

# Geometry: Physical Member

## Geometry

## Functions

afx\_msg void **OSGeometryUI::SetPhysicalMemberUniqueID** (const VARIANT FAR &nPhyMembNo, const VARIANT FAR &szName)

Sets the unique string ID (GUID) for specified physical member.

afx\_msg VARIANT **OSGeometryUI::GetPhysicalMemberUniqueID** (const VARIANT FAR &nSolidNo)

Returns the unique string ID (GUID) for specified physical member.

afx\_msg VARIANT **OSGeometryUI::CreatePhysicalMember** (const VARIANT FAR &nAnalyticalMember, const VARIANT FAR &MemberList, const VARIANT FAR &MemberAttribute)

Creates a physical member from specified analytical members.

afx\_msg VARIANT **OSGeometryUI::DeletePhysicalMember** (const VARIANT FAR &nPhyMembNo)

Deletes specified physical member from the currently loaded model.

afx\_msg VARIANT **OSGeometryUI::GetAnalyticalMemberCountForPhysicalMember** (const VARIANT FAR &nPhyMembNo)

Returns the number of analytical member(s) for specified physical member.

afx\_msg VARIANT **OSGeometryUI::GetAnalyticalMembersForPhysicalMember** (const VARIANT FAR &nPhyMembNo, const VARIANT FAR &nAnalyticalMember, VARIANT FAR &MemberList)

Returns the analytical member ID(s) for specified physical member.

afx\_msg VARIANT **OSGeometryUI::GetLastPhysicalMemberNo** ()

Returns the number ID of the last added physical member.

afx\_msg VARIANT **OSGeometryUI::GetNoOfSelectedPhysicalMembers** ()

Returns the number of selected Physical member(s) in the model.

afx\_msg void **OSGeometryUI::GetSelectedPhysicalMembers** (VARIANT FAR &naPhyMembNos, const VARIANT &nIsSorted)

afx\_msg void **OSGeometryUI::SelectPhysicalMember** (const VARIANT FAR &nPhyMembNo)

Highlights the specified physical member.

afx\_msg void **OSGeometryUI::SelectMultiplePhysicalMembers** (const VARIANT FAR &naPhyMembNos)

Highlights the specified physical members.

afx\_msg VARIANT **OSGeometryUI::GetPhysicalMemberCount** ()

Returns the number of physical member(s) in current model.

afx\_msg void **OSGeometryUI::GetPhysicalMemberList** (VARIANT FAR &nPhyMemberList)

Returns all the existing physical member number ID(s) in current model.

afx\_msg VARIANT **OSGeometryUI::GetPMemberCount** ()

Returns the number of PMembers defined with model.

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afx\_msg VARIANT **OSGeometryUI::CreatePMember** (const VARIANT FAR &nAnalyticalMember, const  
VARIANT FAR &MemberList, const VARIANT FAR &MemberAttribute)

This API has been deprecated. Please use the API

**OSGeometryUI::CreatePhysicalMember** instead.

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## Detailed Description

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These functions are related to operations of creating, adding, getting and deleting physical member(s).

## Function Documentation

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### ◆ CreatePhysicalMember()

```
VARIANT OSGeometryUI::CreatePhysicalMember ( const VARIANT FAR & nAnalyticalMembers,
                                             const VARIANT FAR & MemberList,
                                             const VARIANT FAR & MemberAttribute )
```

private

Creates a physical member from specified analytical members.

Note: This method is not supported for physical models

### Parameters

- [in] **nAnalyticalMembers** The number of member(s) to be added
- [in] **MemberList** List of physical member IDs (array of type long) that would form the physical member to be created
- [in] **MemberAttribute** Reserved for future use, please input null for the time being.

### Return values

- <val> Id of the newly created physical member
- 0 Physical member creation failed

### C++ Syntax

```
// Create a physical member with 2 analytical members
long MemberList[] = {1, 2};
long RetVal = OSGeometryUI::CreatePhysicalMember(2, MemberList, null);
```

### VBA Syntax

```
'Create a physical member with 2 analytical members
Dim RetVal As Variant
Dim MemberList(1) As Long
MemberList(0) = 1
MemberList(1) = 4
RetVal = objOpenStaad.Geometry.CreatePhysicalMember(2, MemberList, Null)
```

## ◆ DeletePhysicalMember()

**VARIANT OSGeometryUI::DeletePhysicalMember ( const VARIANT FAR & nPhyMembNo )**

private

Deletes specified physical member from the currently loaded model.

Note: This method is not supported for physical models

**Parameters**

[ in ] **nPhyMembNo** Long variable specifying Physical member number ID to be deleted.

**Return values**

**1** Deletion of the specified physical member is successful

**0** Deletion of the specified physical member is unsuccessful

**C++ Syntax**

```
// Delete physical member #1.  
bool RetVal = OSGeometryUI::DeletePhysicalMember(1);
```

**VBA Syntax**

```
'Delete physical member #1.  
Dim RetVal As Variant  
RetVal = objOpenStaad.Geometry.DeletePhysicalMember(1)
```

**◆ GetAnalyticalMemberCountForPhysicalMember()**

**VARIANT**

OSGeometryUI::GetAnalyticalMemberCountForPhysicalMember ( const VARIANT FAR & nPhyMembNo )

private

Returns the number of analytical member(s) for specified physical member.

**Parameters**

[in] **nPhyMembNo** Physical member ID.

**Return values**

<Val> The number of analytical member(s).

-1 General error.

**C++ Syntax**

```
// Count for the analytical member(s) in physical member #5.
VARIANT nAnaMember = OSGeometryUI::GetAnalyticalMemberCountForPhysicalMember(5);
```

**VBA Syntax**

```
' Count for the analytical member(s) in physical member #5.
Dim nAnaMember As VARIANT = OSGeometryUI.GetAnalyticalMemberCountForPhysicalMember(5)
```

**See also**

[OSGeometryUI::GetAnalyticalMembersForPhysicalMember](#)

## ◆ GetAnalyticalMembersForPhysicalMember()

**VARIANT**

```
OSGeometryUI::GetAnalyticalMembersForPhysicalMember ( const VARIANT FAR & nPhyMembNo,
                                                    const VARIANT FAR & nAnalyticalMember,
                                                    VARIANT FAR &      MemberList )
```

private

Returns the analytical member ID(s) for specified physical member.

**Parameters**

- [in] **nPhyMembNo**      Physical member number ID.
- [in] **nAnalyticalMember** The number of analytical member(s).
- [out] **MemberList**      Analytical member ID(s) in VARIANT array.

**Return values**

- 0      OK.
- 107 Array of integer expected.
- 108 Array size is smaller than expected.

**C++ Syntax**

```
// Get the analytical member list for physical member #5.
VARIANT RetVal = OSGeometryUI::GetAnalyticalMembersForPhysicalMember(5, 0 &MemberList);
```

**VBA Syntax**

```
' Get the analytical member list for physical member #5.
Dim RetVal As VARIANT = OSGeometryUI.GetAnalyticalMembersForPhysicalMember(5, 0
    &MemberList)
```

◆ **GetLastPhysicalMemberNo()**

**VARIANT OSGeometryUI::GetLastPhysicalMemberNo ( )**

private

Returns the number ID of the last added physical member.

**Return values**

**<Val>** Number ID of the last physical member.

**-1** General error.

**C++ Syntax**

```
// Get the last physical member.  
VARIANT nPhyMember = OSGeometryUI::GetLastPhysicalMemberNo();
```

**VBA Syntax**

```
' Get the last physical member.  
Dim nPhyMember As VARIANT = OSGeometryUI.GetLastPhysicalMemberNo()
```

**See also**

[OSGeometryUI::CreatePhysicalMember](#)

**◆ GetNoOfSelectedPhysicalMembers()**

## VARIANT OSGeometryUI::GetNoOfSelectedPhysicalMembers ( )

private

Returns the number of selected Physical member(s) in the model.

**Return values**

<Val> The number of selected Physical member(s) in the model.

-1 General error.

**C++ Syntax**

```
// Count for the selected Physical Member
VARIANT pMemberCount = OSGeometryUI::GetNoOfSelectedPhysicalMembers();
```

**VBA Syntax**

```
' Count for the selected Physical Member
Option Explicit
Sub Main
    Dim objOpenStaad As Object
    Dim stdFile As String
    Set objOpenStaad = GetObject(,"StaadPro.OpenSTAAD")
    objOpenStaad.GetSTAADFile stdFile, "TRUE"
    If stdFile="" Then
        MsgBox"Bad"
        Set objOpenStaad = Nothing
        Exit Sub
    End If
    Dim retVal As Long
    retVal = objOpenStaad.Geometry.GetNoOfSelectedPhysicalMembers
    Set objOpenStaad = Nothing
End Sub
```

## ◆ GetPhysicalMemberCount()



**VARIANT OSGeometryUI::GetPhysicalMemberCount ( )**

private

Returns the number of physical member(s) in current model.

**Return values**

<Val> The number of physical member(s).

-1 General error.

**C++ Syntax**

```
// Count for the physical member(s)
VARIANT nPhyMember = OSGeometryUI::GetPhysicalMemberCount();
```

**VBA Syntax**

```
' Count for the physical member(s)
Dim nPhyMember As VARIANT = OSGeometryUI.GetPhysicalMemberCount()
```

**See also**

[OSGeometryUI::GetPhysicalMemberList](#)

[OSGeometryUI::DeletePhysicalMember](#)

[OSGeometryUI::CreatePhysicalMember](#)

**◆ GetPhysicalMemberList()**

void OSGeometryUI::GetPhysicalMemberList ( VARIANT FAR & nPhyMemberList )

private

Returns all the existing physical member number ID(s) in current model.

### Parameters

[out] **nPhyMemberList** Physical member number ID(s) in VARIANT array.

### C++ Syntax

```
// Get the physical member list.  
OSGeometryUI::GetPhysicalMemberList(&nPhyMemberList);
```

### VBA Syntax

```
' Get the physical member list.  
OSGeometryUI.GetPhysicalMemberList(&nPhyMemberList)
```

### See also

[OSGeometryUI::GetPhysicalMemberCount](#)

[OSGeometryUI::DeletePhysicalMember](#)

[OSGeometryUI::CreatePhysicalMember](#)

## ◆ GetPhysicalMemberUniqueID()

## VARIANT OSGeometryUI::GetPhysicalMemberUniqueID ( const VARIANT FAR &amp; nPhyMembNo )

private

Returns the unique string ID (GUID) for specified physical member.

### Parameters

[in] **nPhyMembNo** Physical member number ID.

### Return values

<**VARIANT**> Unique string ID for specified physical member

The API would return an empty string if specified physical member < **nPhyMembNo** > is *not* found

### C++ Syntax

```
// Get the unique ID of physical member #3.
string szName = OSGeometryUI::GetPhysicalMemberUniqueID(3);
```

### VBA Syntax

```
' Get the unique ID of physical member #3.
Dim szName As VARIANT
szName= objOpenStaad.Geometry.GetPhysicalMemberUniqueID(3)
```

### See also

[OSGeometryUI::SetPhysicalMemberUniqueID](#)

## ◆ GetPMemberCount()

## VARIANT OSGeometryUI::GetPMemberCount ( )

private

Returns the number of PMembers defined with model.

### Returns

The number of PMembers.

### C++ Syntax

```
// Count for the meshed PMember
VARIANT pMemberCount = OSGeometryUI::GetPMemberCount();
```

### VBA Syntax

```
' Count for the meshed PMember
Dim pMemberCount As VARIANT = OSGeometryUI.GetPMemberCount()
```

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## ◆ GetSelectedPhysicalMembers()

```
void OSGeometryUI::GetSelectedPhysicalMembers ( VARIANT FAR & naPhyMembNos,
                                              const VARIANT & nlsSorted )
```

private

### Parameters

[out] **naPhysicalMember** number ID(s) in VARIANT array

[in] **nlsSorted** Option whether naBeamNos array is sorted(1) or not(0)

### C++ Syntax

```
// Get the sorted list of selected Physical member(s)
OSGeometryUI::GetSelectedPhysicalMembers(physicaMemberNoList,1);
```

### VBA Syntax

```
' Get the sorted list of selected Physical member(s)
Option Explicit
Sub Main
    Dim objOpenStaad As Object
    Dim stdFile As String
    Set objOpenStaad = GetObject(,"StaadPro.OpenSTAAD")
    objOpenStaad.GetSTAADFile stdFile, "TRUE"
    If stdFile="" Then
        MsgBox"Bad"
        Set objOpenStaad = Nothing
        Exit Sub
    End If
    Dim retVal As Long
    retVal = objOpenStaad.Geometry.GetNoOfSelectedPhysicalMembers()
    Dim selectedList() As Long
    ReDim selectedList(retVal - 1)
    objOpenStaad.Geometry.GetSelectedPhysicalMembers selectedList, 1
    Set objOpenStaad = Nothing
End Sub
```

## ◆ SelectMultiplePhysicalMembers()

void OSGeometryUI::SelectMultiplePhysicalMembers ( const VARIANT FAR & nPhyMembNos )

private

Highlights the specified physical members.

### Parameters

[in] **nPhyMembNos** The physical member numbers (Type : Long).

### C++ Syntax

```
// Select physical members #1,2.
long nPhyMembNo [2] = { 1, 2 };
OSGeometryUI::SelectPhysicalMember(nPhyMembNo);
```

### VBA Syntax

```
' Select physical members #1,2.
Option Explicit

Sub Main
    Dim objOpenStaad As Object
    Dim stdFile As String
    Dim nPhyMembNo(1) As Long

    Set objOpenStaad = GetObject("StaadPro.OpenSTAAD")
    objOpenStaad.GetSTAADFile stdFile, "TRUE"
    nPhyMembNo(0) = 1
    nPhyMembNo(1) = 2
    objOpenStaad.geometry.SelectMultiplePhysicalMembers(nPhyMembNo)
End Sub
```

## ◆ SelectPhysicalMember()

void OSGeometryUI::SelectPhysicalMember ( const VARIANT FAR & nPhyMembNo )

private

Highlights the specified physical member.

### Parameters

[in] **nPhyMembNo** The physical member number.

### C++ Syntax

```
// Select physical member #2.  
OSGeometryUI::SelectPhysicalMember(2);
```

### VBA Syntax

```
' Select physical member #2.  
Option Explicit  
  
Sub Main  
    Dim objOpenStaad As Object  
    Dim stdFile As String  
    Dim pPhyMembNo As Long  
  
    Set objOpenStaad = GetObject("StaadPro.OpenSTAAD")  
    objOpenStaad.GetSTAADFile stdFile, "TRUE"  
    pPhyMembNo = 2  
    objOpenStaad.geometry.SelectPhysicalMember(pPhyMembNo)  
End Sub
```

## ◆ SetPhysicalMemberUniqueID()

```
void OSGeometryUI::SetPhysicalMemberUniqueID ( const VARIANT FAR & nPhyMembNo,  
                                              const VARIANT FAR & szGUID )
```

private

Sets the unique string ID (GUID) for specified physical member.

Note: This method is not supported for physical models

### Parameters

[ in ] **nPhyMembNo** Long variable for holding Physical member number ID for which GUID is intended to be set

[ in ] **szGUID** String variable for holding GUID to be set

### C++ Syntax

```
//Set unique ID "ABCD123" for physical member #1.  
OSGeometryUI::SetPhysicalMemberUniqueID(1,"ABCD123");
```

### VBA Syntax

```
'Set unique ID "ABCD123" for physical member #1.  
objOpenStaad.Geometry.GetPhysicalMemberUniqueID(1,"ABCD123")
```

### See also

[OSGeometryUI::GetPhysicalMemberUniqueID](#)

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