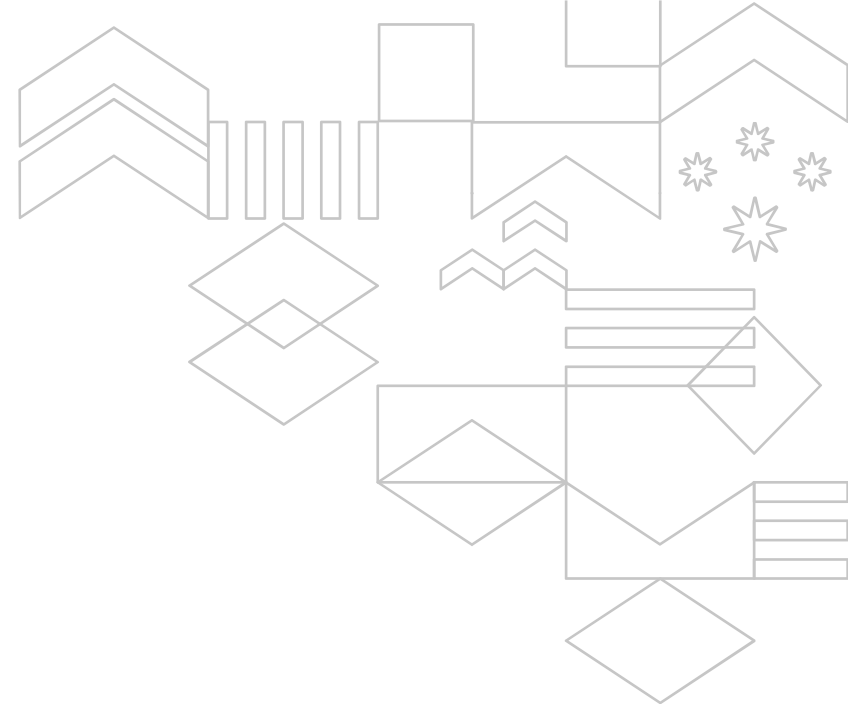




# Rospatent

Federal Service  
for Intellectual Property



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Deputy Head of Division for Information Search System Design,  
Federal Institute of Industrial Property

## **BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES**

WORKSHOP ON INTELLECTUAL PROPERTY DATA IN 3D MODELS AND  
IMAGES, GENEVA

**May 14, 2025**



# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES

## BACKGROUND: 3D TECHNOLOGY IN THE LIFECYCLE OF INTELLECTUAL PROPERTY PRODUCTS

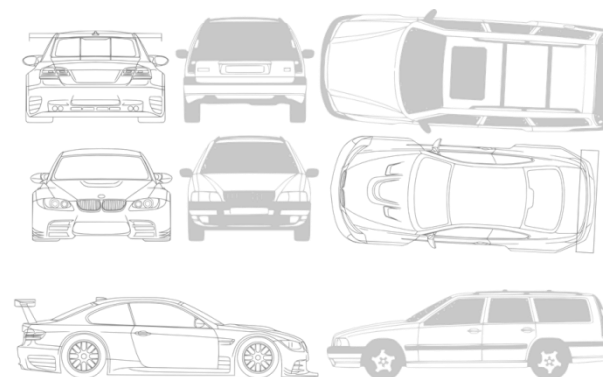
Creation of IP product: from **traditional tools** to **advanced technologies** including **3D**

Full **lifecycle of the product**: CAD systems and other 3D modeling and visualization tools for product creation

**Organizations**: increasing use of specific software, Model Based Enterprise as an approach to product development and manufacturing

**Individuals**: using digital tools for creation

**IP rights protection**: the trend towards digitalization of applications workflow in IP offices





# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES

## WIPO STANDARD ST.91: RECOMMENDATIONS ON DIGITAL THREE-DIMENSIONAL (3D) MODELS AND 3D IMAGES

**3D Task Force** (Task No. 61) was established at the 6<sup>th</sup> Session of the Committee on WIPO Standards (CWS) in 2018

**WIPO Standard ST.91** with the name “Recommendations on digital three-dimensional (3D) models and 3D images” was adopted at the 9<sup>th</sup> Session of the Committee on WIPO Standards (CWS) in 2021

Revision of ST.91 was approved by the Committee on WIPO Standards (CWS) at the 12th session in 2024



# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES

## CHALLENGES AND SOLUTIONS

**Industry** needs and expectations:

- ❖ compliance of IP offices requirements with current industry practice
- ❖ the issue of protection from unauthorized use when publishing 3D models

**IP offices** challenges:

- ❖ compliance with national legislation
- ❖ changes in the examination procedure
- ❖ ensuring the protection of IP rights throughout the entire term
- ❖ improvement of information systems for processing 3D models
- ❖ international exchange

Standard **ST.91** – criteria for choosing the formats:

- ❖ wide-spread adoption
- ❖ openness/accessibility/standardization
- ❖ specific requirements/stored information
- ❖ cross-platform/software accessibility
- ❖ file size

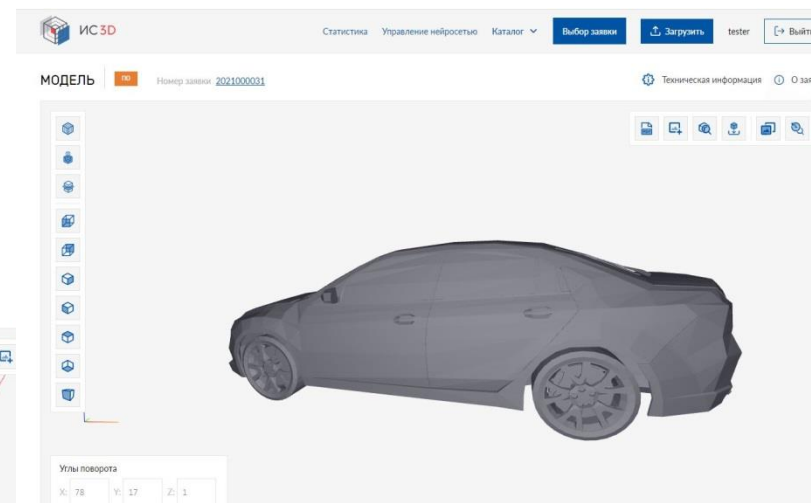
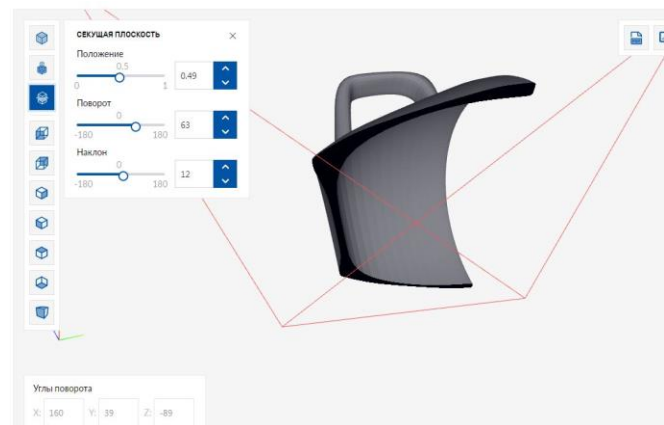
# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES.



## 3D INFORMATION SYSTEM

Due to changes in national legislation, Rospatent accepts national applications for **trademarks**, **industrial designs**, **patents** for inventions and utility models containing files in 3D formats since **17.01.2021**. The development of the internal 3D information system was started in 2020.

- ❖ **application** - **obj**, **stl**, **step**, **u3d** formats
- ❖ **examination** – visualization and **3d-to-3d search** using **AI**
- ❖ **publication** - **3d pdf** format





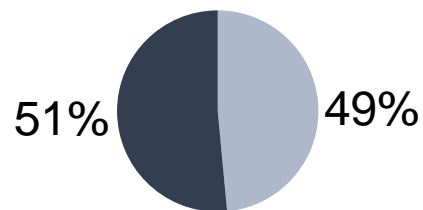
# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES.

## 3D INFORMATION SYSTEM: APPLICATIONS

The internal 3D information system integrates with other document management systems as a service and manages 3D models for IP rights objects that contain them (trademarks, industrial designs, patents)

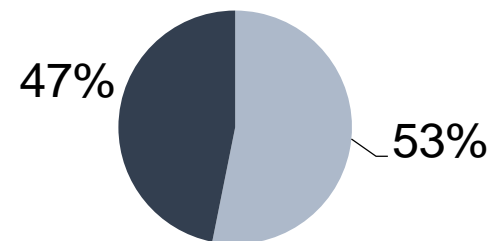
### Applications for **industrial designs** with 3D models

■ individuals/sole proprietors ■ organizations



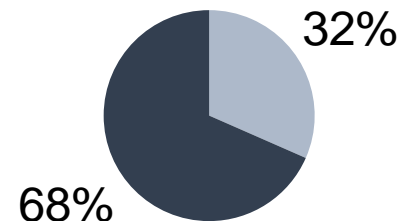
### Applications for **patents** with 3D models

■ individuals/sole proprietors ■ organizations



### Applications for **trademarks** with 3D models

■ individuals/sole proprietors ■ organizations





# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES.

## 3D INFORMATION SYSTEM: SEARCH

During the examination process, examiners can use **3D-to-3D search** tool. The **3D-to-3D search** tool was developed using both mathematical and **artificial intelligence** methods (Siamese neural networks)

Integration with other internal 2D-images search systems:  
**3D view-to-2D image search**

The screenshot displays the IC 3D search interface. The top navigation bar includes 'ИС 3D', 'Статистика', 'Управление нейросетью', 'Каталог', and 'Выбор заявки'. The search criteria are set to 'Критерий поиска: Промышленный образец, Все классы' and 'Дата поиска: 30.11.2023 16:18:48'. The search results are displayed in a grid format, showing the 'Исходная модель' (Original model) and 'Похожая модель' (Similar model) for various items. The main view shows a 3D model of a mug, with a sidebar on the right displaying 'РАСУРСЫ' (Resources) and a grid of similar images. The bottom right corner shows the 'Углы поворота' (Rotation angles) for the model: X: 87, Y: 83, Z: -103.

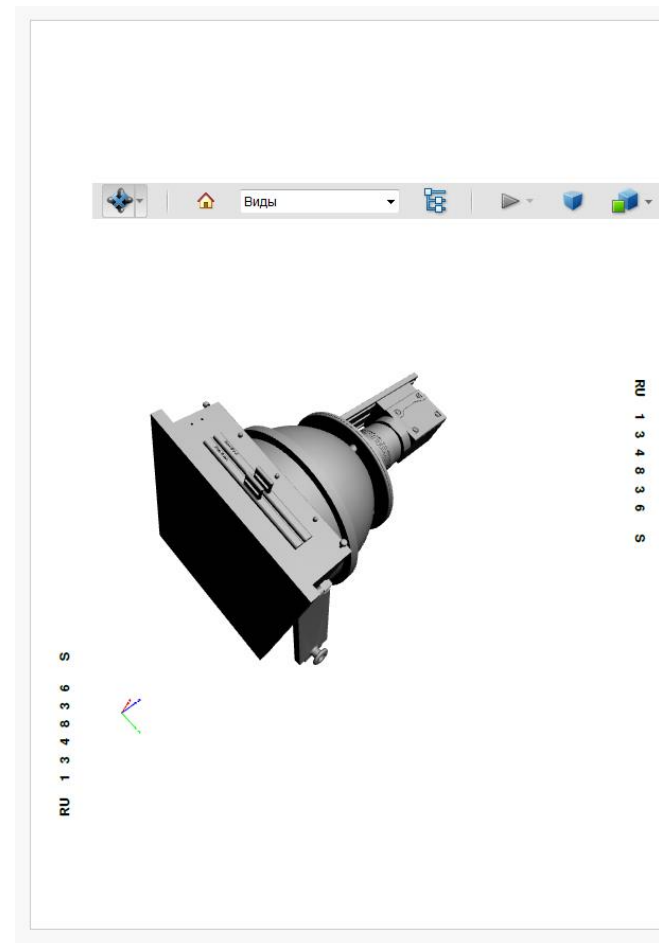
# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES.



## 3D INFORMATION SYSTEM: PUBLICATION

The internal 3D information system generates a **3D pdf** file for each 3D model

**3D pdf** is included in the official bulletin of Rospatent







# BEST PRACTICES ON PROCESSING OF 3D MODELS AND IMAGES.

## THE INTERNATIONAL EXCHANGE AND THE EXPERIENCE SHARING

### International exchange:

- ❖ harmonization of approaches
- ❖ issues of data exchange of national applications and registrations, including 3D models
- ❖ comprehensive consideration of the possibility of including 3D models in international systems in the future

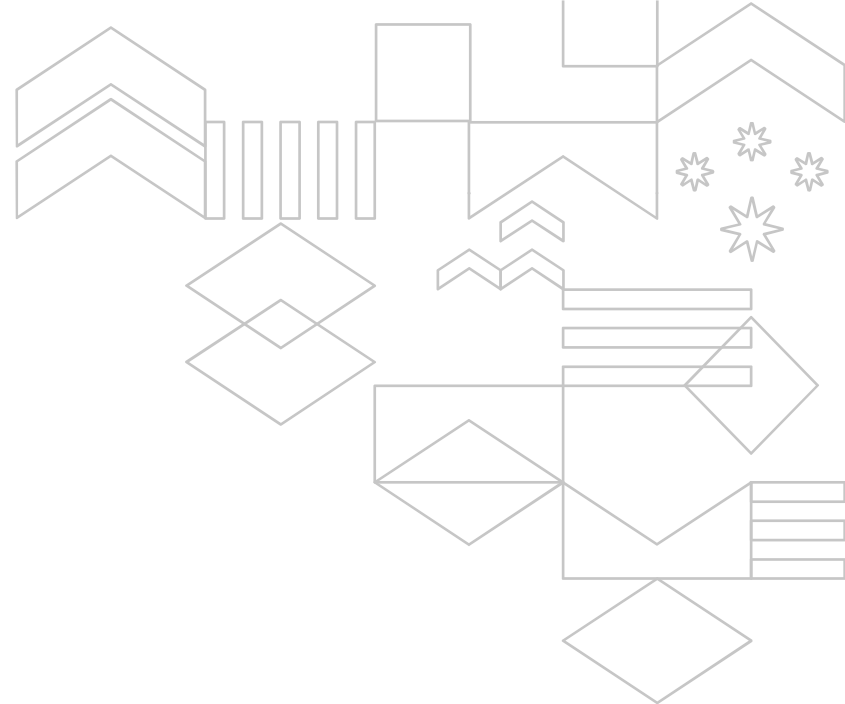
### IP offices and the industry best practices sharing:

- ❖ approaches to long-term storage of 3D models
- ❖ 3D visualization tools
- ❖ 3D-to-3D search tools
- ❖ legislation issues
- ❖ IP rights circulation (3D models in production including 3D printing)



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**THANK YOU FOR ATTENTION**

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