Transactions". This function allows creating the demand with certain conditions without sending it to the exchange, and at the right time a user "gets from a pocket" the prepared demands

Besides VTB24, the service of Internet trading in “QUIK”system is offered by JSC “Sberbank of Russia”, JSC “Rosselkhozbank”, Bank “Petrokommerts”, “Communication bank” and other brokers.

Thus, the client “QUIK” terminal represents the powerful instrument of processing the exchange information. The extensive set of functions allows performing simple and specialized operations. Due to them the terminalhas become rather popular among the systems of Internet trading.

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Необходимость использования аппаратно-независимого цветовоспроизведения

Концепция аппаратно–независимого цветовоспроизведения состоит в обеспечении системы полной цветовой информацией об изображении, позволяющей, в случае необходимости, описать данные изображения в показателях, которые не относятся к какому-либо конкретному устройству. Применение базовой колориметрии радикально модернизирует устройство открытых систем визуализации, определяя взаимоотношения между аппаратными координатами (например, RGB или CMYK) и цветовыми стимулами. Поскольку оригиналы и промежуточные изображения редко рассматриваются в одинаковых условиях, возникает необходимость подключения к работе систем отображения моделей цветового восприятия, чтобы представлять восприятие стимулов изображения на каждой стадии процесса. Модели цветового восприятия применяются для прогноза вынужденного повышения физического контраста отпечатков, что компенсирует изменение в условиях просмотра, и соответствующего управления системами визуализации.

Necessity of using device-independent color imaging

In the informative and esthetic meanings printing illustration is turned to psychovisual perception. It is received nowadays by using intuitive, empirical approaches and value judgment. Imagine: the PC user took the photo, scanned it, admired it on his screen and, in the end, printed on the digital printer. But in spite of the relatively high cost of chromatogenic devices, it is impossible that colors of a final print will be identical to the original. In this situation we can say that the user received only trial images which he compares between itself and the original.

The creative component of a color illustration was entirely displaced from printing house to an author's, editorial and publishing stage. The printing stage practically lost function of regulation of indicators of quality of prints, completely addressing it to prepress (reproductive) process. Therefore, problems of stabilization and normalization of this stage in relation to some optimal mode for the illustrative press became very topical. When we allow the device to act in their individual color dimensions, we implement a process called device-dependent color imaging. Complexity of work with device dependent data consists that scanner’s RGB signals is not same that the RGB signals operating the monitor or the printer. We should lead the principle of the device independent color imaging to eliminate the unpredictable result of the work of the open system. The concept consists in providing system full-color image information which allows describing these images in indicators which don't belong to any particular devices. Furthermore, in order to transfer color coordinates (device independent data) to other structure of open system special mathematical transformations will be carried out.

There are lots of approaches to describe colors using a mathematical model; each of them is qualified as a color model. You can, for example, assign a specific level of hue, saturation and brightness to define a color (HSB color models); value of red, green, and blue (RGB color models); value of cyan, magenta, and yellow (CMY color models); or a value of cyan, magenta, yellow, and black (CMYK color models). Within these general descriptions — HSB, RGB, CMY, CMYK any model can use any arbitrary number of steps for each parameter. Some schemes, for example, use 100 steps for each. Others use 256 steps — a convenient number for the digital world because you can define 256 steps for each color by assigning 8 bits to each color.

All of these color models are widely used to describe colors, both by software and by various types of hardware like digital cameras, scanners, monitors, and printers. Unfortunately, most of them have historically been device dependent models — meaning that the designation for a given color applies only to the particular device. And that makes it hard to move color information between devices without introducing errors.

Two device dependent models can share the same name, but they won't share the same descriptions for each color except by pure coincidence. For example, some printers use CMYK color models. (Not all do. A printer can use an RGB color model, and translate the colors to the right amounts of cyan, magenta, yellow, and black ink.) Suppose you define a color in a drawing program as cyan 120, magenta 75, and yellow 130, and then print on three printers, each of which uses a device dependent version of a CMY or CMYK color model. You will usually find that the color prints as an obviously different color on each printer. Not only that, but each of the colors will usually be noticeably different from the color on your screen.

The application of basic theory of color considerably produces significant improvement in the construction of open color imaging systems by defining the relationships between devise coordinates (for example RGB or CMYK) and the colors detected or produced by the imaging system. However, this coordination is the only one of color reproduction factors: if the image is reproduced so that tristimulus values of its elements are identical to that in the original, this image visually will correspond to the original only until both are considered in identical conditions for which these values were calculated. As originals and intermediate images seldom are considered in identical conditions, there is a need of connection to work of systems of display of models of color perception to represent perception of stimulus of the image at each stage of process. We can say that color gamut of devices is various. Let's see: the certain stimulus reproduced by the LCD-monitor is perceived definitely. However, a certain printer won't be able to generate the incentive causing the same feeling. In such cases the model of color perception operates in the perceptional and justified way the image and as a result yields the best results.

In other situations color coverage of a reproduction can be limited by viewing conditions. For example, photographic prints of outdoor scenes are often viewed under artificial illumination at significantly lower luminance levels than the original scene. At lower luminance level it is impossible to produce the range of luminance and chromatic contrast that is witnessed in the original scene.

Thus it is common for consumer photographic prints to be produced with increased physical contrast to overcome this change in viewing conditions. Color appearance models can be used to predict such effects and guide the design of system to address them. Another advantage of color appearance models in device-independent color imaging is in the area of image editing. It is more intuitive for untrained users to manipulate the colors in the images along perceptual dimensions such as lightness, hue and chroma, rather than through device coordinates such as CMYK. A good color appearance model can improve the correlation between tools intended to manipulate these dimensions and the changes that users implement on their images.

In 1970 issues in devise-independent color imaging were discussed by Hunt. His objectives for color reproduction provide a good summary of the problems encountered in color reproduction and how they can be addressed using concepts of basic and advanced colorimetry. A slight rearrangement and simplification of Hunt’s objectives can be used to define five levels of color reproduction that provide a framework for modern color imaging systems: color reproduction, pleasing color reproduction, colorimetric color reproduction, color appearance reproduction and color preference reproduction.

Note that to achieve each level of reproduction in open systems, firstly it is necessary to have the lower levels achieved. To sum up, the five levels involve simply reproducing pleasing colors, equality of tristimulus values and appearance attributes to “improve” the result. In closed systems, it is not necessary for technology to progress through each of the five levels. This is because the path of image data is defined and controlled throughout the whole process. For example, in color photography the film sensitives, dyes, processing procedures and printing techniques must accord with each other. Thus it is possible to design a photographic negative film to produce pleasing or preferred color reproduction without having the capability for colorimetric or color appearance reproduction since the processing and printing steps are well defined. A similar system exists in color television with standard camera sensitivities, signal processing, and output device setup. In open systems, in intractable number of combinations of output, processing, display, and output devices can be constructed and used together. The manufacturer of each subsystem cannot possibly anticipate all of the possible combinations of devices that might be used with it. Thus the only feasible solution is to have each devise in the system develop through the five levels of reproduction can be handed off from one device to the next in the process known as device-independent color imaging.

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