产权组织标准委员会（CWS）

第八届会议
2020 年 11 月 30 日至 12 月 4 日，日内瓦

关于外观设计表现形式新标准的提案

外观设计表现形式工作队牵头人编拟的文件

背 景

1.   在 2019 年 7 月举行的第七届会议上，产权组织标准委员会（CWS）注意到第 57 号任务"为外观设计的电子可视表现形式编写建议"所取得的进展。标准委员会特别批准公布工业品外观设计电子可视表现形式调查结果，并注意到这一结果将有助于外观设计表现形式工作队制定标准草案。工作队的共同牵头人是澳大利亚知识产权局和国际局。（见文件 CWS/6/34 第 174 段至第 175 段。）

工作队活动

2.   外观设计表现形式工作队通过 wiki 和在线会议继续就拟议标准草案开展工作。起草建议采用了 2019 年 11 月公布的工业品外观设计电子可视表现形式调查结果，以及工作队成员、海牙体系、工业品外观设计五局合作论坛（ID5）成员和其他来源的意见。由此产生的关于工业品外观设计电子表现形式建议标准草案的提案载于本文件附件。

3.   工作队讨论的主要问题包括工业品外观设计的定义、二维（2D）图像的文件格式以及文件转换问题。视频文件的建议格式是另一个与其他相关工作队共同讨论的主要问题（见文件 CWS/8/3 第 5 段至第 10 段）。工作队还就针对三维（3D）物体的建议（包括文件格式在内）开展了工作，但这项工作被推迟到 3D 工作队制定出其建议后进行。

拟议标准

4. 工作队编拟了关于工业品外观设计电子表现形式的拟议建议，供标准委员会审议和通过，作为一项新的产权组织标准。该提案载于本文件附件。国际局建议将新标准指定为标准 ST.88，与其他标准保持一致：标准 ST.67 和 ST.68 涉及各类商标的电子表现形式，拟议的标准 ST.69 同样如此（见文件 CWS/8/3）。

5. 拟议标准提供了关于如何创建、储存、展示、管理、公布和交换工业品外观设计电子表现形式的建议。这些建议旨在最大限度地重复利用电子表现形式，为在多个知识产权局提交相同外观设计申请的申请人提供方便。该拟议标准还为各知识产权局交换电子表现形式数据、公布电子表现形式以及加强电子表现形式自动检索提供了共同指导方针。

6. 在讨论过程中，工作队注意到，不同的 2D 图像格式各有其优缺点。没有一种单一格式能够满足知识产权局和申请人对外观设计图像的各种要求和用法。每个主管局都倾向于根据国家规定、行业惯例和/或利益攸关方偏好等因素，以自己选定的格式开展工作。

7. 若干主管局报告了关于图像转换的困难。不同格式之间的转换构成了挑战，因为转换过程可能会丢失信息或出现错误，需要对结果进行质量检查和验证。该标准旨在尽可能减少格式转换。

8. 因此，拟议的新标准建议 2D 图像使用 JPEG、PNG 和 SVG 这三种首选格式，这些标准化的现代格式受到广泛支持，能够满足不同需求。JPEG 格式的文件较小，图像质量可配置，常用于照片图像。PNG 提供压缩的无损图像表现形式，常用于线条画或图形设计。SVG 提供不受设备分辨率影响的矢量图，常用于图标和简单图形。

9. 该标准建议主管局至少接受以其中一种首选格式提交申请。这使主管局能够选择最适合其环境的格式。为避免将图像转换为不同格式所带来的问题，该标准进一步建议各主管局在与其他局的数据交换中接受所有三种首选格式。

10. 该标准还允许各主管局接受 GIF 和 TIFF 作为替代格式。这些格式并非首选，原因是其已经过时，所受支持不够广泛，实现方式不一致等。主管局如果愿意，可以接受这些格式，但为与其他局进行数据交换，必须将其转换为首选格式之一。尽管由于格式转换所带来的挑战，该标准力图尽可能减少格式转换，但在此情况下，由始发局进行格式转换好过要求所有主管局为使用并不广泛的格式的 IT 支持作出投入。

11. 对于所提交的视频或多媒体内容，该标准建议采用两套多媒体格式。第一套格式受到现有平台和设备的最广泛兼容和支持，但播放视频需支付专利许可费。目前有许多设备和软件提供商支付此类许可费，因此大部分终端用户已经获得许可。第二套多媒体格式在某些特定平台和行业中得到广泛支持，其设计旨在避免专利许可问题。欲知更多信息，请见文件 CWS/8/3 第 5 段至第 10 段。

12. 请标准委员会：

(a) 注意本文件的内容；

(b) 审议并批准新产权组织标准 ST.88 的拟议名称："关于工业品外观设计电子表现形式的建议"；以及

(c) 审议并通过转录于本文件附件的拟议新产权组织标准 ST.88。

[后接附件]

STANDARD ST.##

RECOMMENDATIONS FOR ELECTRONIC REPRESENTATION OF
INDUSTRIAL DESIGNS

Final Draft

Proposal presented by the Design Representation Task Force for consideration at the CWS/8

Editorial Note by the International Bureau

This Standard does not currently make recommendations on 3D objects. Recommendations for 3D objects and file formats are being evaluated by the 3D Task Force of the Committee on WIPO Standards (CWS). It is proposed to revisit this topic w hen the 3D Task Force completes their evaluation, and possibly make revisions to this Standard if appropriate.

INTRODUCTION

1   These recommendations provide guidance on how to create, store, display, manage, search, publish and exchange electronic representations of industrial designs.

OBJECTIVES

2   These recommendations are intended to achieve:

- The maximum re-use of the same electronic representations for applicants to file the same design at multiple Intellectual Property (IP) offices;

- A common set of requirements for IP offices to exchange electronic representations data;

- A common set of requirements for IP offices to process and publish electronic representations; and

- A common set of requirements to enhance automated search of electronic representations.

DEFINITIONS AND TERMINOLOGY

3   For the purposes of these recommendations, the following terms apply unless otherwise specified:

(a) "3D model" means an electronic file that is created by a specialized softw are, for mathematically representing the surface of an object in three dimensions;

(b) "industrial design" means the visual aspect of an object, including its tw o-dimensional and three-dimensional features of shape and surface. Industrial designs are protectable through registration in an industrial property office or another competent authority. Some jurisdictions distinguish betw een a "design" for tw o-dimensional objects and a "model" for three-dimensional objects;

(c) "DPI" or "Dots Per Inch" means a measurement of a physical device, such as a display or printer, of the number of individual dots that can be placed w ithin the span of one linear inch. DPI is commonly applied to monitors, scanners and even digital cameras for w hich the technical correct term is pixels per inch, but DPI is commonly used instead. For the purposes of the present Standard, therefore, DPI is used as a measurement for all image input or output devices mentioned in this Standard[1];

(d) "electronic representation" means the draw ings and/or photographs representing a design on computer files, w hich may have been created and/or converted from the original physical representation, the original paper representation and the original electronic representation;

(e) "EXIF" or "Exchangeable Image File Format" is a standard for storing metadata w ith different image formats, including JPEG and TIFF. It is commonly used by digital cameras, smartphones, scanners, and other systems handling image or audio files;

(f) "hologram" means a photographic recording of a light field, rather than of an image formed by a lens, and it is used to display a fully three-dimensional image of the holograph subject;

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[1] DPI is not a property of the image itself, which is independent of any physical measurements. Electronic image files do not contain an inherent DPI, but may contain a suggested DPI value that provides output devices with a recommended density for displaying the image

(g) "image search" is a method of search for designs by inputting one or more images;

(h) "metadata search" is a method of search for designs by inputting metadata text;

(i) "original electronic representation" means the electronic drawings and/or photographs representing a design as submitted by the applicant on computer files;

(j) "original paper representation" means the drawings and/or photographs representing a design as submitted by the applicant on paper;

(k) "original physical representation" means the physical product specimen (or model) embodying a design as submitted by the applicant to the IP office;

(l) "PPI" means Pixels per inch. See DPI;

(m) "raster image" means an image that is composed of a map of points (pixels), referred to as a bitmap. Typical file formats for raster images include JPEG, TIFF, PNG and BMP;

(n) "resolution" means the number of pixels in an electronic image representing its width and height. This is usually given as width x height, e.g. 1024 x 768;

(o) "vector graphics" means an image file that is composed of shapes formed of mathematical formulas and coordinates on a 2D plane. As opposed to raster images, vector graphics have the property of scaling infinitely without any degradation of quality; and

(p) "view" means the 2D image formed when the design (normally a 3D object) is viewed or projected from a certain position, e.g., front view, rear view, perspective view.

4   The following acronyms are used in this document:

(a) 4K UHD stands for 4000 pixels Ultra-High-Definition, a video resolution of at least 3840 x 2160 pixels;

(b) ANSI stands for American National Standards Institute;

(c) EXIF stands for Exchangeable Image File Format;

(d) GIF stands for Graphics Interchange Format;

(e) GPS stands for Global Positioning System;

(f) IEC stands for International Electrotechnical Commission;

(g) ISO stands for International Organization for Standardization;

(h) JPEG stands for Joint Photographic Experts Group;

(i) PDF stands for Portable Document Format;

(j) PNG stands for Portable Network Graphics;

(k) TIFF stands for Tagged Image File Format;

(l) W3C stands for World Wide Web Consortium.

REFERENCES

5   The following WIPO Standards should be applied as referenced in this Standard:

(a) WIPO Standard ST.80 recommendation concerning bibliographic data relating to industrial designs;

(b) WIPO Standard ST.81 recommendation concerning the content and layout of industrial design gazettes;

(c) WIPO Standard ST.86 recommendation for the processing of industrial design information using XML (Extensible Markup Language); and

(d) WIPO Standard ST.96 recommendation for the processing of industrial property information using XML (EXTENSIBLE MARKUP LANGUAGE).

GENERAL RECOMMENDATIONS

6   This Standard recommends that industrial design documents should provide images in an electronic format, including applications, publications, and other documents containing designs. Electronic image formats and sizes recommended by this Standard should be accepted by each IP office.

7   If an Office has established its preferred electronic representation of designs which differs from this Standard, it is recommended that the Office announce its preferences in its official publications or websites regularly. This includes elements such as image format, resolution, and file size.

8   Offices should preserve the original electronic representation submitted with an application for archival purposes.

9   Offices should not apply any transformations to images received from applicants which do not comply with the Office's image requirements, such as changing the size, resolution, scaling, color space, or other features to bring the image into compliance. If an application contains images which do not comply with the Office's requirements, the images should be rejected with a message informing the applicant which requirement was not met and how to provide acceptable images[2].

10   Offices should not remove any information from submitted images for archival purposes. Copies of the image for other purposes, such as publication or data exchange, should have sensitive or personal information removed. For instance, EXIF metadata in an image file may contain data such as name or GPS location.

RECOMMENDATIONS FOR ELECTRONIC 2D IMAGE FORMAT AND SIZE

11   This Standard recommends JPEG[3] and PNG[4] for raster images and SVG[5] for vector images as preferred electronic image formats for industrial designs.

12   Where supported by the Office, images may optionally use one of the following alternative formats instead of a preferred format:

    (a) TIFF format: this format is not preferred because it is not compressed, leading to very large file sizes; and

    (b) GIF format: this format is not preferred because PNG is a newer format with better support for color and transparency features.

13   Images should not use PDF format. PDF is designed for complex documents not for storing images, and can contain extraneous information besides the image. Determining the precise boundaries between images and other document elements (such as where the margin begins) may be difficult in PDF. Converting or extracting images from PDF to other formats may introduce errors or unintended changes.

14   Offices should accept at least one of the preferred image formats for filing, and should accept all of the preferred image formats for data exchange. Offices may accept other image formats for filing as well, as long as they convert the image to one of the preferred formats for data exchange and publication.

15   Images should be accepted in color, grayscale, and black & white as chosen by the applicant. Files of at least 5 MB in size should be accepted. Images should have a minimum resolution of 300 x 300 pixels and a maximum resolution of 3840 x 2160 pixels (corresponding to 4K UHD).

16   Where the recommendation related to suggested sizes is not able to be followed due to the variable nature of the figurative elements, e.g., long and narrow strip or ribbon type figurative elements, it is recommended that the complete image also be presented as multiple sections, with each section in a separate file that complies with the requirements above, and textual instructions on how the sections fit together.

RECOMMENDATIONS FOR ELECTRONIC VIDEO FORMAT AND SIZE

17   Files containing video or multimedia should use one of these preferred formats[6]: MP4 container files (.mp4) with one of the following video codecs: AVC/H.264 or MPEG-2/H.262.[7]

18   Where supported by the Office, design applications containing video or multimedia may use one of these alternative formats instead: WebM[8] or MP4 container files with one of the following video codecs: VP9 or AV1[9].

19   Multimedia files should not use video container or codec formats other than the preferred and alternative formats, including MPEG-1[10], VP8[11], or HEVC/H.265[12].

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[2] It is up to the Office whether to reject the entire application, or to accept the application and require the applicant to replace the rejected files.

[3] JPEG provides lossy compression of images to create small file sizes and is generally preferable for works such as photographs.

[4] PNG provides lossless images with compression and is generally preferable for works such as drawings, figures, or graphical designs.

[5] SVG is suitable for vector images that are independent of display size and resolution. The recommendations on resolution in this Standard do not apply to SVG files.

[6] The recommended formats may be updated in the future as conditions change.

[7] These formats are ISO standards and have the widest hardware and software support. There are known patent pools covering these formats from the MPEG Licensing Administration, including for video playback, but common platforms such as Windows, Mac OS, Android, and iOS include licenses for playback at this time.

[8] WebM is supported by most web browsers, though other platforms may require installing software to play.

[9] These codecs are designed for royalty-free use and supported by most web browsers. Both codecs are also supported within MP4 containers. At this time industry use of AV1 appears limited, however major platforms are planning to adopt it in the near future.

[10] Superseded by newer formats and not supported by MP4 containers.

[11] Superseded by VP9 and not supported by MP4 containers.

[12] Not widely supported at this time, covered by multiple competing patent pools.

20   Offices should accept at least one of the preferred or alternative multimedia formats for filing, and should accept all of the preferred and alternative formats for data exchange with other Offices. For filing, Offices may accept formats other than preferred or alternative formats at their discretion as long as they convert the video to one of the preferred or alternative formats for data exchange and publication. How ever, it is preferable to avoid conversions altogether (see paragraph 22).

21   Offices should announce what container and codec formats are accepted by the Office. Offices should also verify that submitted multimedia files use a container and codec format accepted by the Office. Such checks can be performed in software at the time of submission. Simply checking the file extension or container format is not sufficient, as some containers (particularly MP4) can use dozens of different codecs. If a submitted file does not use an accepted format, the file should be rejected[13].

22   It is recommended that Offices do not convert multimedia files to a different format, as this can introduce errors, artifacts, or reduction in quality. Conversions may introduce artifacts in the video or audio data and may not match the original electronic representation. Conversion may be required in certain instances for publication or data exchange, such as where an Office accepts formats for filing not recommended by this Standard. In these cases, Offices should verify that the converted format faithfully reproduces the relevant features of the original format covered by the IP right. Offices should preserve the multimedia files originally submitted by the applicant for the duration of the IP right. If format conversions are done for publication or data exchange, the original format should also be made available online or on request.

23   When publishing video files, it is recommended that Offices provide information (including by linking to other websites) about the video formats it accepts and how to play them on various platforms. This information should be linked as near as possible to the published video so users can easily find it.

RECOMMENDATIONS FOR HOLOGRAM REPRESENTATION

24   If the hologram is submitted as a series of images, then it should follow the recommendations for 2D images above.

25   If the hologram is submitted as a video object, then it should follow the recommendations for video formats above.

26   It is not recommended that Offices accept physical holograms in applicant submissions at this time, as there does not appear to be a general way to transform them into digital specimens. If Offices do accept physical holograms, it is recommended that they only use it as a visual aid and that it does not form part of the specification or define the scope of protection.

RECOMMENDATIONS FOR CAPTURING ELECTRONIC IMAGES

27   Where Offices accept original physical or paper representations as part of an application, it is recommended that the images be a minimum of 3 cm by 3 cm in size, and a maximum of 21 cm by 27 cm (reflecting shared dimensions of A4 and ANSI Letter size paper).

28   It is recommended that Offices convert original paper representations to digital images for publication and management. The conversion is recommended using one of the preferred formats for 2D raster images above. Alternatively, Offices may convert the paper image to one of the alternative 2D image formats as long as they convert to a preferred format for data exchange. The resolution of captured images can be as high as the Office deems appropriate, but in all cases should be high enough to adequately capture the details of the source image.

29   Offices should scan images for capture with at least 300 DPI to accurately represent the image. Offices should not scan images with lower than 200 DPI or higher than 600 DPI.

30   Captured images should be in color unless the original paper representation is black and white. The captured image should have the same legal authenticity as the original paper representation.

31   The original paper representation should be stored for archival purposes for at least one year longer than the duration of the IP right.

RECOMMENDATIONS FOR ONLINE PUBLICATION OF REPRESENTATIONS

32   Offices should publish images and documents containing images online.

33   Images embedded in other documents, such as PDF, should reproduce the characteristics of the original image as closely as feasible. When publishing documents with embedded images online or in another electronic medium, Offices should also make the images available as separate files.

34   Images should be published in a preferred or alternative format, with a minimum resolution of 300 pixels in each dimension (width and height). Images should be published in color unless the original image is black and white. Format conversions or other transformations of submitted images should be avoided whenever possible as they have the potential to introduce errors, artifacts, distortions, or other differences. If a conversion or transformation must be done, Offices should verify that the resulting image faithfully reproduces the relevant features of the original image.

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[13] It is up to the Office whether to reject the entire application, or to accept the application and require the applicant to replace the rejected files.

35   If the published image differs from the original image submitted by the applicant in any way (file format, resolution, color space, or other aspects), the Office should note the differences in the publication. E.g. a note such as "Original image: 300 x 400 JPEG 8-bit color" would be appropriate. An indication of how the public can access the original image is also recommended.

36   Offices should remove metadata containing sensitive information from image files intended for publication. For example, EXIF metadata may contain name or geographic location. However, the original file with all metadata should be preserved for archival purposes.

RECOMMENDATIONS FOR TRANSFORMATION OF ELECTRONIC IMAGES

37   Electronic images submitted with an application that are of insufficient quality or do not conform to the formats specified in this Standard should be rejected by the Office and the applicant asked to resubmit the images.

38   If an Office transforms a figurative element from one storage format to another (e.g., GIF to PNG), it is recommended that the Office retain the original format as well as the transformed format. If an Office chooses to discard the original format then it is recommended that clear procedural guidelines be established and documented.

39   If an Office performs touch-ups on an electronic image either submitted by an applicant or captured by the Office, it is recommended that the office establish a set of procedures and guidelines for the physical process and ranges of touch-ups that the office will carry out (e.g., removing minor background specks —no larger than 1 mm). This will ensure consistency within the particular office.

40   Given the variable nature of scanned images, and in particular the color rendition, Offices are recommended to use textual descriptions and detailed color claims when performing touch-ups on an electronic image of the corresponding figurative element. It is also recommended that records of performed touch-ups be kept for future reference.

41   If an Office performs touch-ups on an electronic image either submitted by an applicant or captured by the Office, the Office may choose to send the touched-up image back to the applicant for approval.

42   Offices may perform limited touch-ups of electronic images captured by the industrial property office. Such touch-ups may include:

    (a)   erasing dust, hair, or other blemishes in the background of the image;

    (b)   erasing or color correcting background elements on the periphery of the figurative elements;

    (c)   erasing marks from creases in the original physical representation of the image;

    (d)   color correcting or color balancing the electronic image so as to better capture the original physical representation of the figurative element unless it substantially modifies the scope of the claims of the design.

43   Given the variation in color rendition due to scanning and printing variability, it is recommended that Offices clearly indicate that the colors are only for presentation purposes and that accurate renditions of the color are dependent on the equipment used. It is recommended that a disclaimer to this extent be included whenever a color figurative element is presented.

RECOMMENDATIONS FOR SEARCH OF ELECTRONIC IMAGES

44   It is recommended that Offices make images searchable by metadata, including at least application or file number, applicant name, and date of submission or registration.

45   It is recommended that Offices make images searchable using the Locarno Classification, including classes, subclasses, and types of goods.

RECOMMENDATIONS FOR VIEWS OF DESIGNS

46   The minimum and maximum number of views established by the Office for a design application should permit accurate representation of the design. The number of views required for accurate representation depends on the nature of the product, the features to be protected, the position (perspective) of views provided by the applicant, and other features of the Office's legal requirements.

47   It is recommended that Offices designate an exemplary image for design applications, either by selecting a representative image, selecting the first image in the application, or allowing the applicant to indicate the exemplary image. The exemplary image should be displayed prominently in publications of the application or registered design, such as on the title page of publications or as an accompanying thumbnail image in electronic catalogs, indexes, or databases.

[End of Standard]

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