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VIRTUAL/CONFIGURABLE OLED-BASED 2D AND 3D GRID PATTERN TO VISUALLY ENHANCE INCOMING USER PEN OR TOUCH DATA

HP INC

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Virtual / Configurable OLED-based 2D and 3D grid pattern to visually enhance incoming user pen or touch data

Abstract:

Customers using an indirect tablet today use a physical grid printed pattern to get a grasp on their physical pen input location relative to the screen location. With the OLED screen, we are not only virtualizing that dot pattern grid using software overlay methods but also allows the user to customize their look and feel. Using grid colors and subtle animation to let the user visualize their pen/touch information: hover state can now show their pen size on the grid pattern; When the user applies pressure using their finger or pen, the grid can indicate using colors to show different pressure level ranges. Creators will get real-time feedback using either touch or pen input with OLED screen dot patterns.

Advantages:

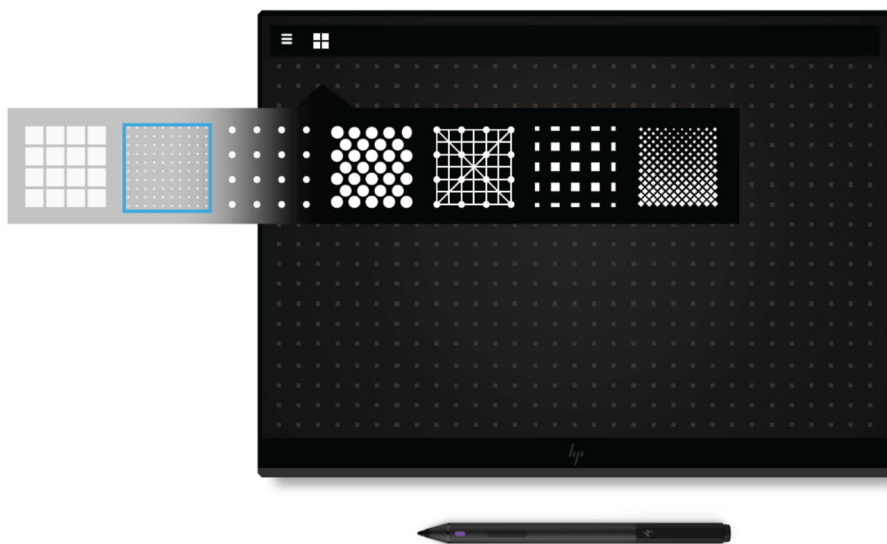
For digital painting, having real-time data to indicate brush size, and pressure on an indirect/direct tablet device will yield huge time saving for the user while providing them an intuitive way to visualize and improve their craft and fine-tune how they are interacting with their digital tools. Give the user a clear reference of grid they are working on from physical indirect input device

Solution:

In our proposal, we use OLED display to:

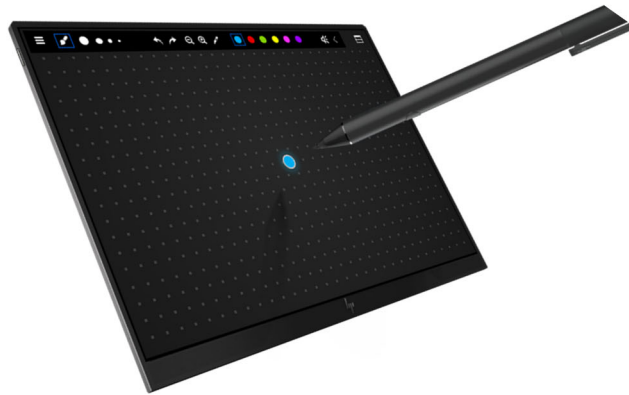
- Virtualize “dot pattern” using software overlay methods
 - Allow users to customize their look and feel (dot colors & dot resolution – i.e. many dots to few dots)
- Provide real-time feedback with colors and subtle animation to let user visualize their pen/touch information. Such as:
 - Hover state can now show their pen brush size on the grid pattern
 - When users apply pressure using their finger or pen, the grid can indicate using colors to show different pressure level ranges
 - UX: Ushering a new era of indirect input compute by having real-time data to indicate brush size, and pressure on an indirect/direct tablet device yield time saving for the user while providing an intuitive way to visualize and improve their craft and fine-tune how they interact with digital tools.

- **OLED technology enables this experience with very low power since only the pixels that are activated consume power**



These are some possible iteration of visual feedback:

- When pen tip hovers over physical surface, the pen size, shape, strength and color is shown on top of the grid pattern at some transparency value (user-customizable)



- When users apply pressure using their finger or pen, the grid can indicate using colors and numerical values to show pressure and tilt value



Disclosed by Thong Thai, Mario E Campos and Ron Y Zhang, HP Inc.