Subject: Re: questionable display of an IDLgrPolygon Object with some transparency
Posted by Rick Towler on Tue, 21 Dec 2004 17:11:57 GMT
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Karsten Rodenacker wrote:
>
> I have a bit surprising display of an IDLgrPolygon object with some
> transparency using xobjview, which shows under certain directions some
> rippling (Windows XP SP 2, IDL 6.1.1). A reduced screenshot is stored
> under http://ibb.gsf.de/homepage/karsten.rodenacker/Misc_WWW/Examp le.jpg.
>
> If there is some experience in the group any hints are appreciated to
> avoid this rippling.

This looks like the nefarious polygon z-order rendering issue that has been discussed many times before. Google the group for "pimento problems". Robert Schaefer had a similar problem recently so you may want to search for that thread too.

The rippling occurs during rotation as polygon drawing order and their position relative to others in Z get out of whack. IDL uses a simple painters algorithm to render to the screen. For each polygon thrown at it, it looks at the z-buffer to see what is already there and if this poly is semi-transparent, takes that value and uses it to calculate the new z value at that pixel. This works wonderfully if you always draw your polys from back to front. But if you don't, the near polygon is drawn with nothing but space behind it and the far polygon is never drawn since it fails the z-test.

In your case, the banding is caused when some of the triangles are in the correct order and some are not. The areas that are lighter show the far side of the object as well as the near while the darker bands do not show the far side since the near side triangles are rendered before the far side.

There are no easy fixes for your complex object. Karl Shultz played around with some BSP code which re-orders triangles properly in Z for every transformation. I played around with it a bit but found it wasn't robust enough to handle my data. It would be worth a shot though. Check the RSI user contrib site for IDLbspPolygon or something like that.

Also, and I can't stress this enough. Put in a feature request for a new renderer that doesn't have these limitations. Your case is a prime example why this needs to be addressed. The competition doesn't suffer from this limitation...

-Rick

P.S. My news server has been acting up. If this isn't posted to the group, can you forward it on?
