

# The Impact of Frontier Technologies on Intellectual Property

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## Disclaimer

The views expressed are purely those of the speaker and may not in any circumstances be regarded as stating an official position of the European Union Intellectual Property Office (EUIPO).

This presentation focuses on areas of interest to the IP enforcement community. In this context, it does not provide an exhaustive overview of the activities of the EUIPO or the EU legislative framework.

- Introduction to EUIPO and the Observatory
- Frontier technology and IP
  - Use at EUIPO
  - Use at operational level
- Introduction to EU Copyright Framework
- Fight against live-event online piracy (as an example)

## What are Frontier Technologies

- Frontier technologies are emerging at the intersection of radical scientific breakthrough and real-world implementation. These technologies are changing our lives.
- Digital Technologies – Artificial intelligence. Big data. Internet of Things (IoT), Blockchain, The Metaverse
- Physical technologies – 3D printing, hardware innovations, quantum computing, autonomous driving
- Biological technologies – Bioprinting, organoids,

(Source: WIPO *Frontier Technologies*)

## Introduction to EUIPO and the Observatory

### European Union Intellectual Property Office – EUIPO

- EU Registry for EU trade mark, registered Community design and Geographical Indications for Craft and Industrial Products
- European and international cooperation in IPR
- and...

### The European Observatory on Infringements of Intellectual Property Rights

- Regulation (EU) No 386/2012 of 19 April 2012
- Network of experts and specialist stakeholders
- Provide **facts and evidence** to support effective policies
- Create **tools and resources** to sharpen the fight against IP infringement
- Raise **awareness** of the importance of IP and of the negative effects of counterfeiting and piracy

## Use of frontier technologies in IP

### EUIPO customer related work

- Use of AI for trademark and design registration registrations
- Use of Blockchain for IP register, Blockathon

### Use in the context of IP infringement

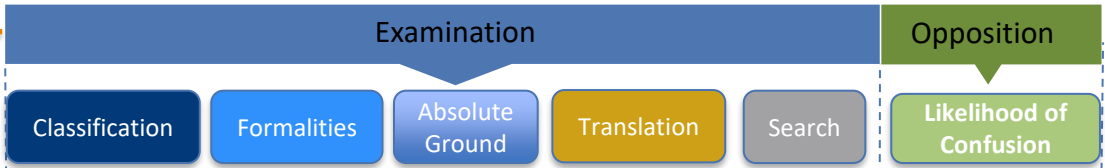
- AI supporting infringing activities
  - AI supporting enforcement activities
- 
- EUIPO's Anti-Counterfeiting and Anti-Piracy Technology guide (ACAPT)

# AI

TM Registration



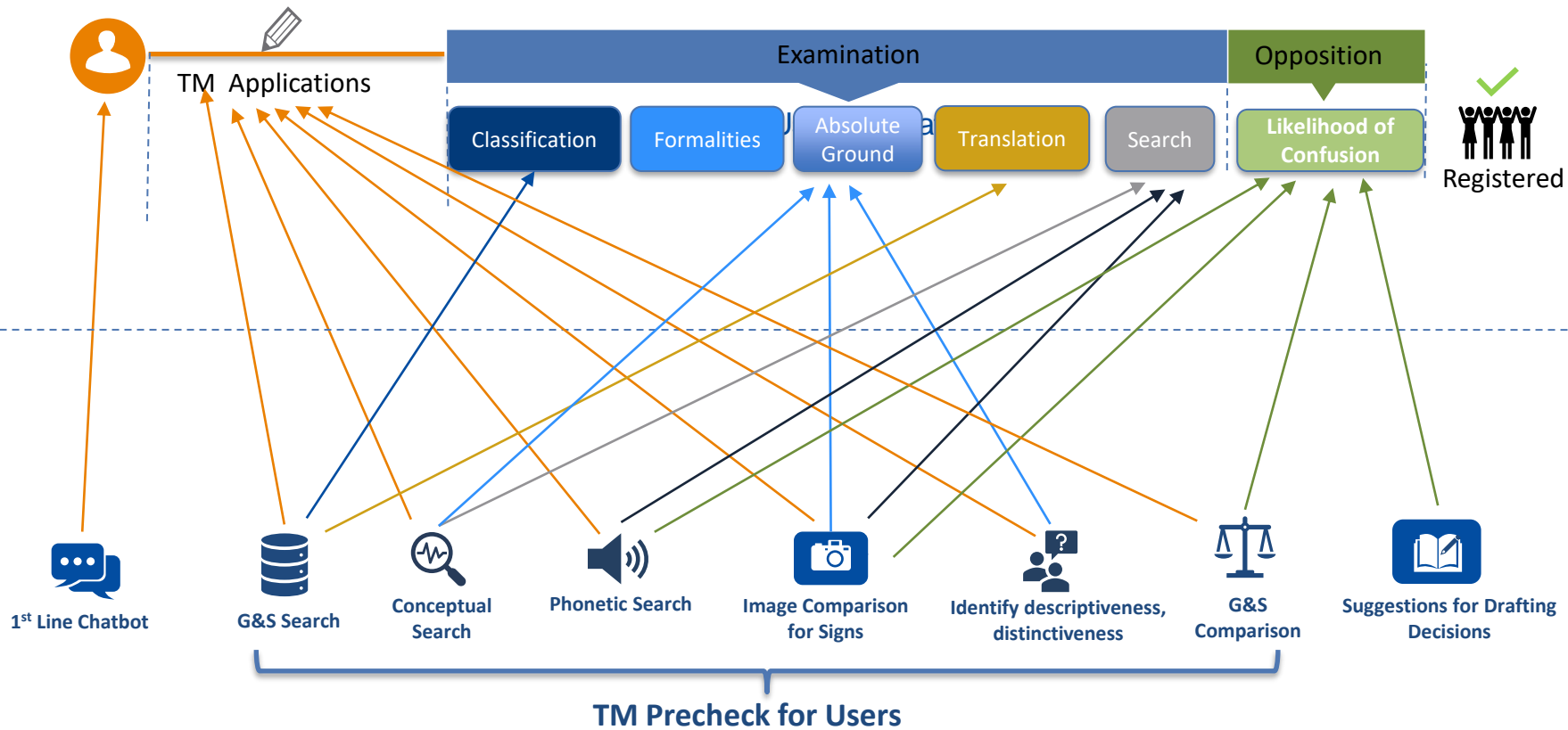
TM Applications



**AI**

TM Registration

AI Tools/Services





## Blockchain for IP register

Blockchain:



## Use of frontier technologies in IP

### EUIPO customer related work

- Use of AI for trademark and design registration registrations
- Use of Blockchain for IP register, Blockathon

### Use at operational level

- AI used in infringement
- AI detection / identification of counterfeited goods and for anti-piracy measures

### Studies, Awareness, Tools

- Imminent launch of technical study on the “Development of Generative Artificial Intelligence from a Copyright Perspective”
- EUIPO Guidelines for staff on the use of online available generative artificial intelligence tools (GenAI Guidelines)
- EUIPO’s Anti-Counterfeiting and Anti-Piracy Technology guide (ACAPT)

## Frontier technologies – operational level



Impact of Technology Deep Dive Report |

STUDY ON THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE INFRINGEMENT AND ENFORCEMENT OF COPYRIGHT AND DESIGNS

### Study on the impact of artificial intelligence on the infringement and enforcement of copyright and designs

In early 2019, the European Union Intellectual Property Office (EUIPO) established an Impact of Technology Expert Group (EG). The group is composed of experts with knowledge of and practical experience in monitoring the impact of new and emerging technologies on the infringement and enforcement of intellectual property rights. The EG follows a specific approach based on an adaptation of Lawrence Lessig's Code and Other Laws of Cyberspace theory (the Code Theory), which describes how human online activity is regulated by law, social norms, and the market, taking into consideration the internet's technical infrastructure (referred to as 'code'). The Code Theory has been adapted by the EG in the sense that it believes all technological impact on intellectual property should be considered from four angles: the market; the law; the social context; and the technology itself.



### Kluwer Trademark Blog

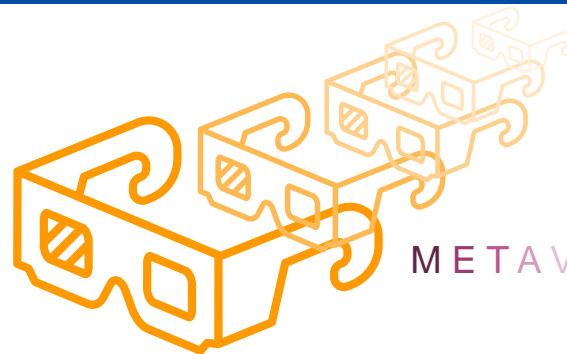
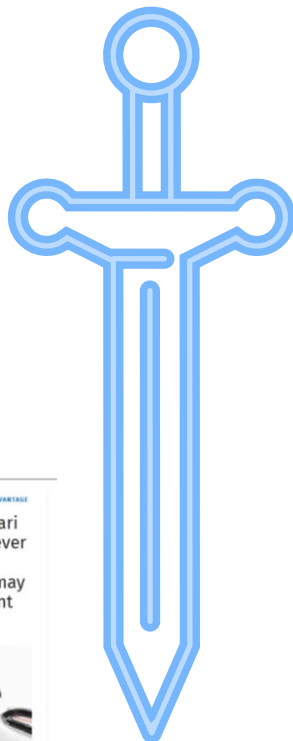
(PRELIMINARY) INDICTION, APPEAL, COPYRIGHT, EUROPEAN UNION, SPAIN, TRADEMARK, UNFAIR ADVANTAGE

The Alicante Appellate court ruled that Ferrari 488 GTB is a work of art (in case there was ever any doubt ...). The 3D printing of derivative bodyworks to be installed on original cars may entail trade mark and copyright infringement

Carolina Mesa, Carolina Pina (Garrigues) / March 2, 2023 / Leave a comment



Source: Kluwer Trademark Blog



### LaLiga on the fight against piracy and AI technology

By Melissa Kasule 6th October 2023



The Gen-Z short-form video platform, TikTok, has introduced new challenges in LaLiga's fight against piracy, revealed a LaLiga exec, with increasing illegal content broadcasted on the app. During an international press conference at the LaLiga headquarters based in Madrid on Saturday September 30, Miguel Angel Leal Góngora, chief technology and innovation officer at LaLiga, revealed the Spanish sports league was working closely with the youth-skewed social media service in identifying, analysing and removing illegal broadcasts of LaLiga content on the app.



Source: Digital TV Europe



# EUIPO's Anti-Counterfeiting and Anti-Piracy Technology guide (ACAPT)

## Technology Map

The technology map illustrates the current landscape of anti-counterfeiting and anti-piracy technologies (ACAPT), providing an overview of their relationships through categorisation into various categories and subcategories. Clicking on specific map items will open a new tab with in-depth information on each item.

### Electronic Technologies

#### RFID

- Passive RFID Tags
- Active RFID Tags
- Battery-Assisted Passive (BAP) or Semi-Passive Tags
- Physical Unclonable Function (PUF)
- Near Field Communication (NFC)

- Electronic Seals
- Magnetic Stripes
- Contact Chips

### Mechanical Technologies

#### Labels

- Fabric Labels
- Adhesive Labels
- Labels with Micro-Engraved Clichés

### Marking Technologies

#### Machine-Readable Codes

- One-Dimensional Barcodes
- Two-Dimensional Barcodes

#### Security Holograms

- Traditional Holograms
- Complex Holograms

#### Inks

- UV-Sensitive Inks
- IR-Sensitive Inks (Infrared)
- Magnetic Inks
- OVI and Iridescent Inks
- Thermochromic Inks
- Reactive Inks
- Penetrating Inks
- Optical Memo

### Chemical & Physical Technologies

- DNA Coding
- Chemical Encoding and Tracers
- Glue Coding
- Surface Fingerprint & Laser Surface Analysis

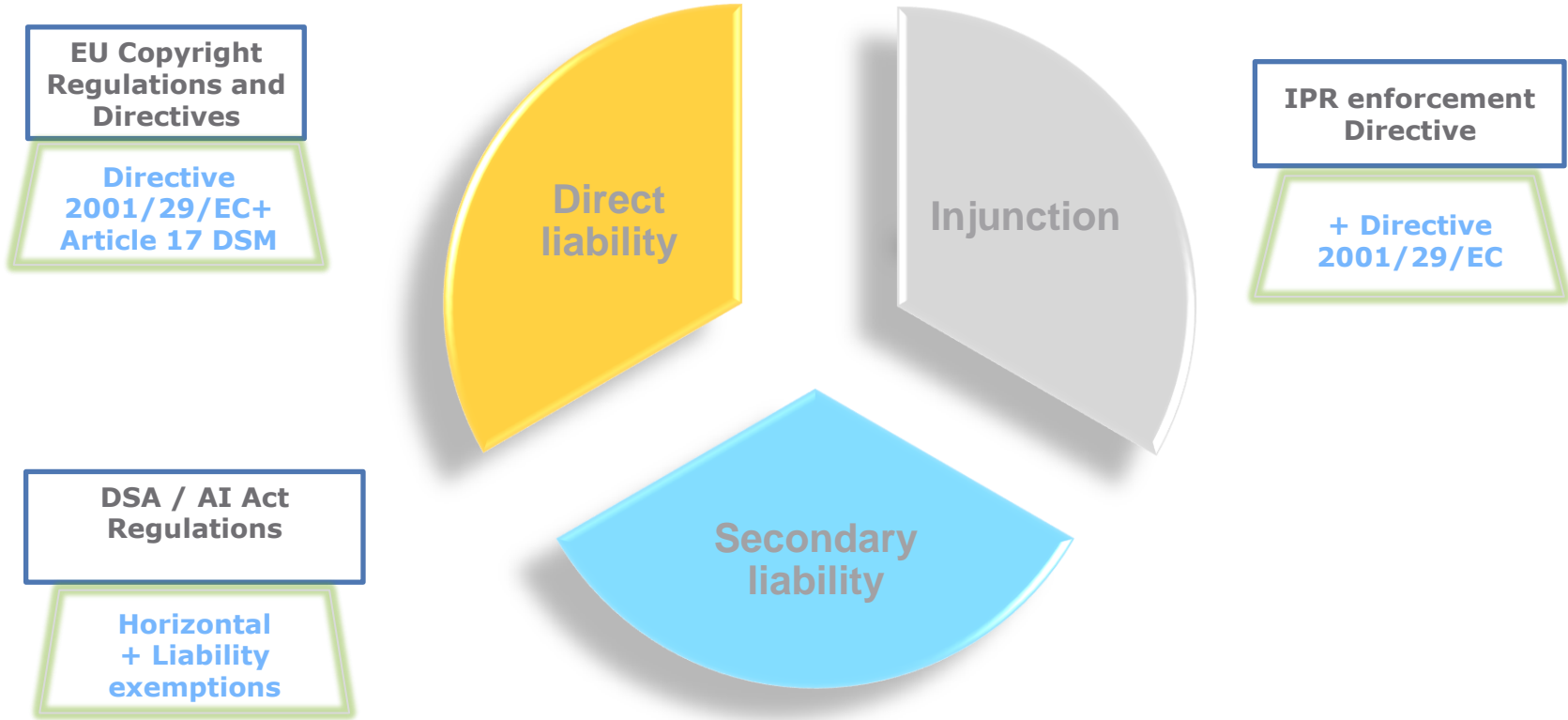
### Technologies for Digital Media

- Digital Rights Management (DRM) Systems
- Digital Watermarks
- Hashing
- Fingerprinting

## EU framework to Copyright and Online IPR enforcement – Introduction

- Vertical and Horizontal legislative acts
- Directives and Regulations
- Direct liability + Secondary liability + Injunctions
  
- InfoSoc and DSM
- AI Act
- DSA
- IPRED

## EU framework to Copyright and Online IPR enforcement



## Copyright in the EU

- The EU copyright law – 13 directives and 2 regulations  
Application in 27 Member States
- Harmonising the essential rights of authors, performers, producers and broadcasters (Copyright and Related rights).
- Copyright: literary, scientific and artistic “work” automatically has copyright protection. No need of formal application process. (Berne Convention)
- Related rights: performance, fixation of phonogram or film, broadcast
- Moral rights are not subject to EU copyright harmonisation

## IP PROTECTION - Copyright

**Directive  
2001/29/EC** on  
copyright in the  
Information society  
(InfoSoc)

**Directive EU  
2019/790** on  
copyright in the Digital  
Single Market (DSM)

Harmonising copyright in  
the online digital  
environment

**Exclusive rights**

**Exceptions and  
limitations**

Appropriate **sanctions  
and remedies** against  
piracy (effective,  
proportionate and  
dissuasive)

Actions for damages,  
seizures, injunctions  
against intermediaries

Update to EU copyright  
legislation

**Use of protected  
content by online  
content-sharing  
platforms**

(large amount of copyright  
protected works, user  
uploaded)

**TDM exceptions  
(reproduction)**

- for scientific use
- **for general use**



## Copyright in the EU – Digital Environment

- Exclusive rights (**reproduction, communication** to the public, **distribution**)
- Exceptions and limitations – mandatory and optional (e.g. temporary reproduction for technological needs, teaching, people with print disabilities, text and data mining...)
- Sanctions and remedies

## TDM Exception

- ‘Text and data mining’ (TDM) means *“any automated analytical technique aimed at analysing text and data in digital form in order to generate information which includes but is not limited to patterns, trends and correlations.”* (Art. 2)
- Training and development of Machine learning, Big Data and AI foundation models
- ‘Scientific’ (Art. 3) and ‘General’ (Art. 4) TDM exceptions.
- Users must:
  - get “lawful access” to the content (Art. 4(1));
  - ensure that rightholders have not *“expressly reserved”* their right of the work *“in an appropriate manner, such as machine-readable means”* (‘OPT-OUT’) (Art. 4(3))
- In case of ‘OPT-OUT’ authorization of rightholders is required.

## IP PROTECTION - Copyright

## LIABILITY OF INTERMEDIARIES

**Directive 2001/29/EC** on copyright in the Information society (InfoSoc)

**Directive EU 2019/790** on copyright in the Digital Single Market (DSM)

**Digital Services Act Regulation (EU) 2022/2065**

**Mere conduit**

Harmonising copyright in the online digital environment

Update to EU copyright legislation

Horizontal tool – Applies to all types of content and business modes

**Caching**

**Exclusive rights**

**Use of protected content by online content-sharing platforms**

**Liability regime for online intermediaries**

**Hosting**

**Exceptions and limitations**

(large amount of copyright protected works, user uploaded)

**Responsibilities, accountability and transparency for online intermediaries**

**Online Platforms**

Appropriate **sanctions and remedies** against piracy (effective, proportionate and dissuasive)

**TDM exceptions (reproduction)**

- for scientific use
- **for general use**

Does not prevent court/administrative orders (Injunctions under IPRED and InfoSoc)

**VLOPs / VLOSEs**

Actions for damages, seizures, injunctions against intermediaries

Prohibition of General Monitoring obligation

+

## DSA – Asymmetric due diligence obligations

### AIM:

- Improve the fight against illegal and harmful content online
- Improve transparency and empower users and stakeholders
- Better enforce rules

### Intermediary services

offering network infrastructure:  
Internet access providers, domain name registrars...

### Hosting services

such as cloud and webhosting services

### Online platforms

such as online marketplaces, app stores, collaborative economy platforms and social media platforms

### Very large platforms & search engines

reaching more than 10% of 450 million consumers in Europe

## DSA – Asymmetric due diligence obligations

- Notice and actions
- General rules on transparency
- Trusted Flaggers
- Repeat Infringer Policy
- Legal representative and Points of contact
- KYBC for marketplaces
- Internal complaint-handling system and out-of-court dispute settlement bodies
- Risk assessment and mitigation measures by VLOPs/VLOSEs

### And SMEs?

Excluded from certain obligations (e.g. KYBC, transparency reporting...)

## IP PROTECTION - Copyright

## LIABILITY OF INTERMEDIARIES

## ARTIFICIAL INTELLIGENCE

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**Digital Services Act Regulation (FIJ)**  
**Mere conduit**

**AI Act Regulation (EU) 2020/1828**

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Horizontal tool – Applies to all types of content and business modes

**Liability regime for online intermediaries**

**Responsibilities, accountability and transparency for online intermediaries**

Does not prevent court/administrative orders (Injunctions under IPRED and InfoSoc)

Prohibition of General Monitoring obligation

Horizontal rules on AI

Risk based model

**Requirements:**

- Policy to **respect Union copyright law** → **Opt-Out** (regardless of the jurisdiction of training)

- Sufficiently detailed **summary of the data used** for the training

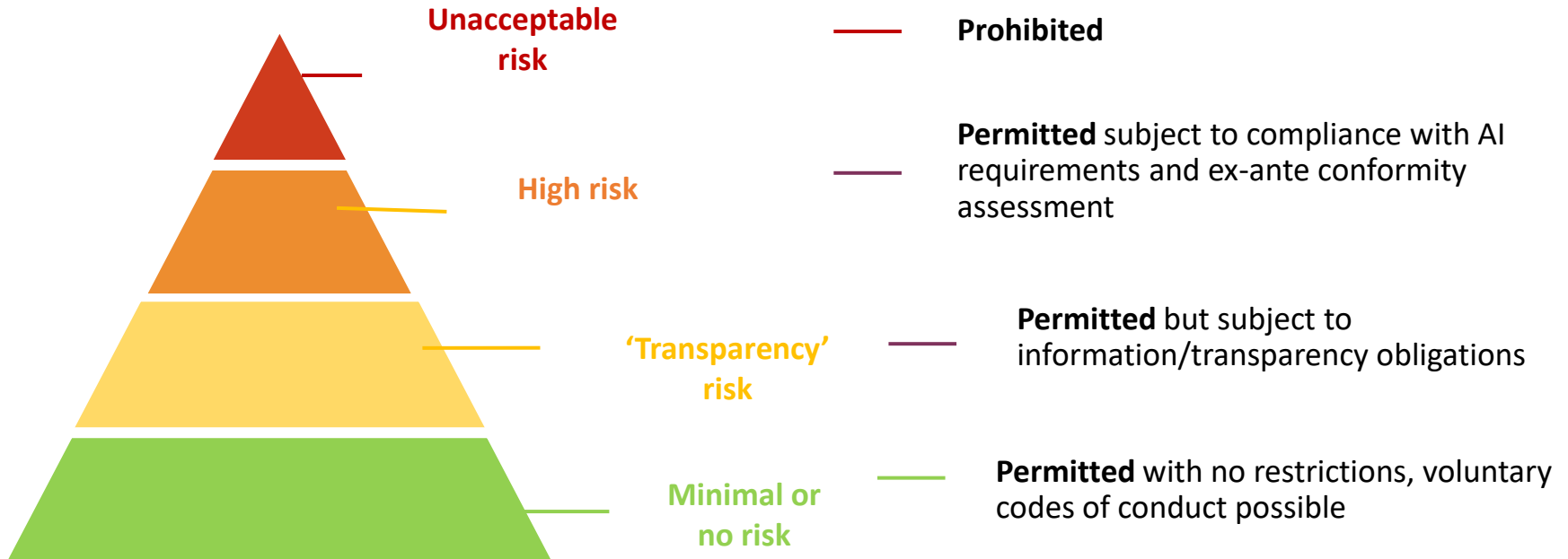
Exception for free and open-source models, when they do not carry systemic risks.

## Artificial Intelligence Act – Key principles

- The EU copyright law – 13 directives and 2 regulations  
Application in 27 Member States
- Harmonising the essential rights of authors, performers, producers and broadcasters (Copyright and Related rights).
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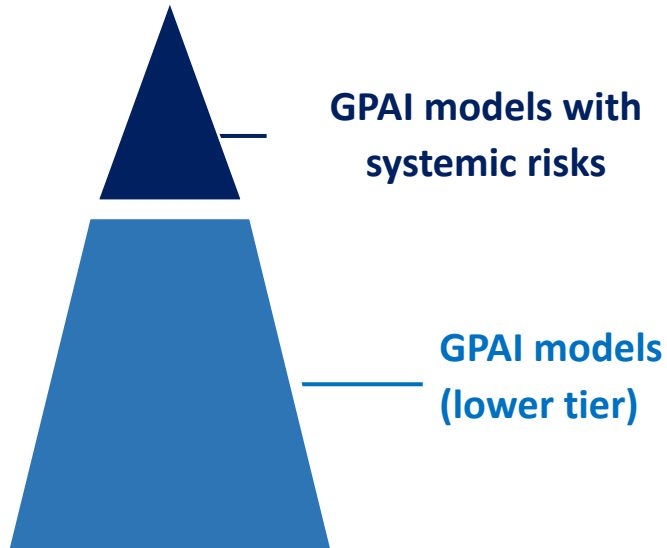
## Artificial Intelligence Act – Risk based approach

AI systems



## Artificial Intelligence Act – GPAI

### General-purpose AI models (GPAI)



#### GPAI models:

- Trained on large data,
- Can competently perform wide range of tasks and
- Be integrated in numerous downstream applications;

Exception: research, development, and prototyping activities preceding the placement on the market are not covered



## Artificial Intelligence Act – Risk based approach

### All GPAI (lower tier)

#### Obligations for all GPAI models placed on the EU market:

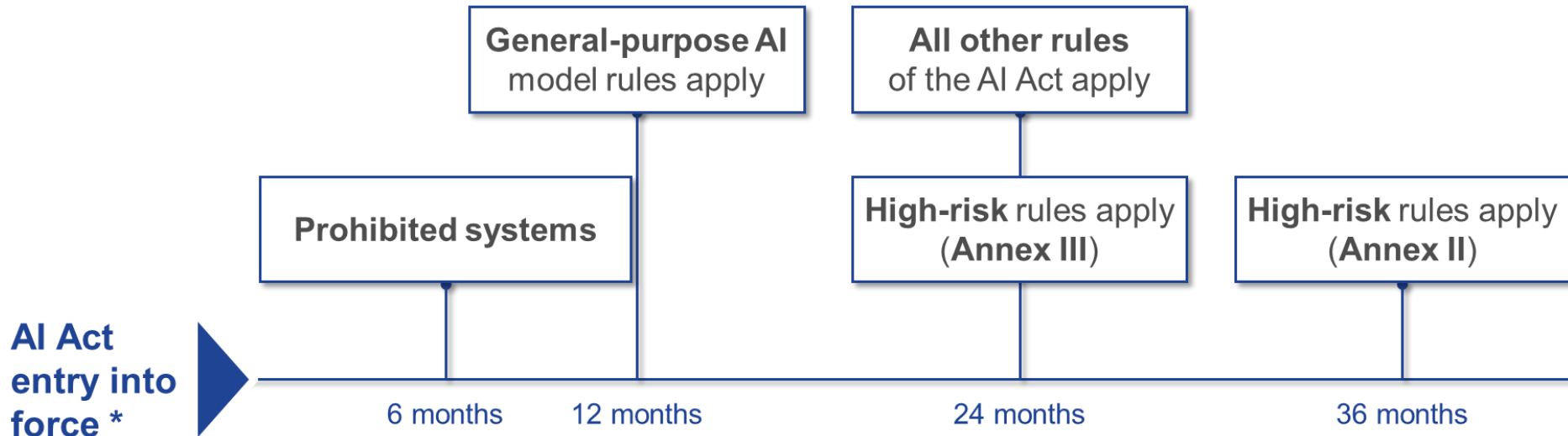
- **Information and documentation requirements**, mainly to achieve transparency for downstream providers

*Exception for free and open-source models, when they do not carry systemic risks*

- Providers established outside the EU to appoint an **authorised representative**
- Put in place a **policy to respect Union copyright law**, in particular to identify and respect the opt-out from the ‘text and data mining’ exception
- Make **publicly available a sufficiently detailed summary** of the data used for the training
  - Comprehensive in its scope in a narrative form, not technically detailed
  - Aim to facilitate parties with legitimate interests, including rights holders, to exercise and enforce their rights under Union law, while balancing interests and trade secrets of providers
  - The AI Office to provide a template for the summary

## Artificial Intelligence Act – entering into application

# The AI Act enters into application in a gradual approach



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Exception for free and open-source models, when they do not carry systemic risks.

## IP ENFORCEMENT

**Directive 2004/48/EC** on the enforcement of IPRs (IPRED)

Horizontal tool – Civil enforcement of all IPRs (counterfeiting and piracy)

Aim: high, equivalent, homogeneous level of protection in EU

**Injunctions** and alternative measures

## EU IPR enforcement legal framework

### EVIDENCE

- Presentation of Evidence (Art.6)
- Preservation of Evidence (Art. 7)

### PROVISIONAL AND PRECAUTIONARY MEASURES; CORRECTIVE MEASURES

- (Art. 9)

### RIGHT OF INFORMATION

- (Art.8) gathering information from infringer or another person on origin and distribution networks of IP-infringing goods
- Names and addresses

### IPRED TOOLBOX

ART. 3  
EFFECTIVENESS &  
PROPORTIONALITY

### MEASURES – DECISION ON THE MERIT

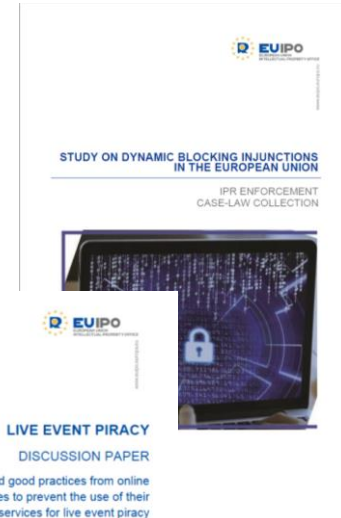
- Corrective measures (Art.10)
- **Injunctions (Art.11)**
- Alternative measures (Art. 12)

### DAMAGES AND LEGAL COSTS





- Damages Art. 13
- Legal costs Art. 14

## Injunctions against intermediaries

- Blocking injunctions: **static, dynamic, live**
- Remedies under ‘InfoSoc’ Directive and IPRED but divergent implementation & application
- Can be implemented at DNS, IP address, or URL
- CJEU: effective and proportionate, respect a fair balance between fundamental rights and interests, are not excessively costly and do not involve a general monitoring obligation
- Live event piracy: role of dynamic and live injunctions



## Member States approach – ‘Live’ measures

	<p>Judicial process (court orders)</p>	<p><b>Evolving case-law in different EU Member States supporting:</b></p> <ul style="list-style-type: none"> <li>• Ireland, Malta, Portugal, the Netherlands</li> </ul>
	<p>Judicial process (court orders) &amp; administrative intervention</p>	<p><b>Regulatory approach: administrative authority</b> supporting the effectiveness of a <b>court order</b></p> <ul style="list-style-type: none"> <li>• <b>France</b> (ARCOM)</li> </ul>
	<p>Administrative process (administrative orders)</p>	<p><b>Regulatory approach</b> – administrative procedure</p> <ul style="list-style-type: none"> <li>• <b>Italy</b> (AGCOM) - <b>Greece</b> (EDPPI) - <b>Portugal</b> (IGAC)</li> </ul>
	<p>Voluntary procedure with intervention of administrative bodies</p>	<p><b>Voluntary agreement</b> whereby an administrative authority acts as a trusted third party in between right holders and ISPs in:</p> <ul style="list-style-type: none"> <li>• <b>Portugal:</b> (IGAC) (2015)</li> </ul>

## Supporting non-legislative measures

### EC Recommendation to combat live event piracy (May 2023)

- to encourage Member States and all relevant stakeholders to take effective measures against unauthorised retransmission of live sports events (e.g. provide for possibility to seek **injunctions adapted to nature of live event piracy**)
- **Support of EUIPO**
  - monitoring the effectiveness of the recommendation (through KPIs)
  - Setting up of a dedicated Network of administrative authorities
  - knowledge-building activities

### - EC Recommendation to combat counterfeiting (Mar 2024)

- Adapting procedures to counter **new counterfeiting practices**
- Adapting IP practices to **AI and virtual worlds**
- **Support of EUIPO**



**EUIPO**  
EUROPEAN UNION  
INTELLECTUAL PROPERTY OFFICE

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