

Application of GDI + Mapping in Quality Tracking System of Risky Exploration Wells

Hao Wang, Pingyu Yuan*

Department of Computer Science, Hubei Yangtze University, CO 434023, China
*Corresponding author: Yuan Pingyu (Email: 1779486805@qq.com)

Abstract: GDI+ provides programmers with a very efficient development method. When plotting survey curves, the large number of objects severely limits the efficiency of using GDI+. When a new drawing graph curve is needed, the process of drawing exploration well curve can be greatly reduced by using the existing drawing graph curve in memory, and the problem of flickering graph curve in the actual drawing process can be further effectively avoided by using double buffering technology. This paper analyzes the specific application of GDI + Mapping in the quality tracking system of risk exploration Wells.

Keywords: Exploratory well, GDI+, Quality tracking system.

1. Summary of Relevant Technologies

GDI is defined as a graphics device interface in China, mainly used for data information exchange between the device system and graphics programs, as well as the graphics output of all Windows programs. These programs are an important part of the Windows API. The existence of GDI allows users to run in a virtual environment without having to pay attention to the details of a particular device, which makes application developers and corresponding hardware devices independent of each other, greatly facilitating application development.

2. There Are Problems in Curve Drawing of Quality Tracking System of Risk Exploration Well

Oil fields are usually hundreds or even thousands of meters

deep underground. For every eight sampling sites, nearly 8,000 are underground at depths of less than 1,000 meters. The standard resolution for drawing images is usually 1280×800, and the interface is 10 screens long. At the same time, the objects specified in the exploration well graph can be manipulated as needed and the marking sequence can be adjusted. However, in the process of graph drawing, when all object images cannot be accurately drawn and displayed, the huge amount of image data often leads to the operation process of graph display and image flicker will appear extremely serious image delay and other phenomena. Therefore, it is necessary to improve the design efficiency of computer graphics system.

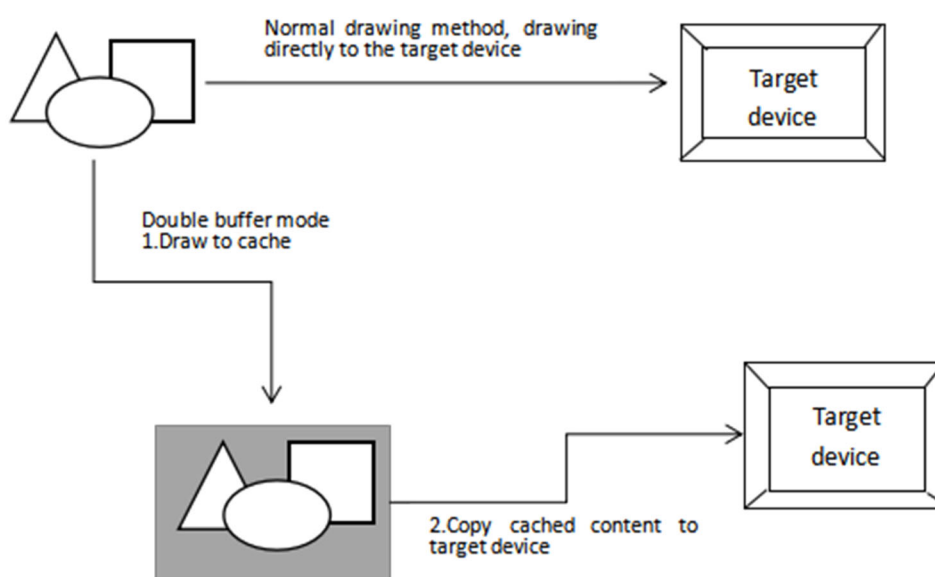


Figure 1. Block diagram of principle double buffering drawing principle

3. GDI+ Double Buffering Technology

Most of the graphics in the dual-buffering technique can be done in memory without much impact on its speed. In the introduction of GDI+ technology. With the support of Net development environment, the design and implementation of double buffer graph becomes very simple. 1. Create a buffer bitmap, automatically generate a Graphics object from the buffer bitmap object, and use this Graphics object to directly draw the exploration well curve; 2. The drawn double buffered image is displayed on the interface. The code for double buffering is as follows:

```
ProtectedvoidOnPaint (ObjectSender, PaintEventArgs)
{
// Create buffer bitmap and generate Graphics object
BitmapbitmapBuffer = newBitmap (enclosing Width, this.
Height);
Graphicsbg= graphics.fromImage (bitmapBuffer);
// Graph drawing function
Draw.Draw ();
// Copy the drawn image to the interface
Um participant raphics. DrawImage (bitmapBuffer,
newPoint (0, 0));
}
```

4. The Risk Exploration Well Quality Tracking System Memory Has Been Graphed

During the actual exploration well operation, the depth of the well is likely to reach hundreds or even thousands of meters. In exploration software, the conversion ratio of commonly used graphics is more than 1:200, so dozens or more than a few hundred screen graphics are necessary. Therefore, the system memory can never be opened up to such a large graphics space. The best solution, of course, is to avoid changing the graphics after each event and only draw the exploration curve within the graphics screen area and display the exploration graphical graphical interface.

4.1. Drag of Exploration Well Curve Objects

Red dotted borders will also appear when moving objects in the survey graph. If all object diagrams are drawn only as they move, severe flickering must occur. At the same time, the drawing and depth of all pattern edges will significantly affect the speed of graphic edge rendering, resulting in a great visual delay in operation time. The use of an exploratory memory curve, which has been almost universally available for many years now, can help solve this problem in a relatively simple, fast and most efficient way. In the rendering process legend that moves the background to the edge of the object, the survey graph box on the background edge is left largely unchanged, as is another red dotted border that can be moved at will. The procedure is as follows :1. Redraw a block diagram of the survey curve in memory. 2. Redraw the red dotted border in the moving render process block. Protectedvoidpanel_MouseMove .

```
(ObjectSender, MouseEventArgs)
{
// Generate the Graphics object from the panel object
GraphicsgPanel = panel. CreateGraphics ();
// Draw exploratory Wells to the interface
```

```
GPanel.DrawImage (this.bmpbackground);
// Draw a red dotted border according to the mouse
movement position
This.redframe.draw (e.X,e.Y);
}
```

4.2. Exploratory Well Graph Rolling

When scrolling up through the scroll bar or down with the mouse wheel, the graphical information in the exploration well curve is changed as the action associated with the scrolling event occurs. Every time we scroll down the event, all the graphics object information will be displayed synchronously on the drawing interface window, and we can use the graphics object in memory at any time to quickly improve the efficiency of computer drawing. Under normal circumstances, the blank area in the scroll bar will not become very large. At this time, many old and new graphics may be overlapped again. Using these new overlapped graphics repeatedly will greatly improve the efficiency of image drawing. The steps are as follows:

(1) In memory, it will automatically allocate a new bitmap object bitmapNew to generate Graphics from the bitmap object;

(2) record the newPosition value newPosition value and the oldPosition value oldPosition value in the rolling condition;

(3) the offset of the calculated scroll bar (offset, that is, the old position value minus the new position value);

(4) According to the offset value, use a graphics-based DrawImage () method to draw the overlapping part of the graph at the position specified by bitmapNew of the position map;

(5) Draw new graphics that do not overlap old graphics;

(6) Output the new graphics to the interface.

5. Conclusion

The drag of the exploration well curve object requires the image to be constantly scrolled to refresh the display and to display the overall graph in real time. Using double buffering technology, using the existing image, can greatly improve the real-time drag rendering performance of curve object image and improve the real-time drag display processing efficiency of rolling and refreshing the overall image in a short period of time to a great extent. These three new technologies have greatly avoided the disadvantages of slow image speed in the processing of delayed image and real-time scrolling refresh of the whole image. By realizing the seamless combination of the two advanced mapping technology systems mentioned above, it can greatly reduce the working time occupied by manual drawing exploration curves, greatly improve the production efficiency of map drawing, and meet the latest application technical standards formulated by foreign exploration companies.

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