

Interactive PDFs

Immersive Design brings the Adobe Acrobat embedded 3D capabilities to life, with user controlled animations and linked text

Share a thought for us poor journalists as we trudge around trade shows, looking at a couple of tweaks added to this bit of software here, a couple of new functions added there, a different layout for the tools for another - all of which we are supposed to greet with astonishment and enthusiasm, as though we were being presented with the 'NEXT MAJOR BREAKTHROUGH' in software design and were privileged to be at its birth! Of course, this doesn't relate to any of the great new products in this issue - or to any of the hardworking exhibitors at the Solid Modelling Show in a couple of weeks time. Perish the thought!

Some products do take you by surprise though; and none more emphatically than Interactive PDF being shown by Immersive Design at SolidWorks World. It was not just what the software can do, but its potential in the market above and beyond what was being demonstrated by Greg Smith on the exhibition stand. It's not even unique, as other companies have addressed the same function, albeit in slightly different ways - see Actify in this issue.

In plain terms, Immersive Design has

taken the nascent 3D function in the latest version of Adobe's Acrobat 7 and allowed the software to publish interactive 3D documents in PDF format - viewable by just about anybody who can download the free Acrobat 7 reader from the Internet. Within the PDF document viewers can manipulate the 3D image in much the same way as they would using the original CAD software, or using a CAD viewer developed by any number of companies, for which they will have probably had to pay for.

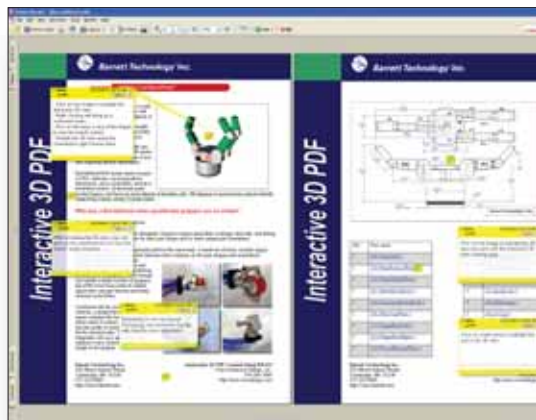
Not only can the user rotate, zoom in and out of, and otherwise inspect the model, but he can section the model or remove components to take a look around inside, or change some of the parameters - colour, lighting etc. And, if the originator of the model sets it up correctly (no more than preparing an exploded view of the model) he can view animated activity that he is able to control using the descriptive text alongside the 3D image!

Think of the many uses for such a tool! Using Adobe's Acrobat as a design review tool is probably just the tip of the iceberg. Acrobat is so widely used that it is becoming the absolute standard for sending a variety of documents to anybody

else, with the assumption that they are bound to have one version of the software installed. You don't even tend to ask anymore! And with a free reader, anybody can view CAD documents without installing the CAD software, or the Acrobat PDF composer. Adobe put in the 3D capability but, not being CAD specialists, didn't really know what to do with it. It has taken companies like Immersive Design to kick the feature into life.

Now interactive 3D designs can be shared by anyone. Maintenance engineers can be presented with animated 3D images on their laptops, and, by clicking in on the instructions for the piece of equipment they are faced with, they can watch an animation of each job unfold before them on the screen. Or they can merely select each component on the accompanying parts list and watch it being highlighted on the 3D model. Salesmen can allow their clients to explore the latest car, conservatory, whirlpool, whatever, and allow them to click through the instructions at will - changing the colour scheme, opening and closing doors, looking at it from all directions, replacing stock wheels with alloys - which puts the buyer in command of the sales situation (in theory!).

It even sparks up design review sessions, as it can be used in NetMeetings whilst the interactive animation is in progress, and links in the accompanying text can be provided to associated websites. And, as a further incentive to using it for design



review sessions, the PDF files are a mere fraction of the original 3D model size in CAD format.

IPA BY IMMERSIVE DESIGN

The name of the software supplied by Immersive Design to publish 3D images in PDF format is IPA, an acronym I haven't yet deciphered, but which provides all of the tools for animation, visualisation, publishing documents to the web, modifying lighting and changing camera angles, and creating assemblies. It's available from the web as a trial version (www.immdesign.com). A wide variety of CAD and other file formats can be handled, including SolidWorks, SolidEdge, PTC Pro/ENGINEER, I-DEAS, STL, as well as the standard bitmap. JPEG and other standard imaging formats. Output is also available in numerous formats, as well as PDF.

Files are converted to the increasingly popular U3D format for publishing in PDF documents. Incorporating U3D images in Acrobat is very easy - merely a matter of opening an assembly within IPA using the File>Open command, then exporting it with File>Export and dropping it into a previously drawn rectangle to position the 3D View within the document.

There is, obviously, a bit more to creating Interactive 3D PDF Files - but nothing too complicated. The first step is to create a Microsoft Word document which will be the basis for the interactive file, and then to open the Publish>Wizard. As with all published documents, you have to assign an author to the piece and then insert the file, together with the 'instructions' Word file, into an existing Word or Framemaker document so that the 3D information can be re-used. Give the file a name, and click on finish.

The Word document is then converted to a PDF file using PDF>Convert to PDF. Don't use the File>Print command here, as it will not convert the links that you need for the interaction. After creating the PDF document, run Advanced>IPA3D tools>IPA 3D PDF Convert, and the conversion tool will insert the 3D file and link up the text to the 3D view. Couldn't be simpler. Save the file, and send it off to whoever you like, so that they can view it with the free Acrobat viewer. When they receive the PDF file with the embedded 3D view they merely have to click on the image, or click on the parts or instructions lists, both of which are linked to the 3D view - and right click on the mouse to find out what commands they can use with the view.

CONCLUSION

The NEXT MAJOR BREAKTHROUGH? Well, I hate to be so dogmatic, and will leave it to your judgement. As we are tending to communicate electronically a lot more, any tool that not only facilitates the process but makes many types of paper documents slightly irrelevant has got to be significant. Irrelevant? If you can provide your maintenance engineers with interactive demonstrations that they can carry round with them, on a relatively cheap laptop, showing them precisely how to handle a job, and produced with little extra effort by the designer of the product they are working on would you really use a printed manual instead? Something that has to have a means of identifying and including every successive modification and upgrade - and something prone to misinterpretation and error? 'Course you wouldn't! AVIs don't cut the mustard either, as they are not interactive. They don't allow the engineer to go at his own speed, backtrack, repeat steps they are unsure of.

It's not only design engineers who will find the software productive. Architects are already producing PDF walkthroughs in large scale projects, and fly-overs of 3D landscapes. The size of the model is not an issue. As well as visiting the Immersive Designs website, type in 3D PDF in your Google search bar and you will find quite a few fascinating examples - and most of them will allow you to download the Acrobat 7 Viewer as well if you don't already have it - and surely there can't be many of you that don't?! **CU** www.immdesign.com

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