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КОМИТЕТ ПО СТАНДАРТАМ ВОИС (КСВ)

**Вторая сессия
Женева, 30 апреля – 4 мая 2012 г.**

ЭЛЕКТРОННАЯ ОБРАБОТКА ИЗОБРАЗИТЕЛЬНЫХ ЭЛЕМЕНТОВ ТОВАРНЫХ ЗНАКОВ

подготовлено Секретариатом

1.   На своей четвертой сессии, состоявшейся в январе 2004 г., бывшая Рабочая группа по стандартам и документации (РГСД) Постоянного комитета по информационным технологиям (ПКИТ) постановила, что следует продолжать уделять внимание стандартизации информации по товарным знакам, и одобрила список из 13 пунктов по стандартам в области товарных знаков, который был составлен Целевой группой по стандартам в области товарных знаков. РГСД договорилась уделить приоритетное внимание разработке двух новых стандартов, а именно нынешних стандартов ВОИС ST.66 и ST.67. В отношении подготовки других 11 стандартов в области товарных знаков Рабочая группа постановила приостановить эту работу до выполнения задачи № 20 (см. Приложение II к документу SCIT/SDWG/4/4; пункты 34-44 документа SCIT/SDWG/4/14). Впоследствии это решение было подтверждено Комитетом по стандартам ВОИС (КСВ) на его первой сессии, состоявшейся в октябре 2010 г.

ПЕРЕСМОТР СТАНДАРТА ВОИС ST.67 И ГЛОССАРИЯ

2.   На своей одиннадцатой сессии, состоявшейся в октябре 2009 г., РГСД приняла новый стандарт ВОИС ST.67 «Рекомендации по электронной обработке изобразительных элементов товарных знаков», подготовленный Целевой группой по стандартам в области товарных знаков. На своей первой сессии КСВ изменил формулировку задачи № 20 следующим образом:

«Обсудить вопросы, касающиеся цифровых форматов изображений, а также цветовой обработки и онлайновой публикации в области товарных знаков, как это указано в пункте 5 документа SCIT/SDWG/11/9, и подготовить впоследствии предложение».

(См. Приложение к документу CWS/1/9 и пункт 52 документа CWS/1/10 Prov.)

3.   Когда Целевая группа по стандартам в области товарных знаков инициировала свои обсуждения, предполагалось, что сфера применения стандарта ВОИС ST.67 – помимо общих рекомендаций – будет охватывать вопросы, касающиеся цифровых форматов изображений, цветовой обработки и онлайновой публикации, которым должны были быть посвящены соответствующие дополнения, однако после продолжительных обсуждений в РГСД и Целевой группе было принято решение (см. пункт 64 документа SCIT/SDWG/11/14) включить важнейшие рекомендации относительно цифровых форматов изображений и онлайнового отображения в основную часть стандарта, а другую релевантную информацию представить в Части 8.1 Руководства ВОИС по информации и документации в области промышленной собственности, озаглавленной «Глоссарий терминов, касающихся информации и документации в области промышленной собственности» (Глоссарий).

4.   Исходя из вышеизложенного Целевая группа подготовила для рассмотрения и утверждения КСВ предложения о пересмотре стандарта ВОИС ST.67 и о дополнительных материалах, подлежащих включению в Глоссарий. Указанные предложения воспроизводятся в Приложениях к настоящему документу.

5.   Поскольку решение РГСД заключалось в выполнении задачи № 20 до завершения подготовки предложений, упомянутых в пункте 3, выше (см. пункт 62 документа SCIT/SDWG/11/14), задачу № 20 следует считать выполненной и исключить из перечня задач Комитета ВОИС по стандартам при условии, что Комитет примет эти предложения.

ИЗОБРАЖЕНИЯ, СОДЕРЖАЩИЕСЯ В ДОКУМЕНТАХ ПО ПАТЕНТАМ И ПРОМЫШЛЕННЫМ ОБРАЗЦАМ

6.   РГСД неоднократно рассматривала вопрос о возможности распространения действия рекомендаций, сформулированных в стандарте ВОИС ST.67, на изображения, содержащиеся в документах по патентам и промышленным образцам (см. пункт (c) в пункте 4 и подпункт (d) в пункте 5 задачи № 20, Приложение к документу CWS/1/9). Кроме того, в настоящее время активные дискуссии относительно возможного использования цветных чертежей и фотографий в международных заявках ведутся в рамках Совещания международных органов PCT (PCT/MIA) и Рабочей группы PCT. На своей третьей сессии, состоявшейся в июне 2010 г., Рабочая группа PCT пришла к выводу о том, что для ускорения работы в этой области необходимо провести дополнительное исследование по техническим и правовым вопросам, которые возникнут в том случае, если будет разрешена подача и обработка таких чертежей в рамках международных заявок (см. пункты 196-204 документа PCT/WG/3/14 и документ PCT/WG/3/9). На своей девятнадцатой сессии, состоявшейся в феврале 2012 г., PCT/MIA подтвердило важность этой работы, признав, однако, то, что при ее выполнении возникнут вопросы, касающиеся затрат времени, финансовых расходов и правовой сферы (см. пункт 36 документа PCT/MIA/19/13 и документ PCT/MIA/19/9). Ввиду происходящих в настоящее время изменений в PCT предлагается отложить осуществление любой деятельности в этой области в рамках КСВ до завершения соответствующих обсуждений в органах PCT.

ДАЛЬНЕЙШАЯ СТАНДАРТИЗАЦИЯ ИНФОРМАЦИИ В ОБЛАСТИ ТОВАРНЫХ ЗНАКОВ (ДАЛЬНЕЙШАЯ ДЕЯТЕЛЬНОСТЬ)

7.   Как было отмечено в пункте 1, выше, Целевая группа по стандартам в области товарных знаков намеревалась подготовить 11 стандартов, касающихся информации и документации в области товарных знаков, по завершении выполнения задачи № 20. Если в соответствии с предложением, содержащимся в пункте 5, выше, Комитет сочтет задачу № 20 выполненной, Целевой группе необходимо будет продолжить свою деятельность во исполнение решения, принятого на четвертой сессии РГСД. Ввиду значительного времени, прошедшего с указанной сессии, и внесенных с тех пор

ведомствами промышленной собственности изменений в области электронной подачи и обработки заявок на регистрацию товарных знаков представляется целесообразным пересмотреть подход к работе по стандартизации в области товарных знаков.

8.   В целях установления рамок для осуществления этой деятельности Международное бюро предлагает на рассмотрение и утверждение КСВ следующее:

(a)   постановка новой задачи следующего содержания:

«изучить вопрос о целесообразности дальнейшей разработки стандартов в области товарных знаков и подготовить соответствующее предложение, включая описание потребности и ожидаемой пользы от каждого нового усовершенствования, а также приоритезацию предложений»;

(b)   возложение выполнения указанной задачи на Целевую группу по стандартам в области товарных знаков;

(c)   Целевой группе по стандартам в области товарных знаков следует представить результаты исследования, наряду с планами дальнейшей деятельности, на рассмотрение КСВ на его сессии, которая состоится в 2013 г.

9.   *КСВ предлагается:*

(a)   рассмотреть и принять пересмотренную версию стандарта ВОИС ST.67, воспроизведенную в Приложении I к настоящему документу;

(b)   рассмотреть и одобрить включение материалов, воспроизведенных в Приложении II к настоящему документу, в Глоссарий;

(c)   считать задачу №. 20 выполненной и исключить ее из перечня задач КСВ, как это указано в пункте 5, выше;

(d)   рассмотреть предложение о приостановлении осуществления любой деятельности КСВ по подготовке рекомендаций относительно изображений, содержащихся в документах по патентам и промышленным образцам, до завершения обсуждений этого вопроса, ведущихся в рамках РСТ, как это указано в пункте 6, выше;

(e) рассмотреть и одобрить продолжение о продолжении деятельности Целевой группой по стандартам в области товарных знаков, направленной на дальнейшую стандартизацию информации по товарным знакам, включая постановку новой задачи, как это указано в пункте 8, выше.

[Приложения следуют]

PROPOSAL FOR REVISION OF STANDARD ST.67

RECOMMENDATIONS FOR THE ELECTRONIC MANAGEMENT OF THE
FIGURATIVE ELEMENTS OF TRADEMARKS

Proposal prepared by the Trademark Standards Task Force

INTRODUCTION

1.   These recommendations provide guidance on how to electronically store, display, and manage the two-dimensional graphical and photographical images representing trademarks as well as the software and hardware used in conjunction therewith.

DEFINITIONS

2.   For the purposes of these Recommendations, unless otherwise specified:

        (a)   "trademark" means trademark, service mark or another type of distinguishing representation of mark according to the definition of the mark in the legislation concerned, including but not limited to collective mark, certification mark or guarantee mark;

        (b)   "figurative element" means a two-dimensional graphical and photographical non-verbal element of a trademark, including a logo, shape, or color scheme;

        (c)   "resolution" means the number of pixels in an electronic image in relation to its width and height. A commonly used measure for the resolution is dpi (dots per inch);

        (d)   ~~"DPI (Dots Per Inch)" means a measurement, typically, of printer resolution that the number of individual dots can be placed within the span of one linear inch. DPI is also commonly applied to monitors, scanners and even digital cameras for which the technical correct term is pixels per inch, but DPI is commonly used instead. In this Standard, therefore, DPI is referred as a resolution measurement for all devices.~~

        (d~~e~~)   "original physical representation" means the physical manifestation of trademarks as submitted by the applicant;

        (e~~f~~)   "touch-up" means a minor change made to an electronic image so as to clarify the main elements in that image without materially altering the intended commercial impression of the image;

        (f~~g~~)   "image capture" means the process of turning a physical representation of an image into an electronic image;

        (g~~h~~)   "ICC profile" is, in color management, a set of data that characterizes a color input or output device, or a color space, according to standards promulgated by the International Color Consortium (ICC). ICC profile specification is published as ISO 15076-1:2005 ("Image technology color management -- Architecture, profile format and data structure -- Part 1: Based on ICC.1:2004-10").

        (h~~i~~)   "color space" means a model for representing color numerically in terms of three or more coordinates which describe the position of the color within the color space being used. For example, the RGB (Red Green Blue) color space represents colors in terms of the Red, Green and Blue coordinates. Note, however, that the coordinates in color space do not define a color in absolute terms. In order to achieve this, an ICC profile is needed;

        (i~~j~~)   "sRGB" stands for a standard RGB color space created cooperatively by Hewlett-Packard and Microsoft for use on monitors, printers, and the Internet, and endorsed by the W3C. It is very well suited for use in combination with ICC profiles;

        (j~~k~~)   "black and white electronic image" means a computer data file that when opened with a compatible software program will display an image using only black and white tones;

        (k~~l~~)   "grayscale electronic image" means a computer data file that when opened by a compatible software program will display an image using the tones of black, white, and various shades of gray;

        (l~~m~~)   "color electronic image" means a computer data file that when opened by a compatible software program will display an image using colors based on a specific color profile, for example, a specific ICC profile, which is most commonly used;

        (m~~n~~)   "JPEG" stands for Joint Photographic Experts Group, the name of the group that created a standard that describes a coding scheme for the (usually lossy) compression of images, as well as a file format, for storing the compressed image. In this context, a JPEG file is a file stored in JFIF format (JPEG file interchange format - a minimal and widely used version of the originally specified file format) that contains an image coded and compressed according to the JPEG standard;

(ne)   "TIFF (Tagged Image File Format)" (Revision 4.0, 5.0, 6.0) is a flexible file format for storing images, with or without compression. This format can create a multi-page document for storing multiple pages in a file. "TIFF Group 4" is a TIFF image file format using CCITT Group 4 two-dimension compression technique, which is a lossless compression algorithm for reducing file size and supports black-and-white (bitonal, monochrome) images. "TIFF LZW" means a TIFF image file format using LZW (Lempel-Ziv-Welch) compression which is a lossless data compression technique for reducing file size;

(oe)   "GIF (Graphic Interchange Format)" means a bit-map image format that provides 8 bit/pixel support to allow for up to 256 RGB colors. The GIF images are compressed using the LZW (Lempel-Ziv-Welch) lossless data compression technique;

(pe)   "PNG (Portable Network Graphics)" means an extensible file format for the lossless, portable, well-compressed storage raster images. Indexed-color, grayscale, and true-color images are supported, plus an optional alpha channel for transparency;

(q)   "DPI (Dots Per Inch)" means a measurement, typically, of printer resolution that the number of individual dots can be placed within the span of one linear inch. DPI is also commonly applied to monitors, scanners and even digital cameras for which the technical correct term is pixels per inch, but DPI is commonly used instead. For the purposes of the present Standard, therefore, DPI is referred as a measurement for all devices mentioned in this Standard.

USE OF WIPO STANDARDS AND CODES

3.   The following WIPO Standards should be applied when electronically managing the figurative elements of trademarks:

- WIPO Standard ST.60   Bibliographic Data Relating to Marks
- WIPO Standard ST.63   Content and Layout of Trademark Gazettes
- WIPO Standard ST.64   Search Files for Trademark Search
- WIPO Standard ST.66   Recommendation for the processing of trademark information using XML

GENERAL RECOMMENDATIONS

4.   Industrial Property Offices (IPOs) may require an applicant to provide a color claim if the applicant files an application in which the trademark is in color.

5.   Applicants should be encouraged to provide figurative elements in electronic format. Image formats and sizes accepted by each IPO as per this Standard should be recommended.

6.   If an IPO has previously established its preferred electronic image formats and sizes, it is recommended that the IPO announce in its official publications at regular intervals and/or on its websites, the image formats, sizes and color swatches that are acceptable to the IPO.

RECOMMENDATIONS FOR ELECTRONIC IMAGE FORMAT AND SIZE

7.   Black and white electronic images should be formatted as PNG (preferred), TIFF Group-4 electronic images (or 8-bit JPEG as an alternate) with a minimum resolution of 200 dpi and a maximum resolution of 600 dpi; 300 dpi being the suggested resolution.

8.   Grayscale electronic images should be formatted as PNG (preferred), TIFF LZW, or 8-bit JPEG or PNG electronic images with a minimum resolution of 200 dpi and a maximum resolution of 600 dpi; 300 dpi being the suggested resolution.

9.   Color electronic images should be formatted as PNG (preferred), TIFF LZW, or 24-bit JPEG electronic images with a minimum resolution of 200 dpi and a maximum resolution of 600 dpi; 300 dpi being the suggested resolution; sRGB color space should be used with an included ICC profile.

10.   TIFF LZW and PNG are non-lossy formats and are more appropriate for trademark data than JPEG that causes distortions of both the image and color space.

11.   Minimum and maximum images sizes will depend on the figurative element being captured or stored. The figurative element should be a minimum size of 4 cm in one dimension and 2 cm in the other dimension, and a maximum size of A4 (29.7 cm x 21.0 cm) or Letter (27.94 cm x 21.59 cm or 8 1/2" x 11"), preferably a maximum size of 28 cm in one dimension and 20 cm in the other dimension; with 4 cm x 3 cm (minimum) and 8 cm x 8 cm (maximum) being the suggested size range.

12.   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/ribbon type figurative elements, it is recommended that the above suggested maximum in one dimension, not be exceeded even if the minimum in the other dimension is not achieved.

RECOMMENDATIONS FOR CAPTURING ELECTRONIC IMAGES

13.   If an IPO provides its own image capturing service, an appropriate scanner and software should be used to capture original images in the appropriate format specified in this Standard. Such a scanner should be regularly color calibrated to capture the figurative elements with the greatest accuracy.

14.   In cases where the image capture does not adequately reflect the image, the IPO should require a textual description of the mark and its colors or a color claim if applicable under its regulations.

15.   Given the variable nature of scanned images, and in particular the color rendition, it is recommended that textual descriptions and detailed color claims be used whenever a complex and/or color figurative element is stored. It is recommended to indicate the name or number of colors which are defined by a set of physical color swatches, and the referred color swatches, for example, green color "PMS 334" (334 defined by PMS: Pantone Color Matching System®).

PROCEDURAL RECOMMENDATIONS FOR IMPRECISE ELECTRONIC IMAGES

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

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

18.   If an IPO performs touch-ups on an electronic image either submitted by an applicant or captured by the IPO, 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.

19.   Given the variable nature of scanned images, and in particular the color rendition, IPOs 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 the records on performed touch-ups be kept for future reference.

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

21.   IPOs may perform limited touch-ups of electronic images submitted by applicants. Such touch-ups may include corrections required by the internal procedures of the office where the corrected image conforms to one of the formats specified as per this Standard.

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

        (a)   corrections required by the internal procedures of the office where the corrected image conforms to one of the formats specified as per this Standard;

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

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

        (d)   erasing marks from creases in the original physical representation of the trademarks;

        (e)   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 claim(s) of the figurative mark.

23.   Given the variation in color rendition due to scanning and printing variability, it is recommended that IPOs 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 ONLINE DISPLAY

24.   For online display of figurative elements the following is recommended:

        (a)   File format: PNG (preferred), JPEG;

        (b)   Resolution: 72-200 DPI; and

        (c)   Bit depth: 8-bit grayscale, 24-bit color.

                              [Приложение II следует]

ADDITIONS TO THE GLOSSARY OF TERMS CONCERNING INDUSTRIAL PROPERTY INFORMATION AND DOCUMENTATION

Proposal prepared by the Trademark Standards Task Force

Materials related to WIPO Standard ST.67 proposed to be included in Part 8.1 of the WIPO Handbook on Industrial Property Information and Documentation – Glossary of Terms concerning Industrial Property Information and Documentation (Glossary).

TERMS TO BE INCLUDED IN THE GLOSSARY, WHICH ARE REFERRED TO IN ST.67

The following terms are proposed for inclusion in Part 8.1 of the WIPO Handbook on Industrial Property Information and Documentation.

Image formats (relevant to WIPO Standard ST.67)

See JPEG, PNG, TIFF, and GIF.

JPEG (Joint Photographic Experts Group)

A commonly used method of compression for photographic images which specifies both the codec and the file format. JPEG compression is used in a number of image file formats; between them, JPEG/EXIF – the most common image format used by digital cameras and other photographic image capture devices, and JPEG/JFIF – the format used mostly for storing and transmitting photographs on the World Wide Web. These format variations are often not distinguished and called JPEG.

JPEG is used for photos when file size must be kept small and some quality loss is acceptable in exchange for a significant reduction in file size. It is best for full-color or grayscale images of real-world scenes. Straight lines display considerable visual artifacts like ringing for too high compression ratios. JPEG is not fully suitable for images with text, large blocks of color, or simple shapes.

Owner: Joint Photographic Experts Group.

(See Appendix IV)

GIF (Graphics Interchange Format)

An 8-bit-per-pixel bitmap image format that is widely used on World Wide Web due to its wide support and portability. CompuServe introduced the GIF format in 1987 to provide a color image format for their file downloading areas, replacing a format, which was black and white only. GIF became popular because it used more efficient encoding so large images could be downloaded in a reasonable amount of time, with very slow modems.

The format uses a palette of up to 256 distinct colors from the 24-bit RGB color space. It also supports animations and allows a separate palette of 256 colors for each frame. The color limitation makes the GIF format unsuitable for reproducing color photographs and other images with continuous color. GIF images work best for a few solid color images like simple cartoons and line drawings. In comparison to JPG, sharp edges in images, in particular text, are usually better when stored in GIF format. GIFs are used for small animations and low resolution film

clips. In circumstances where speed is more important than reduced file size, uncompressed bitmap formats such as Windows bitmap are more commonly used than the GIF format, since uncompressed bitmaps contain raw pixel information and can be displayed very quickly.

GIF images are compressed using the LZW lossless data compression technique to reduce the file size without degrading the visual quality.

Owner: CompuServe, Unisys (compression algorithm).

(See Appendix IV)

PNG (Portable Network Graphics)
A bitmapped image. PNG was created to improve upon and replace the GIF format, as an image-file format not requiring a patent license. The PNG format is becoming an increasingly popular replacement for GIF images since it uses better compression techniques and does not have a limit of 256 colors. Typically the file size of a PNG is about 20% smaller then the same GIF image. PNG was developed around 1995 and became a W3C recommendation in 1996, and has been widely implemented in most Web browsers since 1998.

PNGs do not support animations. It is a universal format that is recognized by the World Wide Web consortium, and supported by modern web browsers. PNG is commonly used in Macromedia Suite software application.

Owner: World Wide Web Consortium.

(See Appendix IV)

TIFF (Tagged Image File Format)
A flexible, adaptable and editable file format. It can handle multiple images and data in a single file through the inclusion of "tags" in the file header. Tags indicate the basic geometry of the image, such as its size, or define how the image data is arranged and whether various image compression options are used. For example, TIFF can be used as a container for JPEG and RLE (run-length encoding) compressed images. A TIFF file can also include a vector-based Clipping path (an outline that crops or frames the main image).

TIFF is a file format for storing images, including photographs and line art. It is a popular format for high color depth images and is used in print. It is widely supported by image-manipulation applications used in desktop publishing and page layout applications such as Adobe Creative Suite, by scanning, faxing, word processing, optical character recognition.

Owner: Adobe Systems.

(See Appendix IV)

Color claims
National and international legislation allows states to mandate verbal descriptions (including the usage of color codes) and/or color images for the applications of trade marks. Verbal description and image should correspond.

It may happen in practice that in different process steps, e.g., during filing, processing, granting, in the file or in the publication the images of the same mark are slightly different, e.g., bad print, image only in grey scale filed or published.

In such cases no general claims about the relation between the verbal description and the colors of the image are possible; the relation depends on the individual case and from the judicial body and the national legal environment. The questions how to determine the claimed color or the allowed or accepted deviation tolerance between description and image depends on these same factors. In the case of a pure color mark the requirements will usually be higher than in an ordinary mark with a color claim.

Color management

In digital imaging systems, color management is the controlled conversion between the color representations of various devices and corresponding media.

The core problem when digitally processing color images is that colored images - without special measures - are differently captured by each input device (scanner or digital camera) and differently displayed on every output device (screen, printer). They are also differently perceived depending on the light, background, context and the media they are presented on.

Color management means that input devices and output devices are matched to each other. The goal is that the side-by-side comparison of the paper original of an image, its display after the scanning procedure on a monitor, and the printout of the scanned image should reveal little or no difference.

This issue has an important impact on the trademark domain. Certain issues when working with color should be brought to the awareness of offices and applicants, namely:

Color representation can differ from device to device. Some devices can represent colors which others can not.

Certain widely used color models do not define colors in absolute terms (i.e. RGB). Therefore, the appearance of the image's colors will differ, depending on the display unit and method (print, monitor, etc.)

Color management can help, but it is not a solution of all problems.

Color management will not define or reflect in more detail the legal protection range of colors in a mark.

Note:

Currently and in the near future no "global" CMS (Color Management System) will be available for electronic color images in the field of intellectual property (IP). The following recommendations are intended as an intermediate step for the meantime:

(a)   IPOs as well as applicants/holders, representatives and the public should be aware of the problems described above regarding color representation. Use of ICC profiles and a calibrated environment can help to obtain comparable representations on different devices. For certain problems like extreme colors, however, there is no full and acceptable solution.

(b)   IPOs should emphasize the use of color claims as critical in clarifying color parts of marks, especially as some publications of marks may be printed in grey scale. The necessity or importance of an accompanying color publication of an image still depends heavily on the kind of the color claims. When a color claim merely lists the colors in a mark without more detail about the location of the particular colors and to which elements of the mark each color applies, a publication in color with the color claim is preferred. A

more complex color claim, which includes such greater detail, may obviate or lessen the need for an accompanying publication in color.

(c)   A possible scenario would be that offices transform images to an absolute color space, i.e., sRGB and include an ICC profile. If problems occur during the transformation, the office should inform the applicant, showing the applicant the transformation result. The applicant can then decide whether the representation is sufficient. Information regarding possible problems during transformation should be posted on an office's website.

(d)   IPOs should be allowed to require that documents/images they received in electronic form are based on normalized sRGB with an included ICC profile.

Color space
See Color model and Color space

Color model and Color space
A color model is an abstract model describing how colors are described as tuples of numbers. RGB and CMYK are examples of color models. Both describe colors in amounts of primary colors. Color models don't necessarily define color in terms of other colors. The HSV-model, for instance, defines color as hue (the color type, like red), saturation (the color intensity), and value (brightness).

The associated color space is the set of colors which can be represented by a color model. Note that often the terms color model and color space are used interchangeably.

ICC profile
ICC profile is a set of data that characterizes a color input or output device, or a color space, according to standards promulgated by the International Color Consortium (ICC). It describes the distance of the colors in a device's gamut to a generic color space called profile connection space (PCS).

Lossless data compression
As being contrasted to lossy data compression, a class of data compression algorithms that allows the exact original data to be reconstructed from the compressed data.

LZW compression
A lossless data compression technique for reducing file size. Until 2004, the use of this option was limited because the LZW technique was the subject of several patents. However, these patents have now all expired.

sRGB
A color model designed to match typical home and office viewing conditions. sRGB is an absolute color model based on defined and measured primaries red, green, and blue. It is well suited for editing and saving images intended for publication on the Internet. Due to its limited gamut, however, it is not suited for professional printing.

Pantone color system

A color system used in the context of color printing. Colors are defined by their numbers, which can be chosen from cards. The color space of this system is by far larger than CMYK, as metallic and fluorescents can also be defined.

RGB

A color model which uses red, green and blue as primary colors. The color model is strongly related to CRT monitors as output device, which use these primary colors to produce colored display. Due to the fact that colors in CRT monitors can vary widely, and the colors red, green and blue are not specified in terms of chromaticity, the resulting color is not defined in absolute terms (relative color model).

Lossy data compression

A technology where compressing data and then decompressing it retrieves data that may be different from the original, it brings the loss of visual quality through the compression process.

CMYK

An abbreviation for cyan, magenta, yellow, and key (Black) is a color model used in color printing, and also used to describe the printing process itself. This color model is also often referred to as process color or four color model.

APPENDIX IV TO THE GLOSSARY "DIGITAL IMAGE FORMATS"

Comparative description of digital image formats referred to in WIPO Standard ST.67

	JPEG	GIF	PNG	TIFF
Version	JPEG, JPEG2000, JPEG XR	GIF87A, GIF89A	PNG1.0, PNG1.2, joint W3C and ISO/IEC version (ISO/IEC 15948:2004)	TIFF6.0
Compression	The compression method is usually lossy although there are variations of the JPEG which are lossless. A useful property of JPEG is that the degree of lossiness can be varied by adjusting compression parameters. JPEGs can store full color information: 24 bits/pixel (16 million colors) and use aggressive, lossy compression which has a less noticeable effect on photographs. A disadvantage of lossy compression is that repeated compression and decompression reduces image quality each time.	GIF images are actually stored in two kinds of compressed formats, lossless (LZW) compression and uncompression process. The standard allows a coder to insert a "clear" code at any time in the image data. This can be used to create GIF files without LZW compression.	PNG employs lossless data compression. PNG offers better compression and more features than GIF. The format is more suitable than GIF in instances where true color imaging, alpha transparency, or a lossless data format is required. However, PNG does not support animation, so the GIF format is still used for simple animations.	TIFF stores image data in a lossless format, making it a useful method for archiving images. TIFF files can be edited and resaved without compression loss and it has an option to use LZW compression. Compression types include Raw uncompressed, PackBits, Lempel-Ziv-Welch (LZW), CCITT Fax 3 & 4.
File Extensions	The most common file extension for this format is .jpg. Others are .jpeg, .jpe, .jfif and .jif. It is also possible for JPEG data to be embedded in other file types, such as TIFF format images. Alternate formats are as follows: (1) "JPEG File Interchange Format (JFIF)" is a minimal version of the JPEG	.gif	PNG files nearly always use file-extension "PNG" or "png" and are assigned MIME media type "image/png".	Due to extensibility, many extensions are available. Examples include .tiff, GeoTIFF and RichTIFF. The TIFF file format is unusual in comparison to other image formats, in that it is composed of small descriptor blocks containing offsets into the file which point to the actual pixel image data. This means

	JPEG	GIF	PNG	TIFF
	format that was deliberately simplified so that it could be widely implemented. Most image editing software programs that write to a "JPEG file" are actually creating a file in JFIF format. (2) "JPEG Interchange Format" is an interlaced "progressive" format of JPEG, in which data is compressed in multiple passes of progressively higher detail. This is used for large images that download over a slow connection, allowing for an on-screen preview before all the data has been retrieved. It is not widely supported.			that incorrect offset values can cause programs to attempt to read erroneous portions of the file or attempt to read past the physical end of file. Like most other image file formats, improperly encoded packet or line lengths within the file can cause poorly written rendering programs to overflow their internal buffers. Properly written image rendering programs generally avoid such pitfalls. Furthermore, the file structure makes TIFF unsuitable for streaming (continually load and process data from a source, i.e. via the internet).
Compatibility	PC or Mac or UNIX workstation compatible. Almost all browsers can view JPEG.	All browsers can read this format.	New web browsers support the PNG format and GIF images can usually be replaced by PNG images if desired. However, Internet Explorer versions 6 and earlier do not support PNG's alpha channel transparency feature without using Microsoft-specific HTML extensions. Therefore, using standard HTML <img> tags for PNG images in Internet Explorer can produce a look different from that intended. MNG, a variant of PNG that supports animation, reached version 1.0 in 2001, but few applications support it. Animated GIF remains widely	Although it is a widely accepted standard format today, when TIFF was first introduced, its extensibility led to compatibility problems. Programmers were free to specify new options, but not all programs supported all the newly created tags. Currently, byte order can cause compatibility issues between Apple Macintosh and Windows programs, which typically use different byte order for TIFF files. Some programs offer the option of saving in Mac or Windows byte order so files can be used across platforms. TIFF format is standard in document imaging and

	JPEG	GIF	PNG	TIFF
			used as many applications are capable of creating the files, and it remains the only animated image format capable of being rendered in nearly all modern web browsers without the use of a plug-in.	document management systems. In this environment it is normally used with CCITT Group IV 2D compression, which supports black-and-white images. In high-volume environments, documents are typically scanned in black and white to conserve storage capacity. Because TIFF format supports multiple pages, multi-page documents can be saved as single TIFF files rather than as a series of files for each scanned page. The inclusion of the Sample Format tag in TIFF 6.0 allows TIFF files to handle advanced pixel data types making it a viable format for scientific image processing where extended precision is required.
Color Spaces	JPEG uses RGB color space, and supports ICC profiles, which allow the RGB values to be interpreted as sRGB and related to spectroscopically defined colors. The JPEG compression algorithm involves a color compression step, which makes use of the human visual system being less receptive to relative differences in color than to intensity values. High quality JPG does not include this color compression step and should therefore be used in all applications where	GIF is palette based: although any palette selection can be one of millions of shades, the maximum number of colors that can be used in a frame is 256. These are stored in a "palette", a table that associates each palette selection number with a specific RGB value. The limitation to 256 colors seemed reasonable at the time of GIF's creation because few people could afford the hardware to display more. Simple graphics, line drawings, cartoons, and grey-scale photographs	PNG supports palette-based colors (24-bit, RGB, sRGB or CIE x,y,z color model), greyscale or RGB images. As PNG was not designed for printing purposes it does not support the CMYK, or other print-related color models. As PNG supports embedded ICC-profiles, it is particularly suited for use in color managed environments and for applications where exact color specification matters.	Grayscale, Pseudocolor (any size), RGB, YCbCr, CMYK, and CIELab.

	JPEG	GIF	PNG	TIFF
	exact color information is important. First, convert image from RGB into the YCbCr color space. This conversion to YCbCr is specified in the JFIF standard, and should be performed for the resulting JPEG file to have maximum compatibility. However, many "high quality" JPEG images do not apply this step and instead keep them in the sRGB color space, where each color plane is compressed and quantized separately with similar quality levels.	typically need fewer than 256 colors. In addition, one of the colors in the palette can optionally be set as fully transparent. GIF stores colors as RGB values and does not support ICC profiles. RGB colors, however, are device dependent, which means that the same GIF image will be displayed with slightly different colors on different devices. The exact color values are not defined. This makes GIF unsuitable for use in color managed environments or in applications where exact color values matter. In the early days of graphical web browsers, graphics cards with 8-bit buffers (allowing only 256 colors) were common and it was fairly common to make GIF images using the web safe palette which was based on the common subset of the standard Windows and Macintosh palettes. This ensured predictable display but severely limited the choice of colors. Now that 24-bit graphics cards are the norm, optimized palettes make less sense when creating images, though there are still many sites on web design that advice the use of the web safe palette.		

	JPEG	GIF	PNG	TIFF
Suggested restriction	The primary disadvantage with the JPEG format apart from its lack of animation support is that its compression method may actually loose information. JPEG is facing new limitations due to the evolution of technology; therefore, JPEG must advance with current trends. JPEG 2000 follows initial compression that is able to decompress into a wide variety of methods, such as, image decompression: (1) maximum quality and resolution, (2) at a lower rate with optimal rate-distortion performance, (3) at reduced resolution with optimal performance, (4) for only spatial regions of the image, and (5) for only a number of selected components. The last alternative is to extract information from the codec stream to create a new codec stream with different quality/ resolution without need of decompressing the original codec stream. JPEG does not fit every compression need. Images containing large areas of a single color do not compress well. JPEG will introduce "artifacts" into such images that are visible against a flat background, making them considerably worse in	The main disadvantage of the GIF format is that it is lossy. This means some image detail is lost when converted to JPEG format. Not good at compressing complex, natural images. Not suitable for large file sized pictures (about 400 by 400 pixel), because the compression algorithm delivers a big data (2-3 times bigger than JPEG does). Requires decompression on the part of any program that uses it. Can't control the rate of compression. Because of color limitations, not suitable for continuous tone images. Only supports up to 256 colors (this is known as 8-bit color and is a type of indexed color image), whereas computers have up to sixteen million colors.	Stores only one picture per data therefore cannot be animated. Not good at compressing complex, natural images. Does not compress well. Not yet widely used (only recently available as a native format in browsers, meaning it can only be read by a small audience). Incompatible with some older browsers.	Difficult to store, large file format. It is difficult to write a fully compliant TIFF decoder you may see some programs that will not load certain TIFF files but will load others. Files for photo images are large. Uncompressed TIFF files are about the same size in bytes as the image size in memory. The greatest disadvantage is that TIFF offers only one compression option which is not as efficient (both in file size and the amount of time it takes to compress) as other file formats now support.

	JPEG	GIF	PNG	TIFF
	appearance than if conventional lossless compression method was used. JPEG can be slow when implemented only in software. If fast decompression is required, hardware-based JPEG solutions are best. JPEG is not trivial to implement. Writing a JPEG encoder/decoder is complex. JPEG is not supported by very many file formats. The formats that do support JPEG are all fairly new and can be expected to be revised at frequent intervals. An interlaced/progressive image increases file size. Can't index colors to set palettes. Doesn't support transparency. Lossy compression. 24-bit color doesn't display consistently across all hardware. Blockiness visible in images with high compression ratios is a general phenomenon in JPEG images. The human visual system is very acute to sharp edges such as those at the block boundaries.			

Suggested Usage of image types by Offices according to WIPO Standard ST.67

Image type	Suggested main format (for internal storage)		
	PNG	JPEG	TIFF
b/w images	++	+	+
greyscale images	++	+	+
color images	++	+	+

- + = suitable
- ++ = optimal format

[Конец Приложения II и документа]