

For immediate release

Fuji Xerox Develops Technology That Facilitates Image Editing Based on Human Visual Perception

TOKYO, July 2, 2014—Fuji Xerox Co., Ltd. has developed a technology that can change the impression of an image data's particular area or its entirety by controlling the texture of an image, such as colors and shapes, based on human visual perception. Through this technology, the impression that an image gives can be changed by enhancing visibility and shapes.

To develop this technology, Fuji Xerox conducted its own luminance frequency analysis^{*1} and dark area analysis^{*2} to enable a natural reproduction of image based on how humans perceive an object in an image (Fig. 1).

Users can first cut out any area of an image data displayed on a tablet or touch monitor simply by selecting the area on the screen with their finger, enabled through the Company's own technology that determines where the boundaries of pixel data are. Then, users can change the selected area to any color or texture they like, or combine the cut out image with another image (Fig. 2).

This technology can also reproduce image characteristics of a model image onto another image in its entirety or for a specific area so that the entire original image or a selected area thereof will render the same impression as that of the model image (Figs. 3 and 4).

Fuji Xerox will explore ways to apply and commercialize this technology together with customers at its Customer Co-creation Laboratory in Fuji Xerox R&D Square, Yokohama, Japan. For example, because this technology can make changes to more than one area within an image, a car dealership will be able to suggest on a tablet to his/her customers several combinations of the car body color and the interior design.

The Company considers the human brain's perception of visual characteristics—such as the visibility of images, luminance frequency and color characteristics—to be an important area of study for reproducing texture in an image, and plans to continue research focused in this area.

*1: Image data analysis based on spatial frequency.

*2: Analysis of the characteristics of dark area within an image through how the area spreads.

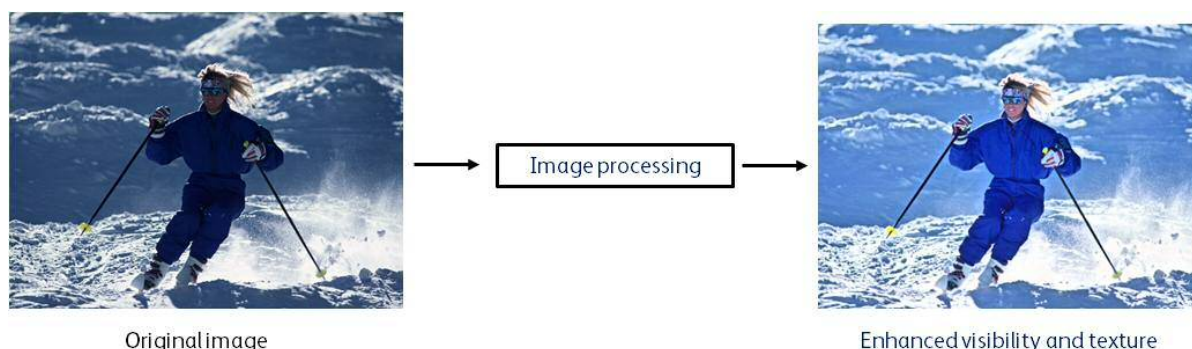


Fig. 1: Enhancement of visibility based on human visual perception characteristics

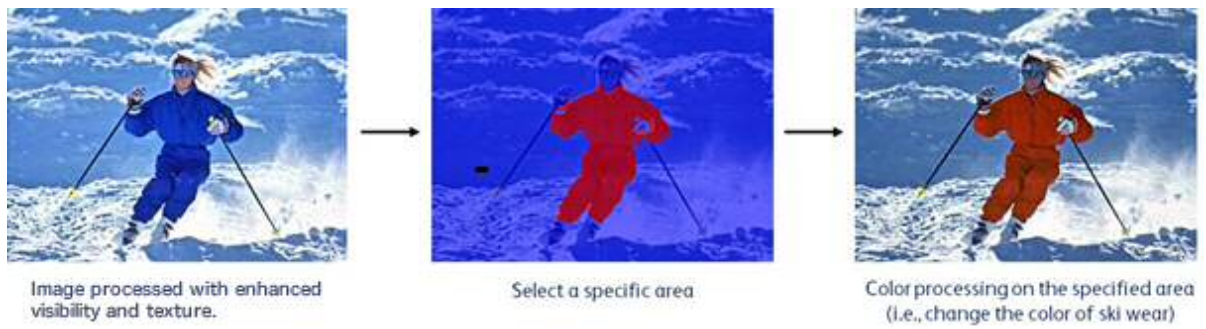


Fig. 2: Cutting out a specific area and applying color processing

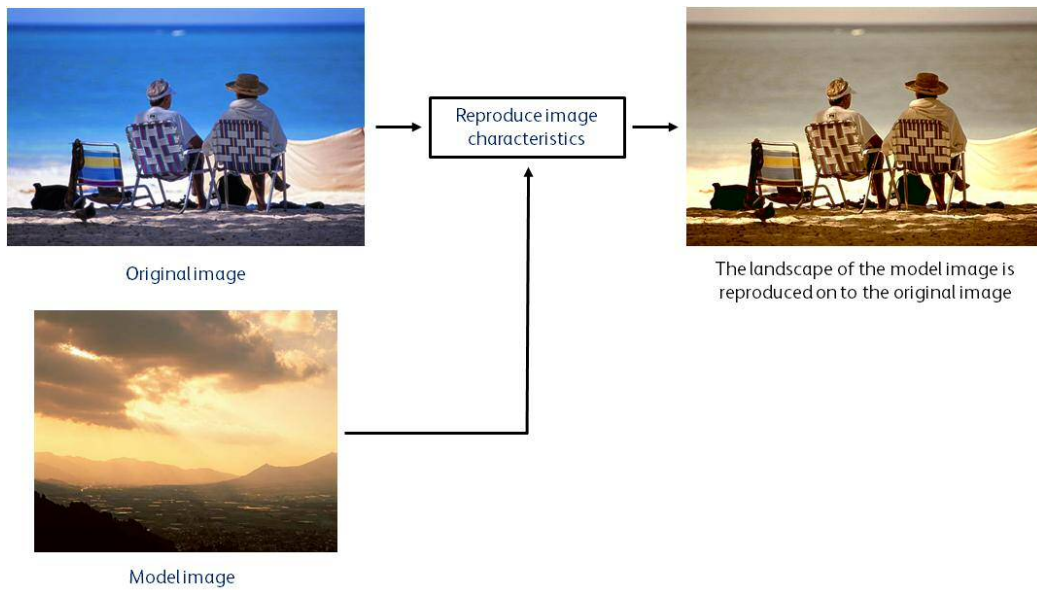


Fig. 3: Reproducing the landscape characteristics of the model image onto the original image

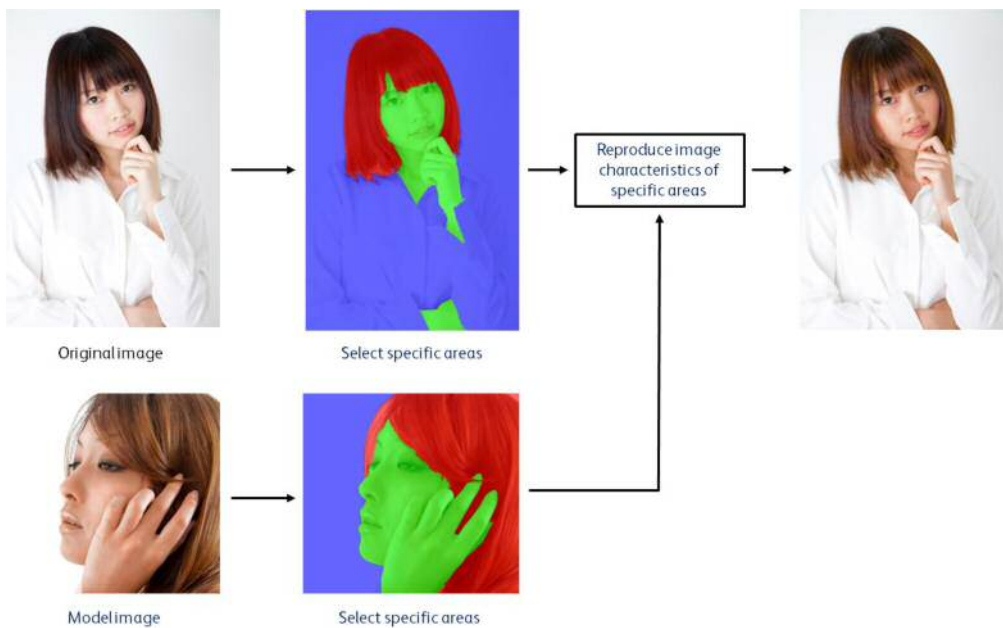


Fig. 4: The characteristics (i.e., hair color and skin color) of a model image reproduced on to the original image on an area-to-area basis.

###