

Artificial Intelligence, Intellectual Property and Fundamental Rights Intertwined

Towards a Conceptual Framework

CEIPI Diploma on AI and IP Program, Université de Strasbourg, 25 January 2021

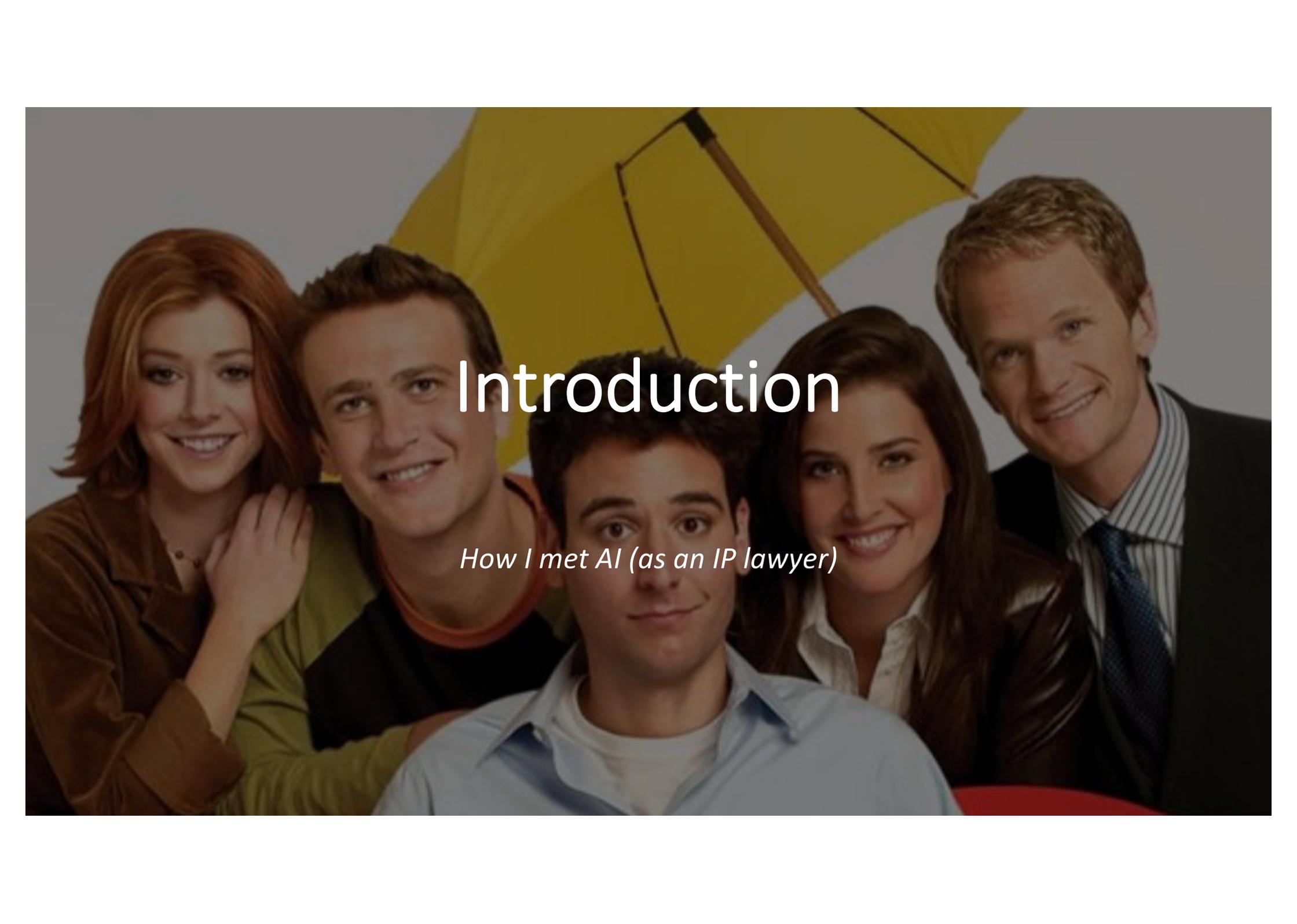
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Professor Université Libre de Bruxelles (ULB – JurisLab)

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Invited Professor KULeuven

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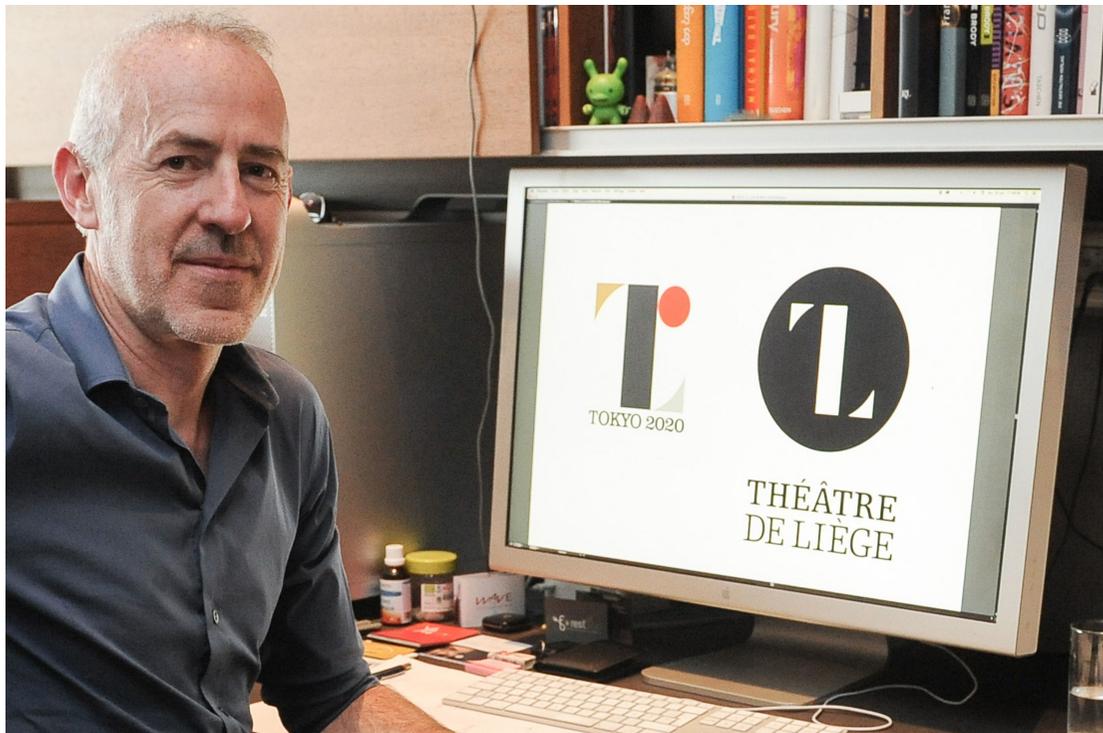
A promotional photograph of the main cast of the television show 'How I Met Your Mother'. The five main characters are posed together, smiling. In the background, a large yellow umbrella is visible. The image has a semi-transparent dark overlay.

Introduction

How I met AI (as an IP lawyer)



Kenjiro Sano (Japanese Designer), *2020 Tokyo Olympics Logo* (2015)



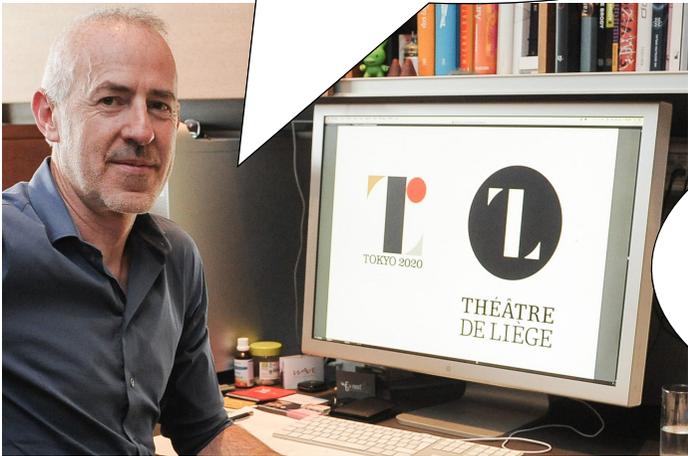
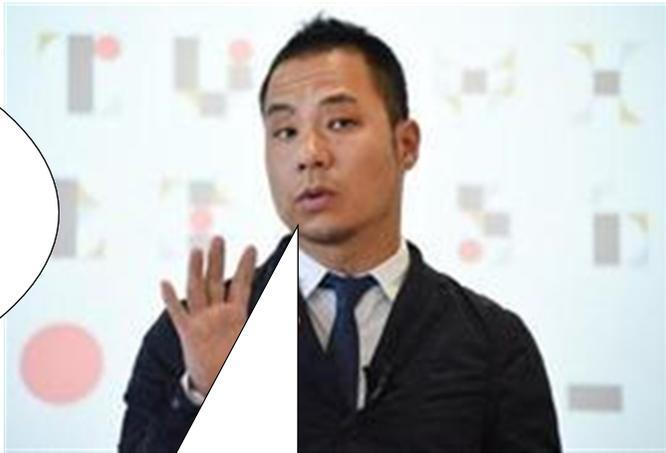
Olivier Debie @OliDebie · 28 juil. 2015
Théâtre de Liège vs Tokyo 2020
#Tokyo2020 #ThéâtredeLiège #plagiat?



GIF
242 2,9 k 1,0 k

Olivier Debie (Belgian Designer), *Theater of Liège Logo* (2011)

Access + similarities
= Presumption of
copying



Independent
Creation
= No Copying



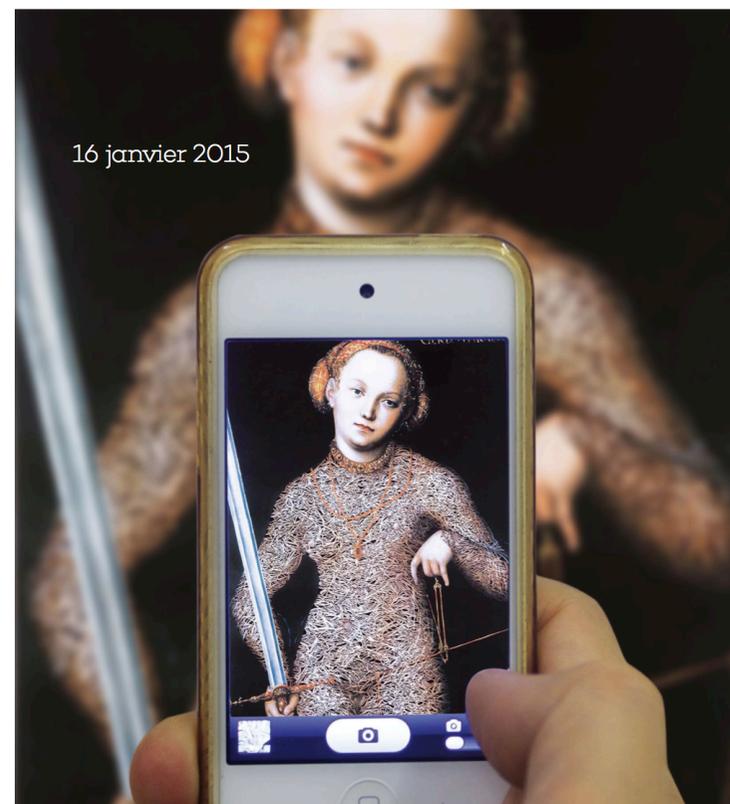
Asao Tokolo (Japanese Designer), *New 2020 Tokyo Olympics Logo* (2016)

L'objet de la protection du droit d'auteur Contribution à l'étude de la liberté de création

Thèse présentée en vue de l'obtention du titre de docteur en sciences juridiques
par Julien CABAY

Promotrice : Prof. Andrée PUTTEMANS (ULB)
Jury : Prof. Alain BERENBOOM (ULB)
Prof. Jane C. GINSBURG (COLUMBIA LAW SCHOOL)
Prof. Frank GOTZEN (KATHOLIEKE UNIVERSITEIT LEUVEN)
Prof. Arnaud NUYTS (ULB)
Prof. Alain STROWEL (UNIVERSITE CATHOLIQUE DE LOUVAIN ;
UNIVERSITE SAINT-LOUIS - BRUXELLES)
Prof. Edouard TREPPOZ (UNIVERSITE JEAN MOULIN - LYON III)

Année académique 2015-2016



20 ans de nouveau *droit d'auteur*

Conférence organisée par Julien CABAY (ULB), Vitorique DELFRÈGE (EPF ÉCONOMIQUE), Virginie FERRÉOL (ULB) et Micaela LAMBECHT (UCL)

- How do I get from Tokyo to Liège on Internet?

- Method 1 : **text-to-image search**

- Input = textual description of images

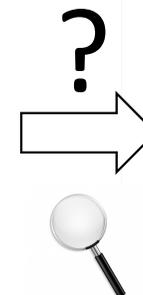
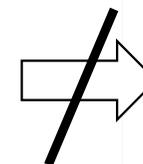
- « Logo based around the « T » letter (for Tokyo, Team, Tomorrow), in Didot font, with a red circle (took over from Yasuka Kamekura's logo for 1964 Tokyo Olympics), symbol of the Hinomaru and representing a beating heart » (Kenjiro Sano)

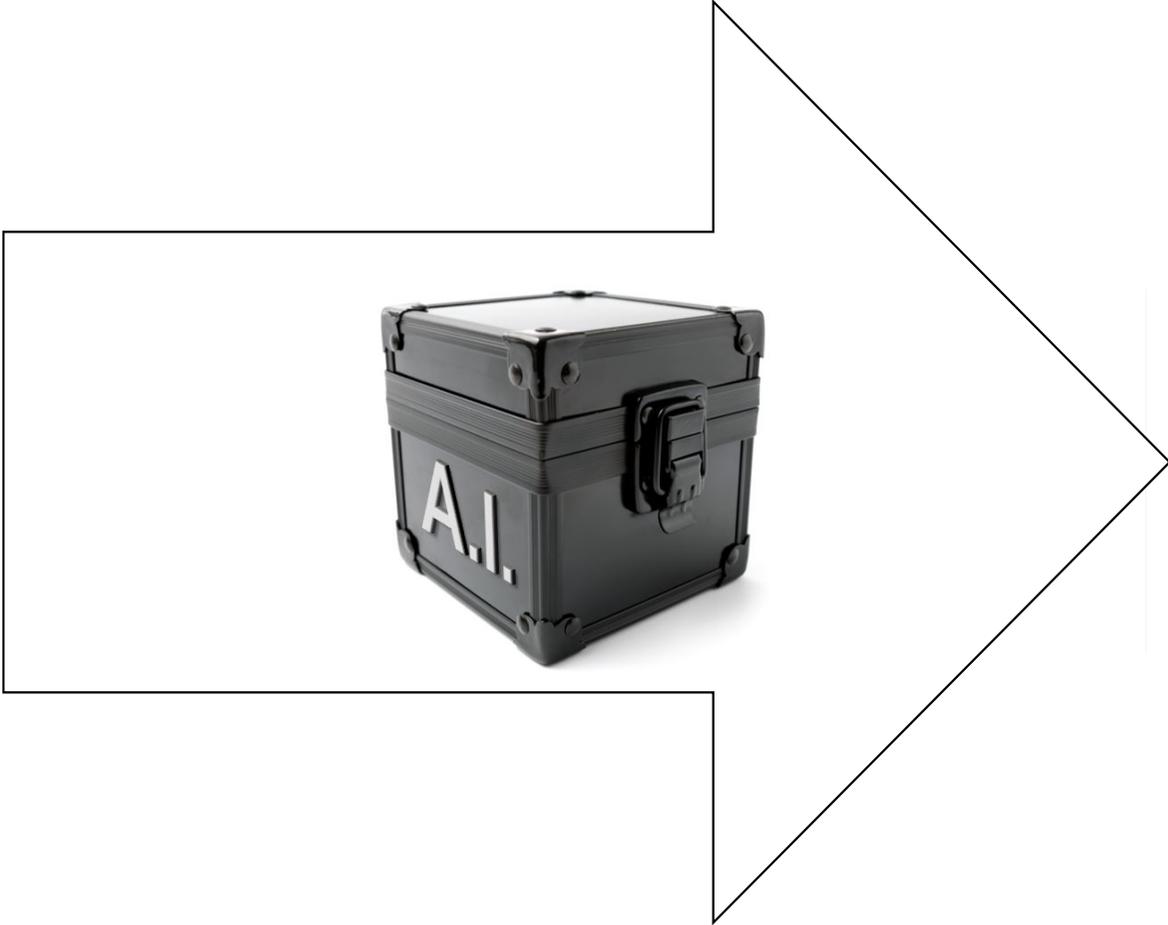
- Output = nothing

- Method 2: **reverse image search**

- Input = image

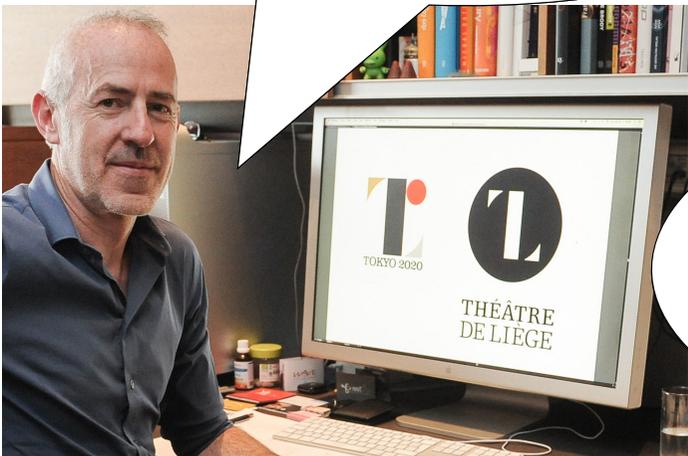
- Output = visually similar images





THÉÂTRE
DE LIÈGE

Internet disclosure +
algorithmic
similarities
= **Copying**



... I am
screwed
...

...



Artificial Intelligence, Intellectual Property and Fundamental Rights are Intertwined

A photograph of three men standing in front of a red background. From left to right: a man in a dark jacket, a man in a striped shirt, and a man in a blue shirt. The background has white text: 'Fablab ULB', 'Frugal LAB', 'Mixer ULB', and 'Juris LAB'. A black box in the top right corner contains the word 'INNOVATION'. A white box at the bottom of the photo contains the text 'De gauche à droite: Olivier Debeir, Julien Cabay et Thomas Vandamme'. A vertical credit 'Victor Levy' is on the right edge.

INNOVATION

De gauche à droite: Olivier Debeir, Julien Cabay et Thomas Vandamme.

Victor Levy

En direct des labos

PROPRIÉTÉ INTELLECTUELLE ET CONTREFAÇON

LE DEEP LEARNING À LA RESCOURSSE

et chercheur au sein du JurisLab du Centre de Droit privé, Julien Cabay pointe le brouillard qui parasite la définition des contours d'un objet de propriété intellectuelle, à divers

labos gonflent leur puissance de calcul pour gagner de petits pourcentages de performance. Cela m'intéresse peu. Ici, nous travaillons sur l'explication des algorithmes: comment les rendre

ARC: research project IPSAM



Assessing Intellectual Property Relevant Similarities In Images Through Algorithmic Decision Systems



The question of whether there are similarities between two given objects is a central one in the field of intellectual property (IP) rights. The answer is an extremely complex one, better left to IP offices and judges—through administrative and legal procedures, respectively—, who do not have proper analysis tools.

However, algorithmic decision systems (ADS) have been developed, mainly by private companies, and they are now increasingly used to enforce IP rights (monitoring counterfeit products online, content filtering) and for registration by IP offices.

In order to limit biases and protect values of public interest associated with IP, the development of these tools should ideally be carried out under the supervision of independent experts. With this in mind, the project intends to develop an open, supervised, and transparent model to analyse IP similarities (IPSAM), specifically for 2D images.

This interdisciplinary project will have legal practitioners (JurisLab) and engineers (LISA) examine the methodological, technical, legal, and ethical challenges involved in developing such tools, in order to provide a critical study of the technological solutions currently available.

The project's result will enable original contributions to the debates surrounding algorithmic regulation in general and in the field of IP in particular.

Coordination : **Julien Cabay**, Centre de Droit privé, Faculté de Droit et de Criminologie

<https://www.ulb.be/fr/arc/arc-research-project-ipsam>



Fundamental rights in the EU

An overview of the CJEU case law

EU Primary Law

- Article 6 Treaty on European Union (TEU)

*'(1) The Union recognises the rights, freedoms and principles set out in the **Charter of Fundamental Rights of the European Union** of 7 December 2000, as adapted at Strasbourg, on 12 December 2007, which shall have the same legal value as the Treaties. (...)*

*(2) The Union shall accede to the **European Convention for the Protection of Human Rights and Fundamental Freedoms**. Such accession shall not affect the Union's competences as defined in the Treaties.*

*(3) Fundamental rights, as guaranteed by the European Convention for the Protection of Human Rights and Fundamental Freedoms and as they result from the constitutional traditions common to the Member States, shall constitute **general principles of the Union's law**.'*

EU Primary Law

- Charter of Fundamental Rights of the European Union (CFREU)
 - Relation with ECHR
 - **EU not yet a member** (cf. CJEU, Opinion 2/13)
 - *'In so far as this Charter contains rights which correspond to rights guaranteed by the Convention for the Protection of Human Rights and Fundamental Freedoms, the **meaning and scope of those rights shall be the same** as those laid down by the said Convention. This provision shall not prevent Union law providing **more extensive protection**'* (art. 52(3) CFREU)
 - *'**Nothing** in this Charter shall be interpreted as **restricting or adversely affecting** human rights and fundamental freedoms as recognised, in their respective fields of application, by Union law and international law and by international agreements to which the Union or all the Member States are party, including the European Convention for the Protection of Human Rights and Fundamental Freedoms, and by the Member States' constitutions'* (art. 53 CFREU)

EU Primary Law

- Charter of Fundamental Rights of the European Union (CFREU)
 - Legal value
 - *'same legal value as the Treaties'* (art. 6 TEU)
 - Addressees
 - *'The provisions of this Charter are addressed to the institutions, bodies, offices and agencies of the **Union** with due regard for the principle of subsidiarity and to the **Member States only when they are implementing Union law'** (art. 51(1) CFREU)
 - = *'legislation falls within the scope of EU law'* (CJEU, *Fransson*, C-617/10, § 19)
 - = *'requires a certain degree of connection above and beyond the matters covered being closely related or one of those matters having an indirect impact on the other'* (CJEU, *Siragusa*, C-206/13, § 24)*

EU Primary Law

- Charter of Fundamental Rights of the European Union (CFREU)
 - Relation with EU Law
 - *'respect for those rights [recognised by the Charter] being a **condition of the lawfulness of EU acts**, so that measures incompatible with those rights are not acceptable in the EU'* (CJEU, Opinion 2/13, § 169)
 - *'situations cannot exist which are covered in that way by European Union law without those fundamental rights being applicable. The **applicability of European Union law entails applicability of the fundamental rights** guaranteed by the Charter'* (CJEU, Fransson, C-617/10, § 21)

EU Primary Law

- Charter of Fundamental Rights of the European Union (CFREU)
 - Limitations
 - *'Any limitation on the exercise of the rights and freedoms recognised by this Charter must be **provided for by law** and **respect the essence** of those rights and freedoms. Subject to the principle of **proportionality**, limitations may be made only if they are necessary and genuinely meet objectives of general interest recognised by the Union or the need to protect the rights and freedoms of others'* (art. 52(1) CFREU)
 - *'reconcile the requirements of the protection of different fundamental rights' => 'fair balance'* (CJEU, *Promusicae*, §§ 65-68)
 - Addressees
 - EU institutions when adopting EU law (CJUE, *Deutsches Weintor*, C-544/10, § 47)
 - MS legislator when implementing EU law (CJEU, *Promusicae*, § 68)
 - MS jurisdictions when applying implemented EU law (CJUE, *Deckmyn*, C-201/13, § 32)

EU Primary Law

- Charter of Fundamental Rights of the European Union (CFREU)
 - IP under the Charter
 - ***'Intellectual property shall be protected'*** (art. 17(2) CFREU)
 - *'No one may be deprived of his or her possessions, except in the public interest and in the cases and under the conditions provided for by law, subject to fair compensation being paid in good time for their loss'* (CJEU, *Luksan*, C-277/10, § 68)
 - *'It is apparent from the wording of that provision that subject matter constituting intellectual property qualifies for protection under EU law. However, it **does not** follow that such subject matter or categories of subject matter must **all qualify for the same protection**'* (CJEU, *Cofemel*, C-683/17, § 38)
 - *'**nothing** whatsoever in the wording of that provision or in the Court's case-law to suggest that that right is **inviolable** and must for that reason be **absolutely protected**'* (CJEU, *Scarlet*, C-70/10, § 43)
 - Enforcement
 - Substantive law (CJEU, *Pelham*, C-476/17, § 33)
 - *'ensure genuine protection of the fundamental right at issue'* (CJEU, *UPC Telekabel Wien*, C-314/12, § 62)
 - *'right to effective judicial protection guaranteed by Article 47 of the Charter'* (CJEU, *Huawei*, C-170/13, § 57)

EU Secondary Law

- Regulations and Directives on IP (legislation)
 - High level of harmonization
 - IP: Copyright, Trademark, Design, 'Patent' (Biotech, SPC, *Unitary*), ...
 - Not IP (but some analogies) : Trade Secrets
 - References to the Charter in most recent secondary law
 - Ex: Directive (EU) 2019/790 on copyright and related rights in the Digital Single Market
 - Ex: Directive (EU) 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure
 - Adoption by EU and implementation by MS in conformity with the Charter
 - *'falls within the scope of EU law' ; 'entails applicability of the fundamental rights guaranteed by the Charter'* (see CJEU, *Fransson*)

EU Secondary Law

- Regulations and Directives on IP (CJEU)
 - CJEU analysis on the basis of the Charter : the exemple of Copyright
 - CJEU, *GS Media*, C-160/15, § 31

*(...) it follows from recitals 3 and 31 of **Directive 2001/29** that the harmonisation effected by [Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society] is to maintain, in particular in the electronic environment, a **fair balance** between, on one hand, **the interests of copyright holders and related rights in protecting their intellectual property rights, safeguarded by Article 17(2) of the Charter of Fundamental Rights of the European Union ('the Charter')** and, on the other, the protection of **the interests and fundamental rights of users of protected objects, in particular their freedom of expression and of information, safeguarded by Article 11 of the Charter, and of the general interest'***

EU Secondary Law

- Regulations and Directives on IP (CJEU)

- CJEU analysis on the basis of the Charter : the exemple of Copyright

- CJEU, *Spiegel Online*, C-516/17, § 43 ; *Funke Medien*, C-469/17, § 58 ; *Pelham*, C-476/17, § 60

*'(...) The **mechanisms allowing those different rights and interests to be balanced are contained in Directive 2001/29 itself**, in that it provides inter alia, first, in Articles 2 to 4 thereof, rightholders with exclusive rights and, second, in Article 5 thereof, for exceptions and limitations to those rights which may, or even must, be transposed by the Member States, since those mechanisms must nevertheless find concrete expression in the national measures transposing that directive and in their application by national authorities'*

EU Secondary Law

- Regulations and Directives on IP (CJEU)

- CJEU analysis on the basis of the Charter : the exemple of Copyright

- CJEU, *YouTube*, C-264/19, § 37

- '(...) **Directive 2004/48** is intended to establish a **fair balance** between, on the one hand, the interest of the holders of copyright in the protection of their intellectual property rights enshrined in Article 17(2) of the Charter of Fundamental Rights and, on the other hand, the protection of the interests and fundamental rights of users of protected subject matter, as well as of the public interest'*

EU Secondary Law

- Regulations and Directives on Data (legislation)
 - Limited level of harmonization so far but strong agenda
 - Harmonisation : mainly Personal Data (GDPR), non-personal data (free flow), public sector information
 - Agenda :
 - See in general EU Commission Communication, *A European Strategy for data*, Brussels, 19.2.2020, COM(2020) 66 final
 - See in particular Digital Services Act (Proposal), Brussels, 15.12.2020, COM(2020) 825 final
 - References to the Charter in secondary law (and agenda)
 - Ex: Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)
 - Ex: Regulation (EU) 2018/1807 on a framework for the free flow of non-personal data in the European Union
 - Ex: Directive (EU) 2019/1024 on open data and the re-use of public sector information
 - Ex : Digital Services Act (Proposal)
 - Adoption by EU and implementation by MS in conformity with the Charter
 - In particular art. 8 CFREU (Protection of personal data)

EU Secondary Law

- Regulations and Directives on Data (CJEU)
 - CJEU analysis on the basis of the Charter : the exemple of Copyright
 - CJEU, *Scarlet*, C-70/10, §§ 50-51

*'(...) contested **filtering system** may also infringe the fundamental rights of that ISP's customers, namely their right to protection of their personal data and their freedom to receive or impart information, which are rights safeguarded by Articles 8 and 11 of the Charter respectively.*

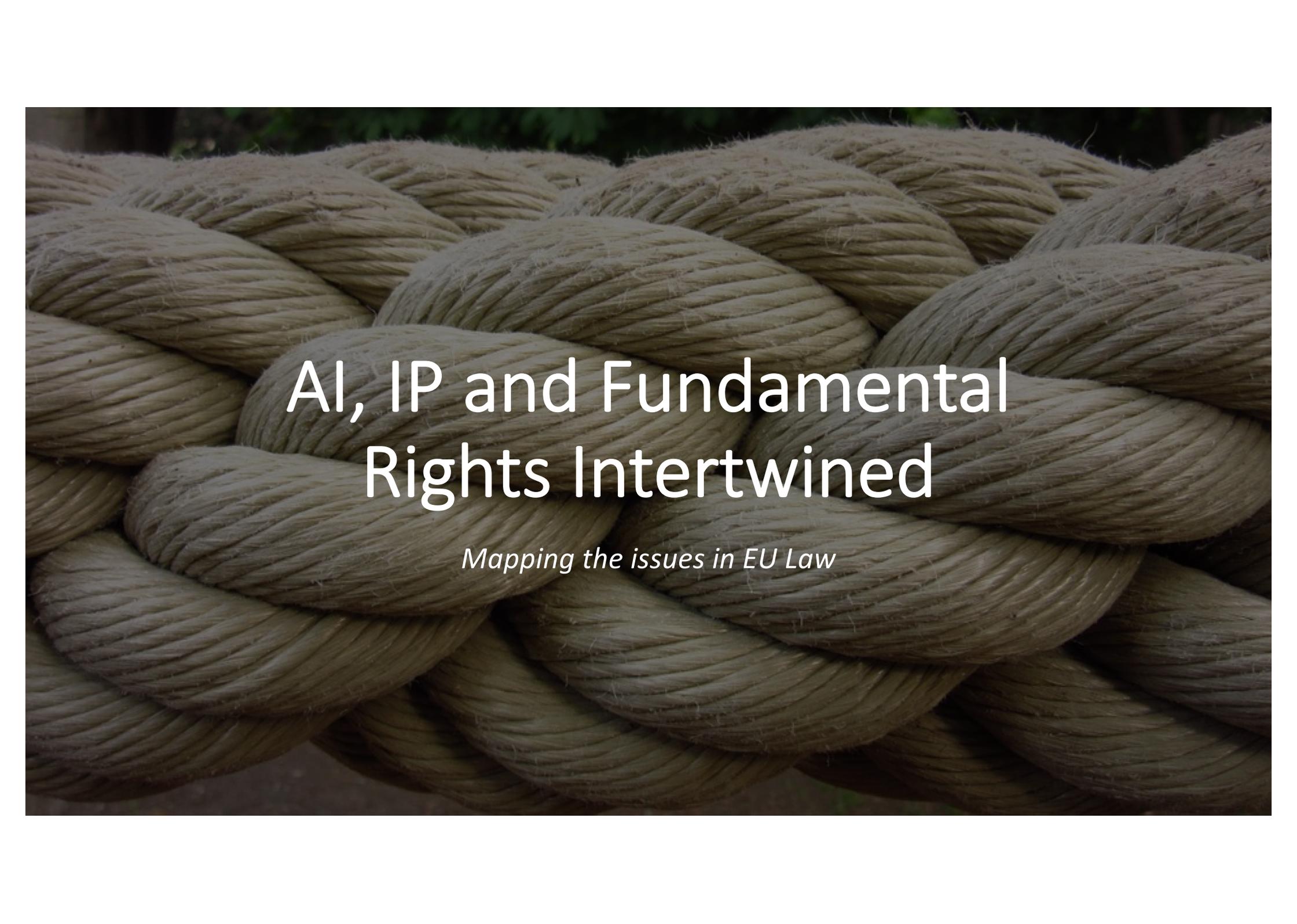
It is common ground, first, that the injunction requiring installation of the contested filtering system would involve a systematic analysis of all content and the collection and identification of users' IP addresses from which unlawful content on the network is sent. Those addresses are protected personal data because they allow those users to be precisely identified.'

EU Secondary Law

- Regulations and Directives on AI (legislation)
 - Very limited level of harmonization so far but strong agenda
 - IP : Text and Data Mining exception (art. 3 and 4 DSM Directive)
 - Personal data : right not to be subject to a decision based solely on automated processing, including profiling (art. 22 GDPR)
 - Digital platforms : voluntary measures aimed at detecting, identifying and removing, or disabling of access to, illegal content (art. 6 and 27), Data access and scrutiny (art. 31 DSA Proposal)
 - AI agenda : *see EU Commission White Paper, On Artificial Intelligence - A European approach to excellence and trust, Brussels, 19.2.2020, COM(2020) 65 final*
 - Reference to the Charter in agenda
 - *See in general EU Commission Communication, Building Trust in Human-Centric Artificial Intelligence, Brussels, 8.4.2019, COM(2019) 168 final*
 - *See in particular risk assessment by very large onlinte platform (art. 26 DSA Proposal)*
 - Adoption by EU and implementation by MS in conformity with the Charter

Situations where AI, IP and Fundamental Rights are intertwined shall be analyzed on the basis of the Charter and its interpretation by CJEU

**BACK
TO
THE FUTURE™**



AI, IP and Fundamental Rights Intertwined

Mapping the issues in EU Law

Commission's view on AI and IP

'(...) Reflection will be needed on interactions between AI and intellectual property rights, from the perspective of both intellectual property offices and users, with a view to fostering innovation and legal certainty in a balanced way (...).'

EU Commission Communication, *Artificial Intelligence for Europe*, Brussels, 25.4.2018, COM(2018) 237

Commission's view on AI and IP

'...'

EU Commission White Paper, *On Artificial Intelligence – A European Approach to Excellence and Trust*, Brussels, 19.2.2020, COM(2020) 65 final ;
Communication *A European strategy for data*, Brussels, 19.2.2020, COM(2020) 66 final ; Communication *Shaping Europe's digital future*,
Brussels, 19.2.2020, COM(2020) 67 final

Commission's view on AI and IP

*'(...) the Commission will, together with stakeholders and IP offices, **explore the use of new technologies such as AI and blockchain to further improve the effectiveness of our IP systems.** In fact, new technologies can help facilitate the protection of IP, improve transparency, allow for a smoother distribution of license fees, and more effectively tackle counterfeiting and piracy (...)'*

*'(...) In addition, the digital revolution requires **reflection on how and what is to be protected. AI technologies are creating new works and inventions.** In some cases, for instance in the cultural sector, the use of inventive machines may become the norm. These developments raise the question of what protection should be given to products created with the help of AI technologies (...)'*

Commission's view on AI and Fundamental Rights

*'(...) As with any new technology, **the use of AI brings both opportunities and risks.** Citizens fear being left powerless in defending their rights and safety when facing the information asymmetries of algorithmic decision-making, and companies are concerned by legal uncertainty. **While AI can help protect citizens' security and enable them to enjoy their fundamental rights, citizens also worry that AI can have unintended effects or even be used for malicious purposes. These concerns need to be addressed. (...)**'*

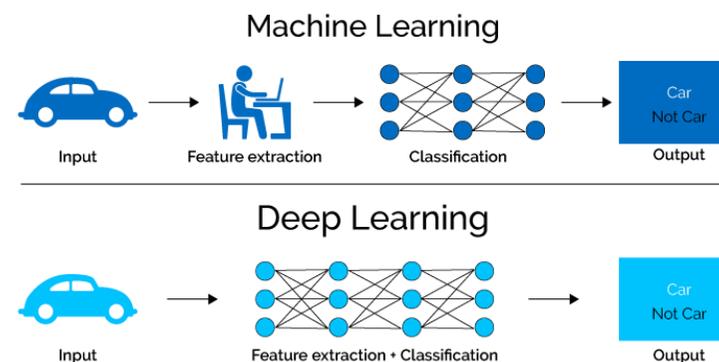
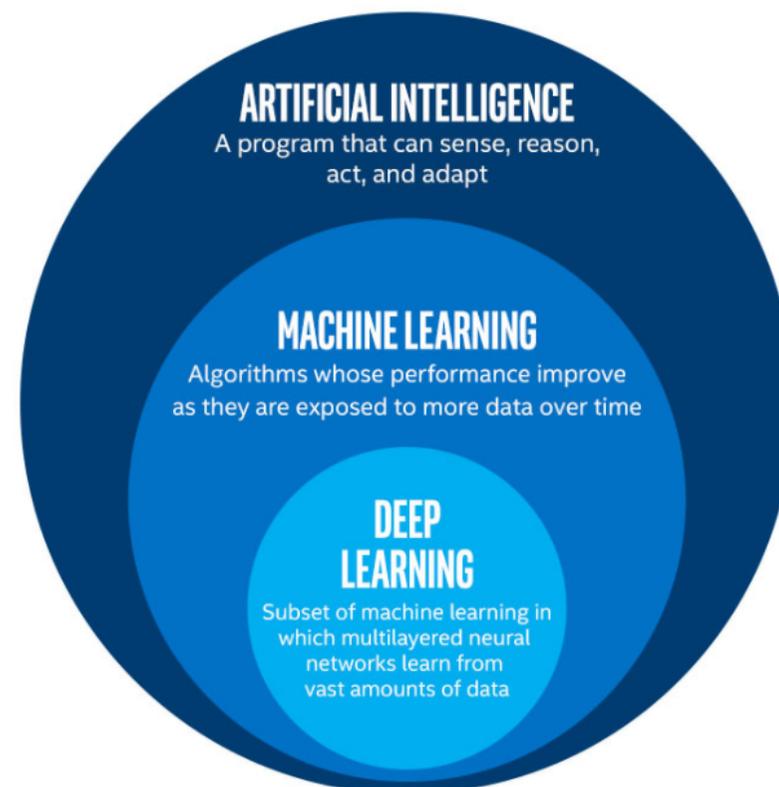
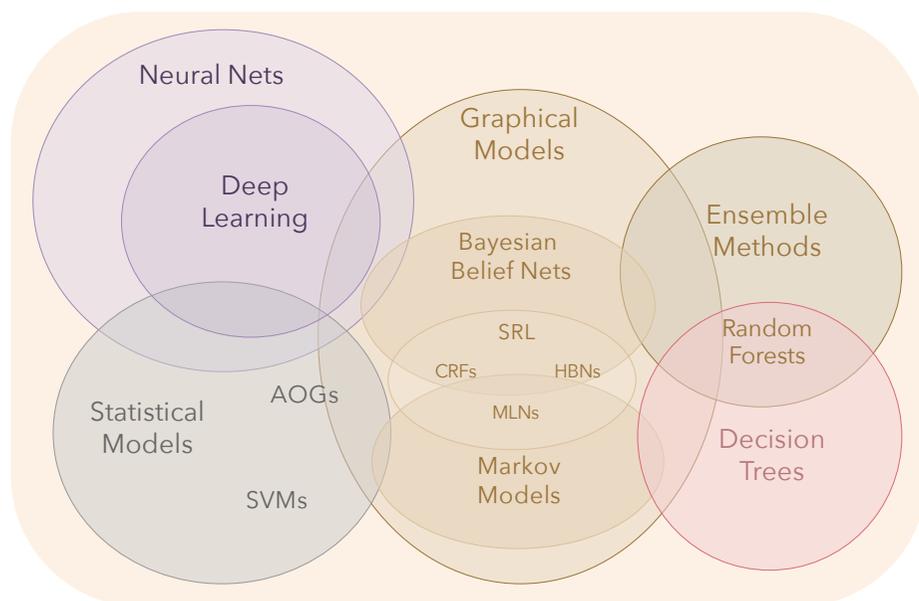
Parliament's view on AI, IP and Fundamental Rights

*'(...) Stresses the key importance of **balanced IPR protection in relation to AI technologies**, and of the multidimensional nature of such protection, and, at the same time, stresses the importance of ensuring a **high level of protection of IPRs**, of creating legal certainty and of building the trust needed to encourage investment in these technologies and ensure their long-term viability and use by consumers; (...) emphasises that **creating an environment conducive to creativity and innovation by encouraging the use of AI technologies by creators must not come at the expense of the interests of human creators, nor the Union's ethical principles** (...)'*

EU Parliament Resolution of 20 October 2020 on intellectual property rights for the development of artificial intelligence technologies (2020/2015(INI))

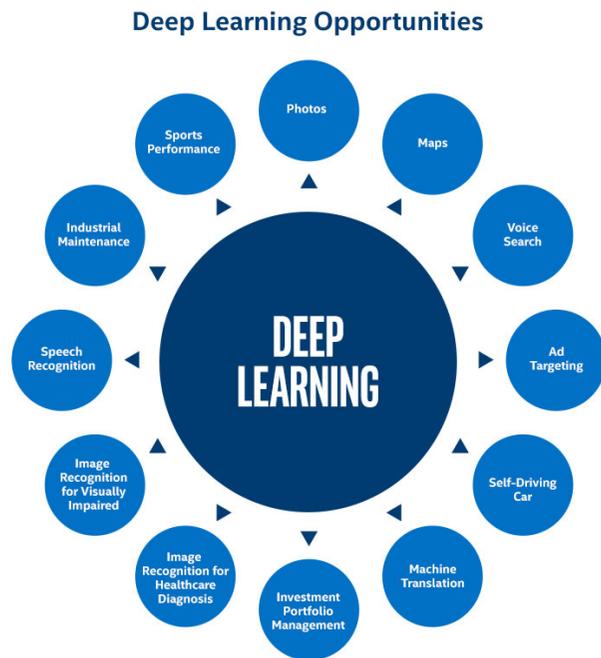
Mapping the issues

- AI as an **umbrella term** that includes machine learning and deep learning (as a subset of the latter)



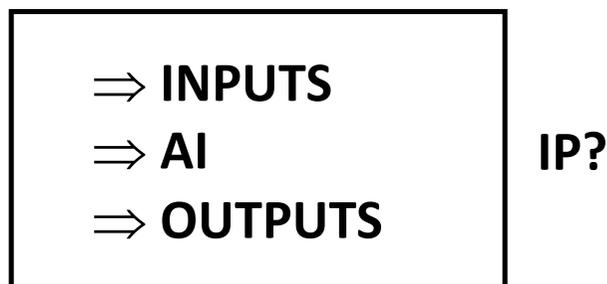
Mapping the issues

- Myriad of applications



Mapping the issues

- Issues are infinite
 - Different types of data
 - Different types of technologies
 - Different types of applications
- Issues can only be addressed through a case by case analysis
 - Balancing exercise considering the different types of data, technologies and applications ⇒ **FUNDAMENTAL RIGHTS METHODOLOGY?**
- Two main categories of issues
 - **IP for AI** and its impact on Fundamental Rights
 - **AI for IP** and its impact on Fundamental Rights





IP for AI and its impact on Fundamental Rights

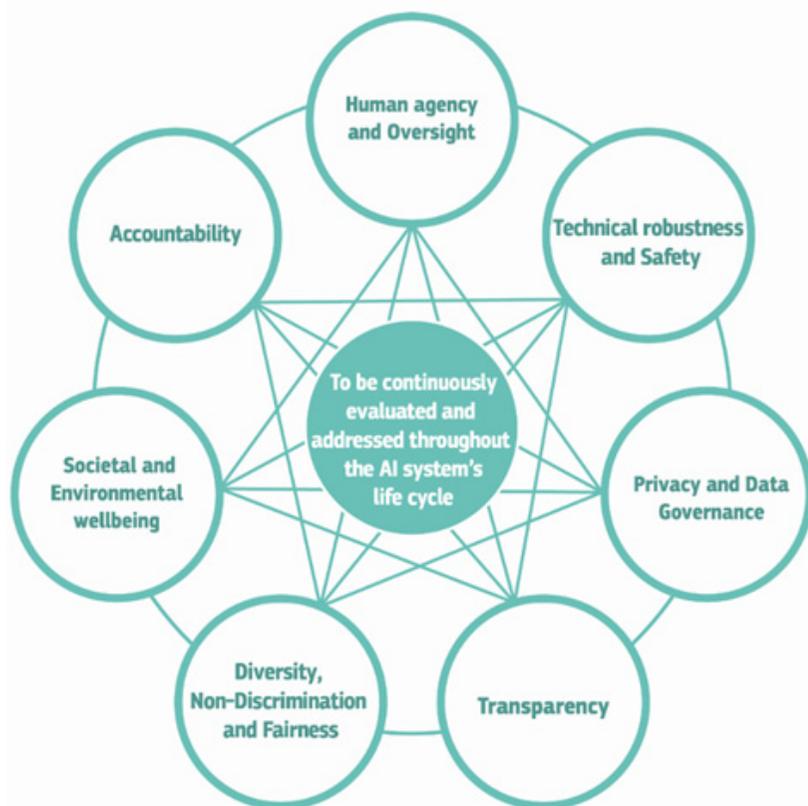
'IP' as a hurdle

Ethicals Guidelines for Trustworthy AI

- ***‘(...) seven requirements that should be met (...). The below list of requirements is non-exhaustive (...)’***
 - **Human agency and oversight** *(including fundamental rights, human agency and human oversight)*
 - **Technical robustness and safety** *(including resilience to attack and security, fall back plan and general safety, accuracy, reliability and reproducibility)*
 - **Privacy and data governance** *(including respect for privacy, quality and integrity of data, and access to data)*
 - **Transparency** *(including traceability, explainability and communication)*
 - **Diversity, non-discrimination and fairness** *(including the avoidance of unfair bias, accessibility and universal design, and stakeholder participation)*
 - **Societal and environmental wellbeing** *(including sustainability and environmental friendliness, social impact, society and democracy)*
 - **Accountability** *(including auditability, minimisation and reporting of negative impact, trade-offs and redress)*



IP as a hurdle?



VS



IP on inputs

- IP protection for data?
 - 'Mere' data
 - No IP
 - 'Augmented' data
 - Might qualify for Copyright protection
 - 'Structured' data
 - Might qualify for Database *sui generis* protection
- Impact on fundamental rights?
 - Freedom of expression and information (art. 11 CFREU)
 - Freedom to conduct business (art. 16 CFREU)
- Restoring the balance?
 - Freedom of expression and information
 - TDM exceptions (art. 3 and 4 DSM Directive)
 - Research Data (art. 10 PSI Directive)
 - Freedom to conduct business
 - Abuse of dominant position (CJEU, *Magill*, C-241/91 P & C-241/92 P ; *IMS Health*, C-418/01)

IP on inputs

- Restoring the balance

- Article 3 Directive (EU) 2019/790 on copyright and related rights in the Digital Single Market

*(1) Member States shall provide for an **exception** to the rights provided for in Article 5(a) and Article 7(1) of Directive 96/9/EC, Article 2 of Directive 2001/29/EC, and Article 15(1) of this Directive for reproductions and extractions made by research organisations and cultural heritage institutions in order to carry out, **for the purposes of scientific research, text and data mining** of works or other subject matter to which they have lawful access.*

IP on inputs

- Restoring the balance

- Article 4 Directive (EU) 2019/790 on copyright and related rights in the Digital Single Market

*(1) Member States shall provide for an **exception** or limitation to the rights provided for in Article 5(a) and Article 7(1) of Directive 96/9/EC, Article 2 of Directive 2001/29/EC, Article 4(1)(a) and (b) of Directive 2009/24/EC and Article 15(1) of this Directive for reproductions and extractions of lawfully accessible works and other subject matter **for the purposes of text and data mining.***

(...)

(3) The exception or limitation provided for in paragraph 1 shall apply on condition that the use of works and other subject matter referred to in that paragraph has not been expressly reserved by their rightholders in an appropriate manner, such as machine-readable means in the case of content made publicly available online.

(...)

IP on inputs

- Restoring the balance

- Article 10 Directive (EU) 2019/1024 on open data and the re-use of public sector information

*(1) Member States shall support the availability of research data by adopting national policies and relevant actions aiming at making **publicly funded research data openly available ('open access policies')**, following the principle of 'open by default' and compatible with the FAIR principles. In that context, concerns relating to intellectual property rights, personal data protection and confidentiality, security and legitimate commercial interests, shall be taken into account in accordance with the principle of 'as open as possible, as closed as necessary'. Those open access policies shall be addressed to research performing organisations and research funding organisations.*

2. Without prejudice to point (c) of Article 1(2), research data shall be re-usable for commercial or non-commercial purposes in accordance with Chapters III and IV, insofar as they are publicly funded and researchers, research performing organisations or research funding organisations have already made them publicly available through an institutional or subject-based repository. In that context, legitimate commercial interests, knowledge transfer activities and pre-existing intellectual property rights shall be taken into account.

IP on AI

- IP protection for AI technologies?
 - Copyright protection for software
 - Patent
- Impact on fundamental rights?
 - Freedom to conduct business (art. 16 CFREU)
- Restoring the balance?
 - Freedom to conduct business
 - Decompilation (art. 5(3) Software Directive ; art. 27 UPC Agreement)
 - Interoperability (art. 6 Software Directive ; art. 27 UPC Agreement)
 - Abuse of dominant position (GC, *Microsoft*, T-201/4)

IP on AI

- Restoring the balance

- Article 5 Directive 2009/24/EC on the legal protection of computer programs

(3) The person having a right to use a copy of a computer program shall be entitled, without the authorisation of the rightholder, to observe, study or test the functioning of the program in order to determine the ideas and principles which underlie any element of the program if he does so while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do.

IP on AI

- Restoring the balance

- Article 6 (Decompilation) Directive 2009/24/EC on the legal protection of computer programs

*1. The **autorisation of the rightholder shall not be required** where reproduction of the code and translation of its form within the meaning of points (a) and (b) of Article 4(1) are indispensable to **obtain the information necessary to achieve the interoperability** of an independently created computer program with other programs, provided that the following conditions are met:*

- (a) those acts are performed by the licensee or by another person having a right to use a copy of a program, or on their behalf by a person authorised to do so;*
- (b) the information necessary to achieve interoperability has not previously been readily available to the persons referred to in point (a); and*
- (c) those acts are confined to the parts of the original program which are necessary in order to achieve interoperability.*

2. The provisions of paragraph 1 shall not permit the information obtained through its application:

- (a) to be used for goals other than to achieve the interoperability of the independently created computer program;*
- (b) to be given to others, except when necessary for the interoperability of the independently created computer program; or*
- (c) to be used for the development, production or marketing of a computer program substantially similar in its expression, or for any other act which infringes copyright.*

(...)

IP on AI

- Restoring the balance

- Article 27 Agreement on a Unified Patent Court

*The rights conferred by a **patent shall not extend** to any of the following:*

(...)

*(k) the acts and the use of the obtained information as allowed under Articles 5 and 6 of Directive 2009/24/EC (3), in particular, by its provisions on **decompilation and interoperability**;*

(...)

IP on outputs

- IP protection for productions assisted by / generated by AI?
 - Copyright? Patent? Design? *Sui Generis* right?
- Impact on fundamental rights?
 - Intellectual Property (art. 17(2) CFREU)
- Restoring the balance?
 - AI production is different from Human production and only if IP protection is evidenced as necessary, then further thinking on appropriate protection in order to avoid undesirable consequences



Commission's view on IP as a hurdle

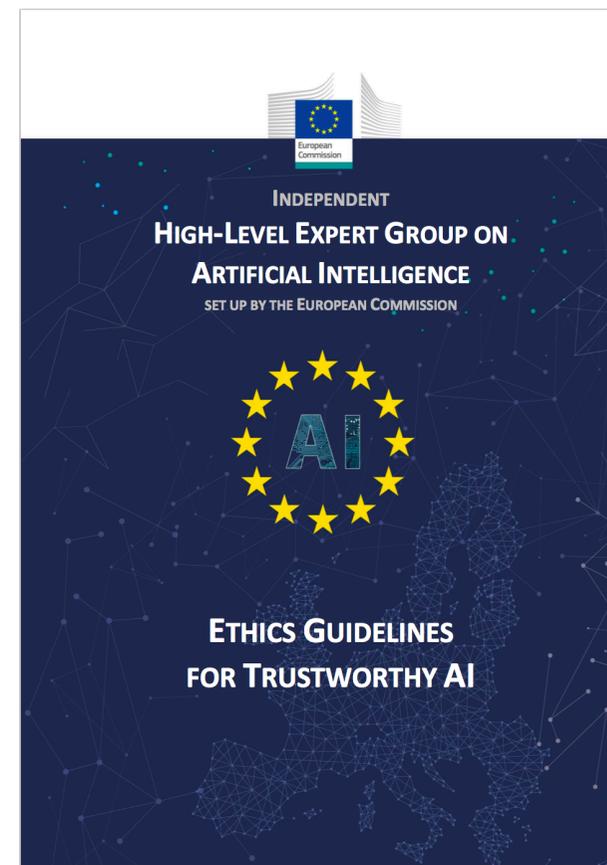
*'(...) the Commission will explore the need for legislative action on issues that affect relations between actors in the data-agile economy to provide incentives for horizontal data sharing across sectors (...). One or more of the following issues could be taken forward in a Data Act (2021): (...) **evaluating the IPR framework with a view to further enhance data access and use** (including a possible revision of the **Database Directive** and a possible clarification of the application of the **Trade Secrets Protection Directive** as an enabling framework) (...).'*

Commission's view on 'IP' as a hurdle

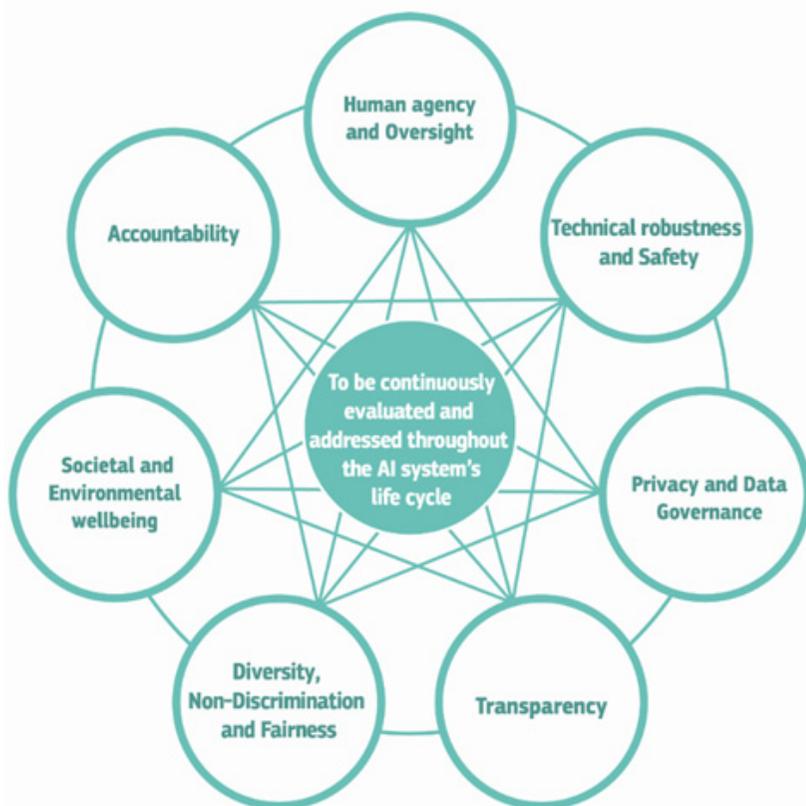
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'IP' as a hurdle?

- *'(...) seven requirements that should be met (...). The below list of requirements is non-exhaustive (...)'*
 - **Human agency and oversight** *(including fundamental rights, human agency and human oversight)*
 - Technical robustness and safety *(including resilience to attack and security, fall back plan and general safety, accuracy, reliability and reproducibility)*
 - Privacy and data governance *(including respect for privacy, quality and integrity of data, and access to data)*
 - **Transparency** *(including traceability, explainability and communication)*
 - Diversity, non-discrimination and fairness *(including the avoidance of unfair bias, accessibility and universal design, and stakeholder participation)*
 - Societal and environmental wellbeing *(including sustainability and environmental friendliness, social impact, society and democracy)*
 - Accountability *(including auditability, minimisation and reporting of negative impact, trade-offs and redress)*



'IP' as a hurdle?

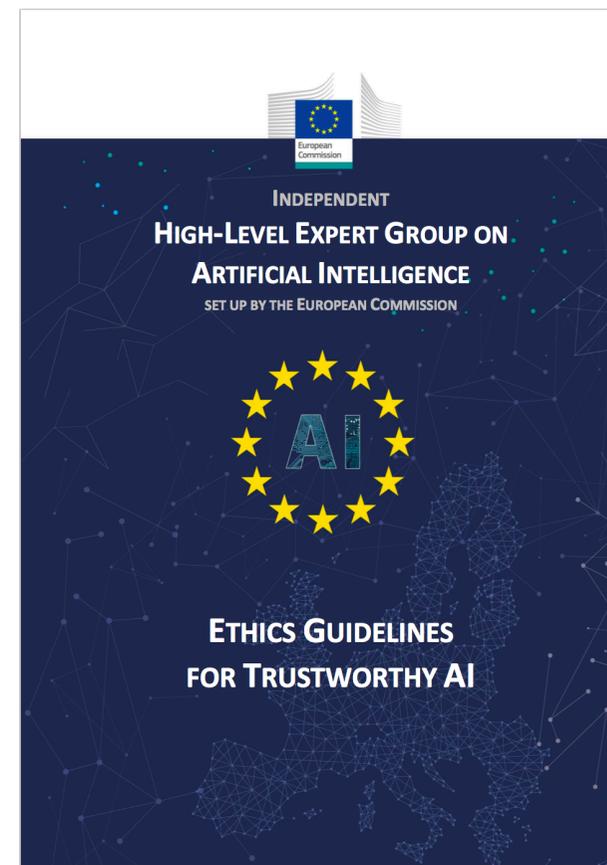


VS



'IP' as a hurdle?

- *'(...) seven requirements that should be met (...). The below list of requirements is non-exhaustive (...).'*
 - **Human agency and oversight** *(including fundamental rights, human agency and human oversight)*
 - (...)
 - **Transparency** *(including traceability, explainability and communication)*
 - (...)



Trade secrets on inputs, AI and outputs

- Trade secrets protection available!
 - See article 2 Directive (EU) 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure:
 - (1) 'trade secret' means information which meets all of the following requirements:*
 - (a) it is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;*
 - (b) it has commercial value because it is secret;*
 - (c) it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret*
- Impact on fundamental rights!
 - Protection of personal data (art. 8 CFREU)
 - Non-discrimination (art. 21 CFREU)
- Restoring the balance?
 - Comp. CJEU case law

Trade secrets on inputs, AI and outputs

- Restoring the balance?

- Comp. CJEU, *Coty Germany*, C-580/13, §§ 39-41 (right to an effective remedy and right to IP vs. right to protection of personal data)

*'In that regard, that **unlimited and unconditional authorisation to invoke banking secrecy** is such as to prevent the procedures laid down by Directive 2004/48 and the measures taken by the competent national authorities, in particular when they seek to order the disclosure of necessary information under Article 8(1) of that directive, from taking due account of the specific characteristics of each intellectual property right and, where appropriate, the intentional or unintentional character of the infringement.*

*It follows that an authorisation of that kind is capable of **seriously impairing**, in the context of Article 8 of Directive 2004/48, **the effective exercise of the fundamental right to intellectual property** — to the benefit of the right of persons covered by Article 8(1) of Directive 2004/48 to the protection of personal data concerning them — as a result of the obligation, for a banking institution, to respect banking secrecy.*

*It follows from the foregoing that a national provision, such as that at issue in the main proceedings, taken in isolation, is such as to **seriously infringe the fundamental right to an effective remedy and, ultimately, the fundamental right to intellectual property**, enjoyed by the holders of those rights, and that it **does not**, therefore, **comply with the requirement to ensure a fair balance** between the various fundamental rights weighed up in Article 8 of Directive 2004/48.'*

Trade secrets on inputs, AI and outputs

- Restoring the balance?

- Comp. CJEU, *Bastei Lübbe*, C-149/17, §§ 51-52 (right to an effective remedy and right to IP vs. right to respect for private and family life)

*'It must be held that if, in situations such as those at issue in the main proceedings, national legislation, as interpreted by the relevant national courts, has the effect of creating an obstacle to a national court before which a tortious action has been brought from being able to compel, on application of the claimant, the providing and obtaining of evidence relating to the opposing party's family members, **proving the alleged infringement of copyright and who was responsible for that infringement are rendered impossible**, and, consequently, the **fundamental rights to an effective remedy and to intellectual property, enjoyed by the holder of the copyright, are seriously infringed**, and thereby the requirement to ensure a fair balance between the various fundamental rights in question is not respected.*

*Therefore, **by guaranteeing an almost absolute protection for the family members of the owner of an internet connection, through which copyright infringements were committed by means of file-sharing**, the national legislation at issue in the main proceedings cannot, contrary to the requirements set by Article 8(1) of Directive 2001/29, be considered to be sufficiently effective and capable of ultimately leading to effective and dissuasive sanctions against the perpetrator of that infringement. Furthermore, the procedure initiated in respect of the remedy at issue in the main proceedings is not capable of ensuring the enforcement of intellectual property rights required by Article 3(1) of Directive 2004/48.'*

Trade secrets on inputs, AI and outputs

- Restoring the balance?

- Personal data shall enjoy effective judicial protection

- CJEU, *Schrems*, C-362/14, § 95

- Additional safeguards :

- *'right to obtain human intervention on the part of the controller, to express his or her point of view and to contest the decision'* (art. 22(3) GDPR)

- *'right to obtain an explanation of the decision'* (recital 71 GDPR)

- Trade secrets might be limited accordingly

- Despite recital 63 GDPR (*'A data subject should have the right of access to personal data (...) That right should not adversely affect the rights or freedoms of others, including trade secrets'*)

- Trade secrets might be limited to a larger extent than IP

- Does not qualify for art. 17(2) CFREU : *'subject matter constituting intellectual property qualifies for protection under EU law. However, it does not follow that such subject matter or categories of subject matter must all qualify for the same protection'* (see CJEU, *Cofemel*)

- Even so : *'nothing whatsoever in the wording of that provision or in the Court's case-law to suggest that that right is inviolable and must for that reason be absolutely protected'* (see CJEU, *Scarlet*, C-70/10 ; *Pelham*, C-476/17)

Trade secrets on inputs, AI and outputs

- Restoring the balance (future)

- Article 26(1) DSA Proposal

*‘Very large online platforms shall identify, analyse and assess, (...) any **significant systemic risks** stemming from the functioning and use made of their services in the Union. This risk assessment shall be specific to their services and shall include the following systemic risks:*

(...)

*(b) any **negative effects for the exercise of the fundamental rights** to respect for private and family life, freedom of expression and information, the prohibition of discrimination and the rights of the child, as enshrined in Articles 7, 11, 21 and 24 of the Charter respectively;*

(...).

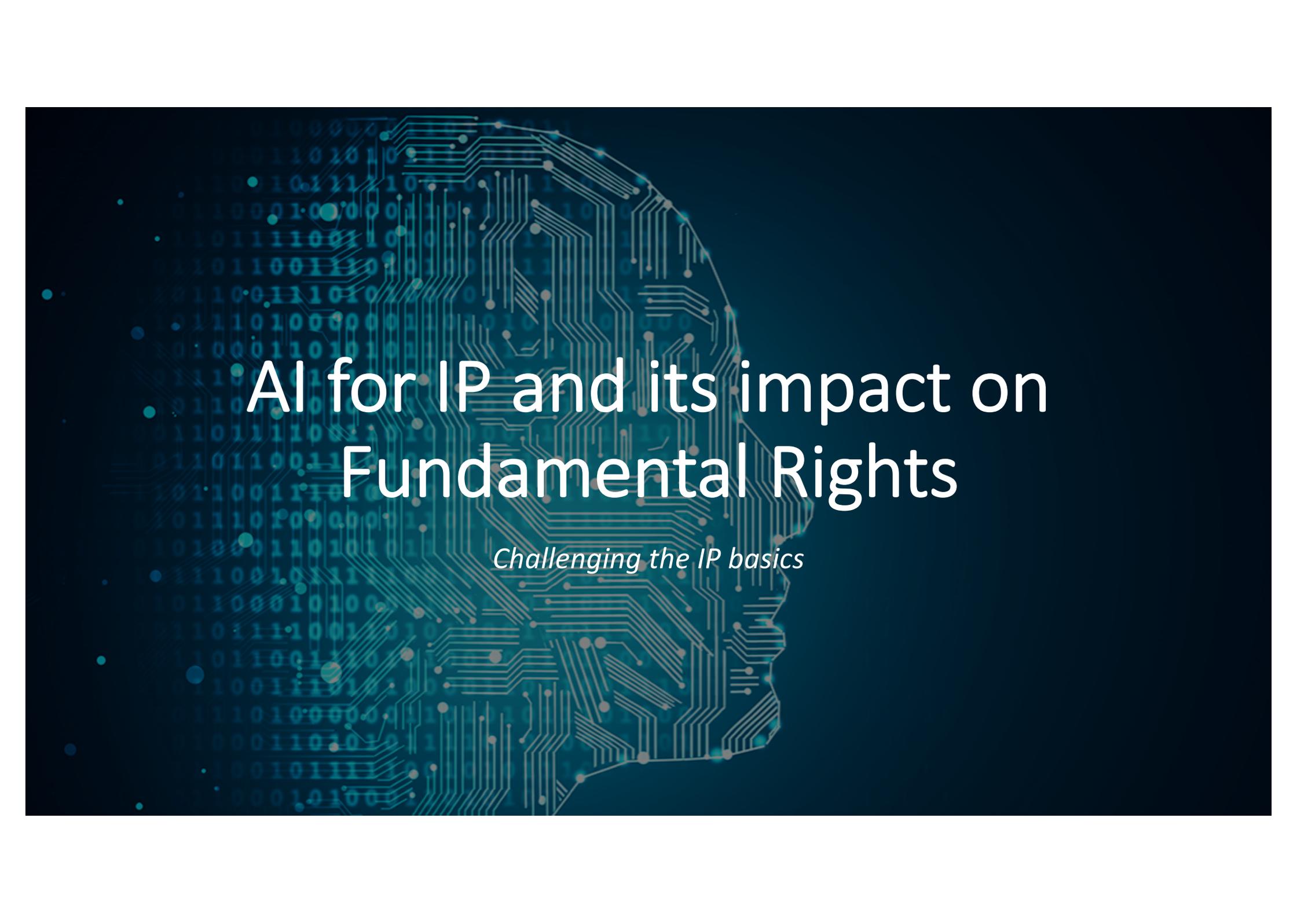
Trade secrets on inputs, AI and outputs

- Restoring the balance (future)
 - Article 31 DSA Proposal

*'(...) 2. Upon a reasoned request from the Digital Services Coordinator of establishment or the Commission, very large online platforms shall, within a reasonable period, as specified in the request, provide **access to data to vetted researchers** who meet the requirements in paragraphs 4 of this Article, for the sole **purpose of conducting research that contributes to the identification and understanding of systemic risks as set out in Article 26(1).***

(...)

*5. The Commission shall, after consulting the Board, adopt delegated acts laying down the technical conditions under which very large online platforms are to share data pursuant to paragraphs 1 and 2 and the purposes for which the data may be used. Those delegated acts shall lay down the specific conditions under which such sharing of data with vetted researchers can take place in compliance with Regulation (EU) 2016/679, **taking into account the rights and interests of the very large online platforms** and the recipients of the service concerned, **including the protection of confidential information, in particular trade secrets**, and maintaining the security of their service.'*



AI for IP and its impact on Fundamental Rights

Challenging the IP basics

The topical exemple

- Algorithmic enforcement of IP

- Article 17 Directive (EU) 2019/790 on copyright and related rights in the Digital Single Market (DSM)

*(4) If no authorisation is granted, **online content-sharing service providers** shall be liable for unauthorised acts of communication to the public, including making available to the public, of copyright-protected works and other subject matter, unless the service providers demonstrate that they have:*

(a) made best efforts to obtain an authorisation, and

*(b) made, in accordance with high industry standards of professional diligence, **best efforts to ensure the unavailability of specific works** and other subject matter for which the rightholders have provided the service providers with the relevant and necessary information; and in any event*

*(c) acted expeditiously, upon receiving a sufficiently substantiated notice from the rightholders, to **disable access to, or to remove from their websites**, the notified works or other subject matter, and made **best efforts to prevent their future uploads** in accordance with point (b).*

The topical exemple

- Article 17 = upload filter
 - Common understanding
 - Fundamental rights concerns
 - Action for annulment brought by Poland (C-401/19, pending)

*'The Republic of Poland claims specifically that the imposition on online content-sharing service providers of the obligation (...) make it necessary for the service providers — in order to avoid liability — to carry out prior **automatic verification (filtering)** of content uploaded online by users, and therefore make it necessary to introduce **preventive control mechanisms**. Such mechanisms **undermine the essence of the right to freedom of expression and information** and do **not** comply with the requirement that limitations imposed on that right be **proportional** and **necessary**.'*

The topical exemple

- ***'reconcile the requirements of the protection of different fundamental rights' => 'fair balance'*** (CJEU, *Promusicae*, §§ 65-68)

Charter Fundamental Rights EU	Article 17 DSM Directive
Protection of personal data (8)	<ul style="list-style-type: none"> - No general monitoring obligation (8) - No identification of individual users / processing of personal data, except in accordance with GDPR <i>e.a.</i> (9)
Freedom of expression and information (11) Freedom of the arts and sciences (13)	<ul style="list-style-type: none"> - Autorisation OCSSP shall also cover acts carried out by users (2) - No prevention of legitimate uses, including copyrihgt exceptions (7)
Freedom to conduct a business (16)	<ul style="list-style-type: none"> - Taking into account features of service, availability/costs means (5) - Taking into account market position (6)
Intellectual property (17(2))	<ul style="list-style-type: none"> - Extension communication to the public right (1)
Right to an effective remedy (47)	<ul style="list-style-type: none"> - Complaint and redress mechanism (9)

Further mapping the issues

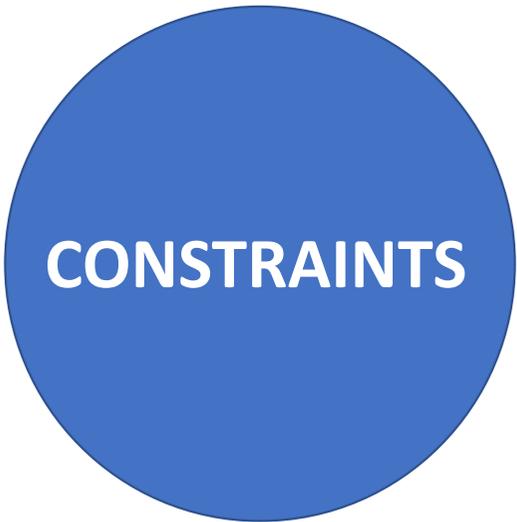
- One exemple amongst many others...
- How to frame the issues with fundamental rights methodology?
 - Balance at the core of IP, but...
 - See the exemple of Copyright (CJEU, *GS Media*, C-160/15, § 31)
 - ... balance different in every IP rights
 - See for another exemple Trademark (CJEU, *Red Bull*, C-65/12, § 41) : *'the purpose of Directive 89/104 is generally to strike a balance between the interest which the proprietor of a trade mark has in safeguarding its essential function, on the one hand, and the interests of other economic operators in having signs capable of denoting their products and services, on the other'*

**CONSIDERING
THE IP BASICS**

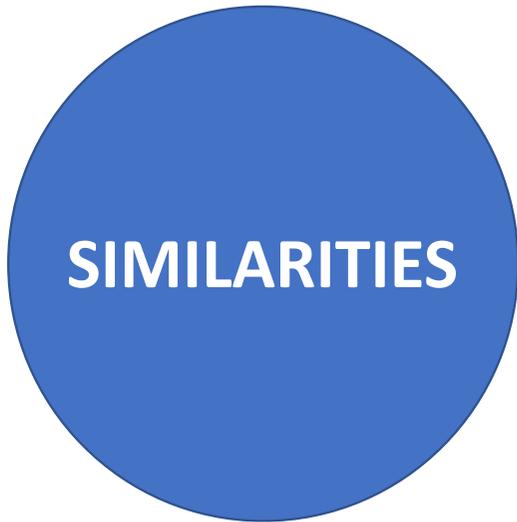
The IP Basics



DISCLOSURE



CONSTRAINTS



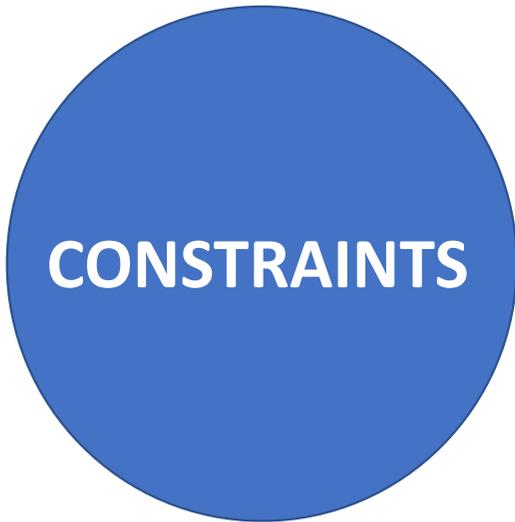
SIMILARITIES

The IP Basics



- Copyright
 - No registration, but publicity
 - Novelty relevant in practice through originality
- Patent
 - Registration and Disclosure, *i.e.* 'in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art'
 - Novelty
- Design
 - Registration or Disclosure, *i.e.* 'disclosed in such a way that, in the normal course of business, these events could reasonably have become known to the circles specialised in the sector concerned, operating within the Community'
 - Novelty
- Trademark
 - Registration or Well-known
 - Availability

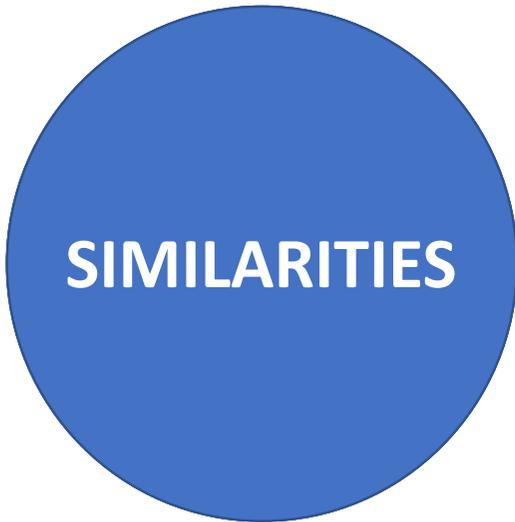
The IP Basics



CONSTRAINTS

- Copyright
 - Originality through ‘free and creative choices’
- Patent
 - Inventive step, *i.e.* ‘having regard to the state of the art, not obvious to a person skilled in the art’
- Design
 - Individual character, considering ‘the degree of freedom of the creator’
- Trademark
 - Distinctive character, with exclusions (descriptive, exclusively nature/technical/substantial value)

The IP Basics



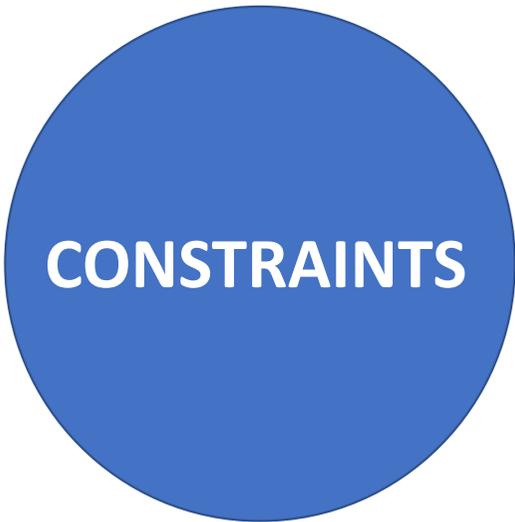
SIMILARITIES

- Copyright
 - 'Similarities', 'Audience'
- Patent
 - 'Equivalents', 'Person skilled in the art'
- Design
 - 'Overall impression', 'Informed user'
- Trademark
 - 'Likelihood of confusion', 'Average consumer'

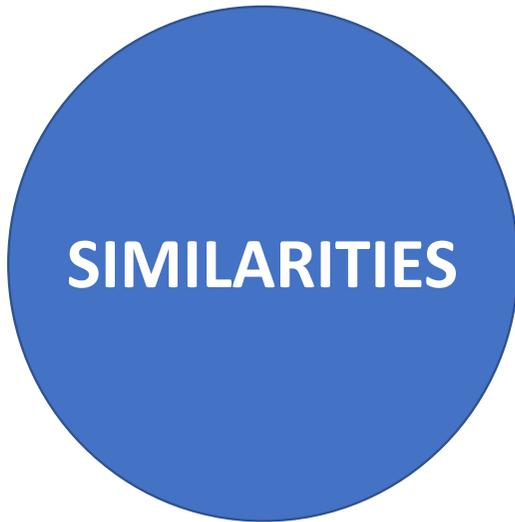
The IP Basics



DISCLOSURE

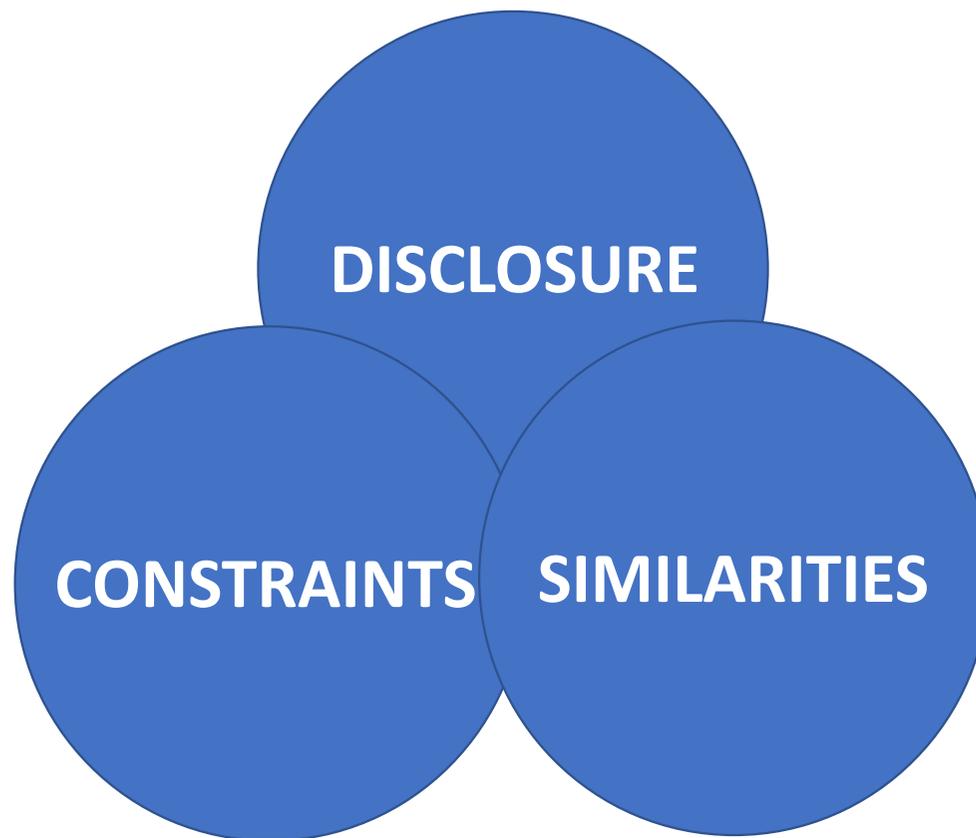


CONSTRAINTS



SIMILARITIES

The IP Basics



The IP Basics: the impact of technology



DISCLOSURE

- Patent

- *'AI often performs its processes in a "black box" which humans cannot understand to the fullest extent due to the different approach that machines take towards solving a problem. This makes it very **difficult for an applicant to fulfil the disclosure requirement if he is not able to explain how the invention works so that the technical solution can be re-worked on the basis of the specifications in the patent**' (Report Trends and Developments in Artificial Intelligence – Challenges to the Intellectual Property Rights Framework (2020))*

CONSTRAINTS

- Copyright

- *'AI-generation of new creation based on a training set can be **unleashed** with little marginal costs, and can explore any kind of combinations and variations' (Sartor, Lagioia, Contissa (2018), "The use of copyrighted works by AI Systems: Art works in the data mill")*

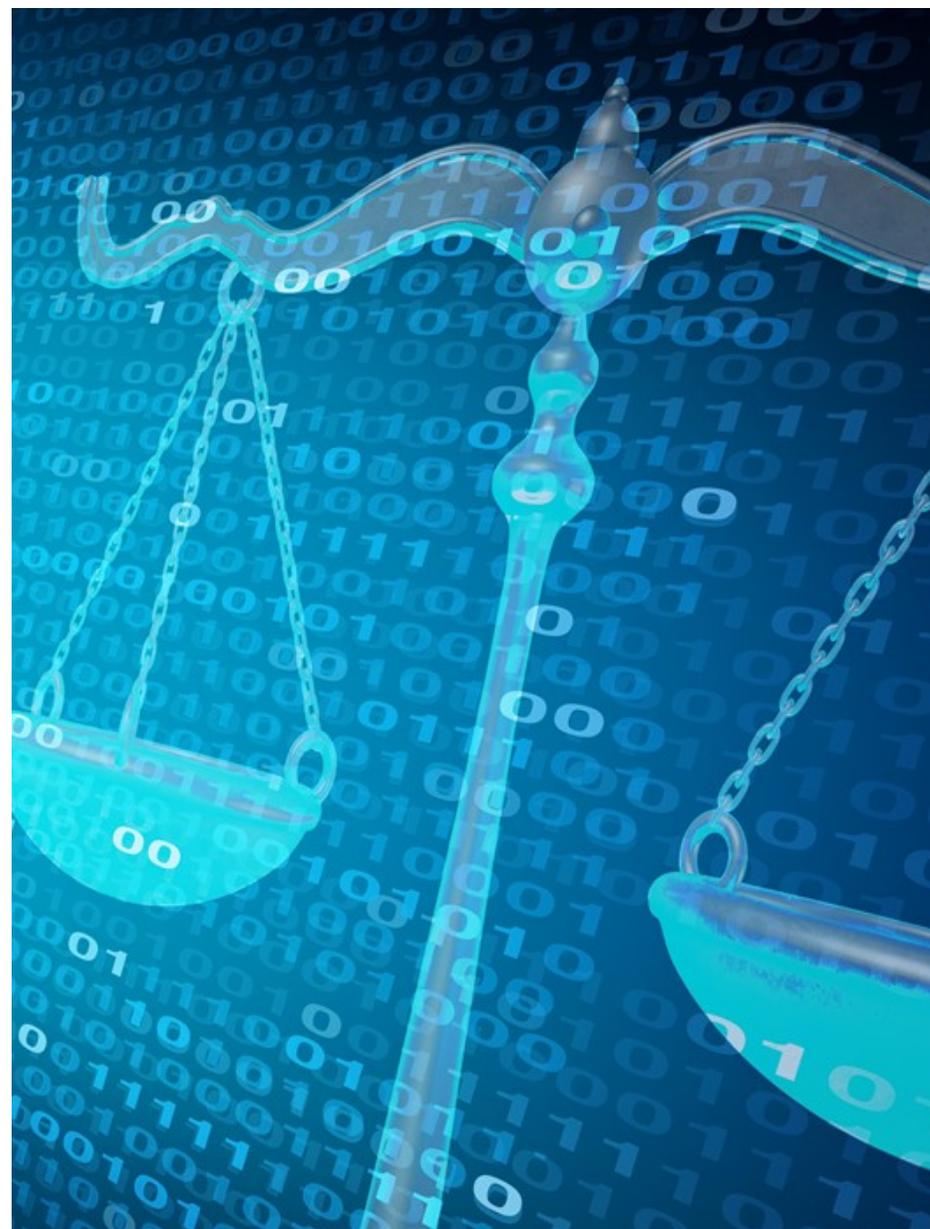
SIMILARITIES

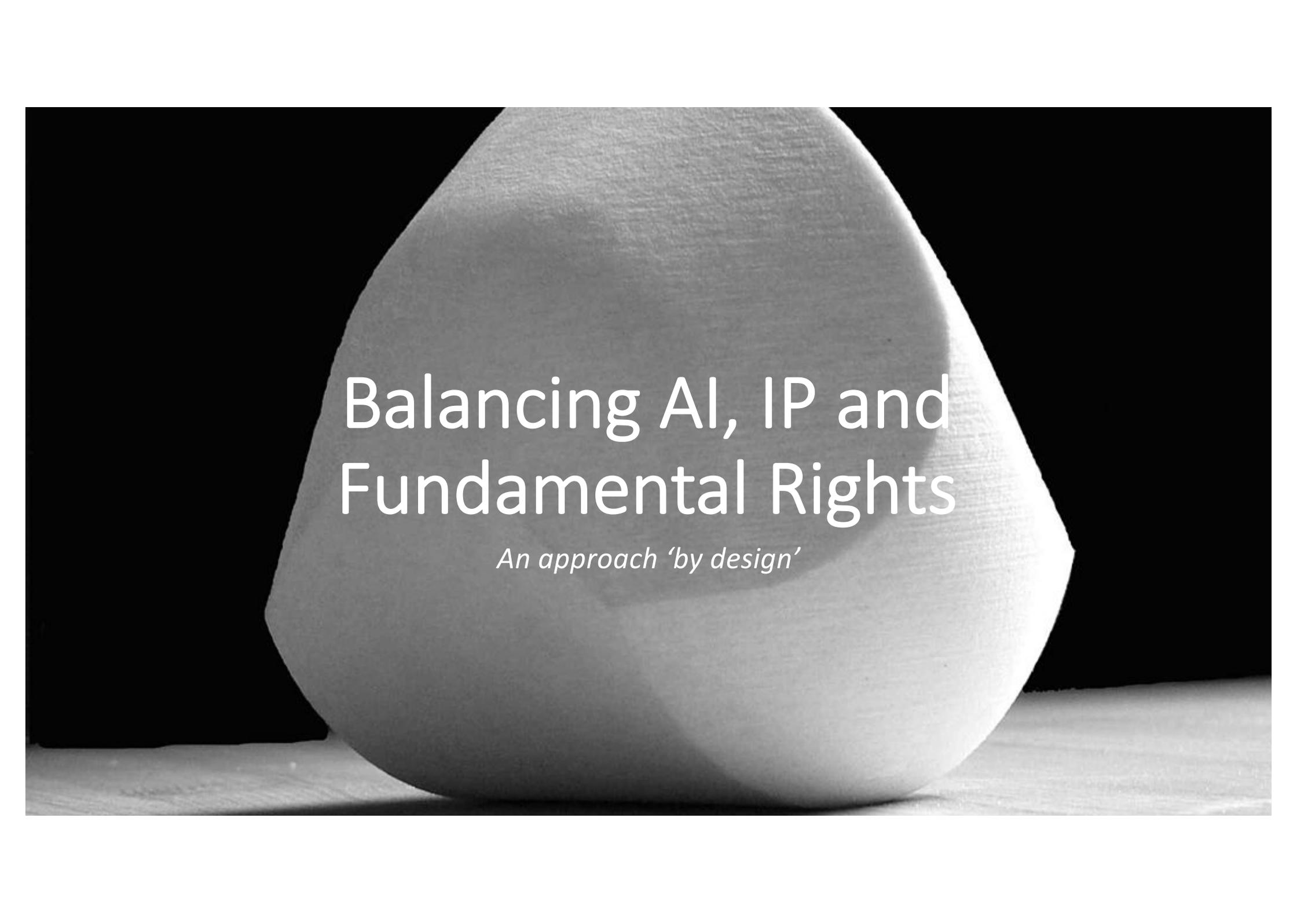
- Trademark

- *'Earlier-generation image search tools primarily determine trademark image similarity by identifying shapes and colors in marks. WIPO's new AI-based technology improves on this technology by **using deep machine learning to identify combinations of concepts** – such as an apple, an eagle, a tree, a crown, a car, a star – **within an image to find similar marks that have previously been registered**' (WIPO Image search Tool (2019))*

The IP Balance: the impact of technology

- Impact of technology on IP basics has an impact on balance within IP
- Modification of balance within IP has an impact on balance between IP holder interests and other interests
- Most of these interests enjoy protection of the Charter, so the balance has to be assessed in the light thereof





Balancing AI, IP and Fundamental Rights

An approach 'by design'

Fundamental Rights by design

- From « Privacy by design » (art. 25 GDPR)...

*'1. Taking into account the state of the art, the cost of implementation and the nature, scope, context and purposes of processing as well as the risks of varying likelihood and severity for rights and freedoms of natural persons posed by the processing, the controller shall, both at the time of the determination of the means for processing and at the time of the processing itself, **implement appropriate technical and organisational measures, such as pseudonymisation, which are designed to implement data-protection principles, such as data minimisation, in an effective manner and to integrate the necessary safeguards into the processing in order to meet the requirements of this Regulation and protect the rights of data subjects.***

*2. The controller shall implement appropriate technical and organisational measures for **ensuring that, by default, only personal data which are necessary for each specific purpose of the processing are processed.** That obligation applies to the amount of personal data collected, the extent of their processing, the period of their storage and their accessibility. In particular, such measures shall ensure that by default personal data are not made accessible without the individual's intervention to an indefinite number of natural persons.
(...)'*

Fundamental Rights by design

- ... to « Mitigating Adverse Effects on Fundamental Rights by design » (art. 27 DSA Proposal)

*‘Very large online platforms shall put in place **reasonable, proportionate and effective mitigation measures**, tailored to the specific systemic risks identified pursuant to Article 26. Such measures may include, where applicable:*

- *(a) **adapting content moderation or recommender systems, their decision-making processes, the features or functioning of their services, or their terms and conditions;***
- *(b) targeted measures aimed at limiting the display of advertisements in association with the service they provide;*
- *(c) reinforcing the internal processes or supervision of any of their activities in particular as regards detection of systemic risk;*
- *(d) initiating or adjusting cooperation with trusted flaggers in accordance with Article 19;*
- *(e) initiating or adjusting cooperation with other online platforms through the codes of conduct and the crisis protocols referred to in Article 35 and 37 respectively.’*

Fundamental Rights by design

- ... to « Mitigating Adverse Effects on Fundamental Rights by design » (recitals 57 and 58)

*‘(...) A second category concerns the **impact of the service on the exercise of fundamental rights**, as protected by the Charter of Fundamental Rights, including the freedom of expression and information, the right to private life, the right to non-discrimination and the rights of the child. **Such risks may arise**, for example, **in relation to the design of the algorithmic systems** used by the very large online platform or the misuse of their service through the submission of abusive notices or other methods for silencing speech or hampering competition (...)’*

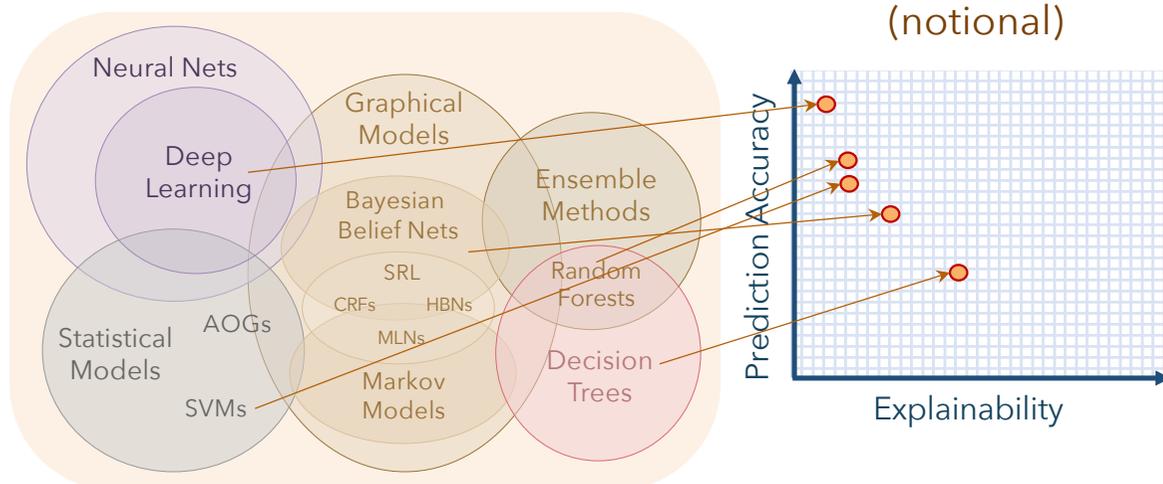
*‘Very large online platforms should **deploy the necessary means to diligently mitigate the systemic risks** identified in the risk assessment. Very large online platforms should under such mitigating measures consider, for example, **enhancing or otherwise adapting the design and functioning of their content moderation**, algorithmic recommender systems and online interfaces (...)’*

By design(s)

- Considering the state of the art
 - See art. 25 GDPR
 - *'Taking into account the **state of the art** (...).'*
 - See recital 66 DSM Dir. (Copyright) (in connection with art. 17)
 - *'When assessing whether an online content-sharing service provider has made its best efforts in accordance with the high industry standards of professional diligence, account should be taken of (...) the principle of proportionality. For the purposes of that assessment, a number of elements should be considered, such as the size of the service, the evolving **state of the art** as regards existing means, including potential future developments, to avoid the availability of different types of content and the cost of such means for the services'*
- Considering the issues
 - Ex : IP vs. Right to life
 - Ex : IP vs. Freedom to conduct business

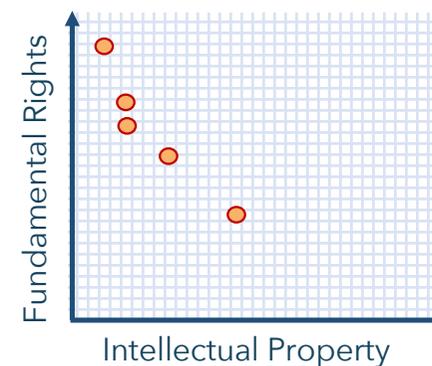
By design(s)

Learning Techniques (today)



Explainability
(notional)

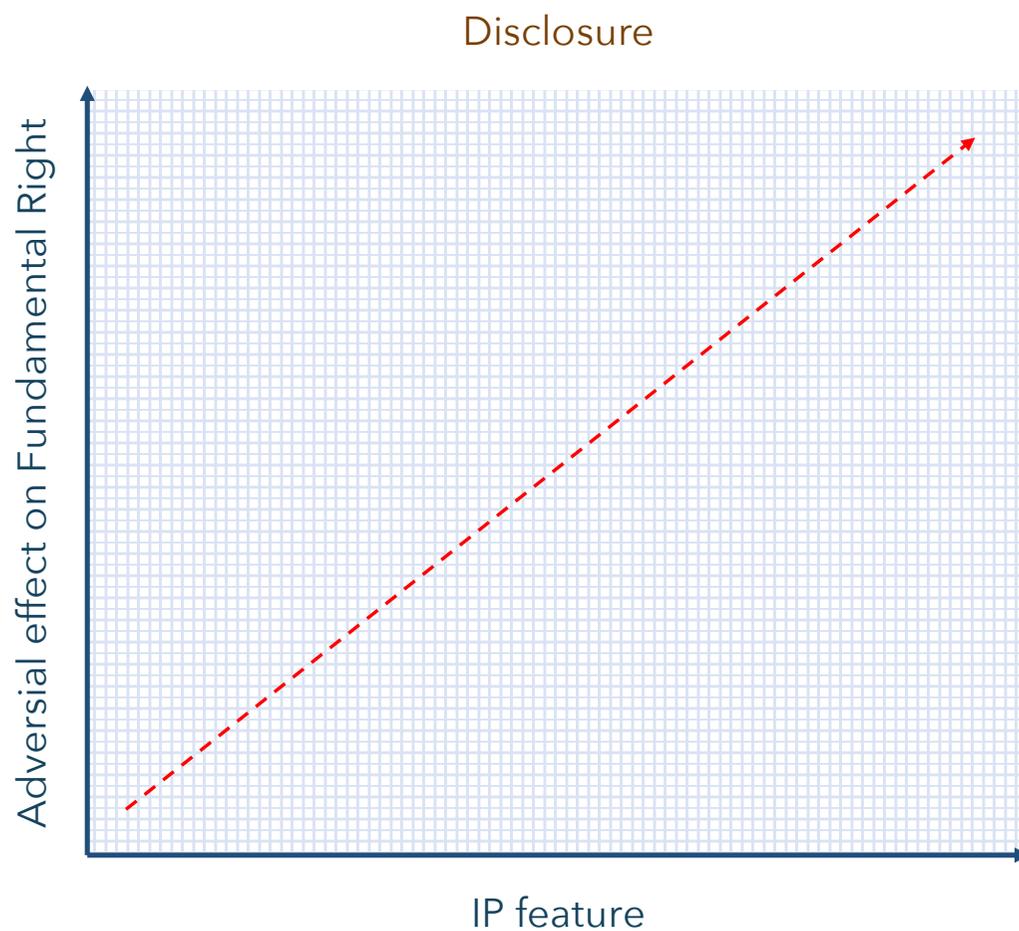
Fundamental Rights
(balancing)



- How to make the trade-off?
 - Explainability/Efficiency
 - Intellectual Property/Other fundamental Rights

**CONSIDERING THE
IP BASICS**

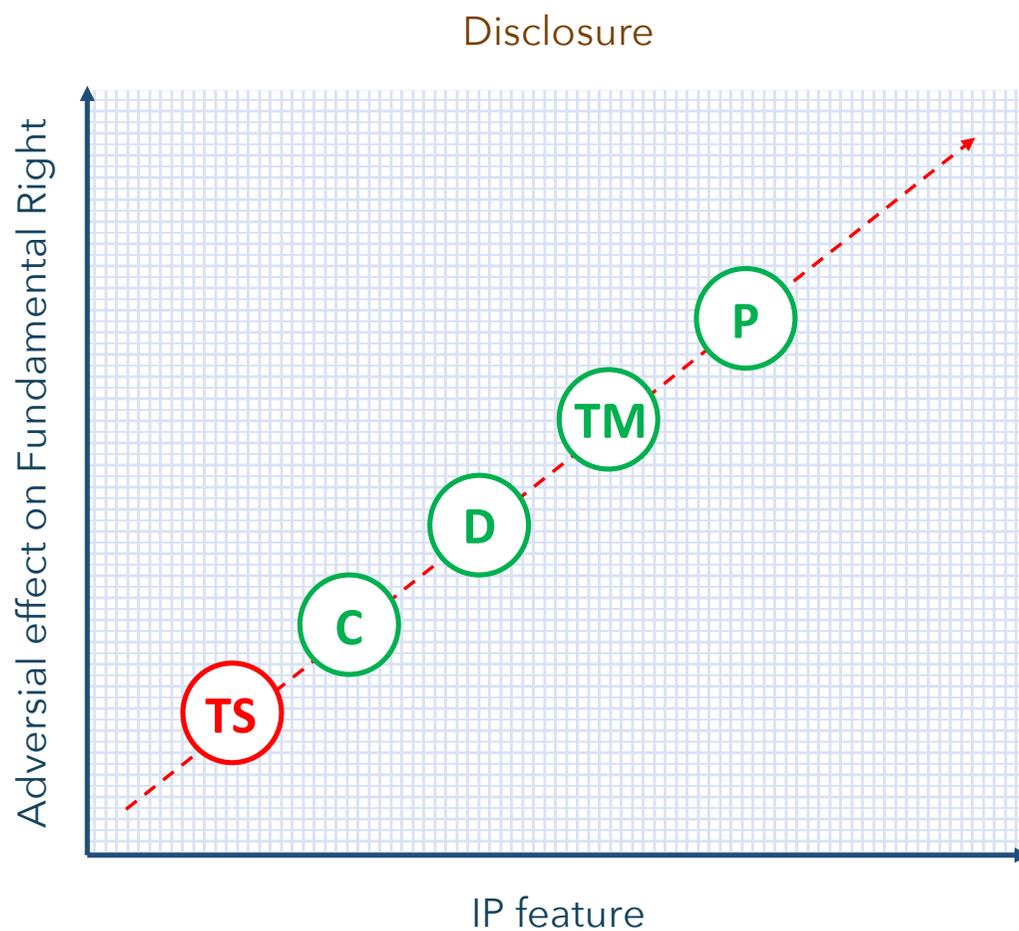
By design(s)



- The more disclosed the IP, the more weight to IP in the balance
 - In theory (-+):



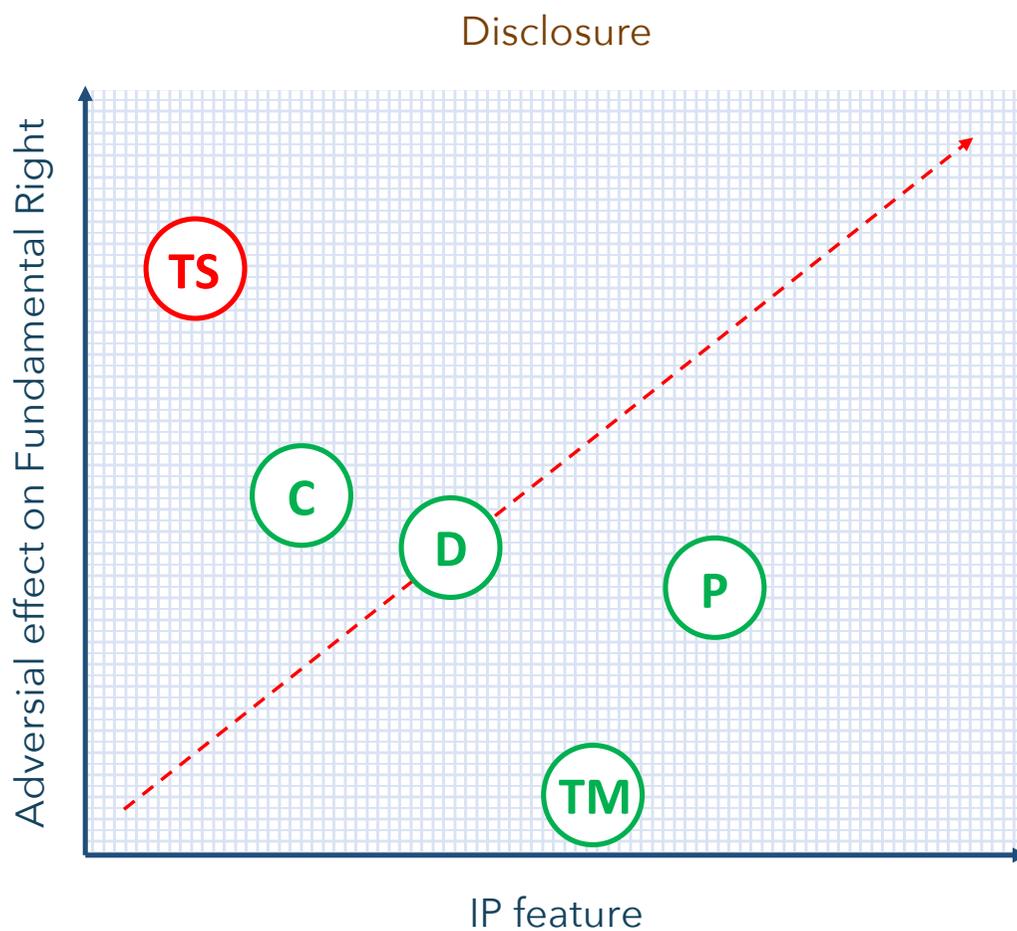
By design(s)



- The more disclosed the IP, the more weight to IP in the balance
 - In theory (-+):



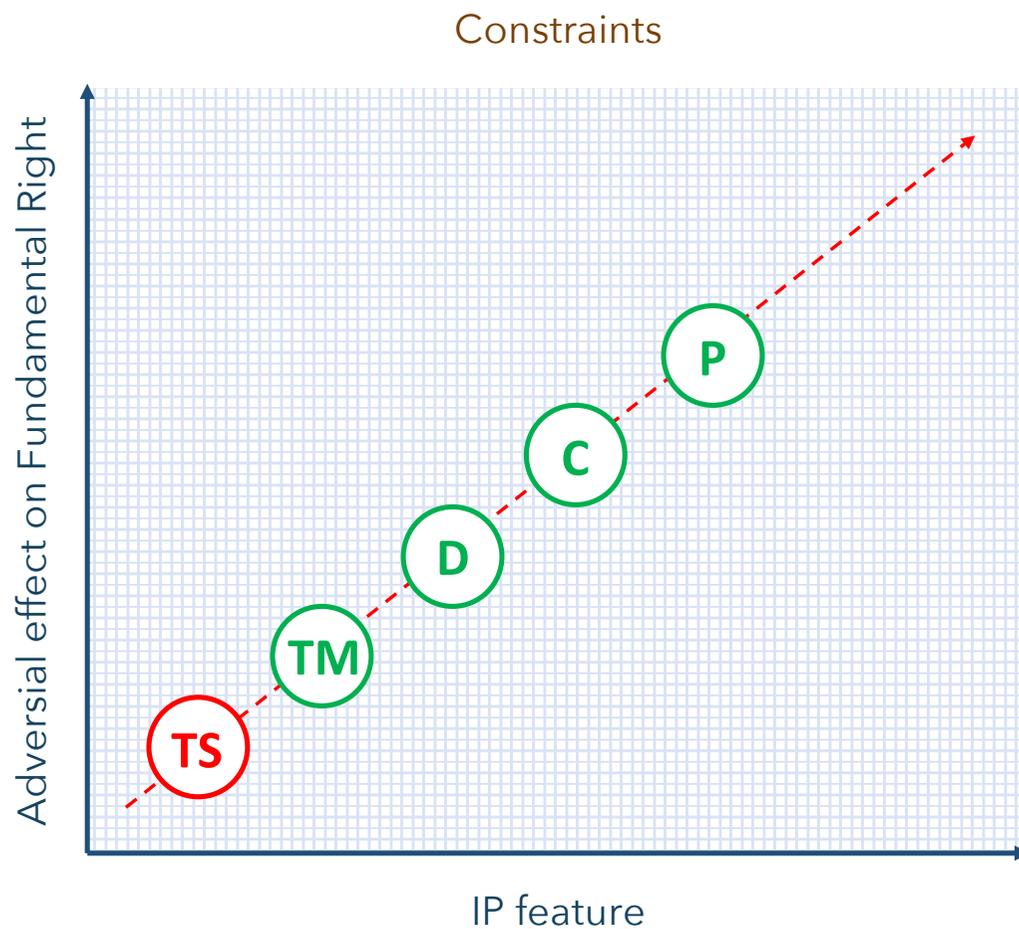
By design(s)



- The more disclosed the IP, the more weight to IP in the balance
 - In theory (-+):



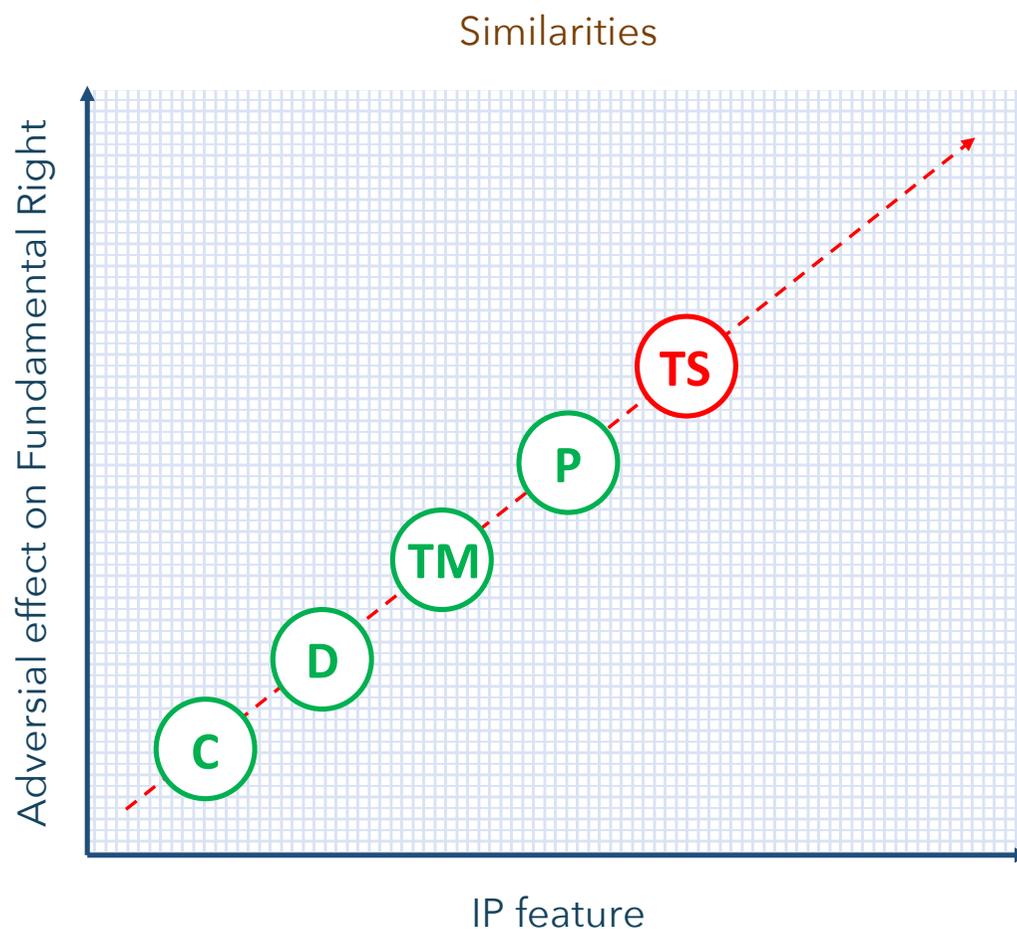
By design(s)



- The more constraints for IP protection, the more weight to IP in the balance
 - In theory (-+):



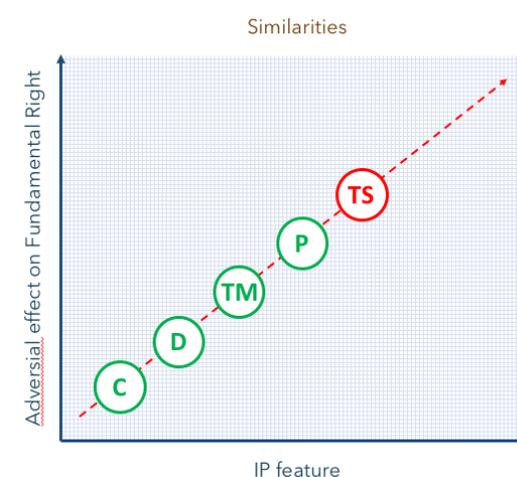
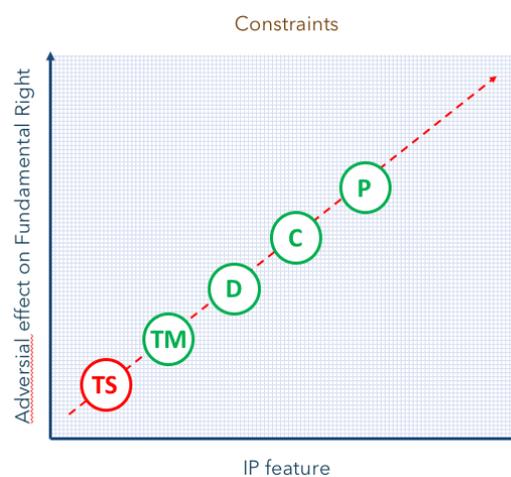
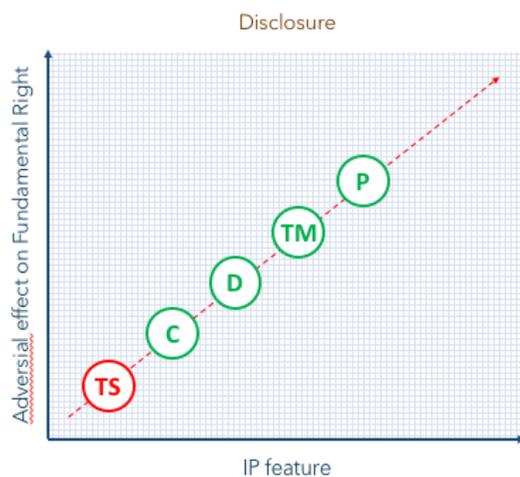
By design(s)



- The more similarities for IP infringement, the more weight to IP in the balance
 - In theory (-+):



By design(s)



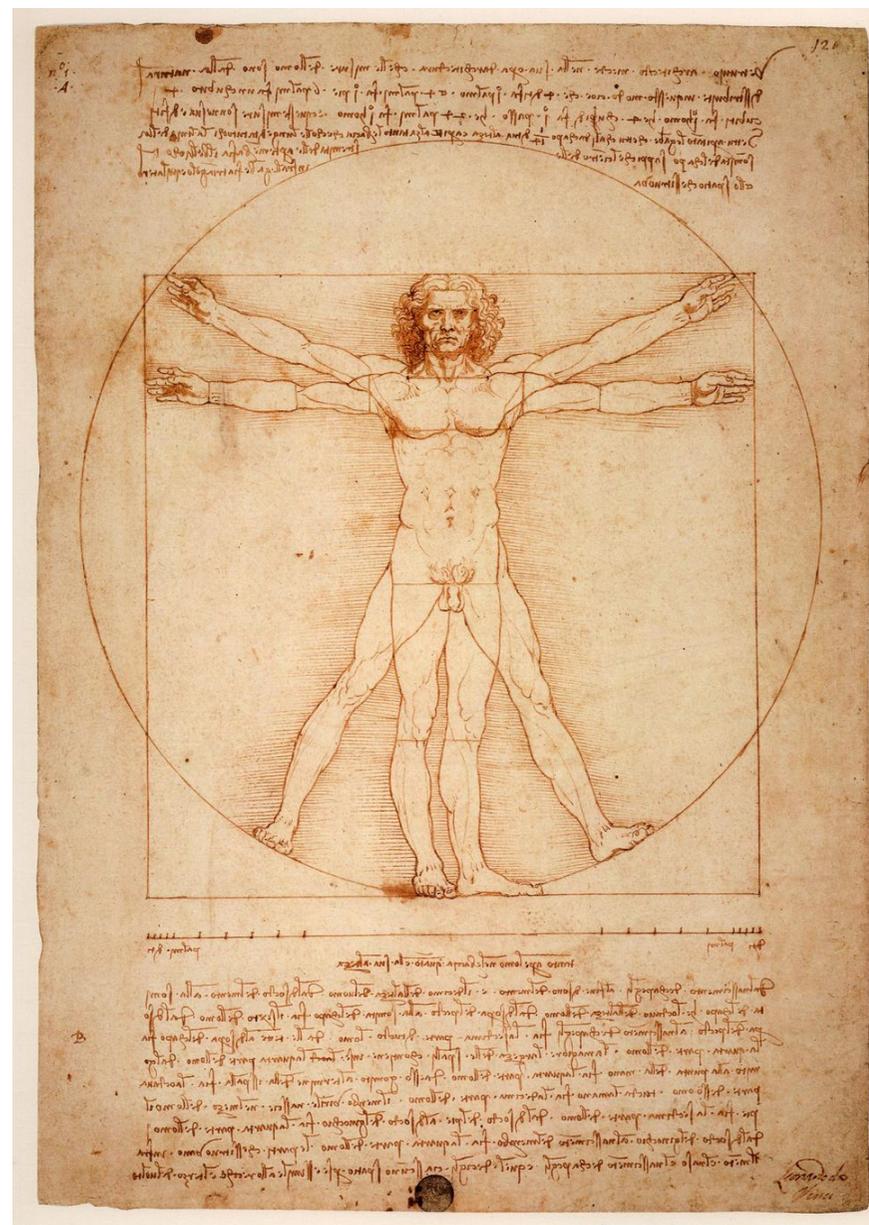
- When combining all dimensions, how to make the final decision?

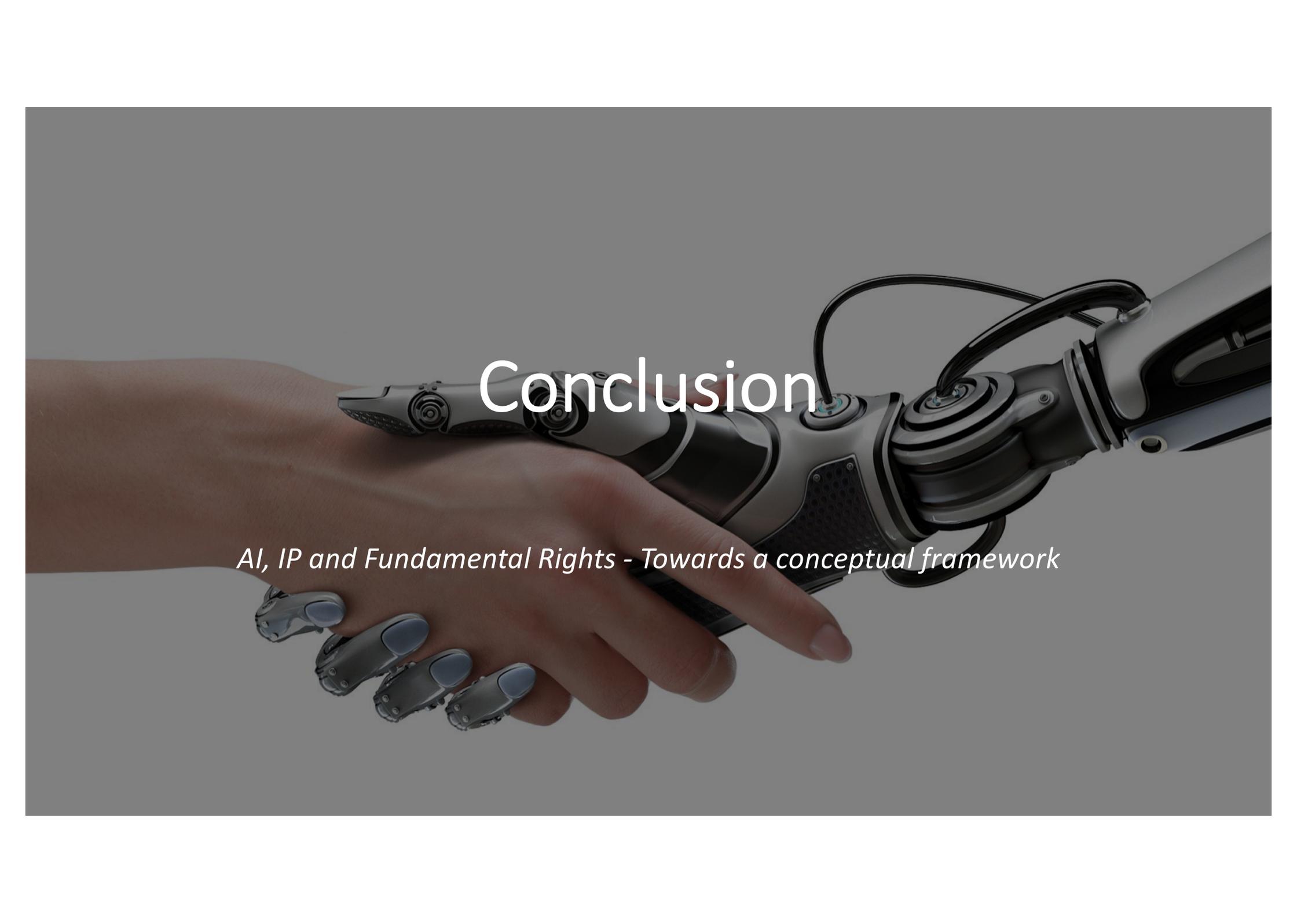
**CONSIDERING THE IP
& FUNDAMENTAL
RIGHTS BASIC**

Human-Centric by design

- IP and Fundamental Rights are designed for human beings
- AI is designed to perform tasks that might be attributed to human beings
- IP rules in relation to AI should be adopted (ex ante), implemented (ex post) and interpreted (both) in order to avoid adversial effects on human beings
 - => strict proportionality test (comp. CJEU, *Sky Österreich*, C-283/11, § 50)

‘(...) when there is a choice between several appropriate measures recourse must be had to the least onerous, and the disadvantages caused must not be disproportionate to the aims pursued’



A hand holding a futuristic, metallic, and mechanical prosthetic arm against a dark grey background. The prosthetic is highly detailed with various joints, wires, and a textured grip. The word "Conclusion" is written in white, sans-serif font across the center of the image.

Conclusion

AI, IP and Fundamental Rights - Towards a conceptual framework

Conclusion

- **AI, IP and Fundamental Rights are Intertwined**
 - Their interconnection shall be analyzed on the basis of the Charter
- **Two main categories of issues**
 - IP for AI
 - AI for IP
- **Towards a conceptual framework based on**
 - IP Basics (disclosure, constraints, similarities)
 - Fair balance
 - Human-Centric by design

Thank You !

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