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T H E " U N - O F F I C I A L "

PLAYSTATION DEVELOPMENT FAQ

ARTIST TOOLS

CONFERENCE

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[1.]: ARTIST TOOLS

[1.1.]: *What are the types of graphic file formats?*

[1.1.1.]: What is TMD format?

TMD format data is modeling data format which is managed in Playstation's 3D library libgs.

[1.1.2.]: What type of data is in the TMD format?

Data recorded in the TMD format is an aggregate of primitives such as polygons and straight lines which make up the object. One TMD file can have multiple objects.

[1.1.3.]: What is RSD file?

The RSD file which is a higher abstract text data, is used by the artist tools such as the 3D Graphics Tool.

[1.1.4.]: What is PMD file format?

PMD format data is a type of modeling data handled by an extended graphics library, "libgs" and it is a format for high speed processing. Compared with the TMD format, several of its functions have been simplified and it can be processed at a higher speed.

[1.1.5.]: What type of data is in the PMD format?

The objects handled by the PMD format are as follows:

- * Limited to triangular/quadrangular polygons
- * A packet creation area is included in the data.
- * It handles polygons with the same attributes collectively.

[1.1.6.]: I would like to know about the tips to create 1-cut animation with MIMe.

As a way to create 1-cut animation, refer to the following:

Initial frame	Key frame	Key frame	Final frame

Interpolation processing	Interpolation processing	Interpolation	processing
TMD data X0 -->	TMD data X1 -->	TMD data X2 -->	TMD data Xn
VDF0 (=0)	VDF1	VDF2	VDFn
(W0=1.0)	W1=1.0	W2=1.0	W1n=1.0

When VDF data is made up by setting the initial frame as the base TMD and setting each key frame as the vector TMD (any TMDs are available for the base), 1-cut animation can be created by interpolating a weighted coefficient "W". In the case of the linear interpolation, the non-zero weighted coefficients are 2 to the maximum between each key frame. Since the functions in vertex MIMe skip the processing when the weighted coefficient is zero, even many key frames will not put the load on the calculation. Moreover, more smooth interpolation can be achieved by performing the spline interpolation for the weighted coefficient W. In this case, the load will increase because the non-zero weighted coefficients increase in number.

If the translation or the rotation is performed in MIMe, the high effect will not be expected because all the vertices move. However, when the base is changed dynamically as follows, VDF will be smaller if there is a correlation between the key frames.

Initial frame	Key frame	Key frame	Final frame

TMD data X0 -->	TMD data X1 -->	TMD data X2 -->	TMD Data Xn
Base=TMD0	Base=TMD2		
VDF1	VDFn		
W1=1.0	(W2=1.0)	Wn=1.0	

Also, the following tool has been released for creating efficient TMD and VDF (NDF).

- * mimefilt ... Tool for creating VDF (NDF)
- * tmdsort ... Sorting TMD according to the packet type Speeding up the display with GsSortObject4() and GsSortObject5()
- * mimesort ... By sorting the vertex information of the TMD file for which MIMe must be performed, speeding up the run-time MIMe. The VDF becomes smaller.

[1.1.7.]: I would like to know about the formats of the rotation parameters (Rx, Ry, Rz), the translation parameters (Tx, Ty, Tz), and the scaling parameters (Sx, Sy, Sz) in the TOD data packet.

See the following.

- * Rotation
 - 32-bit signed integer. (1,31,0) 4096 represents 1 degree.
- * Transfer
 - 32-bit signed integer. (1,31,0)
- * Scale
 - 16-bit fixed decimal point number. (1,3,12)

[1.1.8.]: How can the objects with the parent-child relation, connected by joints, be operated?

With PlayStation, the joints are represented by Origin. For example, in order to connect a body and an arm Origin is necessary as the shoulder. Select "Create Origin" command in Tool menu of animation tool to create Origin.

[1.1.9.]: Are there any ways to display a wire-frame object without perspective?

No ways can eliminate it perfectly, but approximate desired appearance will be achieved with a telephoto lens pulling back the camera.

Refer to the animation tool manual for how to pull back the camera and how to change the focus distance.

[1.1.10.]: How does the copy functionality of the material editor work, and when should it be used?

When performing the copy processing with the material editor, a new polygon will be generated at the quite same location. At this time, since the vertices of the copied polygon are shared by those of the original polygon, the number of vertices doesn't change. If selecting a polygon, the closer polygon will be selected. This functionality is useful as follows:

- 1) By reversing the side of the copied polygon, double-sided polygon will be generated.
- 2) By mapping the texture on the copied polygon, and rendering a part of the polygon semitransparent, such an effect as the texture is mapped on only a part of the polygon will be produced. In other words, it is like decalcomania on plastic-models.

[1.2.]: Graphic Artist Board setup questions.

[1.2.1.]: What address should be used when installing the board?

Always use the default address, 1340, to avoid potential problems with the tools having hardcoded addresses. If you MUST use a different address, use the ABOARD program to specify your boards address.

[1.2.2.]: If I am installing both the graphic Artist card and the development system into the same pc, what should I look out for?

Make sure that you change the default address on the dev system board, since both board sets are shipped with the same default address. Also, use the S-Video output on the Artist Board, because it is the only one that will reliably work when both board sets are installed.

[1.3.]: 3D Studio Plug-In Questions.

[1.3.1.]: What restrictions are there on mapping methods within 3D Studio?

The biggest restriction is that the converter does not support the tiling of materials. You have to "custom map" all textures.

[1.4.]: Caligari Truespace Questions.

[1.4.1.]: Will a version 2.0 of Caligari Truespace for the Playstation be released, to match Caligari's current version?

It depends on the demand for the product. At this time, the 1.0 version is all that we have, and no version 2.0 has been scheduled.

[1.5.]: Materials Editor Questions.

[1.5.1.]: We are trying to get snapshot working from the Meditor Utility on version 1.6 and higher. Every time we get a snapshot we get a blue color bleed all over the TIM image. Does anybody knows why we are getting this blue color bleed?

I believe it to be caused by the Windows configuration, as it only happened when Windows was in 256 color mode. As soon as I switched to a 65k color mode, the bleeding went away. The problem also only showed up while "preview"ing the tim file, not when using the "tim view" option. This is just a limitation of Windows, so the solution is to switch to a higher color mode or to only use the tim view option.

Has anyone used any sort of tiling techniques on the Sony Playstation? We can't seem to find the support for this really useful function. Any advice would be appreciated.