

S'MUN2030

SINGULARITY MODEL UNITED NATIONS

Legal Committee

International regulation
of 3D printing



SINGULARITY
FOUNDATION

 St PETER'S
SCHOOL
Barcelona

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1. Welcome letter

Dear delegates,

It is our privilege to welcome you to The Sixth Committee Legal of SMUN 2023. In this year's edition, This Committee will focus on International 3D Printing Regulation.

3D Priting is seemed to be the future in the technology advances of our era, the majority of countries worldwide are seeking to obtain a benefit of this regulation in order to achieve better conditions for their citizens. Some areas that are looking to be regulated are intellectual property, export control, medical product regulations, consumer protection, and product liability, all of these are crucial to maintain the global economy and investments. Furthermore, it is essential to bear in mind that most countries are developing their own laws due to the fact that there is not an international regulation approved by all nations in this matter.

We encourage delegations to make a profound research on the selected topics and to immerse themselves in all the knowledge and resources they can get, and to use this study guide as a starting point of your investigations to fully comprehend the scope of the committee and the depths of the topics chosen for debate. We will be highly valuing teamwork and forthrightness, as well as following your countr's respective position, being respectful, understanding and always following the rules established by the Secretarty.

If you have any questions about this document or your committee in general, please do not hesitate to contact us, as we are here to guide you and help you in order to achieve an experience that enricheses us all and one that we all can cherish. We look forward to meeting you all and to address any concerns you may have before, during, or after the conference.

Sincerely,

Andreína Landazábal Piñango
Javier León Gómez.

2. Committee Competences.

The Sixth Committee is the primary forum for the consideration of legal questions in the General Assembly. All of the United Nations Member States are entitled to representation on the Sixth Committee as one of the main committees of the General Assembly.

The Sixth Committee's main function is to examine legal issues on the Agenda of the General Assembly.

Among them, the consideration of the annual report of the International Law Commission (CDI) stands out. This is a subsidiary body of the General Assembly, created in 1947, which assists it in compliance with art. 13 of the Charter of the United Nations, according to which the promotion of the progressive development of international law and its codification corresponds to the General Assembly.

Likewise, the Sixth Committee receives and considers the reports of other subsidiary bodies of the General Assembly on legal issues, namely:

- “United Nations Commission on International Trade Law” (UNCITRAL/UNCITRAL), created in 1966, which has the mandate to promote the progressive harmonization and unification of international trade law.
- “Host Country Relations Committee”, established in 1971 to consider issues arising in connection with the implementation of the Agreement between the United Nations and the United States concerning the Headquarters of the United Nations.
- “Special Committee on the Charter of the United Nations and the Strengthening of the Organization”, created in 1974 to examine proposals related to the Charter and suggestions aimed at improving the functioning of the United Nations that do not require reforms to its text.

The Sixth Committee of the General Assembly also works on the other legal issues that are referred to it by the Board of the Assembly, with an annual or biannual periodicity. Among them, the consideration of the resolution on "Measures to eliminate international terrorism" stands out, within the framework of which the General Assembly adopted a significant number of international conventions on the fight against terrorism.

Other items on the Commission's agenda include the criminal liability of United Nations officials and experts on mission; the rule of law at the national and international levels; the scope and application of the principle of universal jurisdiction; the administration of justice at the United Nations; the situation of the Additional Protocols to the Geneva Conventions of

1949 regarding the protection of victims of armed conflicts; and measures to improve the protection and security of missions and diplomatic and consular representatives.

It is also the responsibility of the Sixth Committee to consider the United Nations Program of Assistance for the Teaching, Study, Dissemination and Broader Understanding of International Law, and requests for observer status in the General Assembly.

Within the framework of the Sixth Committee, the so-called "International Law Week" is held, during which the annual meeting of Legal Advisers from the different countries takes place, the ILC report is presented and an interactive dialogue is held with the Special Rapporteurs of the Commission. Likewise, the reports of the International Court of Justice (CJI) and the International Criminal Court (ICC) are presented before the Plenary Assembly.

Indeed, the Sixth Committee does not exhaust the consideration of legal issues in the United Nations, given that certain highly relevant legal areas are dealt with directly by the plenary of the General Assembly. This is the case of the subject "Oceans and law of the sea" and the reports of international Courts such as the aforementioned ICJ and ICC. It should be remembered that the 1998 Rome Statute, which established the International Criminal Court, was a product of the work of the Sixth Committee. Likewise, many of the points dealt with by the Security Council throughout the year have legal dimensions, such as the measures adopted under Chapter VII of the Charter, sanctions regimes, protection of civilians in armed conflicts, "ad hoc" criminal tribunals ", or international terrorism.

3. Introduction/history

3D printing, also known as additive manufacturing, has been around since the 1980s, but it wasn't until the early 2000s that it started to gain popularity and become more widely available. As the technology advanced and 3D printers became more affordable and user-friendly, concerns began to arise about the potential legal and regulatory issues that could arise from their use.

One of the first areas of concern was intellectual property. In 2010, the US Patent and Trademark Office issued guidance on the patentability of 3D printed objects, and in 2011, the National Research Council published a report on the implications of 3D printing for intellectual property law. This was followed by a number of court cases involving a patent infringement, with some companies using 3D printing to create knockoff products.

Another area of concern was the safety and regulation of 3D printed medical devices. In 2013, the US Food and Drug Administration (FDA) issued guidance on the use of 3D printing in medical services, and in 2016, it approved the first 3D printed drug.

More recently, there has been growing concern about the potential of 3D printing to be used to create weapons or other dangerous items. In 2013, the US State Department ordered the removal of 3D printed gun blueprints from the internet, and in 2019, the European Union introduced new regulations on the sale of 3D printers and materials, as well as the creation of 3D printed firearms.

Overall, the regulation of 3D printing is still in its early stages, with many legal and ethical issues yet to be resolved. As the technology continues to advance and becomes more widely used, it is likely that we will see increased regulation and oversight to address these issues.

4.1 Intellectual property rights

The rise of 3D printing technology has brought about numerous challenges in the area of intellectual property rights (IPR). Intellectual property refers to the legal ownership and protection of ideas, inventions, and creative works. 3D printing enables individuals to create, replicate, and distribute physical objects with ease, raising concerns about potential IPR infringement.

One of the primary challenges of IPR and 3D printing is the difficulty of regulating the technology. Unlike traditional manufacturing, which involves large-scale production in centralized facilities, 3D printing enables individuals to produce items on-demand and in a decentralized manner.

As a result, enforcing IPR regulations becomes more complex, especially across international borders. International agreements such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) seek to provide a framework for protecting IPR across international borders. However, enforcing IPR in the 3D printing context requires a more nuanced approach that takes into account the unique challenges posed by the technology.

Another challenge of IPR and 3D printing is the ease with which individuals can create and distribute infringing content. With the advent of 3D scanning technology, individuals can easily create 3D models of existing products and replicate them. This poses a challenge for IPR holders who need to monitor and enforce their rights in a rapidly evolving technological landscape.

To address these challenges, international organizations such as the World Intellectual Property Organization (WIPO) have been working to develop new standards and regulations for protecting IPR in the 3D printing context. For example, WIPO has developed a toolkit for policymakers to help them navigate the legal and policy issues related to 3D printing and IPR.

In summary, the rise of 3D printing technology has presented significant challenges for IPR regulation. To effectively address these challenges, international organizations and

policymakers need to develop new frameworks and regulations that take into account the unique features of 3D printing technology.

An international provision should be created to deal with the specific issues relating to watermarking in 3D printed objects. This provision could be inserted alongside the copyright management information provisions contained within the two main WIPO IP treaties. Within the relevant article, we propose that the following should be added:

“Copyright Management Information should not be used to infringe an individual’s privacy by being used to track individuals or the use of objects without an express statement by the copyright holder to that effect”.

Developments under international copyright law. Protection of personal data is addressed under international copyright law at the international, regional and domestic levels. The WIPO Copyright Treaty of 1996 governs rights management information at the international level. This treaty has been implemented globally within member states, notable countries not to implement it are Iran and China. The impact of the provisions has been twofold. Firstly, protection over such information encourages the collection of it. Secondly, the requirements of knowledge means that to safely protect that information there is a need to also employ technical means.

More recently, there have been moves by the EU executives and legislatures to require filtering technologies. Again, they have not taken account of privacy concerns. The original EU Digital Single Market Directive on Copyright contained Article 13 (now 17) which stated:

“Information society service providers that store and provide to the public access to large amounts of works or other subject-matter uploaded by their users shall, in cooperation with right holders, take measures to ensure the functioning of agreements concluded with right holders... such as the use of effective content recognition technologies, shall be appropriate and proportionate”.

Mainland China is not currently a signatory to the WIPO Copyright Treaty. Nonetheless, implementing an identical provision within domestic law would be a step towards the protection of privacy within watermarking. China itself has recently undergone changes to its own copyright regime in China considering the privacy implications in watermarking in the same manner.

The need for a specific response to the threat posed by 3D printing and watermarking technology should also be acknowledged under the international human rights law framework. Here, the right to privacy is protected but without reference to the particular issues raised by technology. A voluntary code of conduct would encourage self-regulation of 3D printing and watermarking in a manner that supports the right to privacy and would

respond to the specific regulatory challenges that privacy in 3D printings and tracking technology poses.

It seems, then, that the IP legislation in its current form is sufficient to adequately protect both 3D files and people who use 3D printing technologies for non-commercial purposes. However, the specific characteristics of the 3D printing process raise several issues that the courts will inevitably have to decide. For example, who owns an object that was first conceived by one person, digitally modeled by another, and printed by a third? Can the person who designed the work and the person who digitally modeled it be considered co-authors of a collaborative work under copyright law? And if the object can be protected by patent, would those two people be considered co-inventors?

4.2 Weapons advancing in Technology

Back in 2019, two people were shot dead in Halle, Germany, by a perpetrator using a homemade weapon, based on a blueprint downloaded from the internet to partly manufacture the weapon with a 3D printer.

In April 2021, the Spanish National Police raided and dismantled an illegal workshop in the Canary Island which was producing 3D printed weapons. Two 3D printers were seized, alongside gun parts, a replica assault rifle and several manuals in urban guerrilla warfare and white supremacist literature. The owner of the workshop was arrested and charged with illegal possession of weapons.

A month later, two men and one woman were arrested in the town of Keighley in the United Kingdom as part of an investigation into right-wing terrorism. All three were charged with possessing components of 3D printed weapons.

3D printed guns are made outside traditional supply chains, and don't require background checks, they're effectively invisible to law enforcement agencies. They are a form of ghost gun: unserialized, and unable to be traced if recovered by law enforcement.

Of particular concern to many law enforcement agencies are guns that can be completely 3D-printed at home without metal components. Politicians and law enforcement professionals fear that such guns would be able to evade metal detectors, and thus slip into places where firearms are prohibited, like airports or government buildings.

Lack of traceability has already caught the attention of terror groups, according to Mary McCord, a former U.S. attorney and prosecutor in the Department of Justice's National Security Division. "We know from a counterterrorism perspective that there's great interest among terrorist organizations in being able to have workable, usable, efficient, functioning 3D-printed weapons."

Regulation in 3D guns:

United States

Under the Gun Control act of 1968¹, although it is illegal to sell homemade firearms without a license, it is not illegal to manufacture and own homemade guns. Other federal rules governing homemade firearms include the Undetectable Firearms Act², which requires that every homemade firearm include a minimum of 105g of metal. This tries to ensure that a metal detector can pick them up.

In New Jersey, it is strictly illegal to buy parts to manufacture an unserialized gun at home. To 3D print a gun, you need a license for manufacturing.

In California, even homemade guns need a serial number. Makers are expected to apply for a number before manufacturing the gun. Other strict rules about safety apply there too, including operational safety and the means to imprint identifying marks onto the bullet casings.

Europe

Making and owning homemade firearms, including 3D printed guns, is prohibited in EU countries. Beyond such organization-wide legislation, nations apply and enforce their own, more specific regulations. In some parts of Europe, even the possession of 3D printable files for firearms is considered a crime.

In the UK, for example, Home Office Guidelines of Firearm Licensing Law were updated in 2013 to specifically criminalize the manufacturer, purchase, and sale of 3D printed guns and gun parts. Despite all this, the fact that the files are freely available on the internet makes it difficult to enforce some of these laws. Some draw parallels between the futility of controlling gun designs and attempts to stop the piracy of movies, video games, and other digital material.

4.3 Medical Product Regulation.

3D printing, a term introduced into the Medical Subject Headings (MeSH) terminology in 2015, promises to produce complex biomedical devices according to computer design tailored to specific patients. Since its initial use as pre-surgical display models and tool molds, 3D printing has slowly evolved to create unique devices, implants, scaffolds for tissue engineering, diagnostic platforms, and medicines.

The advent of 3D technology and its application to biomedical models has generated a new approach to medicine. Biomedical devices will be produced using patient-specific anatomical

¹ <https://www.govinfo.gov/content/pkg/STATUTE-82/pdf/STATUTE-82-Pg1213-2.pdf>

² <https://www.govinfo.gov/content/pkg/STATUTE-102/pdf/STATUTE-102-Pg3816.pdf>

data. From its initial use as pre-surgical display models and tool molds, 3D printing has slowly evolved to create unique devices, implants, tissue engineering scaffolds, diagnostic platforms, and drug delivery systems. There is renewed interest in combining stem cells with custom 3D scaffolds for personalized regenerative medicine. And high potential in custom tissue and organ design, or for drug screening in an appropriate anatomical structure and patient-specific biochemical microenvironment.

Achievements in the application of 3D in Medicine are described, and its revolutionary use that will allow, among other things, to reduce operating time, lowering the costs of supplies, in addition to enabling more precise surgical maneuvers, lowering the risk of bleeding and infection. . At the same time, the advent of 3D printing technologies and the prospects for personalization provide important market opportunities, but also present a serious challenge for public bodies and private entities that will intervene in the different phases of investigation, control and use of the technologies. new technologies.

The first attempts at 3D printing date back to 1980, thanks to Doctor Kodama who invented the "layer by layer" approach. In 1981, Hideo Kodama of the Nagoya Municipal Industrial Research Institute obtained the first patent for inventing two methods of additive manufacturing (AM) of a three-dimensional plastic model with a photocurable polymer, in which the area of UV exposure was controlled by a mask pattern or sweep fiber transmitter.

It has been observed that, of all the professional branches, medicine is the sector where innovative uses are made of 3D printing technologies. It is common for this technology to be used to create synthetic simulators, with the purpose that both students and doctors can acquire manual skills, and can also replicate specific pathologies of patients to train with real cases. Medical images are converted to 3D files, DICOM (Digital Imaging and Communications in Medicine) files are sent directly from a Computed Tomography equipment (CT) or Magnetic Resonance (NMR), and through software, these images go through a segmentation process, being the STL (Standard Tessellation Language) format the one that allows obtaining a 3D model

It is precisely in the medical field where this printing-by-addition technology has evolved into bioprinting, which includes a cell culture process in a laboratory, making it possible to create personalized organs and/or tissues. Its application in the creation of anatomical models, prototypes, personalized prostheses, among many other medical applications, is of interest.

The doctor can analyze and test the available variants to decide in advance which technique to use. In this way, valuable information is obtained that allows surgery to be performed with greater certainty. In this way it is possible to plan approaches or test the intervention by repeating the same steps that will be carried out during the operation with printed models. Advances in three-dimensional reconstruction of radiological images have made it possible to have virtual tools for surgical planning.

The traditional legal language is insufficient to give security to the acts that arise as a consequence of the application of the new scientific and technological advances on living beings and, especially, about the human being, that is why new expressions and locutions that characterize the facts, acts, businesses and bio-legal relations in order to offer a clear and precise regulation

Understanding that the Law must respond to these new situations and that it may be alien to the development that society has achieved with the advancement of science and technology even more when they are developed in one of the most controversial areas.

4.4 Consumer Protection.

It would not be unreasonable to say that 3D printing today can become the next great technological revolution after the internet, and that in that sense we are in the year 1995 of 3D printing, although it will never be possible to predict the absolutely precise way in which a technology will develop or evolve in private. Even so, according to the proverb that says "in law, what abounds does not left over", it is worth asking what role should be played by the right to face again with a new technology that will most likely bring with it new obstacles to existing legal standards.

So from the process of creating a three-dimensional object by using the technology described here, a series of situations can be derived legally relevant as:

- A potential massive infringement of patent rights for the scope equally massive that a digital design can have in the world of the internet, together with the consequent obstacle that legal control of said factual situation;
- The production and subsequent commercialization of goods by people who do not have the knowledge that a professional in the activity would have, and the consequent informal introduction into the market of goods unrelated to the established quality controls for professional producers;
- The creation of a new production sector that is unusual or professional, that is not covered by consumer protection legislation and, therefore, therefore, the damages caused to third parties by the introduction of goods on the market could not be compensated by resorting to civil liability action for defective products.
- The introduction to the digital world of CAD files by people without the required expertise, which is subsequently used in the creation of goods printed in 3D that consequently are introduced to the market suffering from unsuitable or defective characteristics.

In short, 3D printing technology seems to be invading the world with enough momentum to potentially become a game-changer capable of affecting the technological sphere, economic systems, and of course legal. So in the words of Desai & Magliocca, "depending on one's perspective, this new reality can be scary or exciting".

The growing interest on the part of the same companies in the proliferation of self-regulatory standards could be read from the perspective that these corporations want to avoid the problems derived from serious violations or take advantage of their good practices as a competitive advantage before a concerned and aware consumer, who values and rewards the company that does so behaves.

Many countries have already recognized the transformational potential of 3D printing and have begun to adopt, albeit unevenly, different strategies to create an economic and technological ecosystem that favors its development. The European Commission, for example, has identified 3D printing as a priority area for action that has significant economic potential, particularly for small innovative companies.

4.5 Product liability

Product liability is a term used to describe the legal liability of manufacturers or sellers of goods to compensate buyers, users and even bystanders for damages or injuries suffered because of defects in goods purchased. With the rise of 3D printing technology, there are many challenges in product liability that need to be addressed. One of the challenges is that 3D printing allows for the creation of complex and customized products that are not easily replicated by traditional manufacturing methods. This makes it difficult to establish uniform safety standards for 3D printed products.

Another challenge is that 3D printing technology is widely available to consumers, which means that individuals can produce their own products at home. This raises questions about who is responsible for ensuring the safety and quality of these products.

To address these challenges, some countries have begun to develop regulations and guidelines for 3D printing. These regulations cover issues such as product safety, intellectual property, and liability. For example, in the United States, the Consumer Product Safety Commission (CPSC) has issued guidelines for 3D printed products that are unintended for consumer use. These guidelines cover issues such as product labeling, safety warnings, and the testing and certification of 3D printed products.

In the European Union, 3D printed products are subject to the same product liability laws as traditional products. This means that manufacturers and sellers are responsible for ensuring the safety and quality of their products, regardless of the manufacturing method used.

There are several international laws and standards that can apply to product liability in 3D printing. One of the most important international agreements is the United Nations Commission on International Trade Law (UNCITRAL) Model Law on Product Liability. This model law provides guidance on the liability of manufacturers for festive products, including those produced through 3D printing. The model law has been adopted by many

countries around the world, and it serves as a framework for developing national laws on product liability.

In addition to the UNCITRAL Model Law, there are several international standards that can be applied to product liability in 3D printing. For example, the International Organization for Standardization (ISO) has developed standards for 3D printing, including ISO/ASTM 52900, which provides a framework for the design and manufacture of 3D printed products.

There are also industry-specific standards, such as the American Society for Testing and Materials (ASTM) International Standard Guide for Additive Manufacturing Safety, which provides guidance on the safety of 3D printing.

It is important to note that while these international laws and standards can provide guidance, it is up to individual countries to determine how to implement and enforce them in their national laws and regulations. As such, product liability in 3D printing can be subject to different laws and regulations depending on the country or region in which the products are produced or sold.

5. What to tackle: questions that a resolution must answer

What is the position of your country in each technological advance?

Does your country have other proposals to other Committees? For instance, The Security Council.

Does your country have any recommendations?

How is 3D printing regulated in your country?

In which areas of 3D printing is your country interested to develop?

How can we establish common IP frameworks in the face of the 3D printing phenomenon?

How do we ensure regulatory enforcement when production is decentralized?

6. Recommended lectures and bibliography

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