



Rigorous empirical  
research on  
intellectual property



International  
Trademark  
Association

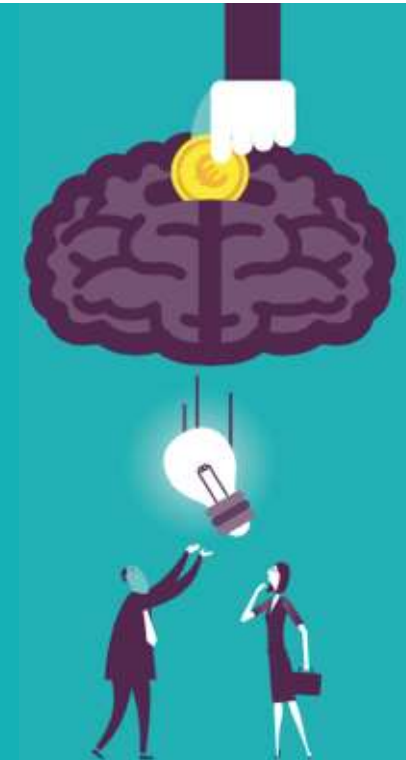
## 3D printing and intellectual property: issues and solutions

**Host:** Claudia Tapia, Chairperson, 4iP Council


### **Presenters:**

**Dr. Peter Schramm**, Attorney at Law, Meyerlustenberger Lachenal Ltd. (MLL), Zurich  
on behalf of INTA

**Alessandro Burro**, 4iP Council Research Award winner 2019, LL.M. in Law of Internet  
Technology, Bocconi University



**4iP Council** Rigorous empirical research on intellectual property STUDENT CONTRIBUTION



**Patents to climate rescue; how intellectual property rights are fundamental to the development of renewable energy**

by **Ariella Aberdeen**

October 2020

**4iP Council** Rigorous empirical research on intellectual property



**The Value of Connectivity in the Automotive Sector**

by **Prof. Bowman Heiden**  
 Center for Intellectual Property (CIP), Chalmers University of Technology  
 The Hoover Institution, Stanford University

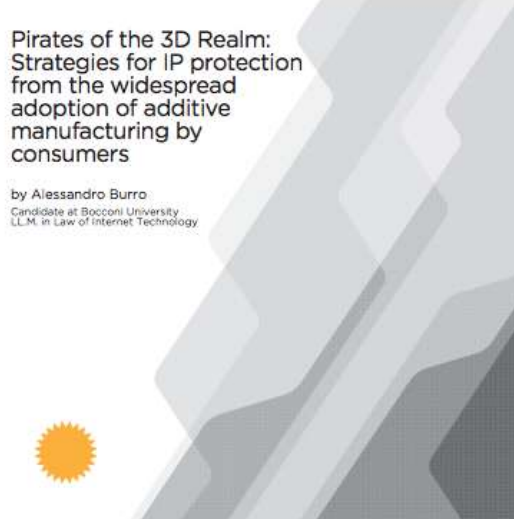
December 2019

**4iP Council**

4iP Council  
Research Award Winner 2019

**Pirates of the 3D Realm: Strategies for IP protection from the widespread adoption of additive manufacturing by consumers**

by **Alessandro Burro**  
 Candidate at Bocconi University  
 LL.M. in Law of Internet Technology



**Case Law post CJEU ruling *Huawei v ZTE***

4iP Council | Case law home | CJEU *Huawei v ZTE* | German court decisions | Italian court decisions | English court decisions | English/Irish court decisions | Romanian court decisions | French court decisions | Dutch court decisions | National Courts Guidance

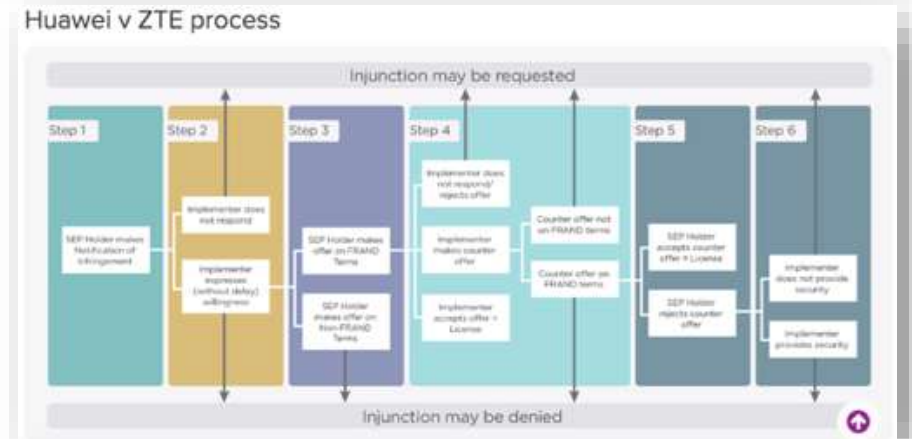
Authors & contributors

## National Courts Guidance

### Negotiating Licenses for Essential Patents in Europe

Increased clarity provided on the principles established by the Court of Justice of the European Union in *Huawei v ZTE*.

The Court of Justice of the European Union clarified, in *Huawei v ZTE* (Case No. C-170/13), European law relating to the availability of injunctive relief for infringements of FRAND-based standard essential patents. In doing so, the Court provided a legal framework focused on the good faith



4iP About The Issue Research Publications Webinars Case Law Search News Features 4SMEs Network

**4iP Council** Rigorous empirical research on intellectual property

- Types of IP
- Benefits of IP
- IP for Business Growth
- 4 Reasons to Patent
- 4 Reasons 4 Copyright
- 4 Reasons 4 Trademarks
- SME Features
- Research

### 4 REASONS TO PATENT

- 1 - MARKET ACCESS
- 2 - NEGOTIATING
- 3 - FUNDING
- 4 - STRATEGIC VALUE

Explore how patents add value with our [interactive guide](#).

### 4 REASONS 4 COPYRIGHT

- 1 - COMPETITIVE EDGE
- 2 - REPUTATION
- 3 - COLLABORATION
- 4 - FUNDING

Explore the benefits of copyright with our [interactive guide](#).

### 4 REASONS 4 TRADEMARKS

- 1 - DIFFERENTIATION
- 2 - PROTECTION
- 3 - REPUTATION
- 4 - REVENUE

Explore the benefits of trademarks with our [interactive guide](#).

### 4 REASONS 4 DESIGN RIGHTS

- 1 - EXCLUSIVITY
- 2 - COMMERCIALISATION
- 3 - REPUTATION
- 4 - VALUE

Explore the benefits of design rights with our [interactive guide](#).

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Which types of intellectual property do you need?

Filter table columns

	PATENTS	COPYRIGHTS	DESIGNS	TRADEMARKS	TRADE SECRETS
What do they protect?	Patents protect inventions that are new, non-obvious and capable of being applied in industry.	Copyrights protect original literary, artistic, scientific and technical works.	Designs protect the appearance of a product.	Trademarks protect words, symbols, sounds or other distinctive signs used to identify goods or services.	Trade secrets protect confidential information that has commercial value.
Examples of what is protected	Medicines, pharmaceuticals, agricultural products, chemical processes, computer software, etc.	Books, music, films, paintings, photographs, etc.	Industrial designs, such as the shape of a chair or a car.	Brand names, logos, slogans, etc.	Formulas, recipes, customer lists, etc.
How long is my right protected?	Up to 20 years from the filing date of the patent application.	Up to 70 years from the end of the calendar year in which the author died.	Up to 15 years from the date of registration.	As long as the mark is used to distinguish goods or services.	As long as the information remains confidential.
How long is my invention protected?	Up to 20 years from the filing date of the patent application.	Up to 70 years from the end of the calendar year in which the author died.	Up to 15 years from the date of registration.	As long as the mark is used to distinguish goods or services.	As long as the information remains confidential.
Do I have to register it?	Yes, you need to register a patent with the Intellectual Property Office (IPO).	No, you do not need to register a copyright.	Yes, you need to register a design with the Intellectual Property Office (IPO).	Yes, you need to register a trademark with the Intellectual Property Office (IPO).	No, you do not need to register a trade secret.

**How do I use intellectual property to grow my business?**



# 3D printing and intellectual property: issues and solutions



**Dr. Peter Schramm**  
Attorney at Law, Meyerlustenberger  
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on behalf of INTA



**Alessandro Burro**  
4iP Council Research Award winner  
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LL.M. in Law of Internet Technology,  
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# **3D printing and IP rights: Legal issues**

Short introduction by Dr. Peter Schramm

## 3D printing: Process of producing a three-dimensional solid object made from a digital model

- **Making of the 3D model:** scanning the object or by directly writing a digital CAD file (designer of the blueprint/CAD file)
- **Dissemination of the 3D model:** usually a website platform offering links to the 3D model (Commercial or non-commercial disseminator)
- **Printing act:** Printing the replica based on the 3D model (designer/manufacturer/retailer/seller of 3D printer; commercial and non-commercial end-users)
- **Distribution of printed replicas:** for private and non-commercial purposes (commercial or non-commercial end users, professional printing company)

- **IP rights at stake:** copyright and design right, patents and trademarks.
- **Subject to infringement by the end-user or intermediaries** in the technology's creation and dissemination process.
- **End user:** 3D printing allows end-users to obtain counterfeit goods without the intervention and assistance of commercial counterfeiters, enables new form of product piracy which makes it harder to enforce IP rights.
- **Intermediaries:** involved in the process of 3D printing, from the creation and dissemination of the object design or computer aided design (CAD) files, to the actual creation and dissemination of the 3D printed object; raises question of direct and indirect infringements.

# Copyright

- Harmonization/lower threshold for protection of works of applied art after CJEU C-683/17 – COFEMEL and CJEU C-833/18 - Brompton (“own intellectual creation”)
- No commercial use requirement: Can copyright also be invoked against private use?
- Are CAD Files Copyright-protected? As a computer program? But unlike traditional software, a CAD file does not control the hardware of the 3D printer, it just represents, embodies the 3D object... Because of its technical drawings, diagrams and models? But no copyright is granted to technological solutions and progress...
- The use of the CAD file to print the physical object in 3D should not be considered counterfeit because the physical object itself does not carry the copyright that was vested in the CAD file.



# Designs

- Useful intellectual property right for larger manufacturers to challenge commercial 3D printing of their products
- No design right infringement if the end-user makes the 3D print for personal and non-commercial use, no fair compensation rules in design law
- Can intermediaries be held liable for design infringements based on the indirect infringement rules in EU e-commerce law? A CAD file does not necessarily infringe a registered design.

# **3D PRINTING CHALLENGES EXISTING INTELLECTUAL PROPERTY LAWS!**

# **3D printing and Intellectual property: a looming crisis?**

Presentation by Alessandro Burro

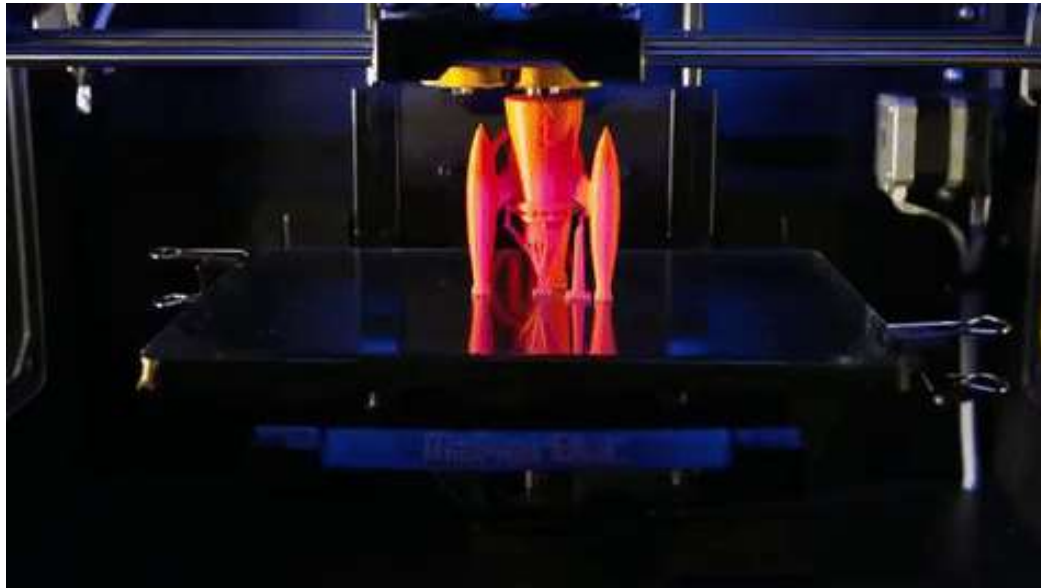
**Part I: What is 3D printing?**

**Part II: Why it should concern us all**

**Part III: What solutions could we adopt?**

# Part I: What is 3D printing?

## 3D Printing



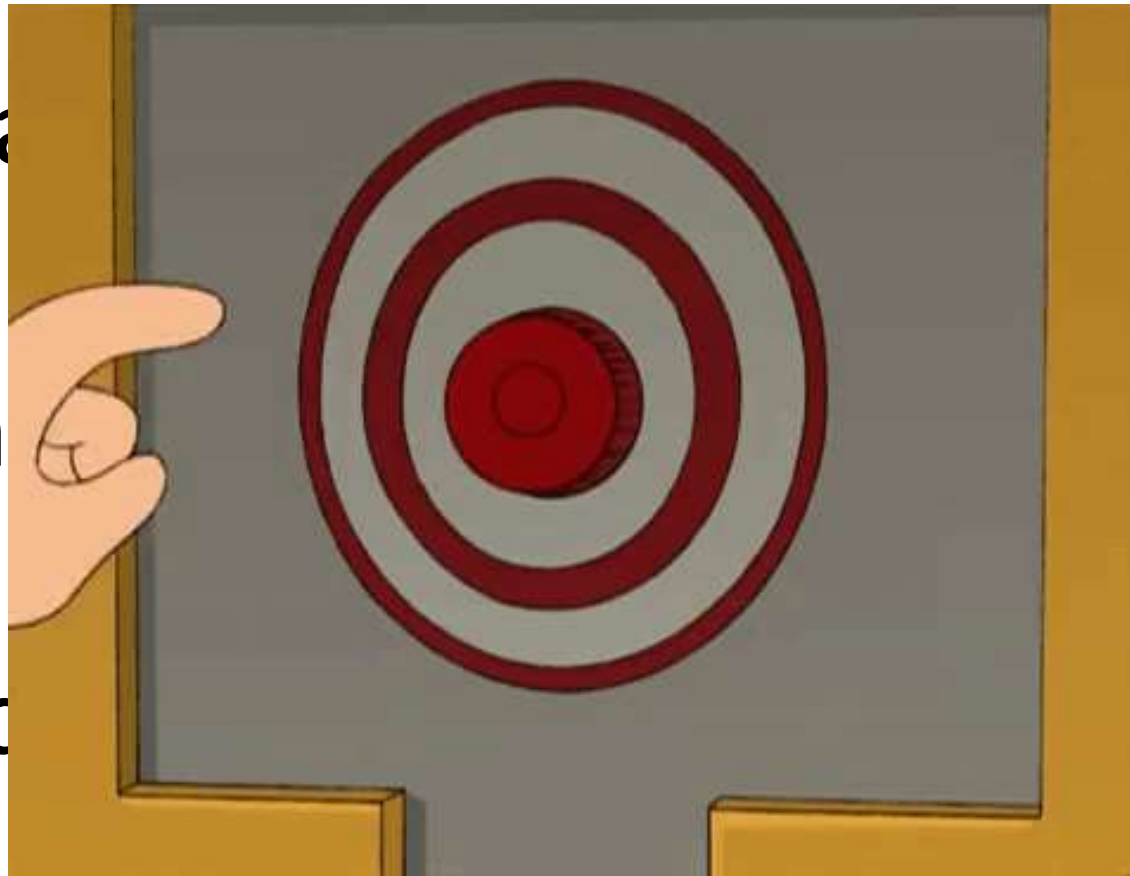
## Traditional Manufacturing



Step 1: Create

Step 2: Tran

Step 3: Send



Printer

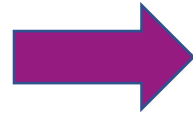
Step 4: The 3D printer prints the object following the .stl file directions



# Part II: Why it should bother us



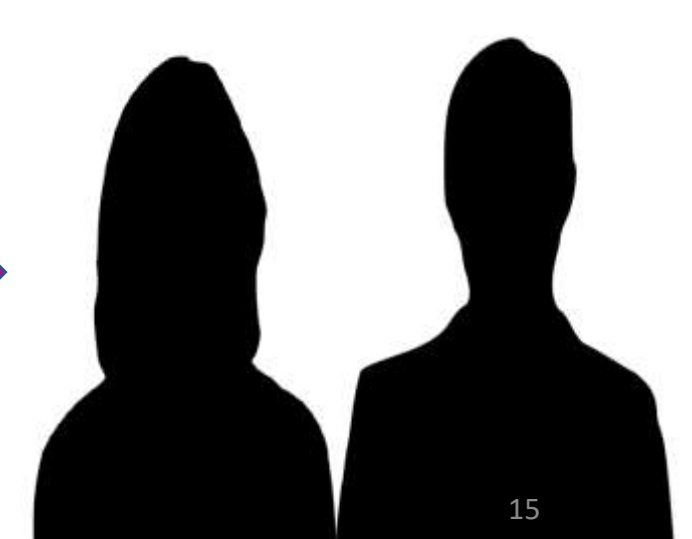
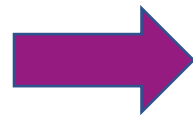
**Cumbersome, costly, difficult to operate**



**Smaller, cheaper, easier to operate**



**Standard consumer interface, appealing for mass consumption**



# P2P piracy crisis of the '2000s

- Music and Movie Industries were the most affected
- Billions of dollars were lost due to pirated content
- Illegally downloaded content was not perceived by the majority of the public opinion as stealing
- Extremely difficult to prosecute every single infringer of these intellectual property rights





# Now you can!



*P2P piracy crisis of the  
2000's*

- Copyright

*3D printing crisis of the  
2020's*

- Copyright
- Patents
- Trademarks

# Part III: What solutions could we adopt?

## *Subjects of the possible solutions:*

- Consumers
- Intermediaries
- Pirates

## *Striking a balance between:*

- Intellectual Property rights protection
- Supporting the new economy

# Solution 1: Intermediary Liability

## *Strict Liability*

- Detrimental for the new economy
- Resource and time consuming

## *Safe Harbor*

- Human
- Algorithmic
- Hybrid

## *Private Copying Levy*

- Confusion regarding the area impacted
- It would hamper or suppress the 3D printers' market
- Would it impact both 3D printers and 3D printing materials?



# Safe Harbor is best option for now

Inspired by



Already implemented by:



In these cases:

Penrose's Triangle case



Warhammer case



# Solution 2: DRMs&Consumers

## Black Box

- Excessive violation of Privacy?
- Costly for the producers of 3D printers
- The cost could limit the expansion of 3D printers' market

## Integrated Copyright Enforcer

- Excessive violation of Privacy?
- Always-on-line: hamper the geographical spread of 3D printers
- Offline: not updated and could be easily bypassed

## Physical Printed Identifier

- Excessive violation of Privacy?
- Can be easily bypassed
- Could be difficult to implement on smaller 3D printed parts

# Other ways to entice consumers to the lawful side

- Better quality and variety
- Subscription model
- Virus free guarantee



# Solution 3: Targeting the pirates

## For Profit

- Can be suppressed through enough enforcement
- But they have Survivor Bias
- To be taken down only if they go very big

## *Profiles of Pirates:*



## For Ideology

- For every pirate taken down two more appear
- Risk of creating martyrs
- Unpopular and time and resource consuming

# Thank you

## Q & A

### Forthcoming webinars

Registration open on [4ipcouncil.com](https://4ipcouncil.com)

<b>2 March 2021, 16.00-17.00 CET</b>	Downsides of Using Inadequate Open Source Software Processes and Licenses within Standard Development	Michele Herman, CEO of Early Stage Health-Tech Startup and Founder of JusTech Law  Dr. Justus Baron, Senior Research Associate at the Center on Law, Business, and Economics, Northwestern University Pritzker School of Law
<b>18 March 2021, 16.00-17.00 CET</b>	Open Source Software and Standards Development: Competition Law Implications	Richard Taffet and Michael Zymler, Morgan Lewis