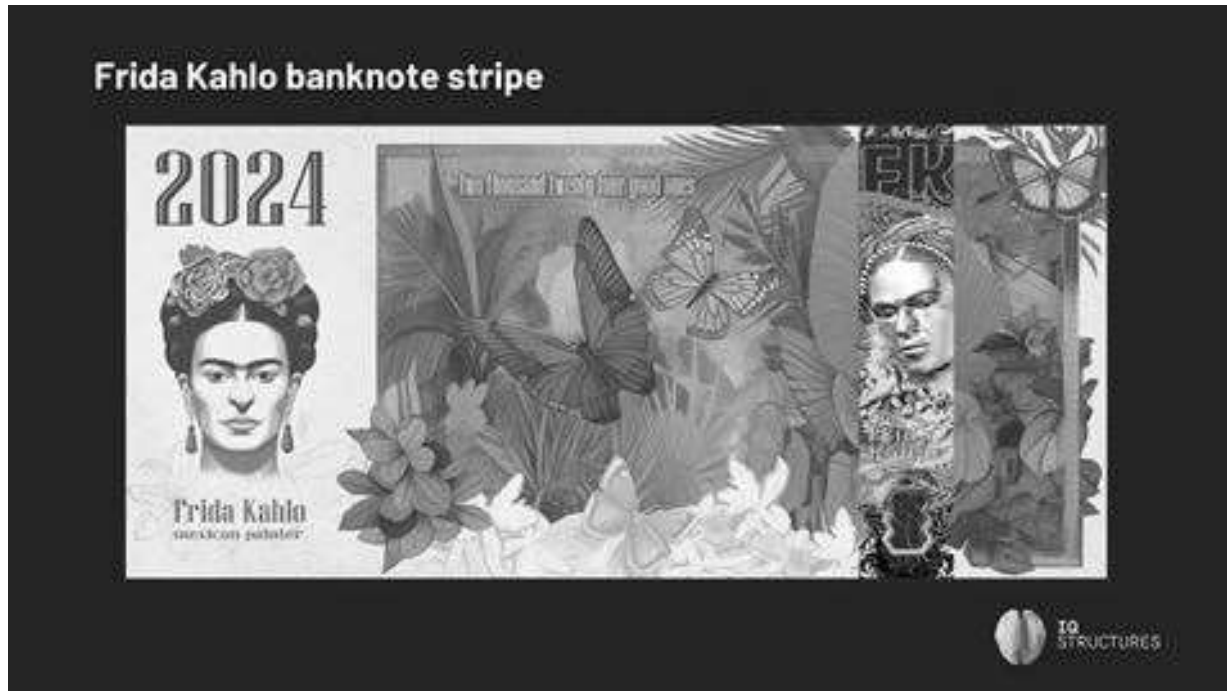


09/01/2024

AI used to create innovative high security holograms

Prague, Czech Republic



The security hologram image of Frida Kahlo appears on the Mexican currency banknotes. *Image courtesy of IQ Structures*

IQ Structures, a research and manufacturing organisation focused on controlled nanostructures, a member of IQS Group, has started using artificial intelligence to enhance the utilisation of potential of its creative staff during DOVID (diffractive optically variable image device) designing. One of the first such DOVIDs is a portrait of Mexican artist Frida Kahlo, literally packed with sophisticated visual effects.

Backed by 20 years of market experience, IQ Structures already protects more than a billion documents every year, and delivers leading-edge anti-counterfeiting solutions to protect ID documents, banknotes and valuables.

The company usually uses five or more types of AI software tools in a number of areas during the design process. As a result:

- Designers can generate many proposals and alternatives for particular parts of a DOVID.
- It is now possible to cover large areas with sophisticated and detailed ornaments that would otherwise take weeks.
- Artificial intelligence helps to efficiently write software to control measuring instruments and other auxiliary devices.
- Creating advanced concepts and models that allow the customer to make fully informed decisions during the approval process.

As a result, the time required for certain tasks has been reduced by more than half. It is a step into a world where artificial intelligence will liberate human creativity and help designers to create even more beautiful works than before.

Robert Dvorak, managing director of IQ Structures, said: " Our DOVIDs are preferred by customers and win prestigious competitions not only because of our technological edge, but also because behind each one is a creative human being. We don't want to waste human potential on something that artificial intelligence can do. Every minute an imaginative mind spends on routine tasks is a minute wasted."

One of the first DOVIDs where these possibilities were used is the aforementioned portrait of Frida Kahlo. This is a sophisticated work that includes a number of advanced visual effects, among them white 3D bass relief (her face), rainbow 3D bass relief (the inscription "Frida Kahlo"), keyhole effect, linear kinetic effect and swap parallax. Combined effect consisting of a visible part which is a coloured effect, and a hidden part visible only with an adapter with monochromatic light. The DOVID, rendered in bold, vibrant colours, also includes machine-readable elements that can be scanned with a mobile phone.

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