UF_CSYS_ask_csys_info (view source)

Defined in: uf_csys.h

Overview

Queries the specified coordinate system and returns the matrix identifier and the x, y, z coordinates of the origin.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_ask_csys_info
(
    tag_t csys_id,
    tag_t * matrix_id,
    double csys_origin [ 3 ]
)
```

tag_t	**csys_id**	Input	Object identifier of the coordinate system to query.
tag_t *	**matrix_id**	Output	Pointer to object identifier of the matrix associated with the coordinate system.
double	**csys_origin [3]**	Output	The origin of the coordinate system

---

UF_CSYS_ask_matrix_of_object (view source)

Defined in: uf_csys.h

Overview

Gets the matrix identifier attached to an object. An object does not necessarily have an matrix attached to it, and some objects can never have a matrix attached. This routine will return a NULL_TAG for the matrix identifier if the object does not have a matrix attached to it, even if the object can never have a matrix attached to it.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_ask_matrix_of_object
(
    tag_t object_id,
    tag_t * matrix_id
)
```

tag_t	**object_id**	Input	Identifier of object associated with matrix

tag_t *	**matrix_id**	Output	Identifier for the matrix attached to the object. This may be a NULL_TAG.

UF_CSYS_ask_matrix_values (view source)

Defined in: uf_csys.h

Overview

Gets the matrix values of the specified matrix tag.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_ask_matrix_values
(
    tag_t matrix_id,
    double matrix_values [ 9 ]
)
```

tag_t	**matrix_id**	Input	Object identifier of the matrix
double	**matrix_values [9]**	Output	Matrix values

UF_CSYS_ask_wcs (view source)

Defined in: uf_csys.h

Overview

Gets the object identifier of the coordinate system to which the work coordinate system is set.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_ask_wcs
(
    tag_t * wcs_id
)
```

tag_t *	**wcs_id**	Output	Object identifier of the coordinate system to which the WCS is set.

UF_CSYS_create_csys (view source)

Defined in: uf_csys.h

Overview

Creates a CSYS.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_create_csys
(
    const double csys_origin [ 3 ] ,
    tag_t matrix_id,
    tag_t * csys_id
)
```

const double	**csys_origin [3]**	Input	The origin for the coordinate system
tag_t	**matrix_id**	Input	Object identifier of the matrix associated with the coordinate system
tag_t *	**csys_id**	Output	Object identifier of the coordinate system

UF_CSYS_create_matrix (view source)

Defined in: uf_csys.h

Overview

Creates a 3 x 3 matrix.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_create_matrix
(
    const double matrix_values [ 9 ] ,
    tag_t * matrix_id
)
```

const double	**matrix_values [9]**	Input	Matrix values -- should be normalized and orthogonal. Use UF_MTX3_initialize to create a matrix from X and Y vectors.
tag_t *	**matrix_id**	Output	Object identifier of the matrix

UF_CSYS_create_temp_csys (view source)

Defined in: uf_csys.h

Overview

Creates a temporary coordinate system.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_create_temp_csys
(
    const double csys_origin [ 3 ] ,
    tag_t matrix_id,
    tag_t * csys_id
)
```

const double	**csys_origin [3]**	Input	The origin for the coordinate system
tag_t	**matrix_id**	Input	Object identifier of the matrix associated with the coordinate system
tag_t *	**csys_id**	Output	Object identifier of the coordinate system

UF_CSYS_edit_matrix_of_object (view source)

Defined in: uf_csys.h

Overview

Updates the specified coordinate system matrix with the identifier of the new coordinate system matrix that you specify.

This function does not perform an update. In order for all of the effects of changing the object's matrix to occur, you must call UF_MODL_update at some point after calling this function.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_edit_matrix_of_object
(
    tag_t object_id,
    tag_t matrix_id
)
```

tag_t	**object_id**	Input	Identifier of the object whose matrix is to be updated.
tag_t	**matrix_id**	Input	Object identifier of the new matrix for the object

UF_CSYS_map_point (view source)

Defined in: uf_csys.h

Overview

Maps a point from one coordinate system to a point in another coordinate system. The coordinate system can be one of the following constants.

UF_CSYS_ROOT_COORDS is the ABS of the displayed part.
UF_CSYS_WORK_COORDS is the ABS of the work part.
UF_CSYS_ROOT_WCS_COORDS is the WCS of the displayed part.
For example:
To convert a point from absolute coordinates of the displayed part to the WCS:
input_csys = UF_CSYS_ROOT_COORDS;
output_csys = UF_CSYS_ROOT_WCS_COORDS;
To convert a point from the work part absolute coordinates to the displayed part absolute coordinates:
input_csys = UF_CSYS_WORK_COORDS;
output_csys = UF_CSYS_ROOT_COORDS;

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_map_point
(
    int input_csys,
    double input_point [ 3 ] ,
    int output_csys,
    double output_point [ 3 ]
)
```

int	**input_csys**	Input	CSYS of point to be mapped which can be: UF_CSYS_ROOT_COORDS (Coordinate space of the root part which is the whole part being displayed), UF_CSYS_WORK_COORDS (Coordinate space of the work part), UF_CSYS_ROOT_WCS_COORDS (Root WCS)
double	**input_point [3]**	Input	The point (xyz) to be mapped.
int	**output_csys**	Input	CSYS to be mapped to
double	**output_point [3]**	Output	The resultant point (xyz) of the mapping

UF_CSYS_set_origin (view source)

Defined in: uf_csys.h

Overview

Set origin of coordinate system.
Note that this function is not valid on the wcs.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_set_origin
(
    tag_t csys_tag,
    double origin [ 3 ]
)
```

tag_t	**csys_tag**	Input	tag of coordinate system to modify
double	**origin [3]**	Input	new origin of coordinate system

UF_CSYS_set_wcs (view source)

Defined in: uf_csys.h

Overview

Sets the work coordinate system to the prototype coordinate system whose tag you specify and then updates the display. If an occurrence coordinate system is specified, the work coordinate system will not be changed and this function will return an error. Note that the current WCS can not be deleted, so the tag that is passed in can not then be deleted using UF_OBJ_delete_object.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_set_wcs
(
    tag_t csys_id
)
```

tag_t	**csys_id**	Input	Object identifier of the coordinate system to set the WCS to

UF_CSYS_set_wcs_display (view source)

Defined in: uf_csys.h

Overview

Set display of work coordinate system.

Environment

Internal and External

Required License(s)

gateway

```
int UF_CSYS_set_wcs_display
(
    int display_status
)
```

int	**display_status**	Input	1 = the wcs should be displayed 0 = the wcs should not be displayed