Subject: Re: Realistic Illumination, IDL & OpenGL
Posted by Rick Towler on Mon, 02 Feb 2004 20:01:02 GMT
View Forum Message <> Reply to Message

"Neil" wrote...
> "Rick Towler" wrote...
>> "Neil" wrote in message...
>>
>>
>>> For Object Graphics to emulate reality, illumination mustbe
>>> accurately represented. Can this be
>>> accurately described in IDL or OpenGL?
>>
>> It depends what you mean by accurately described. Lighting in openGL is
>> more of an art than a science.

> The difficulty i have is that i am trying to use Object Graphics as a
> science to speed my scene simulation, which i have already coded up in
> Direct Graphics with good scientific precision. Somehow i need to be
> quantitatively creative in Object Graphics to create the same result
> as in Direct Graphics. Strategically for the further development of
> Object Graphics, if note is taken of the science of reflections /
> illumination a more accurate description of rendering will result.
> However, i can seen this is not a priority of the gaming industry, but
> IDL with is scientific background would be interested in enabling a
> more scientifically precise Object Graphics, as opposted to art based
> Object Graphics for computer gaming.

The extent of the openGL lighting model that is currently exposed to
IDL programmers is very small so you are limited by IDL. Even if IDL exposed
the entirity of openGL's lighting model, openGL just isn't designd to do
this. OpenGL is designed for interactive applications and as a result a lot
of compromises have been made along the way. Lighting is one. Like I said,
there are many ways to fake it, but you're not interested in that :)

>> If you need to go further (or do it faster) you'll need to move beyond
IDL.
> I may want to go further and faster, if so what would you recommend?
>
> I suppose what i really want to do is to go faster with scientifically
> precise graphics.

Without details it is difficult to be certain but I think it would be safe
to say that you should focus on optimizing the core components of your
current application. Be it simply optmizing your current IDL code or
writing core components in C/C++. You could also just buy a faster computer
:)

>> Or you might want to consider pov-ray.
> Pov-ray? What on earth is that?

The persistence of vision ray tracer. Probably not a tool to do scientifically precise graphics but the "lighting model" is far more realistic. www.povray.org

-Rick
