European Union





George M.R. ZLATI (me)



■ Defence lawyer

- Cybercrime
- Blockchain technology
- Digital evidence

■ ■ Intro



The landscape has changed drastically in the last 5 years

- New opportunities for perpetrators
- New challenges for lawyers, prosecutors, and judges
- Technology is evolving faster than legislation and it becomes harder to keep pace





New trends & modi operandi

- Smart contract manipulation (see Annex 1)
- Fraudulent smart contract drainers (see Annex 2)
- Phishing regarding seed phrases (see Annex 3)
- Counterfeiting crypto tokens (see Annex 4)
- Business email compromise (see Annex 5)
- Investment frauds using caller-id spoofing (see Annex 6)
- Offline debit card transactions (see Annex 7)
- Fake crypto giveaways (see Annex 8)
- Remote access & bank loan misappropriation (see Annex 9)



New trends in investigations

- **On-chain analysis:** *mixers/tumblers* (obfuscates crypto transactions) and *bridges* (swapping between different blockchains)
- **(AI) Bots** used to „scam“ the scammers
- **Cannery tokens** used to retrieve IP addresses

More obscure means of collecting evidence

- **OSINT:** retrieving information from data breaches from the dark web without a warrant
- **Scraping data** from the Internet as mass surveillance

Chain of custody



Source
(collection)



Movement
(handling & storage)



Destination
(presentation in court)

Documentation



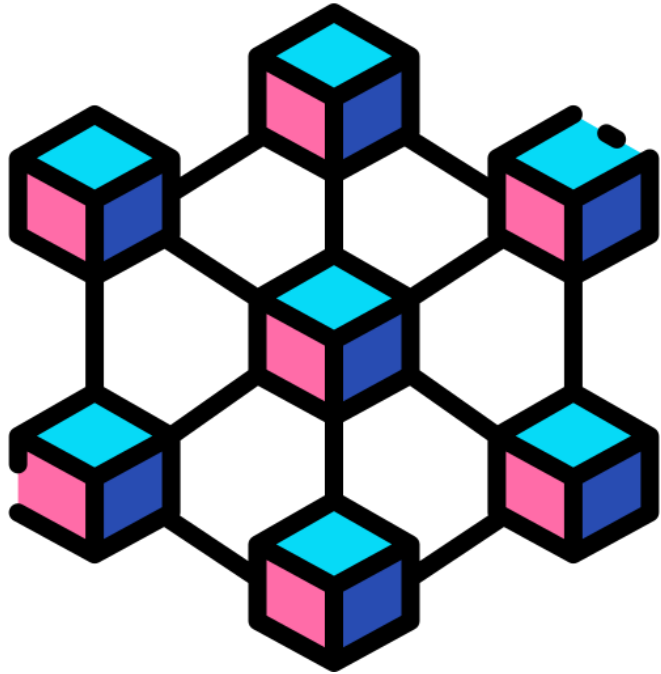
- Check if the device stores volatile (e.g. most printers) or non-volatile data
- If data is volatile, live forensic/acquisition must be used



- Make a forensic bit-stream image (clone) before searching/extracting data
 - Physical (unallocated space) vs. logical acquisition (less data)
- Bit-stream image should be sealed after search and seizure or access to an information system is completed
- In some cases, creating a bit-stream image is not feasible (e.g. smartphones)
 - For CDs & DVDs is not even necessary



- **Hashing** (MD5, SHA-256, etc.) is one of the most important steps in digital forensics
 - digital “fingerprint” for files, partitions, etc.
- **Hash values** can also be used to search for malware or child pornography



- **Lack of documentation** regarding on-chain analysis
- **On-chain analysis reports** with conclusions based on probabilities without sufficient explanations



Principle of transparency

- AI use **disclosure**
- Use of dark web data breaches **disclosure**
 - The most relevant OSINT tools are scanning the dark web for data breaches
 - It can be a crime to acquire (download/buy) sensitive information from data breaches
 - Should you have a warrant for OSINT?
- Live data breaches (e.g. public APIs) **disclosure**

■ ■ Methods of presentation

Relying on experts

- In complex cases, judges must rely on experts
- **It's impossible to know every detail about e-evidence**
 - Difference between „**deleting data**“ (data is not lost) and **wiping data** (data is overwritten)
 - Difference between **HDD** (magnetic storage) and **SSD** (flash memory; *trim* command)
 - Difference between **volatile data** (persistent) and **non-volatile data** (lost when power is turned off)
 - Difference between **M(odify)A(ccess)C(reation)** metadata on Windows, Linux, etc.
 - Difference between **user activity** (accessing child pornography) and **system activity** (antivirus scanning)
 - Relevance of **touch command** in Linux
 - Relevance of **hiberfil.sys** (content of RAM), **pagefile.sys** (hibernation, system crash, forced shutdown), **volume shadow copies** (snapshots of the file system from the past), **registry hives** (e.g. user activity)
 - Relevance of **thumbnail.db** (even if the files were deleted/wiped), **IconCache.db** (recently used apps), **jump lists** (recently open files), **shellbags** (what folders were accessed)
- **Trust... but verify!**

Linux terminal

```
livecd nfs #  
livecd nfs # hexdump  
image.dd          root.dd          testdisk.log      testdisk_static  
livecd nfs # hexdump  
image.dd          root.dd          testdisk.log      testdisk_static  
livecd nfs # hexdump  
image.dd          root.dd          testdisk.log      testdisk_static  
livecd nfs # hexdump -C /dev/sd  
sda sda1 sda2 sda3 sdb sdb1  
livecd nfs # hexdump -C /dev/s  
sda sda1 sda2 sda3 sdb sdb1  
livecd nfs # hexdump -C /dev/sda3  
00000000  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  |.....|  
^C  
livecd nfs # hexdump -C /dev/sda3 Inore
```

Experiment

```
$ sudo hexdump -C /dev/sda3 | head  
00000000  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  |.....|  
00000010  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  |.....|  
...  
00000400  53 ef 01 00 02 00 00 00 e0 00 00 00 02 00 00 00  |S.....|
```

Client accused of **deleting the sda3 partition**

- the expert used the **hexdump command** to display the content in a hexadecimal format
- the expert **interrupted the process** by using control + c in the terminal (see ^C)
- on a Linux ext4 file system **the first 1024 bytes can be zeros**
- the expert did not create a bit-stream image
- the expert did not *mount* the partition in read-only to check for content



Principle of virtualisation

- **Any raw data should be presented to the court in a friendly „user interface“**
- Recreations of digital crime scenes → demonstrative exhibits
- Displaying digital evidence in court → screen projections

”



A number of 161 thumbnail images identified on partition 2 in the profile of user "John", the path "Users\John\AppData\Local\Microsoft\Windows\Explorer" in files named thumbcache_768.db, thumbcache_1280.db. The thumbcache files are created by Windows Explorer when accessing folders on the disk and represent a cache image of the image files within the accessed folder.

Court-appointed expert in the criminal trial



”



Location

AppData > Local > Microsoft > Windows > Explorer

Thumbnail size



Name	Date modified
thumbcache_1280.db	03/06/2022 14:11
thumbcache_2560.db	03/06/2022 12:45
thumbcache_96.db	03/06/2022 09:32
thumbcache_768.db	02/06/2022 17:18
thumbcache_48.db	02/06/2022 13:47
thumbcache_idx.db	02/06/2022 13:36
thumbcache_16.db	01/06/2022 20:05
thumbcache_32.db	01/06/2022 20:05
thumbcache_256.db	01/06/2022 20:05
thumbcache_1920.db	01/06/2022 20:05
thumbcache_custom_stream.db	01/06/2022 20:05
thumbcache_exif.db	01/06/2022 20:05
thumbcache_sr.db	01/06/2022 20:05
thumbcache_wide.db	01/06/2022 20:05
thumbcache_wide_alternate.db	01/06/2022 20:05

Thumbcache Viewer

#	Filename	Cache Entry Offset	Cache Entry Size	Data Offset	Data Size	Data Checksum	Header Checksum	Cache Entry Hash
13	18378357dd98078a.jpg	1908182 B						7dd98078a
14	4e4f52aa03988fcd.jpg	1912670 B						a03988fcd
15	3931230ec3c646e1.png	1917158 B						ec3c646e1
16	dc0b947b3eb1e43a.png	2147216 B						7b3eb1e43a
17	165c2de21f566cb6.png	21566cb6						21f566cb6
18	48c3d29e60b1fa4f.png	21566cb6						c60b1fa4f
19	872fe19a1.jpg	3106178 B						7211857d2
20	ba5d7dd6.png	3165126 B						549fef19a1
21	a45d57988.png	3311334 B						3f96f7dd6
22	b3d57988.png	3621888 B						15aa157988
23	b57988.png	4065778 B						d66b014c19
24	283425a6f.png	4213244 B						944325a6f
25	b8a6a6bada1b6e66.jpg	4213244 B						bada1b6e66
26	8d6e55bd7ffdd627.jpg	4557104 B						d7ffdd627
27	b451f97cd74ee617.png	4866076 B						cd74ee617
28	a4fda6e74b28a67d.jpg	5407468 B						74b28a67d
29	dad888e1ede7561c.jpg	5600032 B						e1ede7561c
30	316a439e36e403ae.jpg	5899202 B						e36e403ae
31	46698a0b2c69e98e.jpg	6091766 B						b2c69e98e
32	d51f1e255207f79a.jpg	6390936 B						55207f79a
33	6861f1301ca9a11d.jpg	6753220 B						01ca9a11d
34	c00ab0cef62fdee.png	7115504 B						cef62fdee
35	1c95e39693a8a89b.jpg	7492708 B						693a8a89b
36	3bff62c5707ac5f0.jpg	7854992 B						707ac5f0
37	d9419947a40b9004.png	8033494 B						7a40b9004
38	b35f9102edbb3af0.png	8512534 B						02edbb3af0
39	d996cc804ffeda7.jpg	9060368 B						0d996cc804ffeda7
40	35702a2d8ead7835.jpg	9422648 B						35702a2d8ead7835

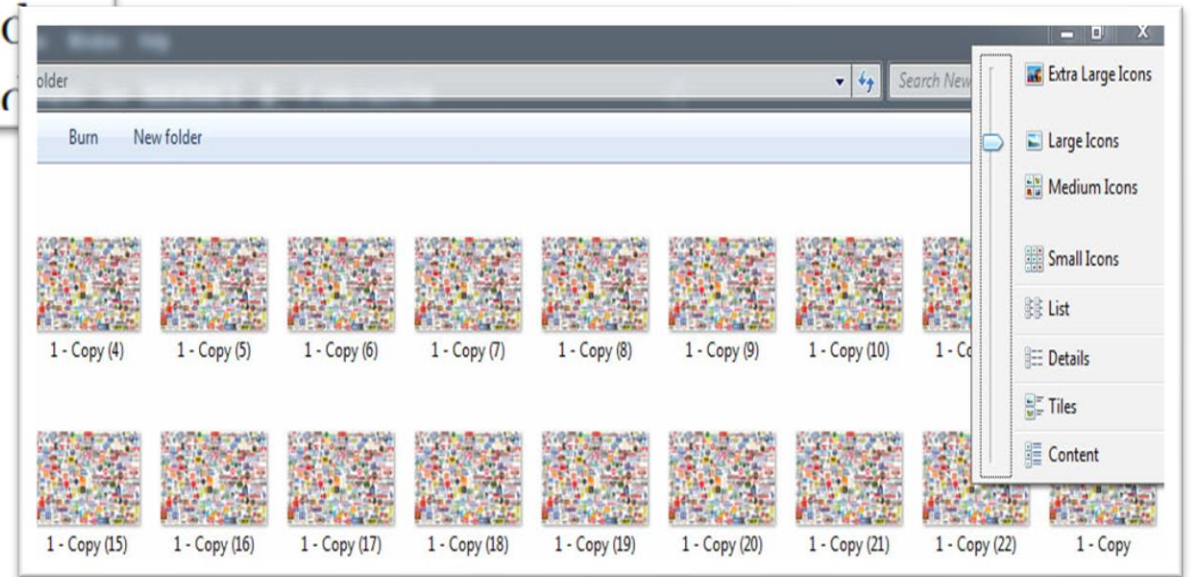
b8a6a6bada1b6e66.jpg - 960x1280

Cache Entry Size	Data Offset	Data Size	Data Checksum	Header Checksum	Cache Entry Hash
354 KB	8512022 B	354 KB	d53cab093a1ca0c5	94b30607aa730d89	d5319102edbb3af0
353 KB	9060454 B	353 KB	1258d0c3a0fd8ad9	1b575a521abde4d6	0d996cc804ffeda7
387 KB	9422736 B	387 KB	3989128bee42ba0f	aa07a5f2901b08c0	35702a2d8ead7835



folder with multiple pages, each corresponding to an item in the directory. Viewing a directory icon may trigger thumbnail creation for files within the directory without the user previewing them directly. Additionally, entries are created for files on removable media in the centralised

*S. McKeown, G. Russel, P. Leimich, Fast Forensic Triage Using Centralised Thumbnail Caches on Windows Operating Systems, in Journal of Digital Forensics, Security and Law, vol. 14, no. 3/2019

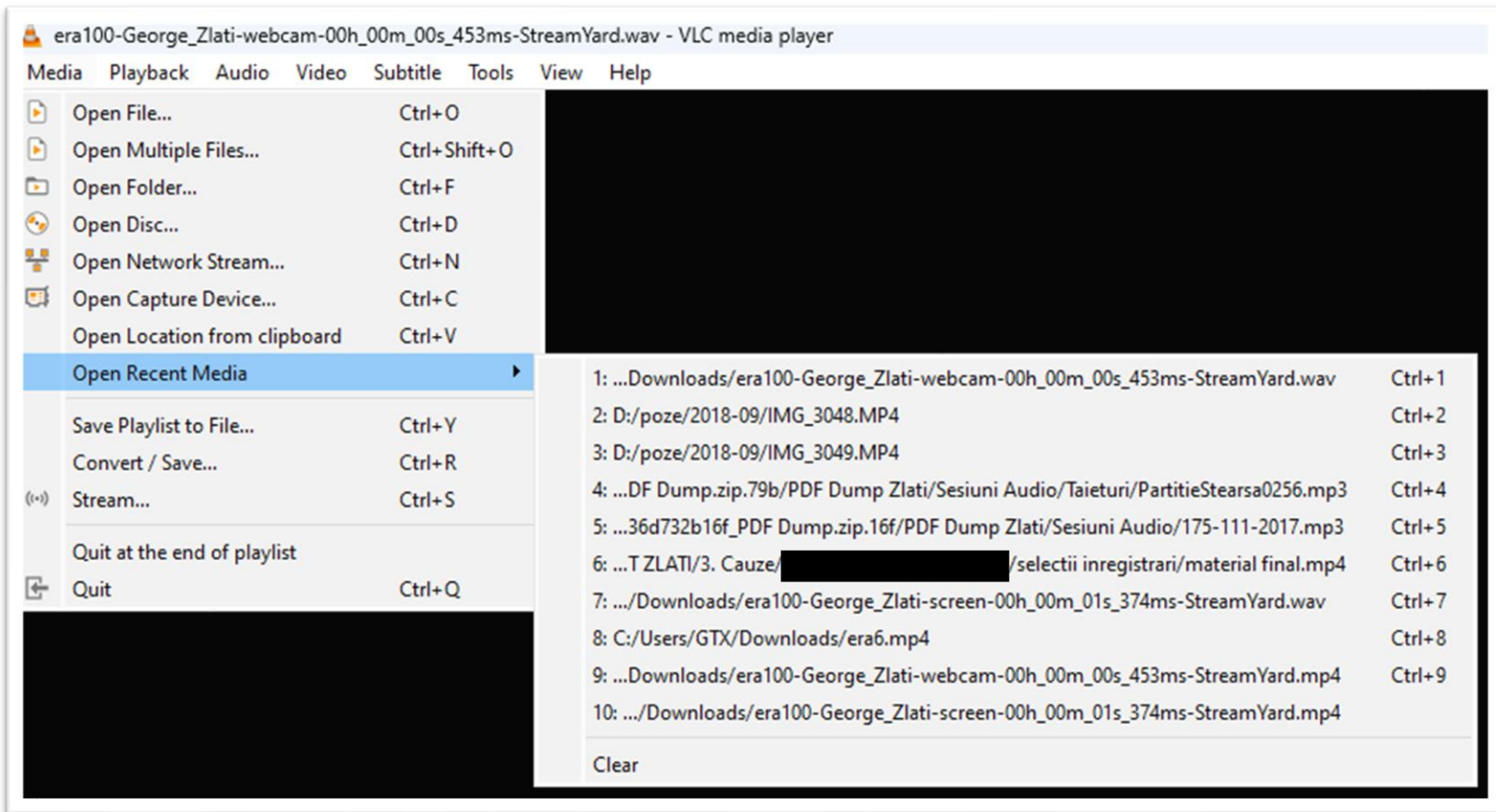




Searches were conducted in the file system for the name 'Tropical Cuties Adry HC 008.MTS', and **a JUMP LIST artifact was identified** (AutomaticDestinations stores entries automatically generated by the Windows operating system when a user launches an application, accesses a file, or interacts with File Explorer). Each file is named with an application ID value, followed by 'automaticDestinations-ms', indicating that on the date of 30.05.2021 at 16:15:17 UTC (19:15:17 local time) in the path 'D:\New folder\New folder\Andry Pack', there existed a jpg file named 'Tropical Cuties Adry HC 008.MTS.JPG'

Court-appointed expert in the criminal trial





Jump list (previous accessed files) on VLC player

Forensic environment

App ID	Potential App Name	Linked Path
9fda41b86ddcf1db	VLC 0.5.3 / 0.8.6i / 0.9.7 / 1.1.11	D:\New folder\New folder\ADULT dealer part 2\магазин бананов\Phthc (Hussyfan) (Kingpass) (Vicky) (Lordoftheri.mp4
9fda41b86ddcf1db	VLC 0.5.3 / 0.8.6i / 0.9.7 / 1.1.11	D:\New folder\New folder\webcams\4bb9dd1964964a412f08cf0be048787a - girl lesbian omg_full oral pthc.mpg
9fda41b86ddcf1db	VLC 0.5.3 / 0.8.6i / 0.9.7 / 1.1.11	D:\New folder\New folder\webcams\4d1cb8aed51cba00b8a57855ba3e3b23 - girl pthc masturbation sound webcam.wmv
a52b0784bd667468	Photos Microsoft (Windows 10)	D:\New folder\New folder\webcams\512e61d1a6c17a627d3f38a9af5ce6ae - bestiality dog girl oral pthc webcam_preview.png

■ ■ Emails



- ❑ **Do not rely solely on email screenshots & PDF prints**
 - You cannot analyse any metadata
 - You cannot check for email spoofing
- ❑ **Always retrieve the header & source code of the email**

Scenario

- The accused worked for an NGO & used the email office@ngo.com
- After he got fired from the NGO, several partners informed the NGO representatives that they received emails from office@ngo.com signed by the accused
- The email service provider could not provide any logs that could prove that the accused sent those emails or that there was an access to that email account
- The accused was sent to trial for illegal access to a computer/information system

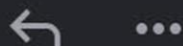


The expression 'the email was sent using the email address office@ngo.com' is incorrect, and **the correct expression is 'an email was sent in which the sender appeared as office@ngo.com'**

Court-appointed expert in the criminal trial



Laviero Buono 16:48



to contact ^

From Laviero Buono lbuono@era.int

To contact@zlati.legal

Date 3 Jun 2023 at 16:48



Standard encryption (TLS)

[Learn more](#)

Hello George,

My name is Laviero and I want to give you 100 bitcoin. Just access the link to claim your BTC.

*this is an example of e-mail spoofing. There was no intent to produce any legal consequences.



Knock Knock

1 message

Laviero Buono <lbuono@era.int>

Sat, Jun 3, 2023 at 4:07 PM

To: contact@zlati.legal




Hello George,


My name is Laviero and I want to give you 100 bitcoin. Just access the link to claim your BTC.

*this is an example of e-mail spoofing. There was no intent to produce any legal consequences.



Original Message

Message ID	<63dbef7da6ba82a8fe41e1a5d521bb04@era.int>
Created at:	Sat, Jun 3, 2023 at 4:07 PM (Delivered after 2465 seconds)
From:	Laviero Buono <lbuono@era.int> 
To:	contact@zlati.legal
Subject:	Knock Knock
SPF:	FAIL with IP 45.67.  Learn more  Sender policy framework fail
DKIM:	'PASS' with domain zlati.legal Learn more

[Download Original](#) 

**Open in an email client
Download .eml file**

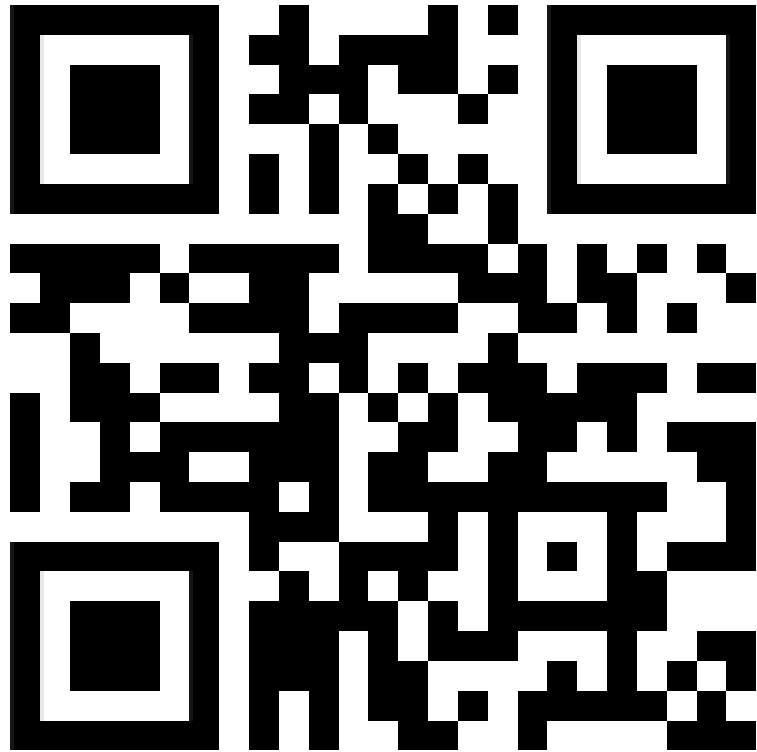
[Copy to clipboard](#)







SPF – sender policy framework


- It checks if the sending IP is authorized to send emails on behalf of the domain.
- In this case the email failed SPF because the sending IP is not listed as an authorized sender for the domain era.int



-  Copy/paste the header
-  Check the results

Received: by 2002:a0c:e60b:0:b0:626:29e6:8036 with SMTP id z11csp1784387qvm;
Sat, 3 Jun 2023 06:48:42 -0700 (PDT)
X-Google-Smtp-Source: ACHHUZ6ci7deXQ74KFEVegdwXyunEdY4U+PCYntWZIrJMN9yAak/ejM2DIPXEGzvEL8HdLhh+YtX
X-Received: by 2002:a17:907:320a:b0:974:e755:9fde with SMTP id xg10-20020a170907320a00b00974e7559fdemr1388498ejb.19.1685800122565;
Sat, 03 Jun 2023 06:48:42 -0700 (PDT)
ARC-Seal: i=1; a=rsa-sha256; t=1685800122; cv=none;
d=google.com; s=arc-20160816;
b=S/7NqisviuuR5SXuxCV+pj53XN5if1sFDeC4yiX5FBUq0iCxt6IXZJURcRfDmHLU0u
be0d2aBJLMmPI28vOVUJicPaM+7u0BMq3RGyNEirrNl02udf091VlraF1MunzWuJLVdl
sNqhRYkeTXIIP21HBapSvZ/i3JTzC29cosKBz90jNxgrm93sJnxgRunhZtt9p59oKXHP
kl//8Rc0zu889EfrUTDhkhIGw1+4FrDoINSXqqahoKrTRNe3PMYIRdF/GQvh+dMTVQXv
esQiYIj0IcxxqcaJICyI9WMOdm/d+F1fW5UZ/ZnQMhTc1hS+HJrG4BTIO0gcuUrXkUyo
ojIQ==
ARC-Message-Signature: i=1; a=rsa-sha256; c=relaxed/relaxed; d=google.com; s=arc-20160816;
h=content-transfer-encoding:message-id:user-agent:subject:to:from
:date:mime-version:dkim-signature:dkim-signature;
bh=6tWOUSlnQZ3aenX4CvAtgbzyCciEXm2FyZJpQuWRg08=;
b=lfKDiyC1h/GbhvRvkhoZ5oeuso9IN6zIKc2XYdb6KDdN/K4xymu5whQbz2amXEvhpu
wEoAPj5s8fRk+IC7y4PV1DfMEEJZvCKdFbc0Fv2CMGocFWvMh3SWJ2R+1FCcxcVH4F2M
7JKIlejppqfnj8Td240tqu3SEdgDYkBI9+34cHak1lFeZSzmMhc1KKp0i5nNvn49e1l4I
nR57rpXzRxHA4yE5Mmp+CY170UAppqa56fW2crrfTNpfr76Mq0rRiYQGQidUemWH5G7z
mdd4SU6M3HAXnyVsDnV1EMeYKkcejwg331KXGpydu7bActhkicf001dS4FbMMG5d3WXH
lbHw==
ARC-Authentication-Results: i=1; mx.google.com;
dkim=pass header.i=@zlati.legal header.s=default header.b=gzJ9tg7i;
dkim=pass header.i=@penalmente.eu header.s=default header.b=Lap0xJj3;
spf=fail (google.com: domain of lbuono@era.int does not designate 45.67. [redacted] as permitted sender)
smtp.mailfrom=lbuono@era.int
Return-Path: <lbuono@era.int>

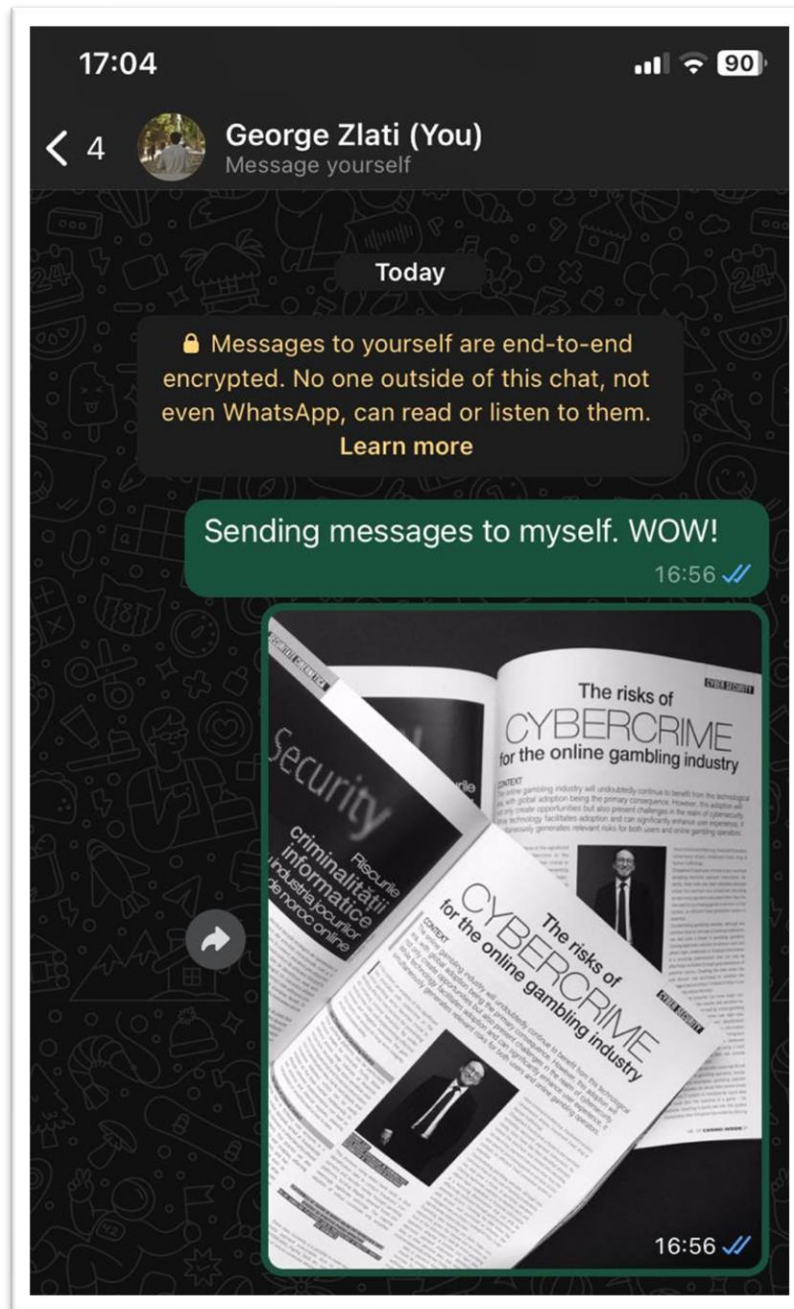


- 
- **You can** have a PDF print and/or a screenshot in the case file → *virtualisation principle*
 - **Always** retrieve the .eml file and/or the header/source code of the original email → *raw data*
 - **Ask the victim to provide the .eml file and the header/source code fo the original email**

WhatsApp printscreens



- Why is this image not helpful?
- What is the proper way to present the evidence?



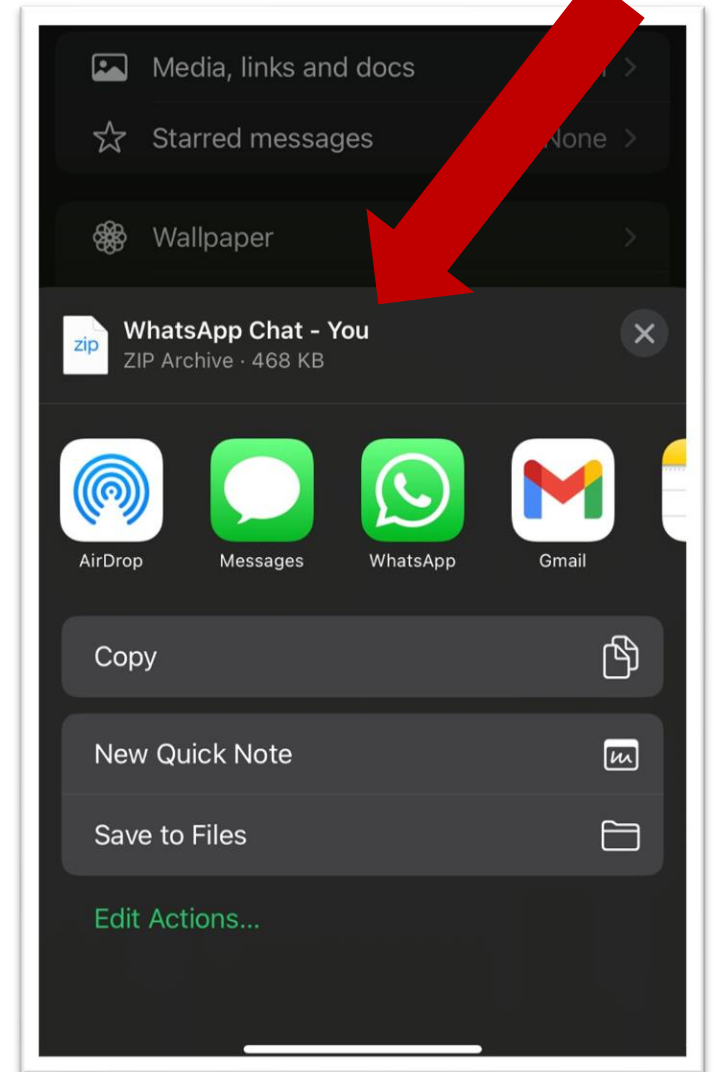
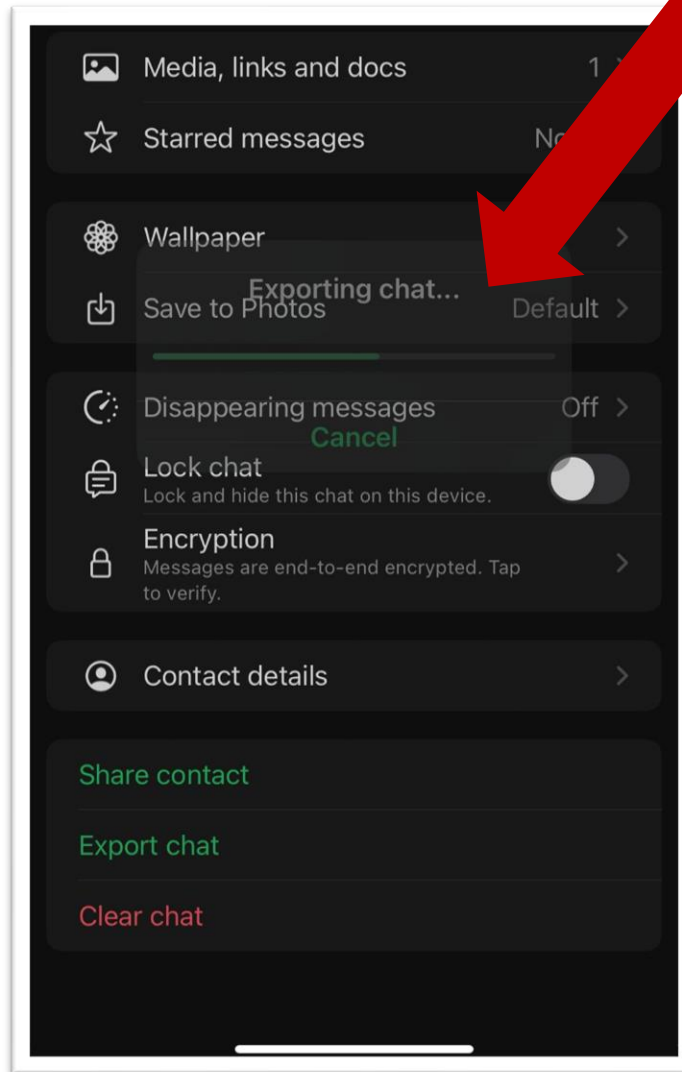
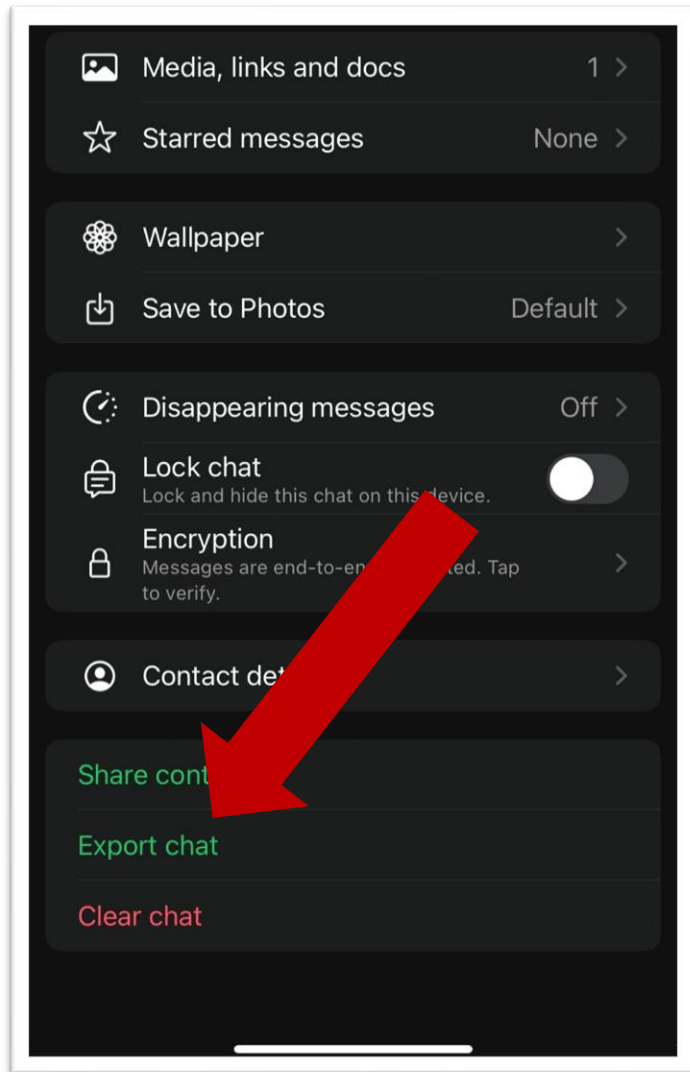
The problem

- Incomplete timestamp
- No phone number
- It shows only part of the sent images (gallery view)
- You cannot check EXIF data (images metadata)



The solution

- Export the WhatsApp conversation



1

Name	Date modified	Type	Size
WhatsApp Chat - You	9/22/2024 5:07 PM	Compressed (zipp...	458 KB

2

Name	Type	Compressed size	Password ...
_chat	TXT File	1 KB	No
00000003-PHOTO-2024-09-22-16-56-48	JPG File	457 KB	No

_chat.txt - Notepad

File Edit Format View Help

A new version of Notepad is available. [Install](#)

3

```
[22.09.2024, 16:56:37] You: Messages to yourself are end-to-end encrypted. No one outside of this chat, not even WhatsApp, can read or listen to them.
[22.09.2024, 16:56:37] George Zlati: Sending messages to myself. WOW!
[22.09.2024, 16:56:49] George Zlati: <attached: 00000003-PHOTO-2024-09-22-16-56-48.jpg>
```



■ Social media ■ printscreens



TRATAT DE CRIMINALITATE INFORMATICĂ VOL.I

Autor: George Zlati

~~139 LEI~~
125.1 LEI

~~169 LEI~~
152.1 LEI

EBOOK

Tratat de criminalitate informatică

Tratat de criminalitate informatică

Edit profile

George M R Zlati
@GeorgeMRZlati

Criminal Defence Lawyer ⚖️ | Expert and Author on Cybercrime & Blockchain | Authored Romania's First Treatise on Cybercrime 📖

📍 Romania 🔗 linktr.ee/zlati.george 📅 Joined April 2013

The username can be changed in settings

Settings

Q Search Settings

Your account



← Account information

Username
@GeorgeMRZlati

← Change username

Username
GeorgeMRZlati

Suggestions

GeorgeR

MrZlati

mr_zlati

GeorgeZlati

george_zlati

Save



Changing the username

- › **Changing the username will change the URL of the profile**
- › You cannot use the new URL to find previous content on the *Internet Archive*
- › You need to ask the service provider for the previous username
 - › If the username has been replaced in the database, it may be impossible to retrieve the previous username
 - › You can use APIs to fetch user details (including account ID) by querying with the username
 - › **Do you need a warrant to access data through an API?**
 - › Public APIs vs. private APIs
 - › Terms and conditions for using APIs → exceeding the limits of authorization?
- › **TIP:** search „**from**:previoususername **since**:date **until**:date”



TweeterID

X/Twitter ID and Username Converter

Type in any X/Twitter ID or @handle below,
and it will be converted into the respective ID
or username on the right:

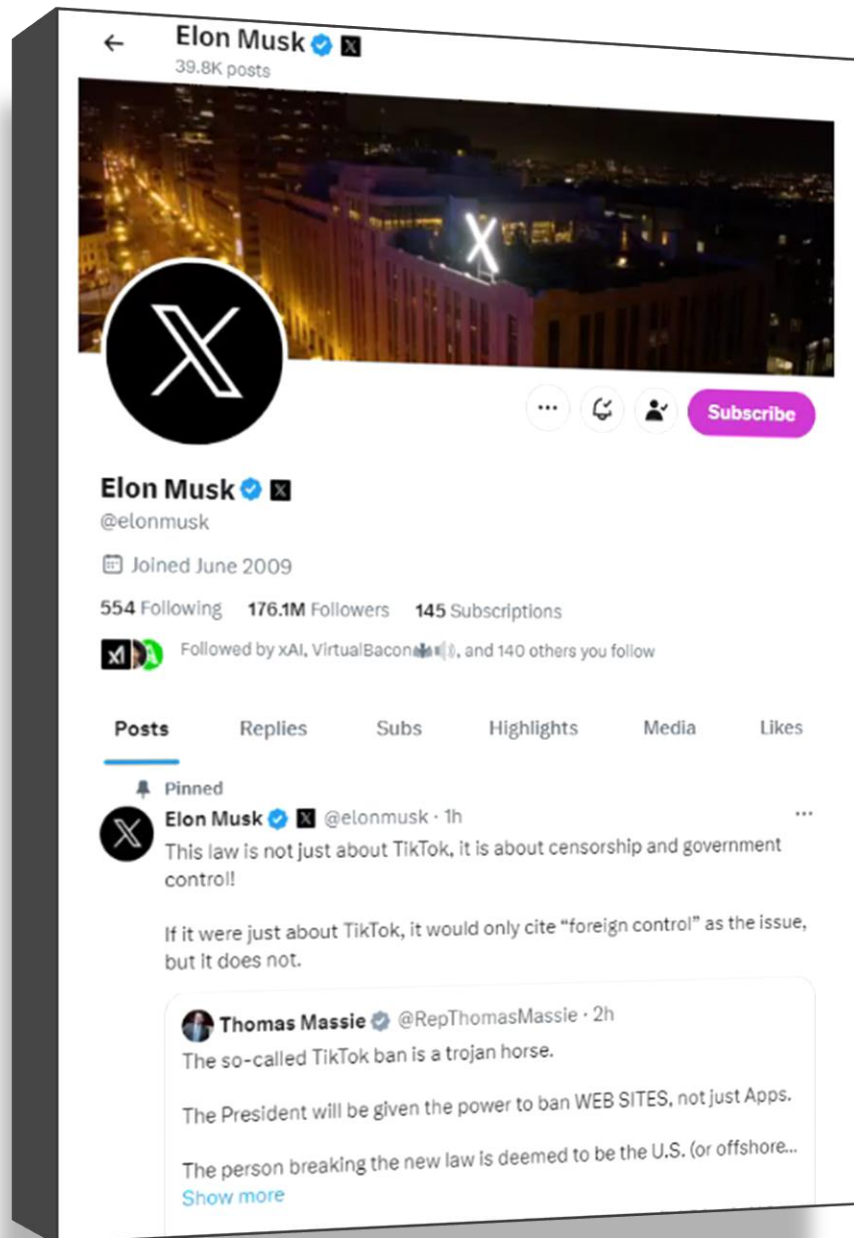
@elonmusk

Convert

Recent ID Conversions:

@elonmusk => 44196397





Can you trust a video capture screen?



The content can be easily manipulated by using *inspect element* in the web browser

39.8K posts



... [Subscribe](#)

Elon Musk

@elonmusk

Joined June 2009

554 Following 176.1M Followers 145 Subscriptions

Followed by xAI, VirtualBacon, and 140 others you follow

[Posts](#) [Replies](#) [Subs](#) [Highlights](#) [Media](#) [Likes](#)

Pinned

Elon Musk @elonmusk · 1h ...
This law is not just about TikTok, it is about censorship and government control!

If it were just about TikTok, it would only cite "foreign control" as the issue, but it does not.

Thomas Massie @RepThomasMassie · 2h
The so-called TikTok ban is a trojan horse.
The President will be given the power to ban WEB SITES, not just Apps.
The person breaking the new law is deemed to be the U.S. (or offshore...
[Show more](#)

Elon Musk
@elonmusk

[Analyze Metrics](#)

[How these metrics are calculated](#)

You might like

Google
@Google [Follow](#)

NASA
@NASA [Follow](#)

MrBeast
@MrBeast [Follow](#)

[Show more](#)

Romania trends

1 · Trending ...

Tate
84.6K posts

2 · Entertainment · Trending ...

#Oscars2024
191K posts

3 · Technology · Trending ...

Samsung
46.4K posts





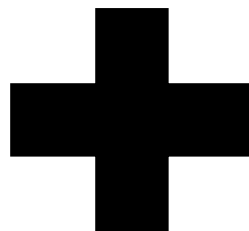
■ ■ ANNEX 1



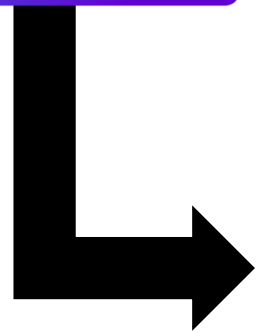
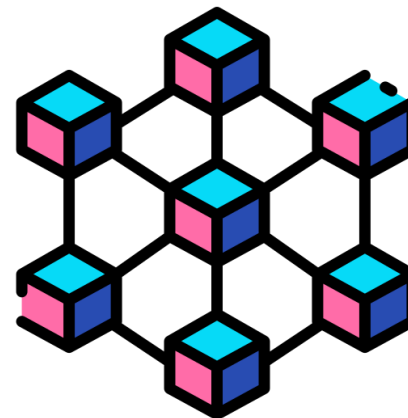
Smart contract



Computer program



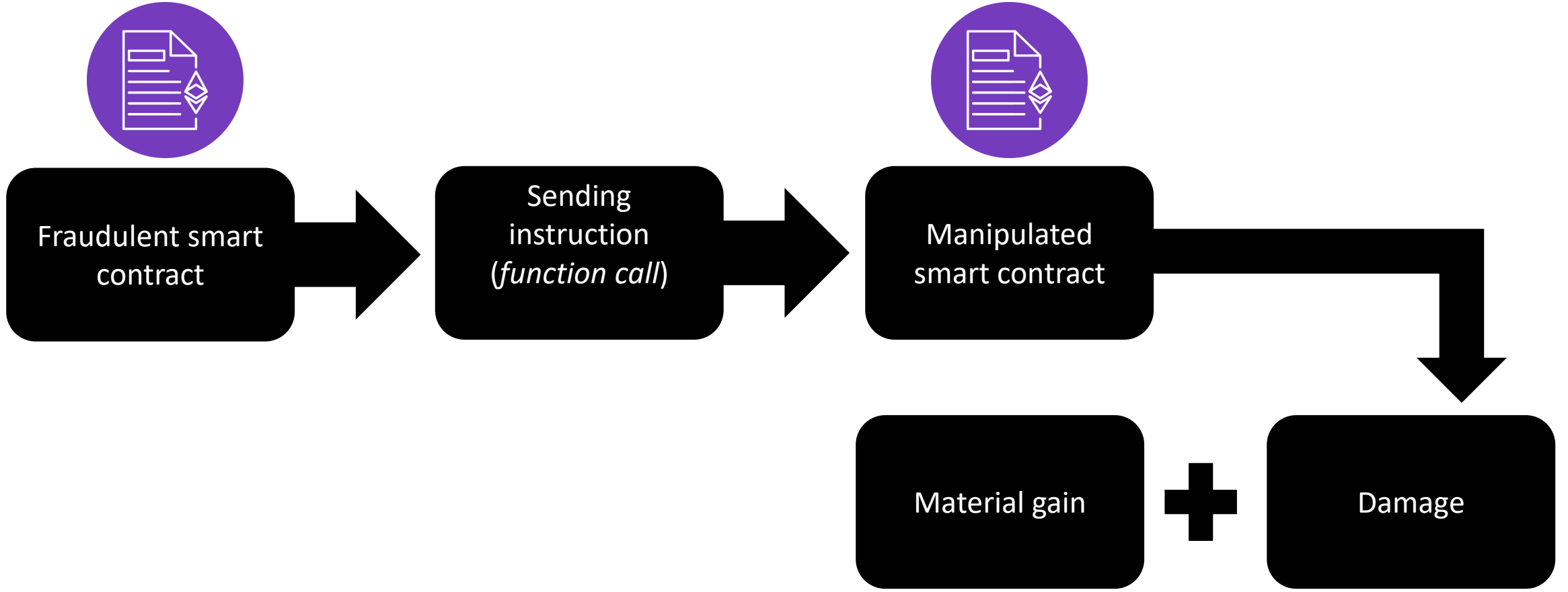
Deployed on blockchain



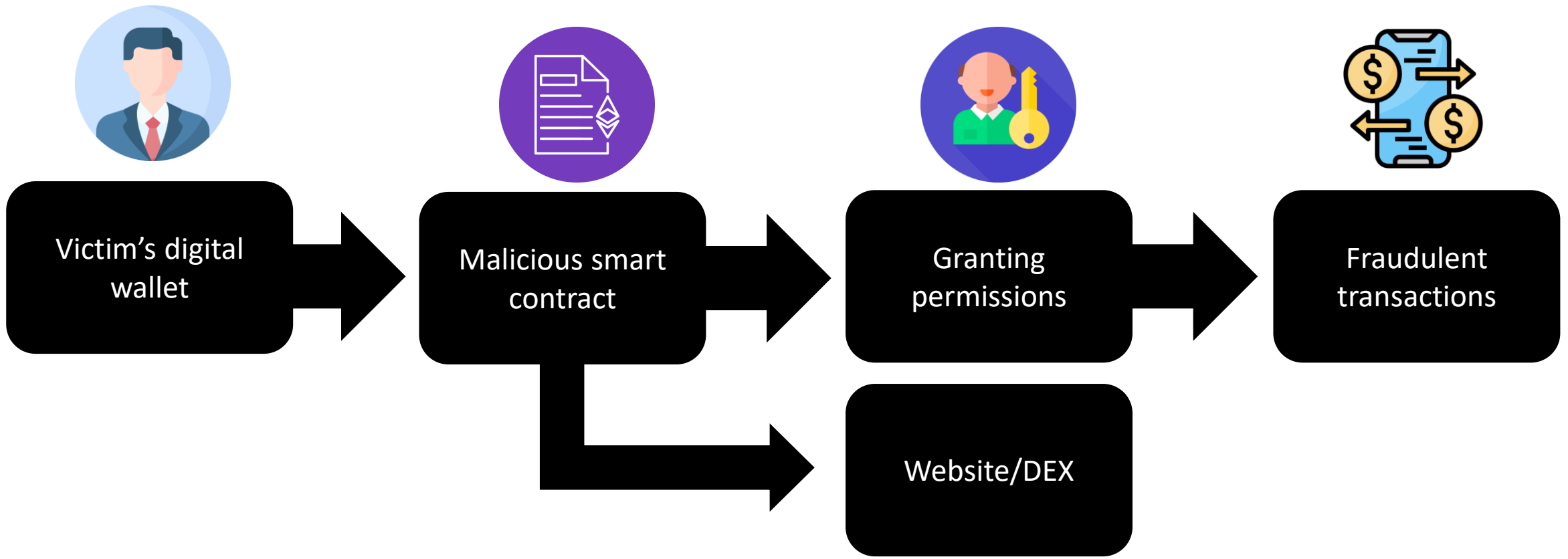
Token swaps → swap ETH for SOL

Staking → receiving rewards

Bridges → move tokens from Ethereum to Solana



■ ■ ANNEX 2

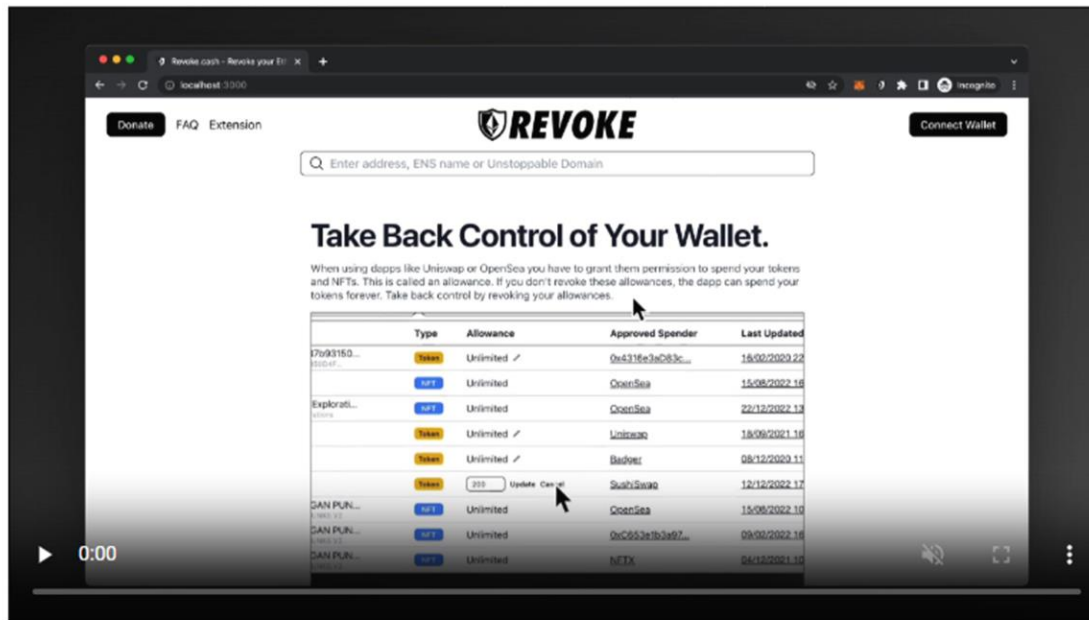




🔍 Search Accounts by Address or Domain

Take Back Control of Your Wallet.

When using dapps like Uniswap or OpenSea you have to grant them permission to spend your tokens and NFTs. This is called a token approval. If you don't revoke these approvals, the dapp can spend your tokens forever. Take back control by revoking your approvals.



Check if your digital wallet is compromised



0xB7515A...395BF1
 < 0.001 ETH (\$0.93) • 0xB7515A...395BF1 Connected

Approvals Signatures

25 **Wallet Health: Bad**
 Powered by Nefture

Sort **Asset Name: A to Z**

Filters **Showing Everything**

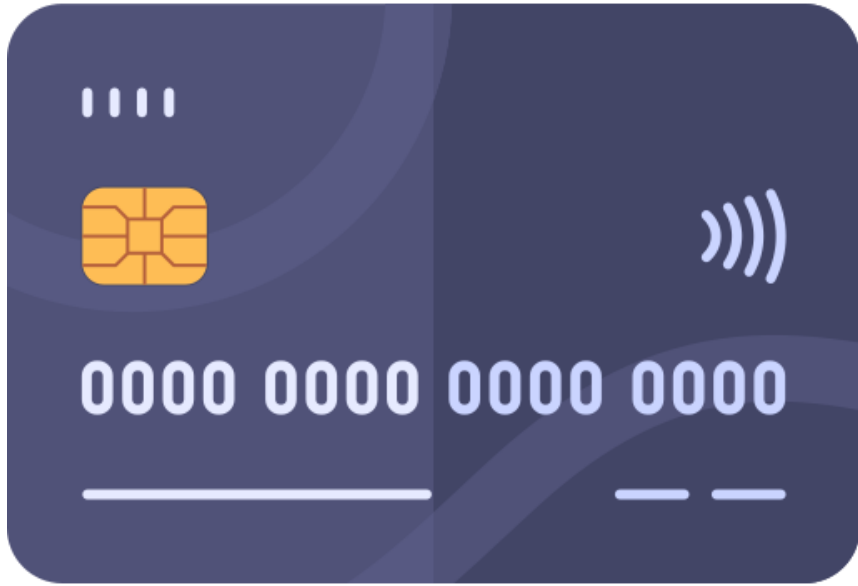
Search by Authorized Spender Address

Asset	Type	Approved Amount
SLOCK 0 SLOCK	Token	Unlimited
SLOCK 0 SLOCK	Token	Unlimited
AGIX 0 AGIX (\$0.00)	Token	Unlimited
AGIX 0 AGIX (\$0.00)	Token	Unlimited Expires in 4 days
AMO 0 AMO (\$0.00)	Token	Unlimited
AMO 0 AMO (\$0.00)	Token	Unlimited Expires in 1 week

Revoke.cash confirms that unlimited transactions were previously approved through smart contracts



■ ■ ANNEX 3




Backup Recovery Phrase

These 12 words are the ONLY way to restore your wallet if you forget your password. Please write them down and store securely offline.

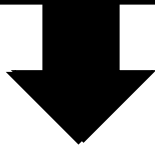
1. liar 2. click 3. merge 4. scan 5. electric 6. early 7. garment
8. urban 9. wall 10. know 11. deliver 12. dinner

Do not save your Recovery Phrase on your computer or share it with anyone - write it down or print it

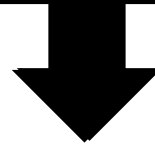
 Print Paper Wallet

I've Written it Down

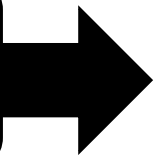
From
2048 words



12-24 random words



Master key




Backup Recovery Phrase

These 12 words are the ONLY way to restore your wallet if you forget your password. Please write them down and store securely offline.

1. liar 2. click 3. merge 4. scan 5. electric 6. early 7. garment
8. urban 9. wall 10. know 11. deliver 12. dinner

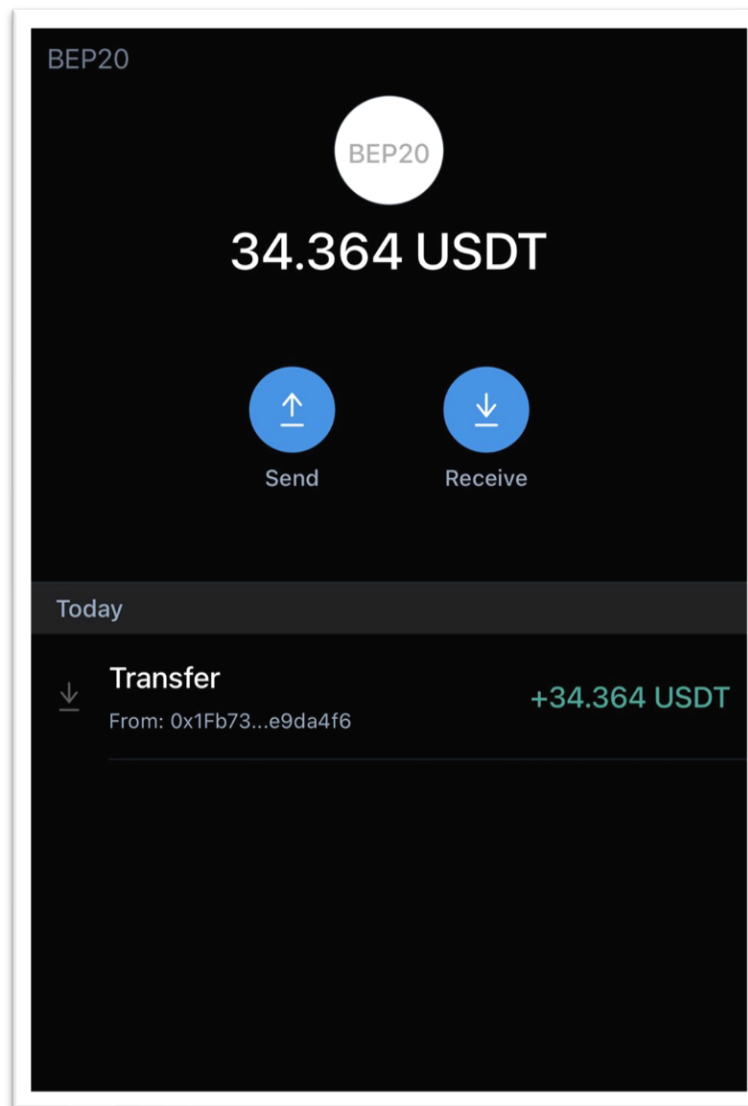
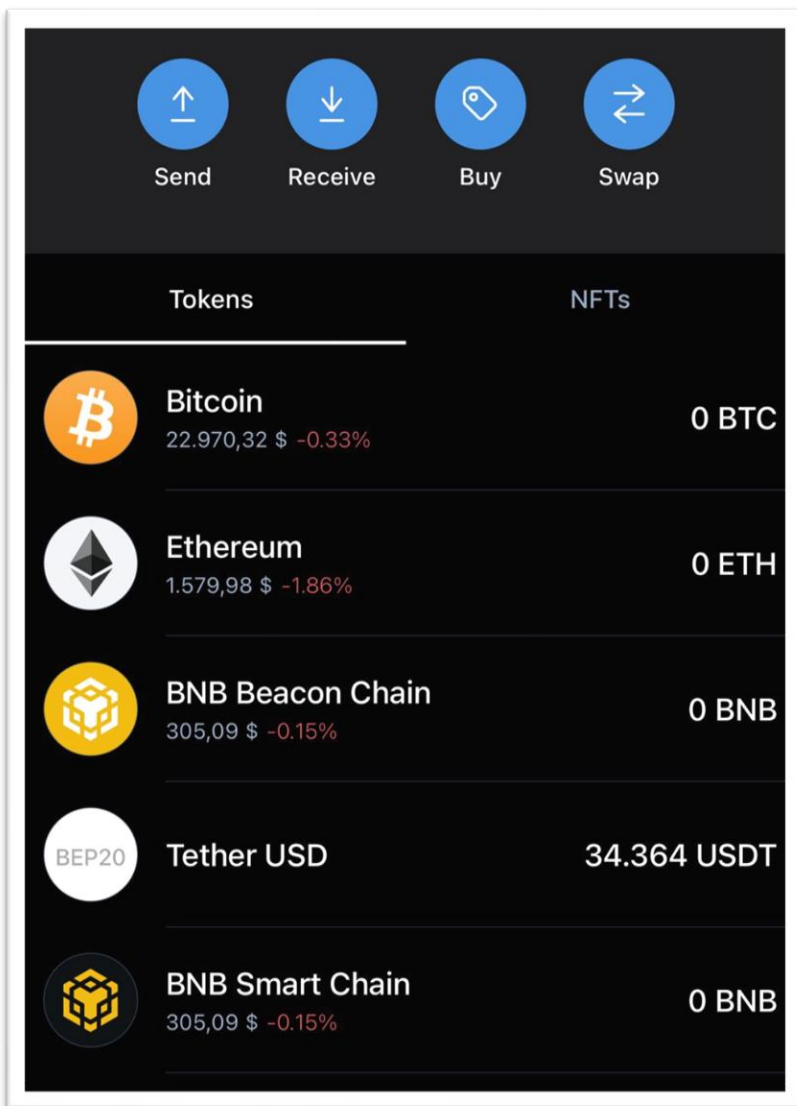
Do not save your Recovery Phrase on your computer or share it with anyone - write it down or print it

 Print Paper Wallet


I've Written it Down

Recreate/clone a digital wallet on a device under your control

■ ■ ANNEX 4



Counterfeired USDT on Binance Smart Chain



ERC-20 token
(Ethereum)

ESDT
(MultiversX)

Counterfeiting virtual currencies

 Token imported

Anyone can create an ERC20 token on Ethereum with any name, including creating fake versions of existing tokens and tokens that claim to represent projects that do not have a token.

This interface can load arbitrary tokens by token addresses. Please take extra caution and do your research when interacting with arbitrary ERC20 tokens.

If you purchase an arbitrary token, **you may be unable to sell it back.**



Any token can be counterfeited

- you cannot remove the token at the blockchain level
- it may be possible to remove the token from a DEX interface with the help of the developer



Check on-chain for red flags



Overview BEP-20

PRICE: \$0.00 @ 0.000000 BNB | FULLY DILUTED MARKET CAP: \$0.00

Total Supply: 1,000,000 USDT ⓘ

Holders: 12 addresses

Profile Summary

Contract: 0xf97401b874401baa927eb496ac... [REDACTED]

Decimals: 18

Social Profiles: Not Available, [Update ?](#)

FILTERED BY TOKEN HOLDER

0x04cff634e468f5874bdc0e98b8... [REDACTED] | BALANCE: 34,364 USDT | VALUE: \$0.00

Transfers | Info | Contract ⓘ | Analytics

0x04cff634e468f5874bdc0e98b84... [REDACTED]

A total of 1 transaction found

Txn Hash	Method ⓘ	Age	From	To	Quantity
0x7d3aa384eeb91f071b...	Transfer	4 hrs 15 mins ago	0x1fb73495c8e99377afc...	IN 0x04cff634e468f5874bdc...	34,364

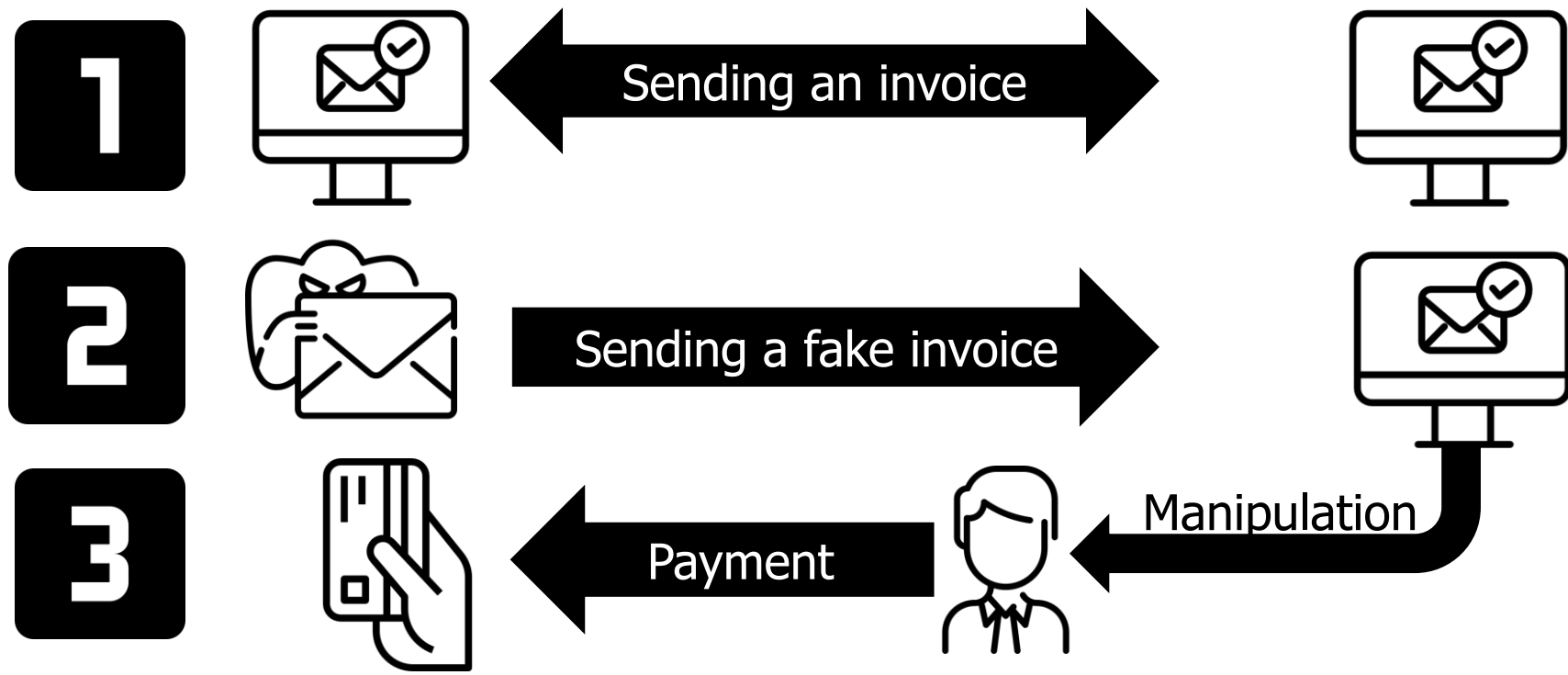
[Download CSV Export ⬇]

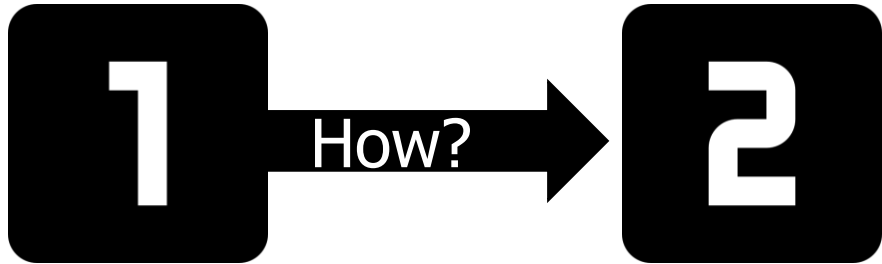
On-chain red flags

- Total supply
- Total holders
- Total transactions
- Smart contract owner



■ ■ ANNEX 5





Inside job from the bank / commercial partner

Compromised email account

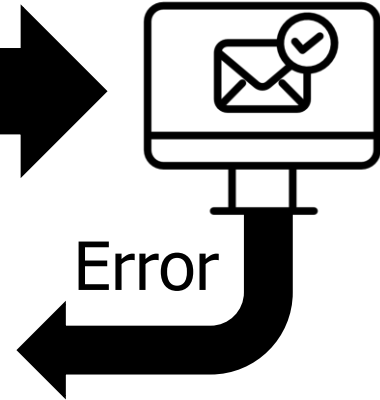
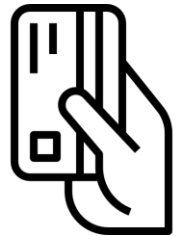
Email interception

Data breach

Computer forgery



Traditional fraud

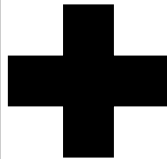


■ ■ ANNEX 6

”

1

Request for an initial investment by the „broker“ (payment in BTC)



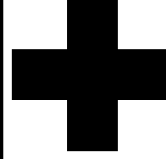
2

Fictitious crediting of the client-account (fictitious ROI)



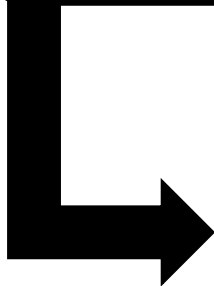
3

Request for fees in order to withdraw the profit

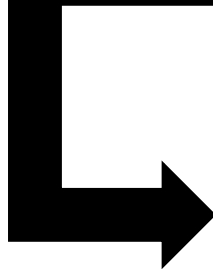


4

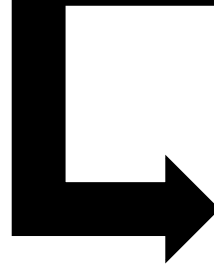
Counterfeiting of virtual currencies (USDT, USDC)



Websites
Social media
Telegram/Whatsapp
Deep fake

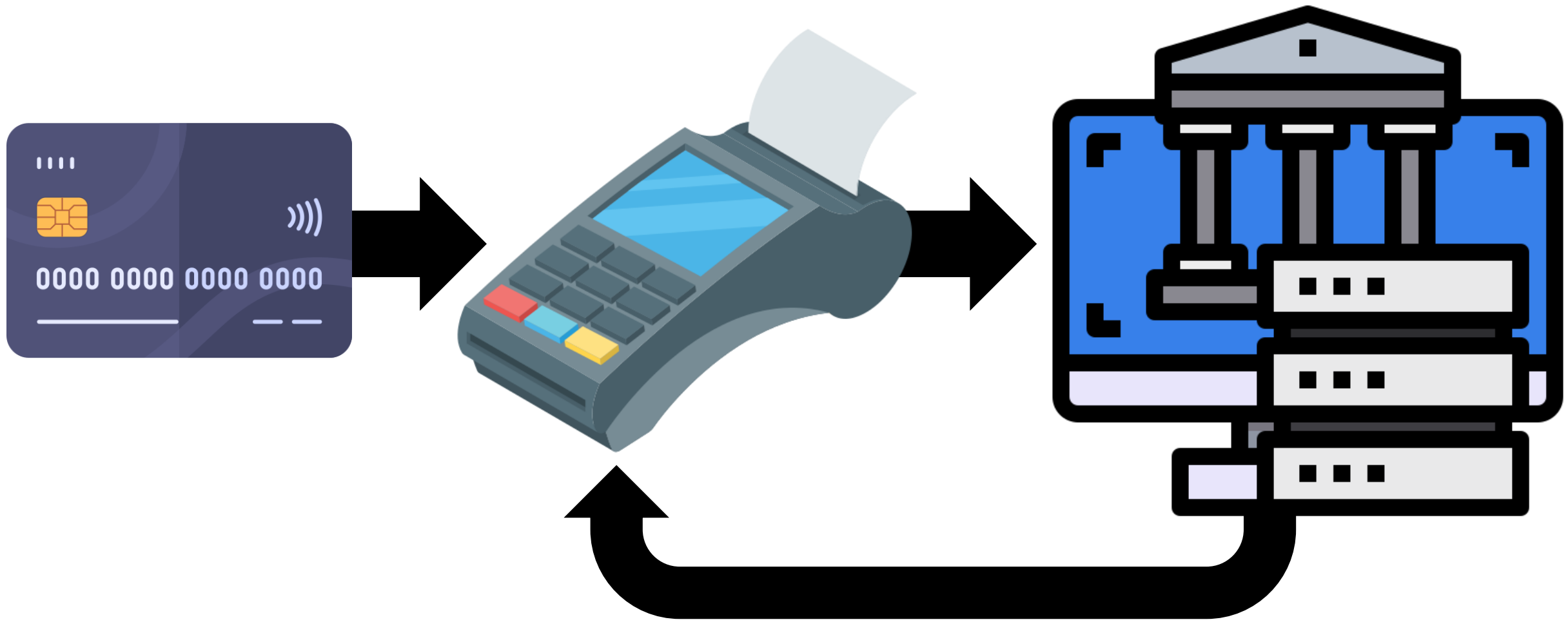



Fake data

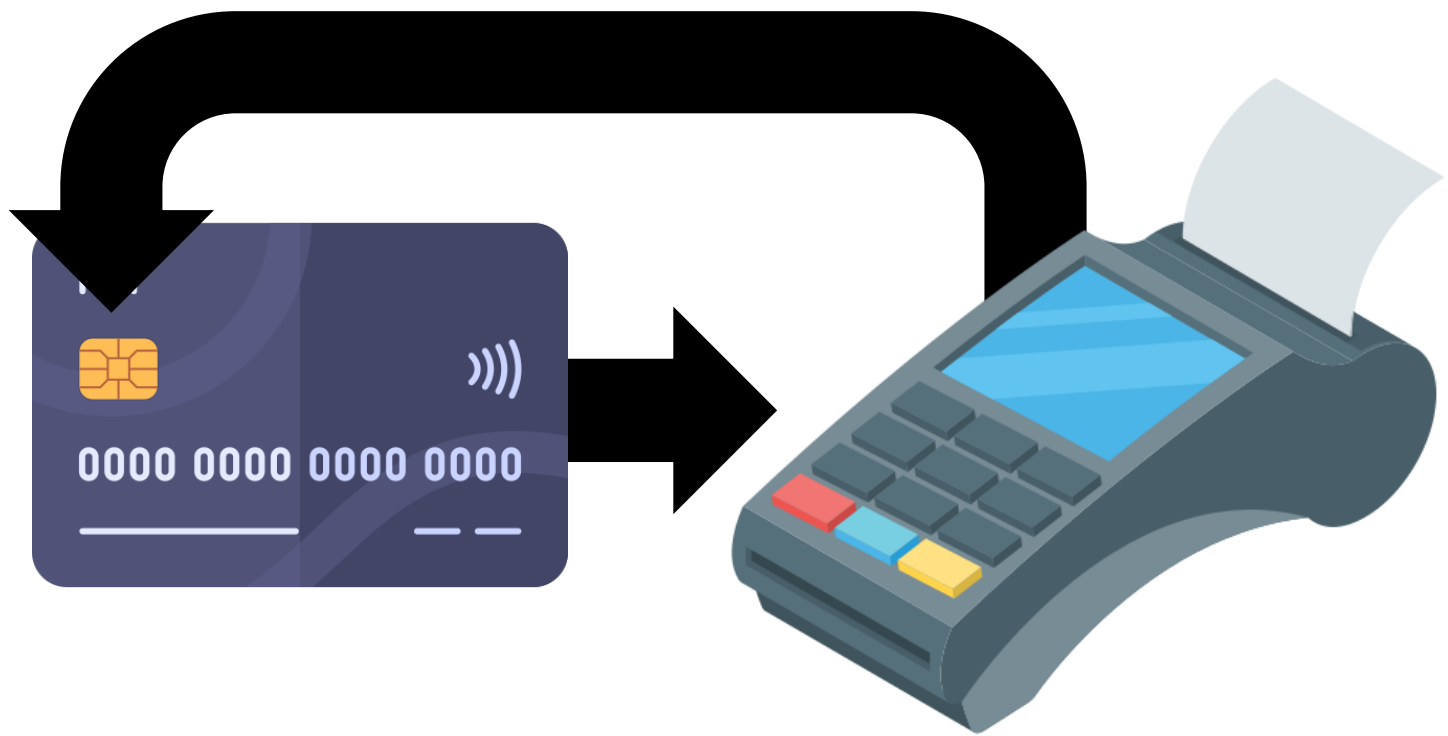





Additional fraud

■ ■ ANNEX 7



- 
- Your debit card is stolen
 - You do not have money in the bank account
 - The perpetrator initiates an offline transaction
 - airplane / offline POS terminal
 - there is no instant authorization
 - **the transaction is approved based on card's offline limits**



-  No real-time authorization
-  Funds are not deducted immediately
-  Risk of insufficient funds

■ ■ ANNEX 8



JOIN THE GIVEAWAY

We believe that Blockchain and ETH coin will make the world more fair. To speed up the process of cryptocurrency mass adoption, We decided to run 50.000 ETH giveaway.

To participate you just need to send from 5 ETH to 500 ETH to the contribution address and we will immediately send you back 10 ETH to 1000 ETH (x2 back) to the address you sent it from.

NOTE: You can do it only one time.

For example:

- If you send 5+ ETH, you will be 10+ ETH back.
- If you send 10+ ETH, you will be get 20+ ETH back.
- If you send 20+ ETH, you will be get 40+ ETH back.
- If you send 50+ ETH, you will be get 100+ ETH back.
- If you send 100+ ETH, you will be get 200+ ETH back.
- If you send 500+ ETH, you will be get 1000+ ETH back.

Contribution Special BONUS:

- 10 ETH + = 10% Bonus
- 50 ETH + = 20% Bonus
- 100 ETH + = 40% Bonus
- 500 ETH + = 50% Bonus

Fake website promoted via Telegram, Instagram, X, YouTube or Google Ads









Transactions for Address

0xaAc8C8Cd17e93D20aA052c6f22dcAA7010877cb5

From		To	Age	Value
0x4840...	OUT	0x2FD11...	right now	728 ETH
0x2FD11...	IN	0x4840...	right now	364 ETH
0x4840...	OUT	0x2FC22...	1 min	966 ETH
0x2FC22...	IN	0x4840...	1 min	483 ETH
0x4840...	OUT	0x2FD11...	right now	728 ETH
0x1EF1...	IN	0x2FD11...	right now	364 ETH
0x4840...	OUT	0x2FB12...	3 min	382 ETH
0x2FB12...	IN	0x4840...	3 min	191 ETH

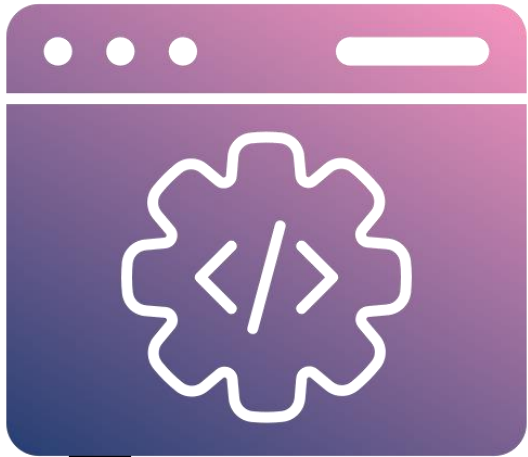
Fake live crypto transactions
incorporated in the website

Age	From 		To 	Value
5 days 16 hrs ago	0xf5b89dc553d2e074a...	OUT	0x07fc314ef481c650ac...	26.50116348 Ether
5 days 21 hrs ago	0xbc15704ede37b9aa3...	IN	0xf5b89dc553d2e074a...	3 Ether
5 days 21 hrs ago	0x9a1c5b1b32f6754e9...	IN	0xf5b89dc553d2e074a...	0.02128006 Ether
6 days 26 mins ago	0x3a4c26149b639d123...	IN	0xf5b89dc553d2e074a...	3.2 Ether
6 days 1 hr ago	0x923934da23302328c...	IN	0xf5b89dc553d2e074a...	3.02 Ether
6 days 3 hrs ago	0x91fd4939cb0af85a3e...	IN	0xf5b89dc553d2e074a...	2 Ether
6 days 3 hrs ago	0x424ec0552e23a2160...	IN	0xf5b89dc553d2e074a...	3.3 Ether
6 days 4 hrs ago	0x6929c3df526d9b310...	IN	0xf5b89dc553d2e074a...	0.85554258 Ether

- 
-  Check the public address of the sender
 -  It should be a smart contract with available funds
 -  There should be a lot of in/out transactions

■ ■ ANNEX 9

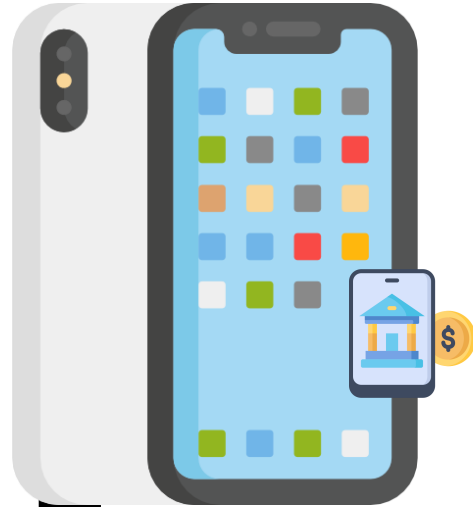
1



Anydesk
Teamviewer
RAT



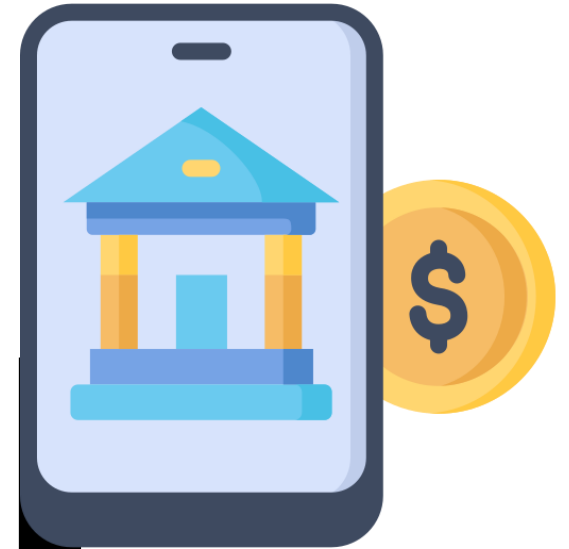
2



Remote
access



3



Bank loan



Towards digitalisation in criminal justice: presentation of the e-CODEX system

#Digitalisation and #AI in Criminal Justice

Lisbon, 26 September 2024

OFFICIAL USE

TLP: AMBER



Agenda

- 01 Main elements in the cross-border interoperability EU scene
- 02 Key concepts about the eEDES Portal
- 03 Why the eEDES Portal?
- 04 Pilot exchange: European Investigation Order
- 05 The Spanish strategy
- 06 Instruments supported by the eEDES Portal
- 07 How the eEDES Portal looks like

1. Main elements in the cross-border interoperability EU scene

The **main concepts** in for the judicial cross-border interoperability are next:

e-CODEX system

The e-Justice Communication via Online Data Exchange system is a **decentralised and interoperable system for cross-border communication for the purpose of facilitating the electronic exchange of data**, which includes any content transmissible in electronic form, in a swift, secure and reliable manner in the area of judicial cooperation in civil and criminal matters ([Regulation - 2022/850 - EN - EUR-Lex \(europa.eu\)](#)).



Decentralised IT system (DITS)

It should be comprised of **back-end systems in the Member States and the relevant Union bodies and agencies, and interoperable access points (APs) through which those systems are linked using secure interconnections**. The APs of the DITS should be based on e-CODEX ([Regulation - 2023/2844 - EN - EUR-Lex \(europa.eu\)](#)).



The **connected systems** can be either the national CMS or the reference implementation software:

National case management systems

IT systems developed by Member States to handle the judicial proceedings. They address the specific requirements of the national judicial framework, its organisation, actors and processes. They can be integrated with e-CODEX.



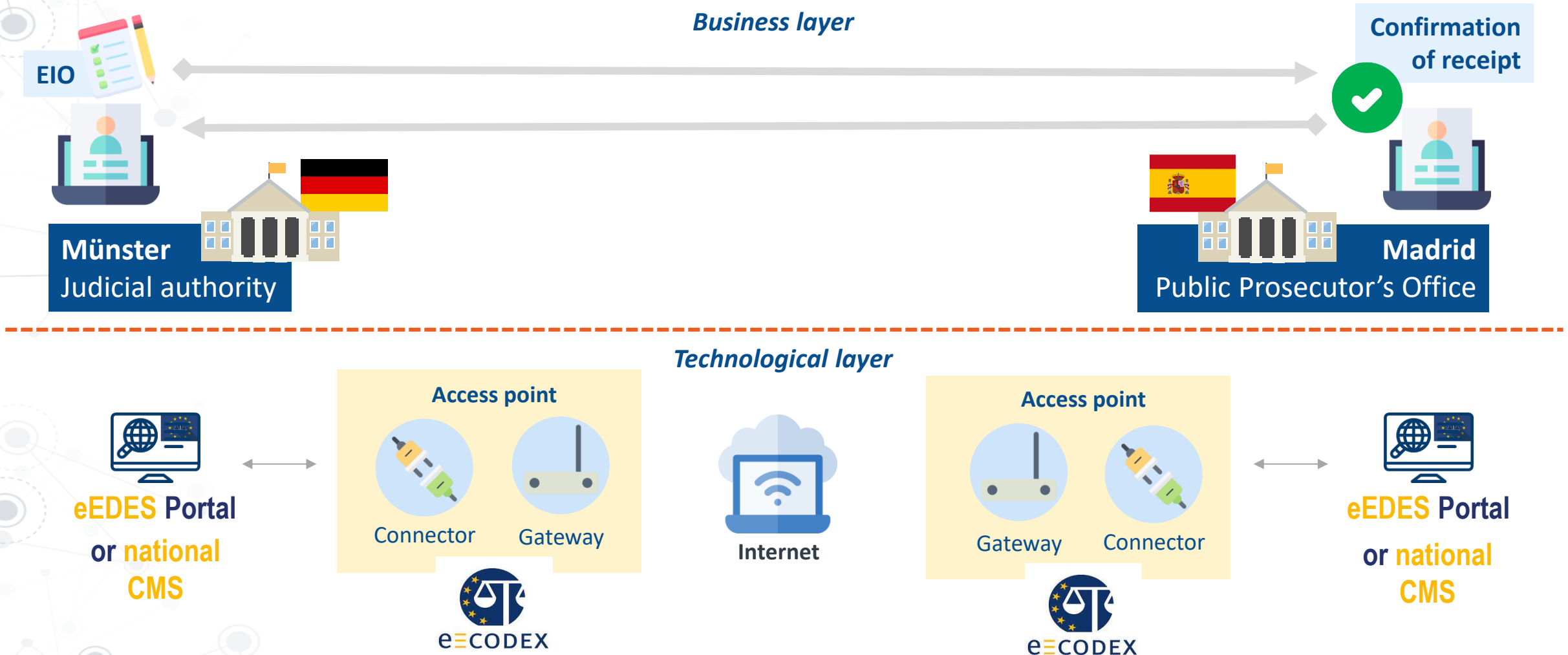
eEDES portal (reference implementation)

The e-Evidence Digital Exchange System is a **software developed by the European Commission that is integrated with e-CODEX**. Competent authorities can use this portal to connect to the DITS in case their national CMS is not integrated with it.



1. Main elements in the cross-border interoperability EU scene

Example: a judicial authority from Germany needs to send a European Investigation Order (EIO) to a competent authority in Spain.



2. Key concepts about the eEDES Portal



eEDES Portal

The **eEDES Portal** (e-Evidence Digital Exchange System) is the tool provided by the European Commission as the reference implementation software to **facilitate the cross-border electronic exchange of judicial cooperation instruments between competent authorities.**

The **core ideas** about the eEDES portal are next:



The European Commission is responsible for creating, developing and maintaining the reference implementation software ([Regulation - 2023/2844 - EN - EUR-Lex \(europa.eu\)](#))



It provides functionalities for the digital exchange of cross-border judicial cooperation instruments (e.g. EIO):

- It is connected to the **Criminal Court Database** to identify sender and recipient.
- It allows to **fill out forms and attach documents.**
- It manages the **exchanged messages.**
- It is connected to **eTranslation.**



It is **installed and operated by each Member State**, which is responsible for managing user access and data security.



It is not a **case management system**. Thus, it cannot substitute them.



The **European Commission** foresees the implementation of services to integrate national CMS with eEDES.

3. Why the eEDES Portal?



To speed up the implementation of cross-border electronic exchange of European legal cooperation instruments **via e-CODEX**.



e-CODEX aims to **make the national justice systems of the different Member States interoperable** among themselves.

The **integration of national systems with e-CODEX requires different efforts in each Member State**. In order to start exchanges at European level, all Member States must be ready at a specific moment for each instrument.



The **eEDES Portal** is meant to **help users in all Member States to exchange electronically on e-CODEX, even if their national systems are not yet integrated with e-CODEX**.

Member States can choose to use the eEDES Portal (reference implementation software) as a solution for electronic exchange, especially if their national case management systems are not integrated with e-CODEX.

The eEDES Portal contributes to facilitate the availability of Member States connected via e-CODEX and thus to speed up electronic exchanges on e-CODEX.

4. Pilot exchange: European Investigation Order



European Investigation Orders exchange

Pilot project sponsored by the European Commission for the **electronic exchange of European Investigation Orders**.
First EU judicial cooperation instrument implemented in the **eEDES Portal**, which runs on top of e-CODEX.



Relevant milestones

- ✓ **April 2022 (beginning):** Germany, Latvia, Poland, Portugal and Spain.
- ✓ **18 May 2022:** first EIO exchanged (Spain → Germany).
- ✓ **14 July 2022:** second EIO exchanged (Portugal → Spain).
- ✓ **September 2024:** participating countries are Austria, Belgium, France, Germany, Hungary, Latvia, Luxembourg, Poland, Portugal, Slovenia, Spain and Sweden.



Spanish National authorities participating in the pilot



- ✓ Central Instruction Courts of the National High Court (6)
- ✓ Instruction Court no. 32 of Madrid
- ✓ Instruction Court no. 4 of Torremolinos (Málaga)
- ✓ International Cooperation Unit of the Public Prosecutor's Office
- ✓ Provincial Prosecutor's Offices (+20)
- ✓ Special Anti-Drug Prosecutor's Office
- ✓ Special Prosecutor's Office against Corruption and Organized Crime
- ✓ ...

+10 courts
+30 Public Prosecutor's Offices

+40

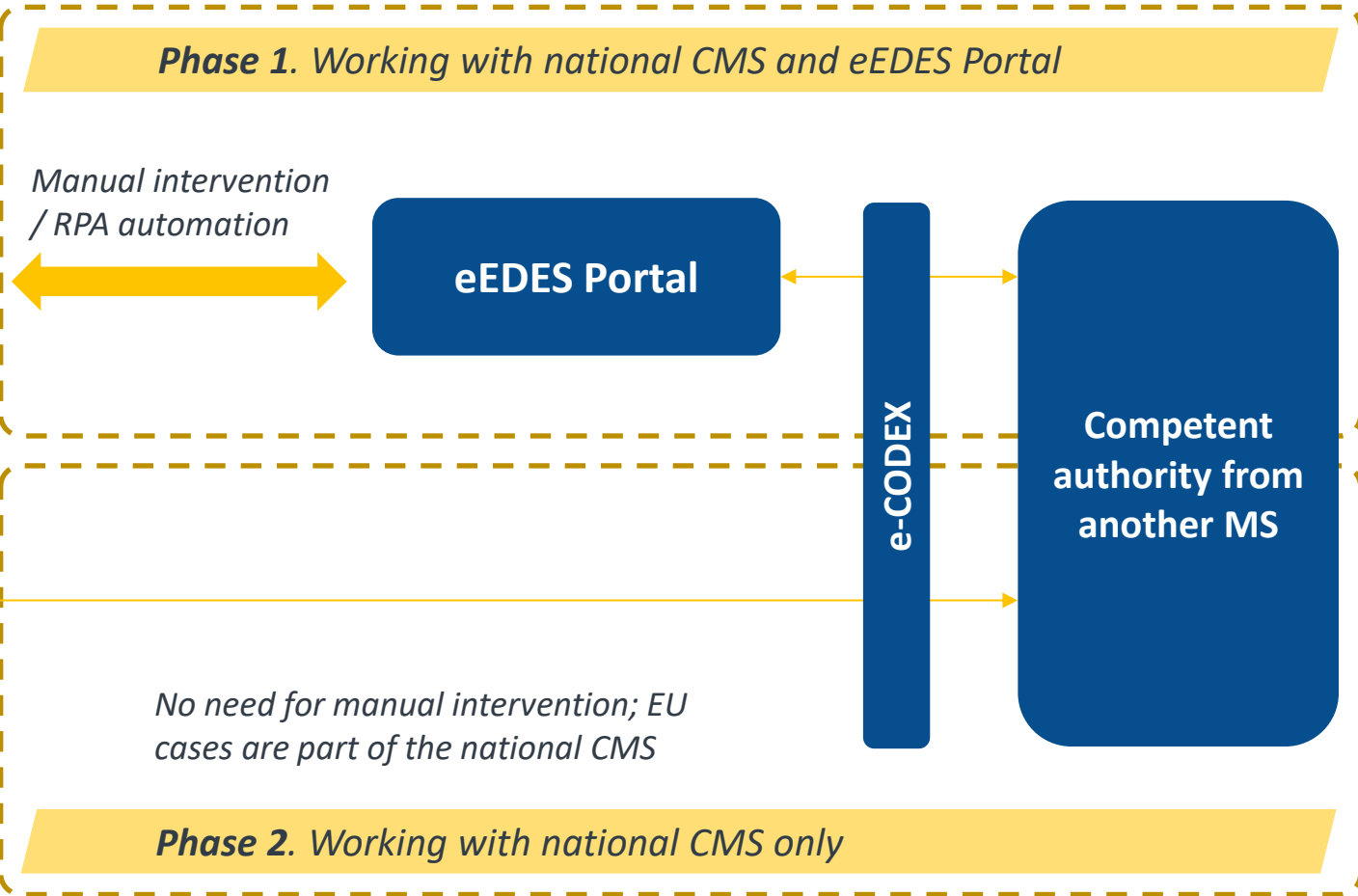
Competent authorities

5. The Spanish strategy

A lawyer submits a lawsuit/document & receives notifications



A citizen submits a lawsuit/document & receives notifications



6. Instruments supported by the eEDES Portal

Legal instruments



eEDES Portal

Legal acts of the European Union providing for communication between competent authorities, including Union agencies and bodies, and between competent authorities and natural and legal persons in civil and commercial matters. They should be complemented by establishing the conditions for conducting such communication through digital means.



The eEDES Portal supports these instruments currently:

- EIO and ITN requests, according to the [European Directive 2014/41/EU](#)
- MLA request, according to [Council Act of 29 May 2000](#)



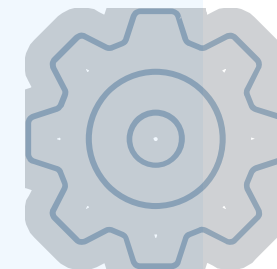
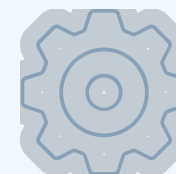
The eEDES Portal will support more instruments:

- Service of documents (SoD) - digital exchange will be mandatory by May 2025: [Regulation \(EU\) 2020/1784](#)
- Taking of evidence (ToE) - digital exchange will be mandatory by May 2025: [Regulation \(EU\) 2020/1783](#)
- Electronic evidences (e-Evidence): [Regulation \(EU\) 2023/1543](#)
- Digital information exchange in terrorism cases: [Regulation - EU - 2023/2131 - EN - EUR-Lex \(europa.eu\)](#)
- 24 legal acts listed in Annexes I and II of the Regulation on the digitalisation of judicial cooperation and access to justice in cross-border civil, commercial and criminal matters: [Regulation - 2023/2844 - EN - EUR-Lex \(europa.eu\)](#)



The eEDES Portal only implements the common aspects defined in the European Union legal acts:

- National transpositions/aspects/functionalities particular to the Member States are not covered by the eEDES Portal.



6. Instruments supported by the eEDES Portal



Regulation on the digitalisation of judicial cooperation and access to justice in cross-border civil, commercial and criminal matters

Commitology committee

This committee chaired by the European Commission is **defining, among others, the digital procedural standards** as defined in Article 3(9) of Regulation (EU) 2022/850:

‘digital procedural standard’ means the technical specifications for business process models and data schemas which set out the electronic structure of the data exchanged through the e-CODEX system based on the EU e-Justice Core Vocabulary.

1st batch

Small Claims, European Order for Payment, European Investigation Order, European Arrest Warrant and Freezing and Confiscation Order.

17 Jan 2026

2nd batch

Legal Aid, Protection measures in civil matters, European Account Preservation Orders, Insolvency, Custodial sentences and deprivation of liberty, European Protection Order.

17 Jan 2027

3rd batch

Succession, Matrimonial property regimes, Property consequences of registered partnerships, Freezing Orders, Confiscation Orders, Financial penalties, Conflict of jurisdiction.

17 Jan 2028

4th batch

European Enforcement Order, Maintenance obligations, Brussels I Regulation, Brussels II b Regulation, Probation Measures, Supervision Measures.

17 Jan 2029

Deadline for the adoption of the implementing act

7. How the eEDES Portal looks like

My Dashboard

General overview of the eEDES Portal after the user login.

European Commission | e-Evidence Digital Exchange System

jmgonzalez s1es1

Start new request

Dashboard

Issued requests

Received requests

Drafts

Downloads

My Dashboard

Last edited cases

Issued requests 8 | Received requests 6 | Drafts 3

Date	ID	Description	Country	Type	Status
04/11/2023	EIO-PL-CZ-2023-11-04-0002-1	DEMO just received - ACK pending	CZ	EIO	Issued
04/11/2023	EIO-PL-CZ-2023-11-04-0001-1	DEMO just received, ACK pending	CZ	EIO	Deleted
04/11/2023	EIO-PL-CZ-2023-11-04-0003-1	DEMO signed request	CZ	EIO	Issued
03/11/2023	EIO-PL-CZ-2023-11-03-0003-1	DEMO_Case for a complete overview	CZ	EIO	Issued
03/11/2023	EIO-PL-CZ-2023-11-03-0005-1	DEMO_new request process	CZ	EIO	Issued
03/11/2023	EIO-PL-CZ-2023-11-03-0004-1	DEMO_to be withdrawn	CZ	EIO	Withdrawn
03/11/2023	EIO-PL-CZ-2023-11-03-0002-1	EJN/DEMO_Overview of an EIO case	CZ	EIO	Deleted
03/11/2023	EIO-PL-CZ-2023-11-03-0001-1	MGO_flujosimple_2023...	CZ	EIO	Issued

My tasks

DEMO signed read...
EIO 04/11/2023 19:22

Send

Load more

*@example.com
e-Evidence CIV-0.4.0
eUI 7.18.2

7. How the eEDES Portal looks like

Issued Requests (issuing authority)

List of the requests issued from my judicial authority.

European Commission | e-Evidence Digital Exchange System

jmgonzalez s1es1

Issued Requests

My issued requests

Search: Title, reference number or National Case Number

Request type: All EIO MLA ITN SoD A SoD B ToE A ToEL Show only urgent cases

Download selected (0) Delete Case (0)

	Issued date	Ref	Title	National Case No.	To	Type	Status
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0002-1	DEMO just received - ACK pending		CZ	EIO	Issued
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0003-1	DEMO signed request		CZ	EIO	Issued
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0003-1	DEMO_Case for a complete overview		CZ	EIO	Issued
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0005-1	DEMO_new request process		CZ	EIO	Issued
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0004-1	DEMO_to be withdrawn		CZ	EIO	Withdrawn
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0001-1	MGO_fujosimple_202311030924		CZ	EIO	Issued

*@example.com
e-Evidence CIV-0.4.0
eUI 7.18.2

7. How the eEDES Portal looks like

Sample Request (issuing authority)

Tabs of a request (overview and events are common to all instruments).

The screenshot displays the eEDES Portal interface. At the top, the European Commission logo and 'e-Evidence Digital Exchange System' are visible. The user 'jmgonzalez s1es1' is logged in. The main content area shows a request titled 'DEMO_Case for a complete overview' with ID 'EIO-PL-CZ-2023-11-03-0003-1'. The interface includes a sidebar with navigation options like 'Start new request', 'Dashboard', 'Issued requests', 'Received requests', 'Drafts', and 'Downloads'. The main view has tabs for 'Overview', 'Annex A', 'Annex B', 'Outcome', and 'Event & Message Timeline'. The 'Request Data' section is expanded, showing details for SECTION A through H. SECTION D is highlighted, indicating it is the current view. The 'Request Data' content includes a description of the EIO and its purpose. An 'Attachments' section lists 'Document.pdf' and 'Document.xml' with their creation dates.

European Commission | e-Evidence Digital Exchange System

jmgonzalez s1es1

Start new request

Dashboard

Issued requests

Received requests

Drafts

Downloads

DEMO_Case for a complete overview

National Case No. + ↶

EIO EIO-PL-CZ-2023-11-03-0003-1

Copy Case Download Comment Workflow

Overview Annex A Annex B Outcome Event & Message Timeline

Get PDF / Print

Request Data

SECTION A

SECTION B

Urgency

SECTION C

Investigative measure(s) to be carried out

SECTION D

Related to an earlier EIO

SECTION E

Identity of the person concerned

SECTION F

Type of proceedings for which the EIO is issued

SECTION G

Grounds for issuing the EIO

SECTION H

Request Data

EUROPEAN INVESTIGATION ORDER (EIO)

This EIO has been issued by a competent authority. The issuing authority certifies that the issuing of this EIO is necessary and proportionate for the purpose of the proceedings specified within it taking into account rights of the suspected or accused person and that the investigative measures requested could have been ordered under the same conditions in a similar domestic case. I requested that the investigative measure or measures specified below be carried out taking due account of the confidentiality of the investigation and that the evidence obtained as a result of the execution of the EIO be transferred.

Attachments

Document.pdf

Created at: 03/11/2023 17:58

Document.xml

Created at: 03/11/2023 17:58

*@example.com

e-Evidence CIV-0.4.0

eUI 7.18.2

7. How the eEDES Portal looks like

Sucessful Submission (issuing authority)

Once the request has been signed (not covered by eEDES), it can be sent.

The screenshot displays the eEDES portal interface. At the top, it shows the European Commission logo and the text 'e-Evidence Digital Exchange System'. The user is logged in as 'jmgonzalez s1es1'. The main content area is titled 'Issued Requests' and includes a search bar, filters for 'Request type' (All, EIO, MLA, ITN, SoD A, SoD B, ToE A, ToE L), and a 'Show only urgent cases' checkbox. Below the filters is a table of issued requests with columns for Issued date, Ref, Title, National Case No., To, Type, and Status. A success notification at the bottom states 'Success: The request has been sent'.

	Issued date	Ref	Title	National Case No.	To	Type	Status
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0005-1	DEMO_new request process		CZ	EIO	Issued
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0003-1	DEMO signed request		CZ	EIO	Issued
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0004-1	DEMO_to be withdrawn		CZ	EIO	Withdrawn
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0003-1	DEMO_Case for a complete overview		CZ	EIO	Issued
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0001-1	MGO_flujosimple_202311030924		CZ	EIO	Issued
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0002-1	DEMO just received - ACK pending		CZ	EIO	Issued
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0004-1	DEMO signed ready TO BE SENT		CZ	EIO	Issued

7. How the eEDES Portal looks like

Received Request (recipient authority)

The recipient authority can find the received request in the list.

European Commission | e-Evidence Digital Exchange System | jmgonzalez s2es1

Received Requests

My received requests | Deadlines

Title, reference number or National Case Number

Request type: All EIO MLA ITN SoD A Show only urgent cases
 SoD B ToE A ToE L

Download selected (0) Delete Case (0) Show search filters Clear all filters

	Received date	Ref	Title	National Case No.	From	Type	Status
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0001-1	MGO_fujosimple_202311030924		PL	EIO	Received
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0004-1	DEMO_to be withdrawn		PL	EIO	Received
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0005-1	DEMO_new request process		PL	EIO	Received
<input type="checkbox"/>	03/11/2023	EIO-PL-CZ-2023-11-03-0003-1	DEMO_Case for a complete overview		PL	EIO	Received
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0002-1	DEMO just received - ACK pending		PL	EIO	Received
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0003-1	DEMO signed request		PL	EIO	Received
<input type="checkbox"/>	04/11/2023	EIO-PL-CZ-2023-11-04-0004-1	DEMO signed ready TO BE SENT		PL	EIO	Received

*@example.com
e-Evidence CIV-0.4.0
eUI 7.18.2



Thank you for your attention

Óscar Palomo Díaz

oscar.palomo@mju.es



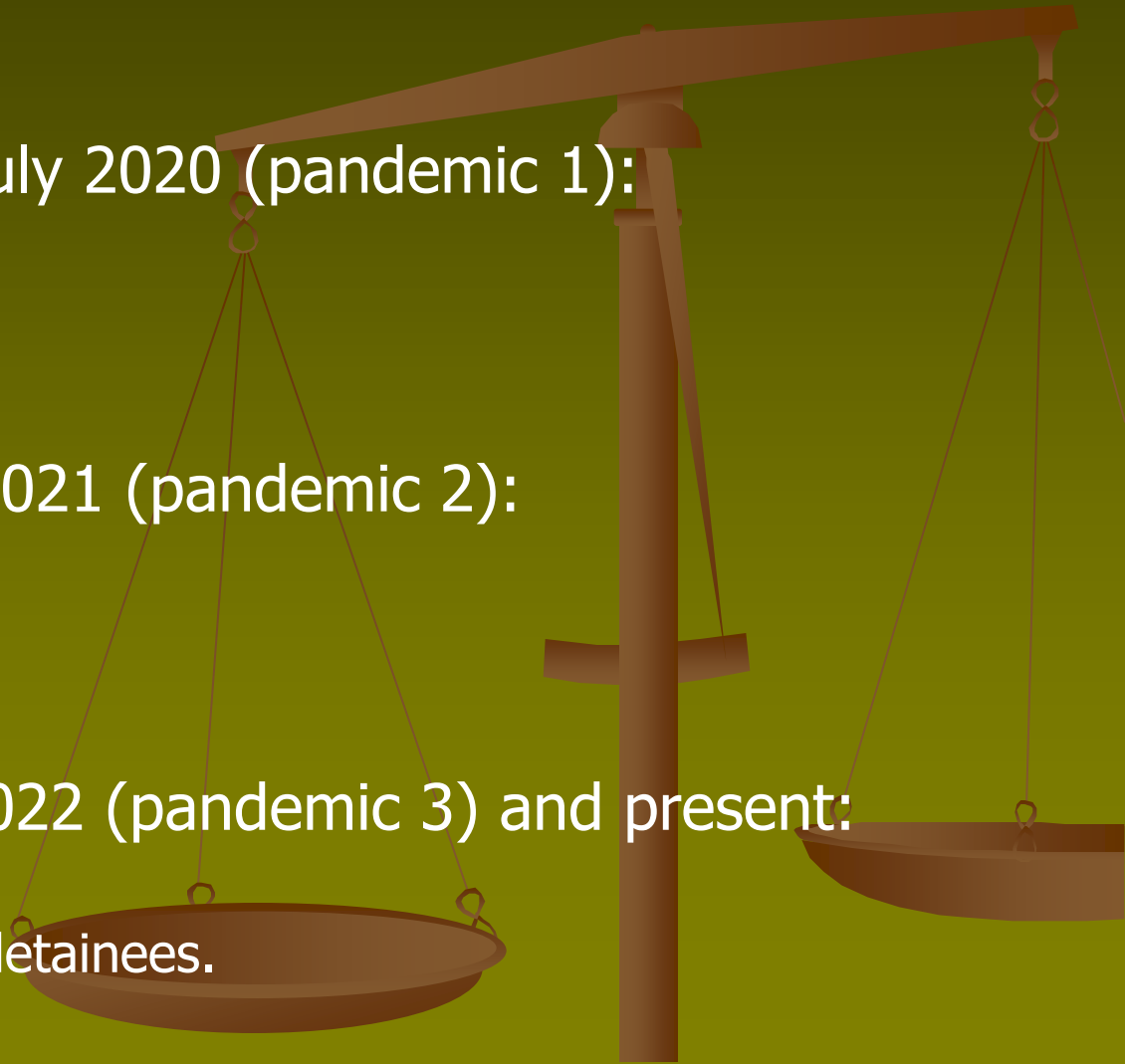
Presenting evidence in court: e-files, videoconferences and remote trials.

Andrea CRUCIANI
Judge at Military Tribunal of Naples



Online remote trials

- 1) 9 march 2020 - 31 July 2020 (pandemic 1):
 - Parties consent not needed.
- 2) up to 31 december 2021 (pandemic 2):
 - Parties consent needed.
- 3) up to 31 december 2022 (pandemic 3) and present:
 - No remote trials, except for detainees.



Attending remote trials



- Creating a Microsoft Teams Channel for each single proceeding; Inviting by e-mails all the parties with guest-links (“Join Microsoft Teams Meeting”).
- Checking the quality of the connection (<https://www.youtube.com/watch?v=IG0ofzZOyl8>) and giving specific instructions on the functioning of remote trials.
- Defence lawyers certifies the identity of the defendant (when not a detainee).
- In public hearings members of the public may attend a virtual hearing (microphones and cameras turned off) with e-mail invitation-link by the registrar. Media coverage.



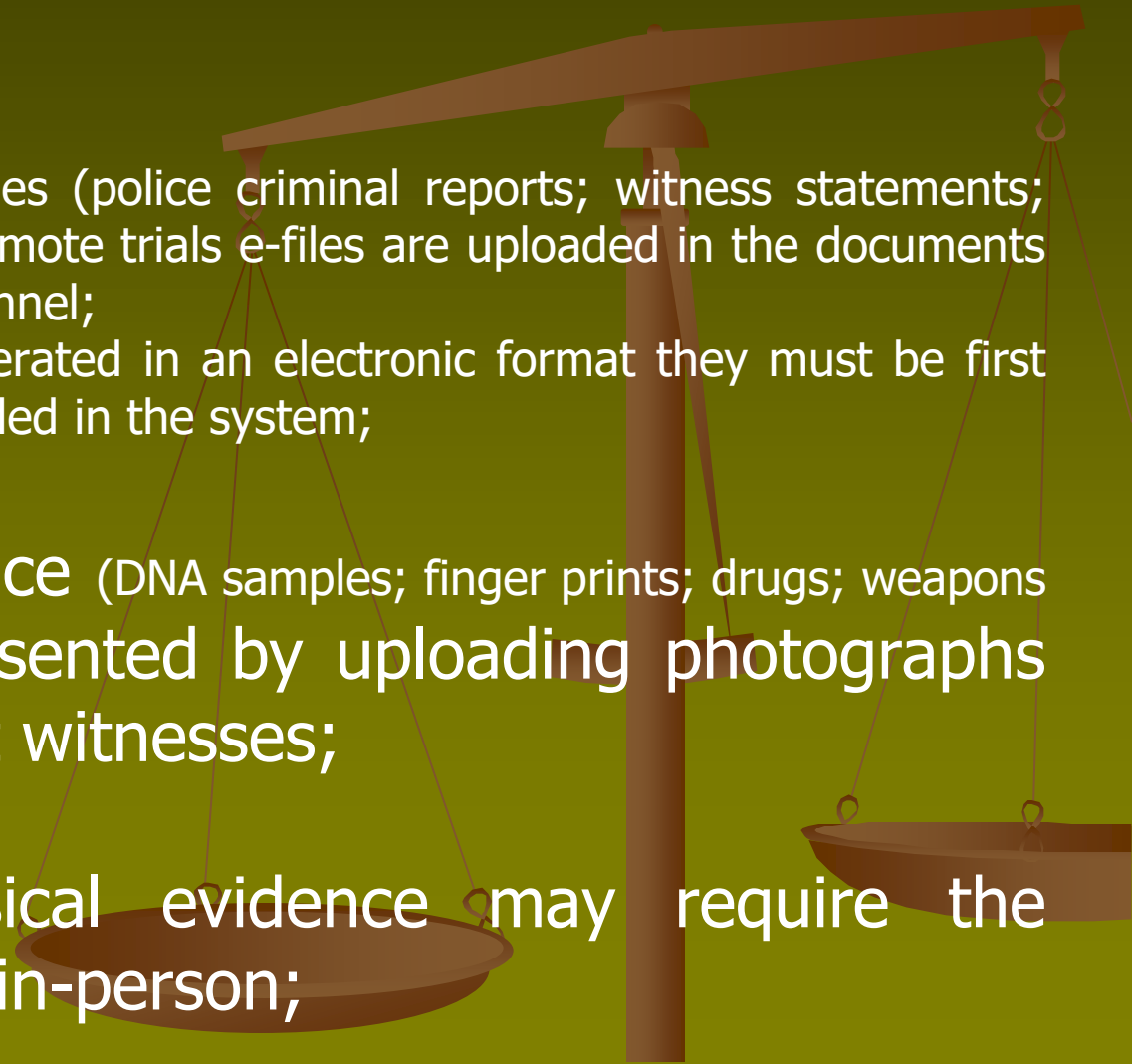
Presenting evidence. Physical evidence.

■ Documents:

- Most documents are now e-files (police criminal reports; witness statements; defensive investigations). In remote trials e-files are uploaded in the documents file of the Microsoft Teams channel;
- When documents are not generated in an electronic format they must be first scanned in pdf and then uploaded in the system;

■ Other physical evidence (DNA samples; finger prints; drugs; weapons or ammunitions...) are presented by uploading photographs and examining expert witnesses;

■ Challenges on physical evidence may require the parties to be present in-person;





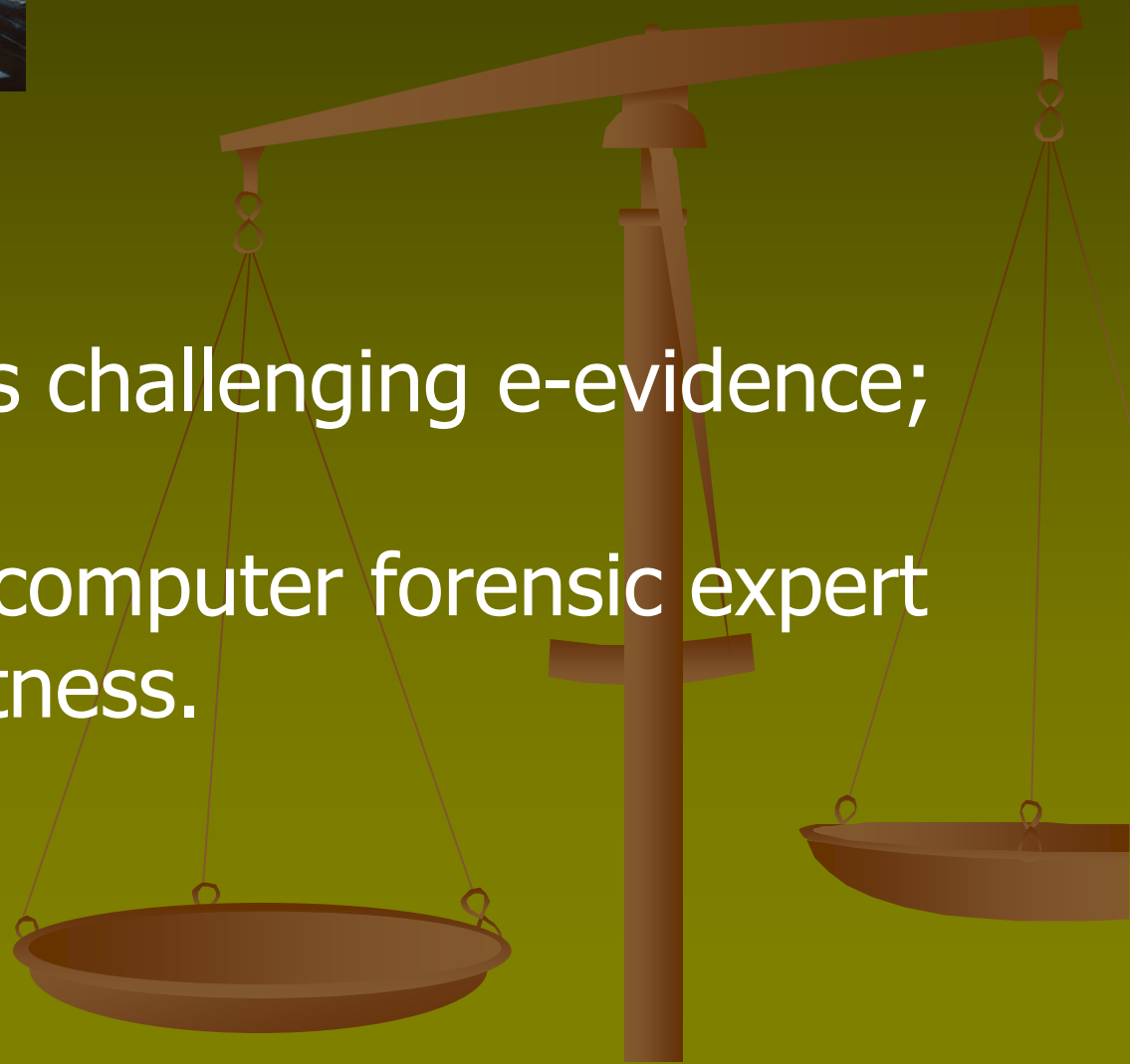
E-evidence. Admissibility.

- **Before and after 2021** (CJEU, Grand Chamber, 2 March 2021, H. K. c. /Prokuratuur, C-746/18).
- **Documents** (pictures or office documents stored in the memory of pc or smartphone); **Police;**
- **Mail** (e-mails; whatsapp messages); **Public prosecutor;**
- **Telephone and e-communications services data** (GPS positioning); **Judge;**
- **Interception of communications** (telephone interception; active chats); **Judge** (stricter conditions);



E-evidence Presentation.

- Defence lawyers challenging e-evidence;
- The role of the computer forensic expert as an expert witness.





Witness videoconferencing

Detainees and protected witnesses: security reasons and time/cost effective measure;

Sanitary reasons during Covid-19 pandemic;

More efficient (less costs; limits geographical or health impediments);

Transparent and repeatable evidence (for both lawyers and judges, appeal courts); reasoning and demeanour; change of panel judge;

Interaction with remote trials and AI tools.

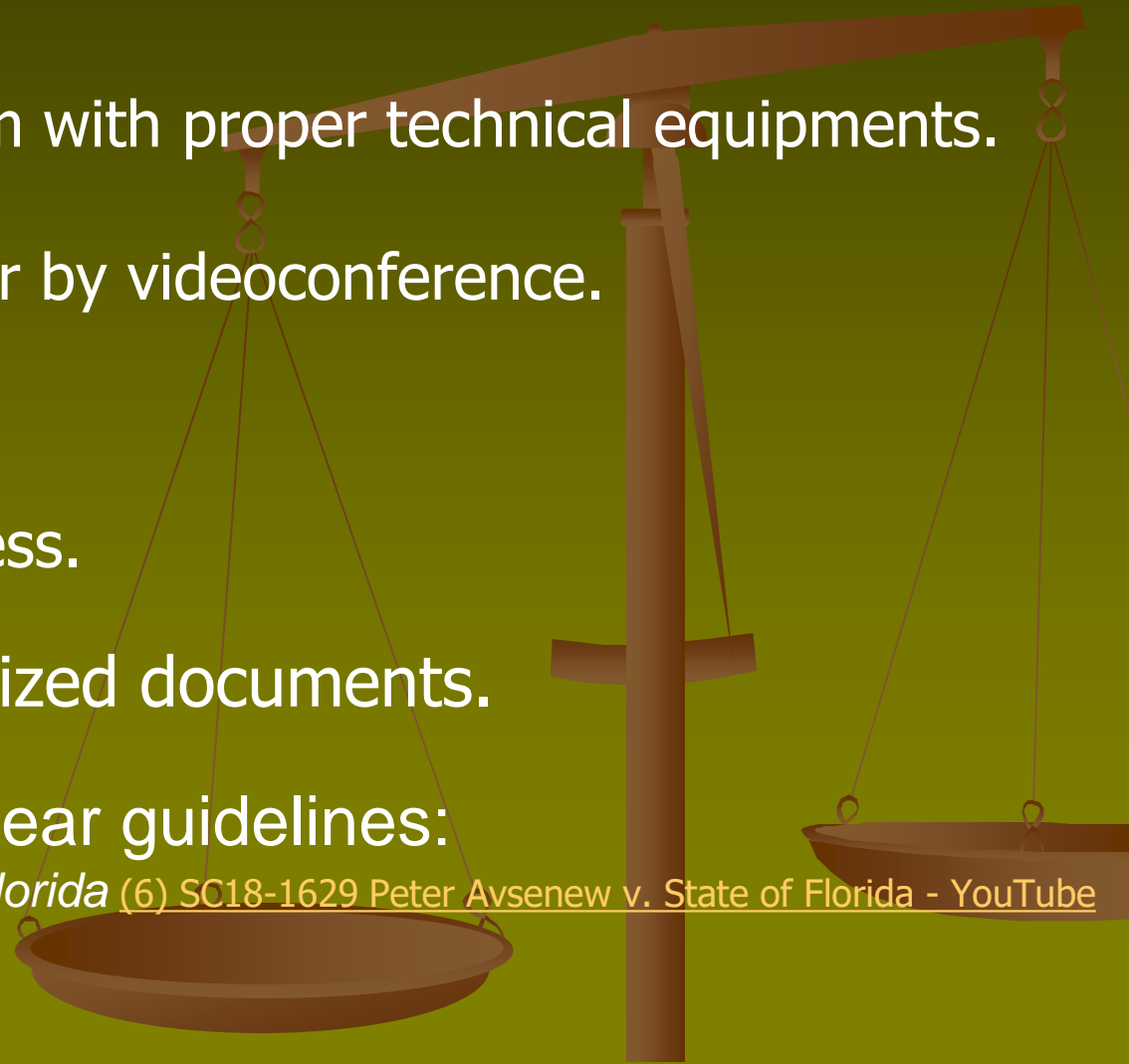




How does it work?



- Setting up the courtroom with proper technical equipments.
- Witness failure to appear by videoconference.
- Witness identification.
- Instructions to the witness.
- Presentation of authorized documents.
- Consequences of unclear guidelines:
 - The case *Avsnew v. State of Florida* (6) SC18-1629 Peter Avsnew v. State of Florida - YouTube





Evaluating witnesses and AI

- Credibility (reliability; trustworthiness: truthful or untruthful?): from polygraphs to AI tools: eyes and demeanour tracking; blood pressure measurement (transdermal optical imaging and the Pinocchio Effect); brain imaging;
- Accuracy (right or wrong?); perception, memory, deposition; ADVOKATE; Immersive technology; Virtual theater/simulation/reconstruction; ChatGPT Image Generator; Metaverse and avatars;
- From demeanour to consistency: algorithms checking witness declarations for gaps/incoherences/contradictions; Virtual practitioner;



Closing statements in remote trials

- **Technically feasible** (members of the panel take the decision in a videoconference-chamber; screen-sharing functionality for judgement reading);
- **In-presence and humanity in sensitive criminal trials** (Capital punishment verdicts on Zoom in some countries have been heavily criticised).



Takeaways.



■ Pros:

- 
- Efficiency (time, costs, security, accuracy), neutrality, predictability and uniformity;



■ Cons:

- AI algorithms transparency and intellectual property; cyber attacks; data leaks; deep fakes; judicial overconfidence; standardization of the justice system;



The irreplaceable role of judges in ensuring «under user control» and fairness of criminal proceedings.

AUTOMATED GENERATED EVIDENCE?

ERA, Lisbon – 26-27.9.2024

Serena Quattrocchio, Professor of Italian and European Criminal Procedure,
University of Turin



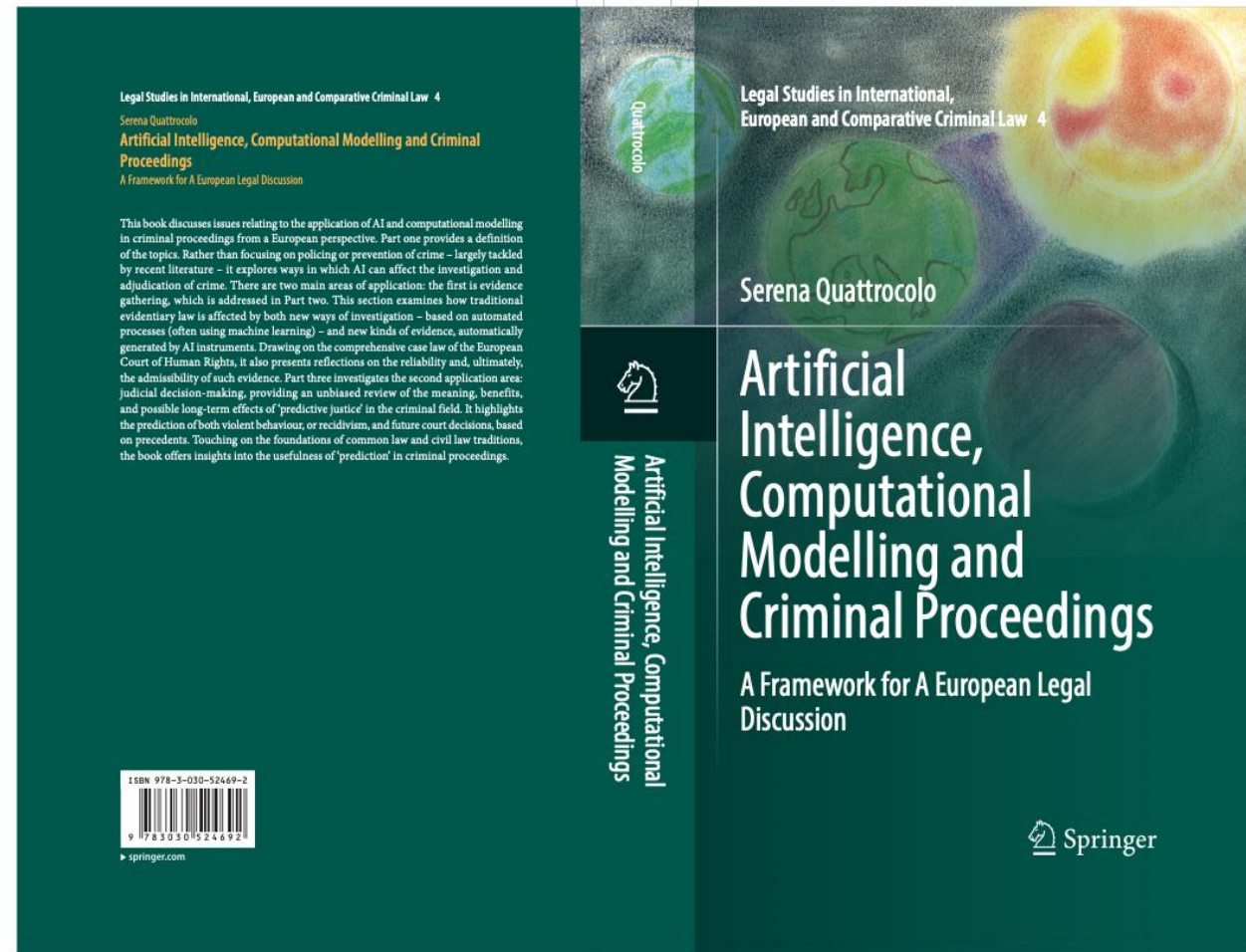
Co-funded by
the European Union



Università di Torino
Dipartimento di Giurisprudenza

IS THERE SUCH A THING?

This is a question I tried to answer in my book



SEVERAL IMPORTANT CAVEAT:

*Let's try to understand
each others*

The law of evidence is the area of criminal procedure with the lowest level of harmonisation

In every legal order, the law of evidence is rich of different and non-normative definitions

Lawmakers are reluctant to rule on evidence law: New technical solutions are seldom regulated under the evidence point of view

New scientific/technical achievements often cause complete chaos in the application of the law of evidence

We need to adapt our legal definitions

EVIDENCE & THE DIGITAL TURN

Digital evidence/E-evidence

Budapest Convention on cyber crime (iunder amendment process)

- Procedural provisions
- Protocols for gathering e-evidence
- Chain of custody



But what do these pieces of evidence prove?

What does a conversation on a digital platform demonstrate?

TELEGRAM CASE-STUDY



admissibility and **evaluation** of digital evidence are based on specific conditions, pre-established by law: **reliability** of a piece of evidence stems from a **pre-determined process** applied for gathering it

SEE REG. 2023/1543/EU AND DIR. 2023/1544/EU

OUR FINDINGS

Serena Quattrocolo¹ / Cosimo Anglano² / Massimo Canonico² / Marco Guazzone²

Technical Solutions for Legal Challenges: Equality of Arms in Criminal Proceedings

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Abstract:

The paper focuses on how computational models and methods impact on current legal systems, and in particular, on criminal justice. While the discussion about the suitability of the exploitation of learning machines and Artificial Intelligence (AI) either as surveillance means and human substitutes in the judicial decision-making process is arising, the authors reflect upon the risk of using AI and algorithm-based evidence in criminal proceedings. The claim of the paper is twofold: on the one hand, we should reinterpret today's legal frameworks, e.g. the European Convention of Human Rights, shifting the attention from possible violations of the right to privacy to potential infringements on a basic fair trial feature, the Equality of Arms. On the other hand, we should acknowledge that main legal issues, triggered by the breathtaking advancements in AI, can properly be addressed mainly through technical solutions (e.g. methods for assessing the completeness and correctness of digital evidence related to mobile devices and conversations). No legal theory, which overlooks the crossover of juridical and computational expertise, will survive the present time.

Keywords: algorithm, data protection law, evidence, fair trial, forensic analysis

DOI: 10.1515/gj-2019-0058

1 Introduction

The so-called Fourth Revolution,¹ the digital one, has already transformed and reshaped people's daily lives and their mutual interactions, especially because computational systems are now used as decision tools in many areas of the public and private domain, traditionally ruled by human decisions. Computational modelling, along with Artificial Intelligence ("AI"), robotics, the internet of things, and more,² enacted a trend of delegating decisions to both automated systems and autonomous artificial agents, that has raised a number of critical issues. *Weapons of Math Destruction*, by, Cathy O'Neil, first tried to shake and wake-up the public opinion, with regard to the risks of inequality and discrimination behind the uncontrolled use of big data analytics, able to even **threaten pillars of the rule of law and democracy**.³ In *AI4People – An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles and Recommendations*, Luciano Floridi and his research group, AI4People, extensively focus on the risks of developing a non-properly monitored AI society, setting forth principles and recommendations to be followed either by policy makers and private stakeholders.⁴ Thus, we must acknowledge that the use of computational modelling is a matter of normative challenges, both because of possible unfair outcomes – ending up with discrimination – and for the transformative effects it may imply, impinging on autonomy in the decision-making process. Such challenges suggest an overarching concern, triggering issues such as the acceptability of replacing or augmenting human decision-making with algorithms.⁵ In particular, after the very famous *Compass case*,⁶ more awareness grew up around the topic of allocating (even partly) judicial decisions to computational models. Being deeply entrenched into the foundational values of the society, criminal justice tends to be considered an 'out-of-reach' realm for technology, whose use in criminal trial is submitted, in many jurisdictions, to the 'Daubert test', stipulated by the U.S. Supreme Court in the Nineties of the past century.⁷ However, the proliferation of free-of-cost digital data and of the easily accessible system of processing them is penetrating the domain of criminal justice in various ways.

Within this framework, on December 2018 the CEPEJ⁸ released the European Ethical Charter on the Use of AI in Judicial Systems.⁹ The soft-law document, based on five principles,¹⁰ sets the spotlight on some general issues that affect any application of computational modelling and artificial intelligence to (continental) judicial systems. Although being not binding, the Charter sets forth minimum standards to start a genuine legally-framed discussion on the topic. In particular, the first principle recommends that the use of AI and other automated

Serena Quattrocolo is the corresponding author.
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AUTOMATEDLY GENERATED EVIDENCE

Digital devices incorporating AI tools tend to operate without a specific (human) external input such as IoT

IoT objects may provide crucial information for criminal investigations and evidence for trial

This is not 'traditional 'e-evidence'

IoT is coded for commercial purposes and is not designed for transparency

GIVEN THE FREQUENT NATURE OF
'**BLACK BOX**' OF AUTOMATED
GENERATED EVIDENCE,
WHAT IS THE **DEMONSTRATIVE**
VALUE OF SUCH A PIECE OF EVIDENCE?



AN UNEXPECTED QUESTION... WHAT IS EVIDENCE

- Although few codes of criminal procedure define 'what evidence is', we take it for granted that **EVIDENCE** is a piece of information able to **DEMONSTRATE A FACT**
- The court **admit** evidence related to the fact to be proved
- e.g., in Italy, such facts refer to the accusation, to the defendant's personal conditions, or impinge on the application of procedural rules...
- It can be **direct** or **indirect** demonstration, based on the number of **inferences** necessary to get to from the piece of evidence to the fact

THIS IS NOT A
THEORETICAL QUESTION

at all...

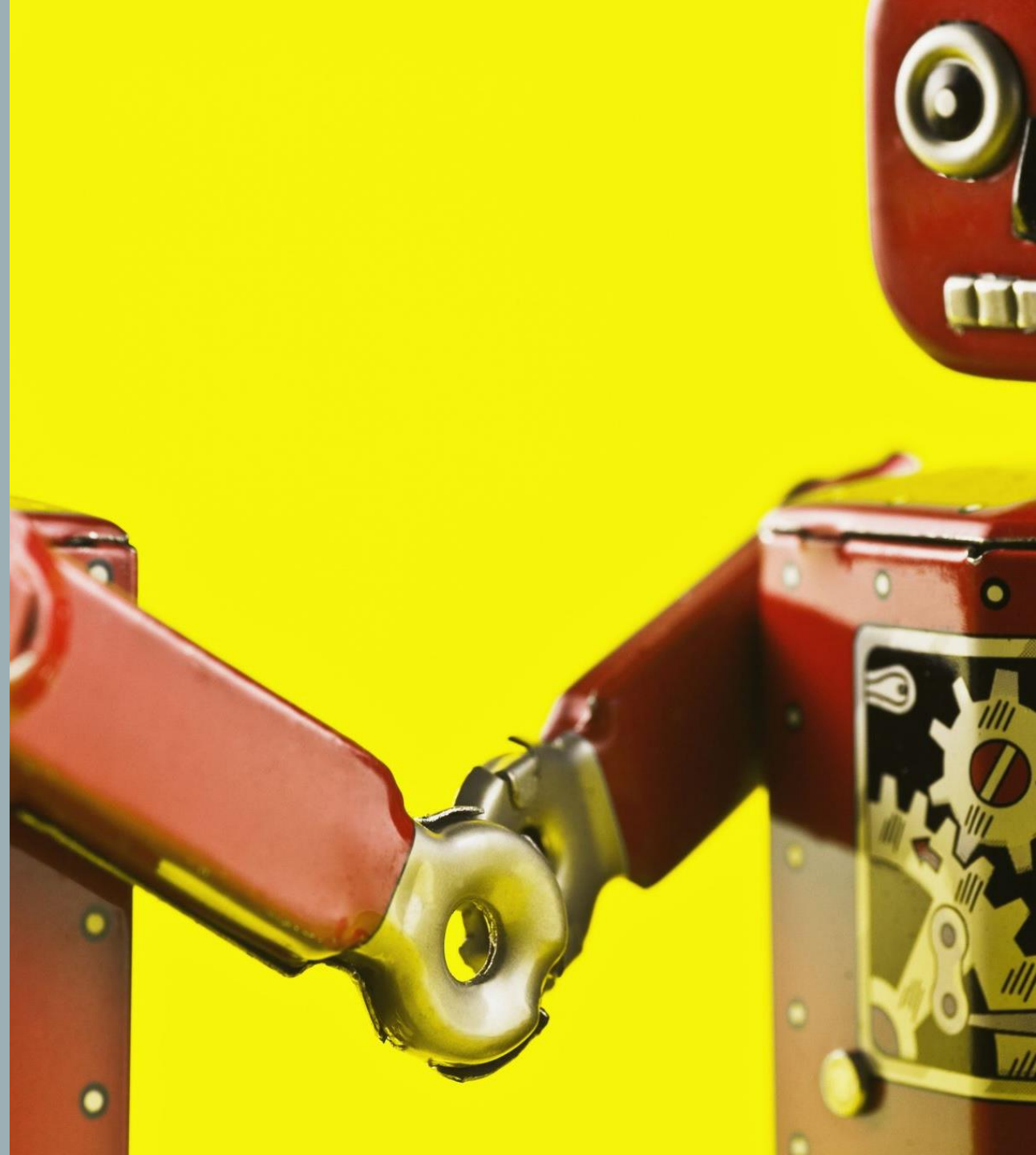
IS
AUTOMATEDLY
GENERATED
EVIDENCE
ADMISSIBLE?

- Are we able to assess what it demonstrates?
- *can a smart fridge turning on to counterbalance the heat in the room demonstrate a fact such as a person was in the room?*
- Are we able to assess how it has been generated?
- *Which is the process that triggered a specific output in the functioning of an IoT tool?*

AUTOMATEDLY GENERATED EVIDENCE IMPLY A
FULL PROCESS OF ADMISSIBILITY,
MOVING FROM THE VERY NATURE OF EVIDENCE,
THE CAPABILITY OF DEMONSTRATING FACTS

*We must refuse to attach
admissibility and reliability to
machine evidence just because it is
machine-generated*

Chessman (2017); Van Buskirk, Liu
(2006)

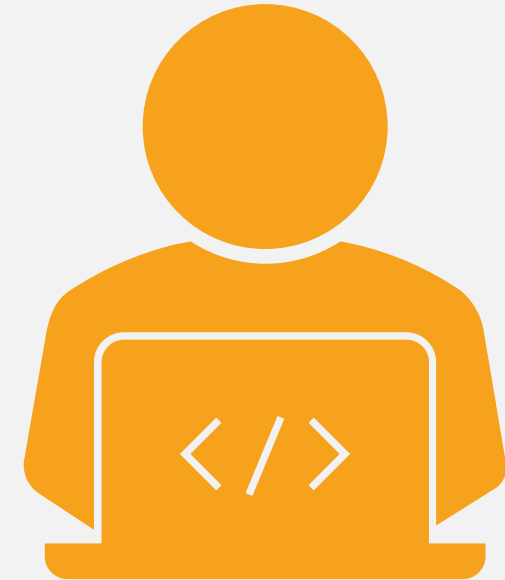


EU LEGISLATIVE 'PACKAGE' ON E-EVIDENCE, 27 JUNE 2023

REGULATION 2023/1543

DIRECTIVE 2023/1544

- E-evidence refers to digital data, such as emails, text messages and traffic data, that is used to investigate and prosecute criminal offences.
- European production order: judicial authorities will be able to directly request electronic evidence from service providers – such as telecom or social media companies – based in another member state. The service providers will be obliged to respond within 10 days, or 8 hours in emergency cases.
- Service providers that offer their services in the EU must appoint a legal representative or designate an establishment to which judicial authorities can send their e-evidence orders.



E.L.I. PROPOSAL FOR A DIRECTIVE ON ADMISSIBILITY OF DIGITAL EVIDENCE

Article 4: General
rules on
admissibility of
evidence

Article 5: Absolute
inadmissibility of
evidence

Article 6: Non-
absolute
inadmissibility of
evidence

Article 7:
Admissibility of
electronic
evidence

Article 8: Rules on
electronic evidence
and forensic
standards

*To re-establish the
equality of arms, as
provided for by the
inner concept of
fair trial,*

FOCUS THE
DISCUSSION IN
COURT ON:
**ADMISSIBILITY
RELIABILITY**

THANK YOU

ERA, Lisbon – 26-27.9.2024

Serena Quattrocchio, professor of Italian and European Criminal Procedure,
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