Adobe Releases Next Generation of Firefly Models

- New Adobe Firefly Image 2 Model significantly advances Firefly creative control and image quality, with continued focus on being safe for commercial use
- New Adobe Firefly Vector Model, the world's first generative AI model for vector graphics, powers new Text to Vector Graphic in Illustrator
- New Adobe Firefly Design Model instantly generates stunning template designs, powers new Text to Template in Express

LOS ANGELES, Calif. — October 10, 2023 — Today, at Adobe MAX – the world's largest creativity conference – Adobe (Nasdaq:ADBE) unveiled **Adobe Firefly Image 2 Model**, **Adobe Firefly Vector Model** and **Adobe Firefly Design Model**, the next major release in its family of creative generative AI models. Firefly Image 2 is the next generation of generative AI for imaging that brings a new level of creative control and quality to users. Firefly Vector Model is the world's first generative AI model focused on producing vector graphics, bringing Adobe's vector graphic and generative AI expertise directly into Adobe Illustrator workflows with Text to Vector Graphic. Firefly Design Model powers instant generation of amazing quality template designs in Adobe Express with the new Text to Template capability.

"Our rapid, continuous pace of Firefly innovation continues with imaging, design and vector generation advancements – three new models that set new industry standards for output quality and user control," said Ely Greenfield, chief technology officer, Digital Media at Adobe. "Firefly continues to offer the world's best combination of visual capabilities, designed to be commercially safe, enables transformative new creative workflows across Adobe apps."

New Firefly Image 2 Model
Users have generated over 3 billion images with Firefly's initial model since its beta launch in March, making it the most popular AI image generation model designed for safe commercial use, in record time, globally. Building on the wildly popular release of the initial Firefly image model, Firefly Image 2 is the next generation of generative AI for imaging, bringing significant advancements to creative control and quality, including new Text to Image capabilities now available in the popular Firefly web app where 90% of users are new to Adobe products: **Generative Match**, an industry first, to generate content in custom, user-specified styles, **Photo Settings** to enable photography-style image adjustments and **Prompt Guidance** to help users expand or reword prompts for superior results.

Firefly Image 2 generates higher-quality images and illustrations, enhances human rendering quality with improvements to skin, hair, eyes, hands and body structure, offers better colors and improved dynamic range and provides users greater ability to control output – ultimately helping produce creative visions faster. Like the initial Firefly model, Firefly Image 2 is trained on licensed content, such as Adobe Stock, and public domain content where the copyright has expired. It supports text prompts in over 100 languages, along with new paid plans that include an allocation of "fast" Generative Credits.

New features:
- **Generative Match**: Apply the style of a user-specified image to generate new images at scale. An industry first, Generative Match enables users to either pick images from a pre-selected list or upload their own reference image to guide the style when generating new images through the Text to Image prompt in the

Firefly web app. Users can easily meet brand guidelines or save time designing from scratch by replicating the style of an existing image, and quickly maintain a consistent look across assets. Adobe stores a thumbnail of the reference image on its servers while Generative Match automatically prompts users with an in-app message, requiring them to confirm they have rights to use uploaded images as well as agree to Adobe's Terms of Use.

- **Photo Settings:** Firefly Image 2 enables more photorealistic image quality with higher-fidelity details, including skin pores and foliage, plus greater depth of field control, motion blur, field of view and generation. Users can apply and adjust photo settings, similar to manual camera lens controls, helping creators quickly achieve their creative visions, saving time and resources. Auto Mode will now automatically select either "photo" or "art" as an image generation style, then apply appropriate photo settings during prompting, guaranteeing great results without tinkering.
- **Improved Text Prompt Capabilities:** Firefly Image 2 has an improved understanding of text prompts and will recognize more landmarks and cultural symbols. Users can receive suggestions for improved prompts, inspiring new creations and reducing the need for re-generation, and auto-completion of prompts will help generate beautiful content faster. Prompt Guidance teaches users to expand or reword prompts more effectively, making it easier for creators to realize their visions. Additionally, users can select specific elements, such as key terms, colors or shapes, to leave out of image generations in the Text to Image module in the Firefly web app.
- **Share from Firefly** and **Save to Libraries:** Users can share and save images directly from Firefly and leverage prompts from images they like to fine-tune. Share from Firefly enables users to share their work and help others understand how to create a specific image. Save to Library facilitates cross-app workflows, enabling users to save a Firefly file to Creative Cloud Libraries and then reopen it within other apps. This allows Firefly-generated outputs to be saved in a shared library for others to open and use.

New Firefly Vector Model

The new Firefly Vector Model brings together Adobe's vector graphic and generative AI expertise to power the next generation of high-quality designs and illustrations. It is the world's first generative AI model for vector graphics and first generative AI model to generate "human quality" vector and pattern outputs. Now available in beta, Illustrator's new trailblazing Text to Vector Graphic capabilities empower creatives to easily generate a wide array of vector graphics from simple text prompts. Generated graphics are editable, compact and organized into groups, enabling easy editability and reuse. This innovation will speed up inspiration, mood boarding, marketing and advertising graphic creation.

New features:
- **Generative Match**: A new first-of-a-kind Firefly-powered capability ensures that vectors added to a user's artboard perfectly match the existing style. This enables the model to generate high-quality vector output, specializing in scenes, subjects, icons and patterns, offering unparalleled versatility in crafting specialized content.
- **Gradients**: Traditionally, gradients have been a challenge in the vectorization world, but the model's new engine generates editable vector gradients, drastically simplifying the geometry rather than using multiple solid-filled paths to depict the same image effect.
- **Organized** and **User-friendly Output:** When the vector graphic is generated, all elements are logically grouped and layered. Artwork of a tree for example will automatically group all the related paths making up that tree, making it much more convenient for users to tweak, edit and re-use the final vector output.
- **Seamless Patterns:** Vectorized patterns produced by Firefly Vector Model are seamlessly tile-able, so design patterns can be repeated infinitely without any visible gaps between the repeats.
- **Precise Geometry:** High-quality vector curves in the output are smooth and precise, with attention to details such as intelligent handling of junctions where multiple curves intersect.

New Firefly Design Model

The new Firefly Design Model powers the instant generation of stunning template designs with the new Text to Template capability in Adobe Express, using the best professional layout technology combined with Firefly Image Model, Adobe Stock and Adobe Fonts. Firefly Design Model generates templates for all popular aspect ratios that are fully editable in Express and can be used for print, social and web advertising – enabling consumers to create at the speed of their imaginations and SMBs and enterprises to accelerate their content velocity for more efficient and personalized marketing.

New features:
- **Fully editable**: Templates generated in Text to Template in Express can be custom designed for print, social, online advertising and more. Users can generate images in Firefly then carry over prompts to continue refining in Express, using Firefly-powered Text Effects to enrich titles.
- **Automated designs**: AI generated templates, as well as the ability to leverage auto-generated text and images, save users time sifting through thousands of Express templates and helps identify layouts that best fit their needs.
- **Comprehensive content generation**: Users can easily generate text and images from simple prompts, while choosing the best text size, color and position, and crop, replace or rotate images as needed.
- **Instant end-to-end design:** Firefly Design Model leverages generative AI to create images, text and tones that are in harmony with user prompts, enabling creators to generate optimal results instantly.

Top global brands are also working with Adobe to explore how Firefly drives productivity, reduces costs and accelerates their content supply chains. Adobe and NVIDIA recently announced plans to make Firefly available as APIs in NVIDIA Omniverse, a platform for Universal Scene Description (OpenUSD) workflows, enabling developers and designers to simplify and accelerate their workflows.

"Adobe's creative tools continue to play an important part in our design processes at Mattel, including on beloved brands like Barbie and Hot Wheels," said Chris Down, executive vice president and chief design officer at Mattel. "Adobe Firefly has enhanced our workflows with trusted capabilities, driving inspiration and productivity from ideation to execution."

"Generative AI is helping creatives across many industries bring ideas to life at unprecedented speed," said Greg Estes, vice president, Developer Programs at NVIDIA. "NVIDIA and Adobe are dedicated partners. Using our GPUs, Adobe is bringing new opportunities for artists and businesses looking to accelerate generative AI for commercial use, and NVIDIA's creative team is using Adobe Firefly to explore new concepts and create marketing assets faster."

"Adobe's creative tools play an important role in how we bring NASCAR fans closer to the sport," said Patrick Morris, managing director of Brand, Creative and Media at NASCAR. "We're excited for the increased efficiency and creative capabilities Adobe's generative AI technology affords our team as we strive to deliver world-class executions for NASCAR fans on a daily basis."

About Adobe MAX
Adobe MAX – the world's largest creativity event – offers something for creators at all skill levels, from all walks of life, working across all forms of media. Running from October 10-12, the three-day conference in Los Angeles is packed with creative luminaries, musical performances and global, collaborative art projects and round-the-clock networking. Speakers such as actor Adam Devine, record producer, songwriter and entrepreneur Oak Felder, creative director Karen X Cheng, founder Aaron Draplin, and co-founder and creative director Walker Noble will inspire and entertain audiences with their stories and insights into their creative processes. Adobe MAX will also showcase how Adobe is using Firefly with Creative Cloud, Express and Experience Cloud to power a world-class event experience.

Virtual event attendees can livestream keynotes at max.adobe.com starting Tuesday, October 10 at 9 a.m. PT and Wednesday, October 11 at 10 a.m. PT. To catch Adobe's latest prototype innovations in Adobe Sneaks, tune in live at max.adobe.com on Wednesday, October 11. For more information and to register for MAX, visit max.adobe.com.

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