

## **Demo Script for Voxel Analyst**

### **Key Message:**

Engineers can really appreciate the time savings in performing analysis and visualization functions in high-end CPU-intensive scientific applications such as Voxel Analyst.

### **Background:**

Voxel Analyst is used to perform analysis and visualization of large data sets and models. Datasets and models represent a wide variety of real world phenomenon such as waste concentration and flow, weather behaviour, mining structures, oil drilling sites, geological structures, etc. Models are built from real-world samples of data or from theoretical machines providing data based on real-world sample data.

Both analysis and visualization of these large models and datasets are floating-point CPU-intensive. Here we show some of the visualization features utilizing the performance of the Pentium (R) Pro processor.

### **Demo Setup:**

- Run setup from the \PPRO\_WS2\VOXEL.INS directory. The serial number required to install Voxel Analyst is 99988259003023.
- We recommend bringing up the Performance Monitor using Administrative Tools. Select add to chart, processor time, histogram view, and always on top option. Reduce the size of the monitor to fit to one corner of your screen.
- Launch Voxel Analyst.

### **Demo1:**

- File/Open/Dataset
  - Open PPRO\_WS2\voxel\_analyst\samples/misc/clouds.hdf
- File/Open/Color File
  - Open PPRO\_WS2\voxel\_analyst\samples/misc/clrcodes.ctr

Notes:

Color files are needed for proper color to appear for the datasets loaded.

### **SoundByte:**

Here we'll be looking at a model of a thunderstorm.

### **Actions:**

- Graphics/Outline
  - click ok
- Utilities/Preferences
  - make sure Backing Store is not selected
  - make sure Graphics Caching is selected
- View Control/ISO+
  - this gives a better view of the model
- View Control/Z-scale
  - set to 5; this exaggerates the scale on the z axis to make visual effects more

pronounced

- Graphics/Iso-solid
  - click ok.
- Dataset/Resample
  - Under Resample Method: select "replace every n with average"
  - Under When n equals: enter "2" for all i, j, and k entries.  
*This reduces the dataset in about half without noticeably affecting the visual effects of the model*
- View Control/Dynamics
  - Click on the dynamics to get a moving model
  - If you have the Performance Monitor up, you can see the CPU is very busy in calculating the model as it is spun.

## **Demo2:**

### **Soundbyte:**

Here we will be looking at a model of a plume.

### **Actions:**

- File/Open/Dataset
  - Open PPRO\_WS2\voxel\_analyst\samples\wrkflow1\plumes.hdf
- File/Open/Color File
  - Open PPRO\_WS2\voxel\_analyst\samples\wrkflow1\plumes.ctr
- Graphics/Outline
- Graphics/Iso-solid
  - In the window that pops up, for Iso solid values: move the low slider until you see an interesting selection in the view window. click ok.
- View Control/Z-scale
  - set to about 5
- View Control/Dynamics
  - Click on the dynamics to get a moving model
  - If you have the Performance Monitor up, you can see the CPU is very busy in calculating the model as it is spun.