

Functions

Data Component Functions

Return components of 3D data structures

RtFloat	N3D_XComp (RtFloat <i>*theVector</i>)
RtFloat	N3D_YComp (RtFloat <i>*theVector</i>)
RtFloat	N3D_ZComp (RtFloat <i>*theVector</i>)
RtFloat	N3D_WComp (RtFloat <i>*theVector</i>)

Data Conversion Functions

Convert between RtPoints and RtBounds

void	N3D_ConvertBoundToPoints (RtBound <i>theBound</i> , RtPoint * <i>thePoints</i>)
void	N3D_ConvertPointsToBound (RtPoint * <i>thePoints</i> , RtBound <i>theBound</i>)

Data Copying Functions

Efficiently copy 3D data types

void	N3D_CopyBound (RtBound <i>sourceBounds</i> , RtBound <i>destBounds</i>)
void	N3D_CopyMatrix (RtMatrix <i>sourceMatrix</i> , RtMatrix <i>destMatrix</i>)
void	N3D_CopyPoint (RtPoint <i>sourcePoint</i> , RtPoint <i>destPoint</i>)

Intersection Testing Function

Test for intersection between line and plane

void	N3DIntersectLinePlane (RtPoint <i>*endPoints</i> , RtPoint <i>planeNormal</i> , RtPoint <i>planePoint</i> , RtPoint <i>*intersection</i>)
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Matrix Manipulation Functions

Efficient matrix multiplication

void	N3DMultiplyMatrix (RtMatrix <i>preTransform</i> , RtMatrix <i>postTransform</i> , RtMatrix <i>resultTransform</i>)
float	N3DInvertMatrix (RtMatrix <i>theTransform</i> , RtMatrix <i>theInverse</i>)

Transformation Functions

Transform between coordinate systems

```
void      N3DMult3DPoint(RtPoint thePoint, RtMatrix theTransform, RtPoint newPoint)
void      N3DMult3DPoints(RtPoint *thePoints, int pointCount,
RtMatrix theTransform, RtPoint *newPoints)
```