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I. INTRODUCTION

ECTA has been carefully following the developments of industrial 3D and 4D printing (hereinafter “3DP” and “4DP”) and their potential impact on intellectual property rights (hereinafter “IP”), particularly in design law and practice. ECTA has responded to the Studies,¹ as well as contributed to the Public Consultation in analysing the current EU legislation on designs leading to the evaluation report of EU legislation on design protection² (hereinafter the “Evaluation Report”) published by the European Commission (hereinafter the “EC”).

In this position paper, ECTA has focused particularly on the study of emerging technologies and their implications on the current EU design legislation and the need to reform the said laws. Based on “The Intellectual Property Implications of the Development of Industrial 3D Printing”, authored by Dinusha Mendis, Jan Bernd Nordemann, Rosa Maria Ballardini, Hans Brorsen, Maria del Carmen Calatrava Moreno, Julie Robson and Phill Dickens, as published in February 2020 (hereinafter the “Study”),³ ECTA has further identified features of 3D printing technology having implications for EU design legislation which need to be addressed in any future design law review in a balanced manner, in order to secure the efficient functioning of the single market and the incentive to innovate.

II. EXECUTIVE SUMMARY

The definition of a product is one of the most important aspects of design law to be reconsidered in relation to 3D printing and also regarding future technological advancements in the digital age. A CAD file is merely a medium, containing the blueprint of the design and the features thereof, incorporating the design in its entirety, which is used in the 3D printing process. ECTA takes the position that the CAD file must qualify as a ‘product’ in order to be protected under the EU design law in accordance with Article 3(b) of the Design Regulation and Article 1 of the Design Directive. In order to achieve legal certainty, the wording of Article 3(b) of the Regulation and Article 1 of the Directive should be amended to include not only CAD files, but also any digital representation of items. Like the digital items in virtual reality, the design within the CAD file should be considered a ‘product’ and the CAD file encompassing the design of a digital item should, therefore, be eligible for design protection.

The defence available for acts done privately and for non-commercial purposes in accordance with Article 20(1) of the Regulation should be interpreted narrowly. However, the

¹ Economic review of the industrial design in Europe (2015), Legal review on design protection in Europe (2016), and Intellectual property implications of the development of industrial 3DP (2020)

² Commission Staff Working Document Evaluation of EU legislation on design protection 6 November 2020

³ The IP Implications of the Development of Industrial 3D Printing Final Report 12 February 2020

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technology has not yet reached a stage where completely accurate reproduction of a wide range of consumer goods and/or high-value complex products would be possible in a sufficiently wide range of materials cost-effectively. This may still be a decade or more away. A relevant case will need to come to the ECJ for a ruling to be made. While it could be objected that this leaves the law in a state of uncertainty until such a case is heard, the counter-argument is that the law is not in urgent need of clarification until this exemption starts to be used on a regular basis. Hence, ECTA recommends that the above factors are left to judicial teleological interpretation rather than requiring a formal change to the law. ECTA considers that attempting to fix a perceived problem before there is a detailed understanding of its practical implications risks to create additional unforeseen problems.

Further, in any future design law reform, it would be both relevant and necessary to explicitly include contributory infringement so as to provide legal clarity and more effective tools for rights holders in defending their rights. Without this additional remedy it may not be possible to hold liable all parties involved in the infringement of a design through 3D printing. ECTA maintains this position irrespective of whether or not the law is changed to provide that a CAD file containing the 3D model itself constitutes a “product” in the sense of Article 19(1) of the Design Regulation and Article 12(1) of the Design Directive.

Regarding spare parts, it is important to take into account the possible further analysis of the economic impact of 3DP as suggested in the Study of the expected democratising effect and changes in markets, and recognise that technological changes may not take place as fast as previously thought. ECTA takes the position that this anticipated technological advancement can help find a better balance between total liberalisation (removing all design protection from items categorised as spare parts) and full, although time restricted, exclusivity of design rights in spare parts. Already in 2016, in the “ECTA Position Paper – Designs and Spare Parts”, ECTA took a balanced position suggesting to reduce the term of design protection to a maximum of 5 years for spare parts (with no possibility of extension) and to open the market for competition after said protection period. In this paper, however, we explore further alternatives.

Considering that there is already a multitude of legal tools, including other IP laws, in place to incentivise innovation and control the markets, ECTA’s opinion from the design law point of view is that there is currently no need for a specific *sui generis* law to govern 3DP technology. ECTA further believes that there are no clear obstacles to further amending current EU design laws to cover the implications of 3DP or other related foreseeable digital technologies (such as 4DP).

III. COMMENTS

In these comments, ECTA provides its position on the most important issues raised by the 3DP Study. Starting from the CAD file containing the design and its enforcement, having a look at the 3DP with a particular focus on spare parts, and finally expressing our position on the possible *sui generis* rights regarding 3DP.

1. CAD FILES

Computer Aided Design (hereinafter “CAD”) can be defined essentially as the use of computer systems to aid in the creation, modification, analysis or optimisation of a design. The concept of a computer system includes the essential hardware and software to perform the customised design functions.⁴

CAD files constitute the baseline for 3DP. In other words, a CAD file is the ‘vessel’ which carries the 3D model and is the blueprint of the physical model for the digital manufacturing technology referred to as 3DP.⁵

The 3D printer basically constructs a physical three-dimensional object by adding materials layer upon layer. In the absence of a CAD file, it is safe to assume that a 3D printer would not be able to print any object.

Even though 3DP of an object is not solely limited to a CAD file and the commencement process can be achieved through other file formats, the CAD file is the most common starting point for the 3DP process within the industry. Therefore, ECTA has chosen to focus on CAD files as the commencement stage for the 3D print manufacture of an object.

The most common 3DP process consists of the following stages:⁶

1. Designing a CAD file,
2. Using and sharing a CAD file,
3. Printing the CAD file,
4. Distributing the printed good,
5. Licensing/Selling the CAD file.

⁴ Narayan, K. Lalit (2008). Computer Aided Design and Manufacturing. New Delhi: Prentice Hall of India. p. 3.

⁵ The IP Implications of the Development of Industrial 3D Printing Final Report 12 February 2020 p. 21.

⁶ The IP Implications of the Development of Industrial 3D Printing Final Report 12 February 2020 pages 12-13.

THE 3DP PROCESS AND THE IMPORTANCE OF CAD FILES

To place ECTA's views in context, it is helpful to explain how the 3DP process works. The first three consecutive steps in an ordinary 3DP process are: a) creating the CAD file, b) conveying the CAD file to the 3D printer through a computer code, and c) printing of the physical object layer upon layer.

Firstly, CAD files are created with software tools or by scanning a physical object. In the broadest sense, CAD files can be created from scratch by using a modelling software ("CAD Software") or generated by scanning an existing object with a 3D scanner, which turns the object into a virtual 3D model. As a result, a CAD file simultaneously contains a "design drawing component" and a "code component".⁷

It is important to note that the original CAD file, containing a CAD model created with a CAD Software, includes the designer's intellectual property since the design is incorporated in the CAD file. Furthermore, this 3D model encompassed by the CAD file is a product of the individual's intellect as it contains the source code used to develop the design through design drawing component.

Following the creation of the CAD file, the file is transferred and saved into a neutral file format such as the STL format (STereoLithography) or the AMF format (Additive Manufacturing Format), which represents the digital model to be 3D printed. The neutral file format does not include information that would allow a third party to edit the original CAD file. However, significant changes within the CAD file may pave the way for the loss of the original file structure.⁸

Secondly, the CAD file is processed and exported to a 3D printer using dedicated software, in order to become printable.

Finally, the digital model is then transformed into a physical object with the guidance of the CAD file through a process in which molten material is built up layer upon layer until the physical object emerges.

At the present time, 3D printers can create objects from many sorts of materials such as plastic, pharmaceutical substances, metals, ceramics and hybrid materials, but not all materials.

CAD files are an important element used in the design of many applications, including but not limited to automotive, consumer, electronics, health, aerospace, construction, energy and tooling industries.⁹

⁷ Elam, Viola (2016) 'CAD Files and European Design Law', *JIPITEC*.

⁸ The IP Implications of the Development of Industrial 3D Printing Final Report 12 February 2020 p. 21.

⁹ *ibid.* p. 26.

PROTECTION OF CAD FILES AS A PRODUCT UNDER DESIGN LAW

Academic discussion on the basis for legal protection of the various elements of the 3DP creation and process include copyright law, trade mark law, patent law, IT law, design law and a new *sui generis* law. This position paper focuses solely on the protection under design law.

In the case of CAD files, unless they are obtained through the scanning of an existing object, it is widely accepted that the design arising from the utilisation of CAD Software by an individual includes the designer's intellect, since the design is incorporated in the CAD model as stated above. The following comments only apply to a CAD file created as part of the original design of an object, rather than a file created by scanning an already existing object in its final form.

Under the Design Directive and the Design Regulation,¹⁰ protection as a design requires that there be a "design" of a "product". Under Article 3(a) of the Regulation, the design must show the appearance of the product resulting from its "lines, contours, colours, shape, texture and/or materials". A "product" is widely defined and includes, *inter alia*, packaging, get-up and graphic symbols, but excludes "computer programs". While it could be argued that a CAD file created to enable 3D printing of an object is a computer program as it contains code, it is clear that design law is not intended to protect the code as such (the code being subject to copyright protection) but rather the output of the file – the 3D model of the product. The effect of running the CAD file through a printer designed for making 3D printed objects is that the design of the product can be seen both as a graphic display on a computer screen and in the final product produced by the printer.

Even though computer programs are not eligible for protection under EU design law since they are not considered as 'products' by virtue of the aforementioned legislation, the design created with the use of a CAD Software that generates the 3D model would be considered to fulfil the requirements of protection as a product. In other words, the virtual item within the CAD file would be considered a 'product' and the 3D model encompassed by the CAD file containing the design of an item in digital form will be eligible for design protection.

It is apparent that the current legislation lacks a comprehensive definition of computer programs. However, this computer program exception does not cover the '*results of running a computer program*' either. The expression clearly refers to the programs which only include their code lines and functionality. Considering that the CAD file is not solely a source and an object code, as it encompasses digital representation of the design along with instructions as to its printing method, it is important to differentiate a CAD file incorporating a design from any other computer program.¹¹

Consequently, ECTA agrees with the approach embraced by Nordberg and Schovsbo who argue that CAD files resemble blueprints and may be considered as 'products' according to

¹⁰ Ibid. p. 62.

¹¹ Ibid. pp. 62-63.

the EUIPO guidelines of examination of registered Community Designs and hence the legislation in effect.¹²

Many other scholars also support the understanding that a CAD file has to be considered a product due to its incorporation of the design in its entirety:

“Nordemann, Rüberg and Schaefer, Wiedemann and Engbrink as well as Schmoll, Graf Ballestrem, Hellenbrand and Soppe argue that the CAD file has to be considered a ‘product’ as the CAD file incorporates the design in its entirety.”¹³

Even though design rights specifically protect the appearance of a product or a part of a product and a 3D design contained in a CAD file may be considered as lacking physical form in the traditional sense (since it is merely displayed on a screen before being printed for the first time), the wording of the current legislation does not require the ‘appearance’ of a product within a design to have a physical form: a digital ‘appearance’ should also be permitted.

Considering that graphic symbols that are solely displayed on computer screens are recognised as ‘products’ and have already been successfully registered before the EUIPO, it is safe to assume that ‘products’ can have a non-physical form and ‘appearance’.¹⁴

It is to be noted that there are many ways in which a design can be represented. EUIPO accepts drawings, photographs and computer-made representations (i.e. CAD representations), provided that they are of quality and include all details of the design to be clearly distinguished. Accordingly, if the CAD file contains clear and intelligible information about the features resulting in the individual character of the item in which the design is incorporated or to which the design is applied, the protection should be granted to its holder.¹⁵

As a result, ECTA adopts the position that the 3D design encompassed in the CAD file should be eligible for design protection, as the current wording of EU design law suffices to provide legal protection for 3D models contained within a CAD file.

In order to achieve this, further clarification would be required of how the 3D design incorporated within a CAD file should be described for the purposes of filing a design application. Moreover, the definition or interpretation of “design” and/or “product” should be broadened so as to cover a wider range of protectable elements under EU design law. It will also be necessary to distinguish CAD files generated as part of the original design of a product, which should be protectable as a design, from CAD files created by mechanical scanning of a pre-existing product designed by a third party, which should not and should,

¹² Ana Nordberg and Jens Schovsbo, in Rosa M. Ballardini, Marcus Norrgård and Jouni Partanen (eds), 3D Printing, Intellectual Property and Innovation – Insights from Law and Technology (Wolters Kluwer, 2017) chapter 13, para. 13.2.

¹³ The IP Implications of the Development of Industrial 3D Printing Final Report 12 February 2020 p. 63.

¹⁴ Ibid. p.65.

¹⁵ Elam, Viola (2016) ‘CAD Files and European Design Law’, *JIPITEC*.

as discussed in Part 2B below, instead be clearly regarded as an infringement of that earlier design.

2A) ENFORCEMENT / LIMITATIONS – PRIVATE USE

Article 20 of the Design Regulation¹⁶ limits the exclusive rights conferred by a Community design. In particular, Article 20(1)(a) states:

“The rights conferred by a Community design shall not be exercised in respect of:

(a) acts done privately and for non-commercial purposes ...”

There do not appear to have been any cases at the EU level or elsewhere in which this exception has been interpreted or applied.

In the context of 3DP, this exception could conceivably be relevant in a number of situations.

1. An individual could purchase 3D scanning and printing equipment and use that equipment to scan and print copies (hereinafter the “Copy Products”) of products protected by Community designs (hereinafter the “Protected Products”) for their own use;
2. That same individual could use their equipment to scan and print further Copy Products for family and friends without charge, or for no more than a reimbursement of the costs of the printing materials;
3. The same individual could obtain a CAD file from a third party, rather than scanning a product themselves, and use that CAD file to print Copy Products as in 1 or 2 above;
4. That same individual could create a CAD file using their scanning equipment and ask a third party (such as a 3D Printing Bureau) to print Copy Products for that individual’s own use, or for the benefit of friends or family;
5. An individual could commission a third party (such as a 3D Printing Bureau) to print Copy Products for the individual’s private and non-commercial use and/or as a gift for family or friends.

In each of these examples, the individual would likely be able to argue that it was protected from infringement by the Article 20(1)(a) exception.

¹⁶ Council Regulation (EC) No 6/2002 of 12 December 2001 on Community designs

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It can be seen that this exception could potentially be used by a very large category of individuals who would otherwise be likely purchasers of Protected Products.

The Study states:

“If 3D printing becomes more common in the future, some fear that the private use limitation would lead to de facto immunity for 3D printing activities. To address this issue, some respondents to the Public Consultation suggested modifying this limitation by requiring the 3D printing acts to be compatible with fair trade practices and not unduly prejudice the normal exploitation of a design. This is in line with the conclusions of the 3D Printing Study which suggested adapting the private use limitation along the lines of the three-step test in the Agreement on Trade-Related Aspects of Intellectual Property Rights (‘TRIPS’). However, this solution was criticised as ineffective by some representatives of right holders in their feedback to the Public Consultation.”¹⁷

In practice, this has not been an issue of any significance to date, probably because 3DP technology has not yet reached a stage where completely accurate reproduction of a wide range of consumer goods and/or high-value complex products in a sufficiently wide range of materials would be possible cost-effectively.

However, it is foreseeable that advances in technology could make the scanning and printing of Copy Products cost-effective in a relatively short term.

It is, therefore, appropriate to consider the balance between protecting the rights of individuals who wish to use this technology for their private and non-commercial benefit, and protecting the investment that businesses have made in designing products and obtaining Community design protection for them.

The Study cites views from textbooks and commentators arguing that *“the exception likely only applies to private individuals in their personal, non-commercial capacities, doing acts privately’ and that only private persons can rely on this provision. The non-commercial requirement rules out all acts by corporations and other commercial entities and also all acts done privately but for commercial reasons”*. However, these are not binding opinions and a broader interpretation is highly likely to be argued as and when the exception comes before a court to be applied.

The Study cites differing views on whether a private individual who uses a 3D Printing Bureau may take advantage of the exception or not and whether the Bureau itself would fall within the scope of the said exception. It concludes that as the Bureau is a commercial enterprise, and as the customer using the Bureau’s services is not acting non-commercially, neither party can take advantage of the exception.¹⁸ ECTA

¹⁷ Para 5.2.4 Commission Staff Working Document Evaluation of EU legislation on design protection. SWD/2020/0264 final November 2020

¹⁸ Ibid, p. 106

respectfully disagrees. In our opinion, a 3D Printing Bureau does not have an intention as to the end use of the product separate from the intention of the customer. The customer's intention is to make a copy of the product for non-commercial use. The mere fact that a third party commercial agent is used to facilitate the customer's wishes should not taint the ultimate intention of the customer. On that basis, both the Bureau and the customer should *prima facie* be able to use the exception.

ECTA takes a position to recommend that a narrow interpretation of Article 20(1)(a) should be adopted.

The interpretation could focus on the two separate elements of the exception:

- i) acts done privately; and
- ii) non-commercial purposes.

A "private" act is one done solely by or for the benefit of one particular person or group of people only. The immediate issue is that if the exception can be applied where the act is done by or for the benefit of a group of people, rather than a single individual, there are no limits to how large that group might be. As a matter of policy, the question is whether the use of the exemption can be justified with respect to an act by or for the benefit of more than one person.

Another question is whether the availability of this exception should be limited to natural persons, or whether a "legal person" such as a partnership or corporation could qualify.

As to the purpose of the copying, a "commercial" act or objective is usually defined as one that makes or is intended to make a profit. In common law jurisdictions there is a compensatory remedy of an Account of Profits. This requires an infringer of intellectual property rights to provide details of the accounts of its business in order to determine whether a profit has been made, and if so, what proportion of that profit can be said to have been generated by the infringing activity. The results of that disclosure, usually presented by an expert accountant, frequently (if not invariably) appear to show that the actual sales of the infringing products have generated little or no profit whatsoever, although the business otherwise appears to be healthy and profitable.

A feasible argument can, therefore, be made that payment can be taken by an individual for producing a Copy Product, and so long as this is to cover reasonable expenses and overheads and does not generate an overall profit, this is not a "commercial purpose".

ECTA recommends that the above factors are left to judicial teleological interpretation rather than requiring a formal change to the law. A relevant case will need to come to the ECJ for a ruling to be made. While it could be objected that this leaves the law in a state of uncertainty until such a case is heard, the counter-argument is that the law is not in urgent need of clarification until this exemption starts to be used on a regular basis. Furthermore, by waiting until the technological advances referred to above have taken place and the copying of consumer products has become more widespread, a

court would be in a better position to assess how the balancing act between the interests of the right holder and the interests of the consumer should be resolved in a real-life rather than a theoretical context. ECTA considers that attempting to fix a perceived problem before there is a detailed understanding of its practical implications risks to create additional unforeseen problems.

Another possible limitation consists of a “fair trade practices” requirement, meaning that the exploitation does not unduly prejudice the normal exploitation of the design as suggested in the three-step test under Article 26 of the TRIPS Agreement¹⁹; however, this would require amendments to the Regulation and Directive rather than judicial interpretation. In addition, an immediately apparent difficulty is that such a test would require an assessment of commercial criteria with respect to acts that are specified to be private and non-commercial. The Study was not in favour of this solution and neither is ECTA.

The Study refers to the position in copyright law where the private use exception differentiates between lawful and unlawful sources.²⁰ If the owner of a design right decides to make available a CAD file enabling a product to be 3D printed on an authorised basis, in return for a royalty payment for a one-time use of the CAD file, it has been suggested that technological measures could be incorporated in the CAD file preventing more than a single use. The file could also contain software preventing (or attempting to prevent) circumvention of such a limitation of use. Consequently, any attempt to bypass the limitation of use would render the use of the CAD file unlawful.

However, the example related to the production of Copy Products given at the beginning of this section could conceivably use CAD files lawfully created by scanning (using the same exception), so this argument is potentially circular and not, in ECTA’s opinion, a helpful comparison or distinction, save in the limited circumstances of the above example.

Therefore, even if ECTA does not endorse all the individual observations of the Study, it does endorse the overall conclusion that allowing national courts and the ECJ to undertake teleological interpretation of the exception in the context of actual claims is the most sensible and practical way forward. ECTA also strongly recommends that a narrow interpretation of the exception be applied in order to protect design rights owners from potentially extensive carve-outs from the scope of protection of their rights. However, attempting to legislate now for technological advances of an unknown scope

¹⁹ Article 26 Agreement On Trade-Related Aspects Of Intellectual Property Rights “Members may provide limited exceptions to the protection of industrial designs, provided that such exceptions do not unreasonably conflict with the normal exploitation of protected industrial designs and do not unreasonably prejudice the legitimate interests of the owner of the protected design, taking account of the legitimate interests of third parties.”

²⁰ The IP Implications of the Development of Industrial 3D Printing Final Report 12 February 2020 p. 105

and focus is not, in ECTA's opinion, a practical solution to a problem which (at the present time) is no more than theoretical.

2B) ENFORCEMENT / LIMITATIONS – CONTRIBUTORY INFRINGEMENT

As already outlined in Part 1 above, ECTA adopts the position that the current wording of EU design law suffices to provide legal protection for 3D models encompassed by a CAD file.

The Study summarises some questions relating to 3DP and IP infringement and, more specifically, to which extent Directive 2004/48²¹ provides instruments that enable rights holders to protect their rights and fight infringing activities.

The authors have split up 3DP activities into several scenarios:

- Designing a CAD file
- Sharing a CAD file
- Printing a CAD file

More in-depth discussions on the question of infringement under design law are found in the Study,²² the conclusions of which can be summarised as follows, particularly as to the question of whether or not changes to EU design law are needed:

Scenario	
Designing a CAD File	<ul style="list-style-type: none"> • <u>Creating</u>: “As a person creating a design from inception is the overarching goal of the EU Design law framework no infringement will occur by doing so with the help of software tools.”²³ • <u>Scanning</u>: “It is suggested that if it does not matter how or through which means the design is protected, then it may also not matter how or through which means the product incorporating the design is replicated in order to establish an infringement”²⁴. In the Summary, the authors conclude: “It is controversially discussed whether scanning a protected design may constitute an infringement. A clarification to this effect is therefore recommended.”²⁵

²¹ Directive 2004/48/EC of the European Parliament and of the Council of 29 April 2004 on the enforcement of intellectual property rights

²² pp. 137-144

²³ p. 138

²⁴ p. 140

²⁵ p. 143

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Sharing a CAD File	<ul style="list-style-type: none"> • <u>Uploading</u>: “<i>This finding is in line with the arguments made by Reeves and Mendis (arguing from a UK perspective) as well as Nordberg and Schovsbo who consider the uploading of a CAD file an infringement. As this interpretation provides reasonable protection of the design, an explicit change to the statute as has been suggested is not necessary and is not encouraged.</i>”²⁶ • <u>Hosting</u>: “<i>In the light of the above the author is not in favour of supposedly clarifying ‘patent-like’ provisions against indirect (intermediary) design infringement that are intended to facilitate enforcement as the current law already provides for the necessary protection of rightsholders in this hindsight.</i>”²⁷
Printing a CAD File	<ul style="list-style-type: none"> • <u>Downloading</u>: “<i>Downloading a design contained in a CAD file must also be evaluated as a use.</i>”²⁸ The private use exception, however, might be applicable.²⁹ • <u>Printing</u>: “<i>3D Printing a copy of a valid design is widely agreed to constitute ‘making’ of a product incorporating the design within the meaning of Articles 19(1) of the Design Regulation and 12(1) of the Design Directive.</i>”³⁰

As can be seen from the above summary table, the authors of the Study are hence of the opinion that EU design law is well equipped to provide measures against many different types of intermediaries involved in the 3DP chain and have only identified the scanning scenario as one requiring clarification in EU design law.

In general, the opinion of the authors of the Study is that contributory infringement by intermediaries should not be included in EU design law, mainly in view of the opinion that the 3D model encompassed by the CAD file already in itself may constitute a ‘product’, having an ‘appearance’ and hence being eligible for protection under EU design law.

ECTA submits that it is uncertain whether national and regional legislations throughout the EU will automatically result in a similar reasoning being followed by national or regional courts in design infringement suits. This concern seems to be shared in the “Commission Staff Working Document - Evaluation of EU legislation on design protection” (SWD(2020) 264, p.30), which states: “Finally, it remains unclear whether acts of uploading, hosting and downloading a CAD file on a publicly available platform constitute a design infringement.

²⁶ pp. 141-142

²⁷ p. 143

²⁸ p. 143

²⁹ p. 183

³⁰ p. 143

Against that background, the Study suggested adapting the scope of the design rights (including limitations) and enforcement measures. This is in line with the recommendations of the Legal Review and the recommendations proposed by some respondents to the Public Consultation”.

Turning once more to the Study, the authors set out: “Mengden argues that uploading the CAD file is supplying the means, relating to an essential element of the invention for putting the invention into effect. However, neither EU design law nor German design law include such a provision. Moreover, even if such an indirect infringement principle could be applicable within design law, supplying a third party with the CAD file must be interpreted as a direct infringement since the design is incorporated in the CAD file (see above). Therefore, Mengden’s reasoning cannot be followed for the interpretation of EU design law, and uploading a CAD file to a public accessible website cannot be considered an indirect infringement”.

While the authors of the Study seem to put the focus on the parties involved and ask whether or not an intermediary has contributed to generating, commercialising or distributing the product (in tangible or intangible form), patent law provisions rather put the focus on the product itself and address whether or not an intermediary has supplied means relating to an essential element of a patented invention.

ECTA considers it appropriate and necessary to explicitly include contributory infringement in EU design law for at least the following two reasons:

- A) The scope of the infringement should not exclusively envisage parties that have directly participated in the generation, commercialisation and distribution of the infringing product (tangible or intangible), but also parties that knowingly facilitated and/or contributed to the infringement. This could imply an indirect infringement.

Indeed, in order to avoid legal uncertainty for the market as to what constitutes a potential infringement of design rights, ECTA submits that EU design law should clarify that any party that knowingly facilitates and/or contributes to a violation of design rights would potentially be a contributory infringer and hence liable. To the extent that this includes acts such as, but not limited to, scanning an object, hosting a CAD file or providing it to a party not having the proprietor’s consent to exploit the protected product or even providing the 3DP material to such a party, all of these should potentially be considered as a contribution to the infringement act.

While interpreting the scope of EU design law so that it would include protection for the 3D model encompassed by the CAD file as a product would make liable most parties that have knowingly contributed to and enabled the infringing act, it might still be unclear whether or not acts such as scanning the product or hosting the CAD file would constitute an infringement.

Therefore, ECTA submits that the necessary clarification would be provided by including in EU design law a contributory infringement clause stating that knowingly

contributing to and enabling the infringing act would also constitute an infringement, which would explicitly extend the scope of the infringing activities to include acts such as scanning a product and hosting a CAD file.

- B) The scope of the infringement should not be limited to the use of the infringing product (tangible or intangible) in its entirety, but it should also include the use of essential elements of the product, which might only constitute a part of the protected product.

This aspect is not only relevant when dealing specifically with 3DP, but it relates to design law in general. However, given the fact that 3DP would greatly facilitate the reproduction of products protected under design law, the question is whether EU design law is sufficiently equipped to hold parties participating in generating a substantial portion of the infringing product liable for design infringement.

Even technically speaking, the nature of a 3DP process might be such as to necessitate separate elements of the infringing product being printed as separate parts to be later assembled into the finished infringing product. In such a case, it should be clear that the party printing one or more of these essential parts, knowing they will be used to produce the product as protected under design law, should be held liable for infringement as indirect or contributory infringer.

By way of illustration, reference is made to Article 26(1) of the Agreement on a Unified Patent Court: “A patent shall confer on its proprietor the right to prevent any third party not having the proprietor's consent from supplying or offering to supply, within the territory of the Contracting Member States in which that patent has effect, any person other than a party entitled to exploit the patented invention, with means, relating to an essential element of that invention, for putting it into effect therein, when the third party knows, or should have known, that those means are suitable and intended for putting that invention into effect”.

As can be seen from the above Article, the aspects included are both the wilfulness of the contribution to the infringing activity and the essentiality of the element that is contributed to, neither of which currently seems to be addressed by EU design law.

Therefore, ECTA adopts the position that, in any future design law reform, it would still be relevant and necessary to explicitly include contributory infringement so as to provide legal clarity and more effective tools for rights holders in defending their rights and holding all parties involved in the infringement liable. ECTA maintains this position irrespective of whether or not the CAD file encompassing the 3D model is itself held to constitute a product in the sense of Article 19(1) of the Design Regulation and Article 12(1) of the Design Directive.

Finally, for the sake of completeness with respect to the topic of contributory infringement, ECTA is of the opinion that commercialising a CAD file encompassing a 3D model representing a protected design, be it through sale, offering for sale, distribution, importation, exportation, licensing, or any other use of such CAD file as envisaged under Article 19(1) of

the Design Regulation and Article 12(1) of the Design Directive, should constitute a direct infringement rather than an indirect infringement.

3. SPARE PARTS AND 3DP

As already mentioned, 3DP technology brings many benefits to the industry and society in general. For example, by increasing efficiency and reducing logistics, the technology can promote further environmental sustainability and the circular economy.

In addition to changing traditional industrial designing and manufacturing, 3DP technology can bring industrial designing and manufacturing of products and parts, even spare parts, to the homes of ordinary consumers. Although the costs of high quality 3DP technology and materials have until now remained too high for ordinary consumers to print out their own spare parts, there are already service providers (intermediaries) offering these services to consumers. Our current understanding is that the quality of printed parts, reflecting the technology and materials available, has not yet been good enough to enable the widespread use of 3DP technology in relation to spare parts. However, as the lower costs of the 3DP in terms of the materials and technology and the increased availability of 3DP services is a very likely scenario in the foreseeable future, making the technology more available even to ordinary consumers, ECTA is of the opinion that its implications should be taken into consideration in the current review of the EU design laws concerning spare parts.

The history of design protection for spare parts in general and the so called “freeze plus” clause of EU Design Directive (Article 14)³¹ and Design Regulation “repair” clause (Article 110(1))³² have for 20 years divided the European markets of spare parts (specifically the must-match spare parts) into countries affording no protection to these spare parts, and countries affording either full protection or at least protection for a shorter period of time.³³ As further background on spare parts in general, it should be considered that the EU design regime already limits the right to protection of designs, especially spare parts, by excluding from design protection the design features that are “solely dictated by technical function”³⁴

³¹ Until such time as amendments to this Directive are adopted on a proposal from the Commission in accordance with the provisions of Article 18, Member States shall maintain in force their existing legal provisions relating to the use of the design of a component part used for the purpose of the repair of a complex product so as to restore its original appearance and shall introduce changes to those provisions only if the purpose is to liberalise the market for such parts

³² Until such time as amendments to this Regulation enter into force on a proposal from the Commission on this subject, protection as a Community design shall not exist for a design which constitutes a component part of a complex product used within the meaning of Article 19(1) for the purpose of the repair of that complex product so as to restore its original appearance.

³³ The EC evaluation report of EU legislation on design protection – Adding a correction regarding Finnish national design law, which affords a shorter period of protection of spare parts, 15 years, as also in Sweden and Denmark p.66

³⁴ Art 8(1) of Regulation and Art 7(1) of Directive “A Community design shall not subsist in features of appearance of a product which are solely dictated by its technical function”

and so-called “interconnectivity parts” (must-fit spare parts)³⁵ ECTA believes that further clarification and narrow interpretation of these limitations are very important to the future of design-intensive industries and to the designer’s incentive to further innovate. However, despite their importance to the EU design regime as a whole, these limitations will not be further commented in this position paper from the 3DP technology point of view.

In the heart of “freeze plus” and “repair” clause matters are

- 1) the designers’ (whether they are OEM’s, big or small companies or individual designers) incentive to innovate and receive their compensation;
- 2) the scope of protection of designs in general, also in relation to other IP rights;
- 3) the secondary markets of spare parts in the single European market; and
- 4) specifically, the affordable right to repair by consumers.

This matter was addressed in 2004 by proposing that the Directive includes a similar formulation of the “repair” clause as in Article 110 of the Regulation, with an additional obligation on the sellers to clearly indicate (label) the origin of the parts, thereby eliminating any confusion as to their origin. However, this proposal was finally rejected by the EU Council in 2014.

Meanwhile, the matter of the “repair” clause has been dealt with by case law from the CJEU in 2017 in the joint cases of Acacia Srl v Pneusgarda Srl, Audi AG (C-397/16) Acacia Srl, Rolando D’Amato v Dr. Ing. h.c. F. Porsche AG (C-435/16) concerning wheel rims. In these cases, the CJEU indicated that the manufacturer or seller of the spare parts is responsible for clearly indicating to the downstream users (resellers and end-users) that they are not the holder of said design and that the part is a spare part and only intended to be used for the purpose of the repair of the complex product to restore its original appearance. They were also held responsible for ensuring that the downstream users should not be able to use the parts in a way that does not comply with Article 110(1) and that they must refrain from selling parts where they know or should have known that the use does not comply with Article 110(1). Based on these joint cases, it is clear that the purpose of the repair clause is to allow the restoration of said products only and not to upgrade them.

In light of the above-mentioned and considering the possible implications of 3DP technology on decentralising manufacturing process, ECTA believes that taking a balanced approach to new technologies, which are democratising the designing and manufacturing of spare parts, would best serve both the industry and society in the future. As mentioned in the Study, 3DP technology may soon challenge the old perspective on liberalising spare parts and the secondary market business models and may no longer as such be a valid justification with regards to 3D spare parts, especially considering the goals of EU design law in general:

³⁵ Art 8(2) of Regulation and Art 7(2) of Directive “A design right shall not subsist in features of appearance of a product which must necessarily be reproduced in their exact form and dimensions in order to permit the product in which the design is incorporated or to which it is applied to be mechanically connected to or placed in, around or against another product so that either product may perform its function.”

“As already explained above, the avoidance of monopolisation, ideally allows competition from third parties which in turn should restrict the inflation of the price of spare parts and allow for a greater variety of parts. Considering the new technical possibilities provided for by 3D printing a liberalisation of protection could potentially hamper the creation of newly designed spare parts and hence lead to constraining the diversity. It is therefore recommended to (economically) analyse the impact of the given liberalisation in the light of a future with 3D printing.”

However, while taking into account the possible further analysis on the economic impact of the expected changes in the markets and considering that technological changes may not be as fast as now anticipated, ECTA takes the position that this technological advancement could enable a better balance to be found between total liberalisation and full, although time-restricted, exclusivity of design rights in spare parts.

ECTA has already in 2016 in the “ECTA Position Paper Designs and Spare Parts” taken a balanced position suggesting that the term of design protection for spare parts be reduced to a maximum of 5 years (with no possibility of extension) and that the market be opened for competition after such protection period. ECTA still believes that in view of the goals of EU design law in general and the new technologies changing the markets, this approach is a more balanced and a better compromise solution than full liberalisation.

To the extent that product designers and rights holders consider that the balance is weighted too far on the side of consumers with only 5 years of protection for spare parts, especially in the context of quick, cheap and high quality 3D printed spare parts, and EU policy makers agree, ECTA believes that there are two possible alternatives:

1. the protected period could be doubled from 5 to 10 years; and/or
2. after the 5 year period of exclusivity, spare part makers could obtain a licence as of right to reproduce the design on terms to be agreed with the rights holder, or in default of agreement, settled by a court.

ECTA considers that either of these alternatives would still provide a better balance between the competing interests than the present uncertainty. However, in order to provide legal clarity to this compromise, and to avoid any ambiguity in related negotiations or proceedings, ECTA takes the position that the former alternative with a clear and precise term of protection of 10 years is preferred.

4. IS *SUI GENERIS* LAW NEEDED?

Digitalisation and new emerging technologies are challenging the current legal regimes, and intellectual property laws are no exception. In discussions around the 3DP technology and its implications for IP laws, a question may be raised whether 3DP technology should be governed by a completely new *sui generis* right to avoid the overlaps and possible confusion in the current legal regime.

3DP is mainly a manufacturing technology - a new way of developing and manufacturing products. It does not change the outcome of the manufacturing process, which is still an item or a medium containing the product design. A product or part created in this way may be afforded protection by one or more intellectual property laws or related laws. Having said this, it must be strongly emphasised that 3DP technology changes the old structures of designing and manufacturing processes and thereby provides more opportunities for both the industry and society as a whole, but at the same requires changes or at least some amendments to existing IP laws. However, as the outcome of the actual process is still a physical product or at least some kind of medium containing the design of the physical product, and considering that there are already a multitude of legal tools, also further IP laws, in place to incentivise innovation and control the markets, ECTA's opinion from the design law point of view is that there is currently no need for a specific *sui generis* law to govern the output of 3DP technology.

ECTA further believes that there are no serious obstacles in further amending current EU design laws to cover the implications of 3DP or other related foreseeable technologies (such as 4DP), as more specifically closely discussed in this position paper. The way forward would be to find a balanced way to amend and specify especially the limitations and exceptions of the current laws to increase legal certainty and not to add further legislation. New laws could also have the undesirable effect of further complicating the legal field, resulting in overly broad protection of rights, and even hindering the use and future development of 3DP technology. This could undermine the usefulness of an important tool to many designers (whether they are OEM's, big or small companies or individual designers) both now and in the future.

IV. FINAL REMARKS

3DP is a fast-developing technology, even if it still is somewhat unclear to what extent it will become more widely spread and used in the industry and in private use in the near future. It is, however, clear that this technology and other developing technologies alike are challenging IP laws, and when reviewing changes to these laws, their implications (so far as they can be accurately anticipated) should at least be taken into consideration.

ECTA is respectfully of the opinion that the EU design law should now be addressing the implications of 3DP as set forth in this position paper. Specifically, there is a need to clarify the definition of a product to include new technologies, to ensure efficient means of enforcement in a balanced manner by further introduction of contributory infringement, to maintain limited protection for spare parts in order to incentivise the future design industry and to maintain a well-functioning and attractive design protection regime in the EU.

ECTA, which was formed in 1980, is an organisation concerned primarily with trade marks and designs. ECTA has approximately 1,500 members, coming from all the Member States of the EU, with associate Members from more than 50 other countries throughout the world.

ECTA brings together those practicing in the field of IP, in particular, trade marks, designs, geographical indications, copyright and related matters. These professionals are lawyers, trade mark and patent attorneys, in-house lawyers concerned with IP matters, and other specialists in these fields. ECTA does not have any direct or indirect links to, and is not funded by, any section of the tobacco or any other industry.

The extensive work carried out by the Association, following the above guidelines, combined with the high degree of professionalism and recognised technical capabilities of its members, has established ECTA at the highest level and has allowed the Association to achieve the status of a recognised expert spokesman on all questions related to the protection and use of trade marks, designs and domain names in and throughout the European Union, and for example, in the following areas:

- Harmonization of the national laws of the EU member countries;
- European Union Trade Mark Regulation and Directive;
- Community Design Regulation and Directive;
- Organisation and practice of the EUIPO.

In addition to having close links with the European Commission and the European Union Intellectual Property Office (EUIPO), ECTA is recognised by WIPO as a non-Government Organisation (NGO).

ECTA does also take into consideration all questions arising from the new framework affecting trade marks, including the globalization of markets, the explosion of the Internet and the changes in the world economy.