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Final Report

IP BRICS Participating Offices

**Patent Application filings containing Three-
Dimensional Images**

(Participating offices include INPI, ROSPATENT and CGPDTM)

Brazil
- September 2022 -



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1. Introduction

A detailed description of the invention is one of the legal requirements when it is desired the protection as a Patent or Utility Model. It is understood that the description must disclose any feature essential for carrying out the invention in sufficient detail to render it apparent to the skilled person how to put the invention into practice. The term "*Sufficiency of disclosure*" is used to describe this requirement.

Also, it is essential to address that the extent of Patent or Utility Model protection is conferred by what is determined by the claims but especially interpreted based on the description and drawings. So, a three-dimensional object revealed in a Patent or Utility Model application must be very well defined for the technical examination to be carried out, usually demanding a comprehensive representation of its details and constituent parts. Furthermore, it is imperative to file drawings fulfilling the conditions of clarity and disclosure of patent applications. Otherwise, the lack of clarity might compromise the enforcement of the protection under legal cases.

It can be observed that an application in which the subject is adequately disclosed can be perfectly understood by the examiner. Subsequently, it results in high-efficiency rates in examining pending time and ensures the accuracy of prior art search since the drawings may provide the examiners with precise information, leading to a better understanding of how the proposed invention works. The file of a patent or utility model application assisted with 3D modelling, therefore, would come to solve the problems of poor disclosure and would lead to greater efficiency in examining pendency time, leveraging the IP offices means to overcome backlog issues.

This study was participated by INPI, ROSPATENT and CGPDTM. CNIPA and CIPC do not accept and process 3D model file according to their current examination practice, thus they are not member of this research.



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2. Summary of Delivery

a. Methodology

Evaluate different available 3D modeling softwares and standard format, and develop a procedure to ensure the submission of 3D modeling files and also the mainframe for depiction of 2D critical data from the 3D modeling files, considering ease of access for rendering and visualizing, and consistent lifecycle, ensuring digital preservation and open access.

Analyze and understand the benchmark of patent or design application filing procedures that would allow 3D modeling submission.

Evaluate the submission of 3D modeling files to Patents and Utility Model applications.

b. Problem to be solved

Sufficiency of disclosure is a condition of the patent application that must be fulfilled, but is not always easily achieved, as it is often a challenge to be able to demonstrate all the essential characteristics of the invention with texts and planned drawings.

This search for sufficiency of disclosure is a challenge in all areas of knowledge, as can be seen in the 2022 IP Brics Final Report, on Artificial Intelligence:

The basic concept of the sufficiency of disclosure condition is provided in the patent law of the IP BRICS members, mentioning that the applicant must disclose the invention in a way that all the necessary elements and means are present for a person skilled in the art to understand, perform and use the invention. In this sense, the description must not mislead the technician in the matter or encourage him to carry out undue experimentation.



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It is worth noting that sufficient disclosure does not oblige the inventor to teach all the details involved in the state of the art in the field of their invention. The function of the description is not to disclose all the scientific phenomena behind the technical results, but to give all the means and details beyond the state of the art, necessary to allow a person skilled in the art to realize the invention protected by the patent.

It should be noted that the Patent Offices are constantly updating the documental framework to improve the analysis of patent applications in technological sectors where the fulfillment of sufficiency of description deserves special attention, such as Artificial Intelligence (AI). In the case of inventions involving AI, much has been discussed about the need to establish specific criteria to guarantee the reproduction of the invention by a person skilled in the art. In this sense, patent offices have engaged in a series of activities to discuss aspects related to the technical examination of patent applications in the area of AI.

The search for efficiency and effectiveness in patent examination are also indicators sought by all patent offices. Therefore, it is necessary to develop procedures so that the stage of understanding the request is increasingly effective, that is, that the request is correctly understood in the shortest possible time.

Nowadays, the examination of Utility Models applications is hindered by the lack of clarity and partial disclosure of the subject under examination. In 2019, considering all 885 denial reports issued by the Utility Model division, 209 pointed out any nonconformity over clarity in the object's description.

In 2022, in addition to the significant number of formal requirements (417), which include a lack of clarity in the request, 175 reports were published indicating lack of sufficiency of disclosure.



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Also, in the examination of inventions, formal requirements due to lack of clarity have a significant impact on the divisions that examine patent applications for three-dimensional objects. In these divisions, 3 to 5% of negative opinions indicate that there is a lack of sufficiency of disclosure in the request.

The numbers demonstrate that investment in adapting current systems to receive deposits with 3D images will bring greater efficiency to patent examination. Hence, the patent office has to deal with the combined effects of the increase, both in the number of applications and lack of sufficiency, which trends to wane any effort to reduce the backlog issues.

c. WIPO – CWS: Recommendations on digital three-dimensional (3d) models in patent of invention or utility models

This Standard provides recommendations for IPOs that manage, store, process, exchange or disseminate patent for invention or utility model data using digital three-dimensional (3D) models:

1. An application for patent of invention or utility models protection may contain a 3D visual representation of an object in the form of a digital 3D model as supplementary material to the application or as the main visual representation of the object, if allowed by the requirements of the receiving IPO.
2. 3D visual representation of an invention or utility model should preferably be formatted as at least one of the formats: STEP, IGES, U3D, OBJ or STL. Maximum file size should not exceed 50 MB.
3. For chemical structures that are included in patent applications, 3D visual representation should preferably be formatted as MOL. Maximum file size should not exceed 50 MB.
4. If the applicant considers disclosure the invention or utility model with a 3D model as supplementary material, the digital file data must be presented only at the filing of the application, limited to one 3D model file.



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5. Due to the presentation of the 3D model data file, the IPO should provide and generate a map data of arbitrary size to fixed-size values, as a hash code.
6. If an IPO converts a 3D model from formats originally submitted by applicants to formats other than recommended above, or transforms from one storage format to another (e.g. STEP to STL), the IPO retain the original format as well as the transformed format for archival purposes.
7. If an IPO receives a 3D model as the only visual representation of an object in an application and needs 2D images, it should make 2D views of the 3D model in order to ensure publication and fast visualization of technical information. The depictions must at least comprehend seven 2D views of the 3D mode as front, rear, right, left, top, bottom, and perspective views, in an electronic format corresponding to the requirements established by the IPO for 2D images of inventions or utility models.
8. Paper publication should contain a 2D visual representation of the 3D object and the hash code generated during application

d. Procedures

INPI-BR understands that the presentation of the digital file of three-dimensional modeling would be optional and restricted to the moment of submission of the patent application, and would include the issuance of a digital file, limited to digitally representing technical elements endowed with a defined, delimited form, with dimensions macroscopic and spatial.

Initially, the presentation of amendments with three-dimensional drawings would not be permitted so as not to exceed the file size limit.

The content of the digital file presented will be part of the description initially revealed in the application.

The digital file of three-dimensional drawings when submitting the application also guarantees a perfect understanding of the object and the delimitation of the matter revealed in the deposit data. Facilitating the examination and identification of amended descriptions that would expand the scope of what was initially revealed.



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The presentation of a single digital file would be permitted, with “size” limitations (MB), where the content must be formatted as IGS (IGES Drawing File), STEP (STEP 3D Model - ISO 10303-21) or STL (CAD stereolithography).

It would also be necessary to generate an alphanumeric control code for the presented digital file, associating the timestamp with the presented digital file.

e. Use of images in examining the application

Until the end of the examination, the applicant will be able to supplement the content of the application copies, based on the information contained in the digital file presented. This amendment must not alter the description initially revealed at the application.

The Patent will contain, in addition to the information and documents, the control code for the digital file presented at the time of filing.

The content of the digital file presented will become publicly accessible at the time of publication of the patent application to which it is associated.



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3. Conclusion

The study carried out in this project met the objective of bringing the necessary elements to identify the best practices for filing 3D images in patent applications, as well as the main challenges for adjustments in documentation and structure to face this new reality.

The main actions that an office is recommended to take to accept 3D image deposits can be summarized in the following topics:

- Understand the scenario of requests for three-dimensional objects;
- Identify the main technologies related to 3D imaging;
- Identify possible limitations in the documentary framework (guidelines, normative instructions, manual, among others) currently available for filing 3D images;
- Identify technology updates in relation to 3D images;
- Define the “size” limitations (MB) of 3D images;
- Create the control code for the digital file presented, and;
- Determine the investment in adapting current systems to receive deposits with 3D images.

Therefore, the project sought to contribute elements that can be used in the process of improving the sufficiency of disclosure of three-dimensional objects. It is worth mentioning that the procedures proposed in this project are recommended to be constantly reviewed by IP BRICS members to identify technology updates in relation to 3D images.

4. Technical Members

Adriana Briggs de Aguiar

Raul Flores da Fonseca

Fabiano Alves do SantosGuilherme Moreira Marques