

OCX 10 Reference

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1 Introduction

1.1 Structure

The Navigator 10 development kit comes in 5 Active X controls.

CoreOCX - controls which maps are open

MpvViewOCX - controls the mapview (zoom, coordinates displayed, rotation etc.)

MpvDataOCX - lets you add/remove user objects (tracks, icons, lines etc.) and highlights

DbcOCX - lets you search internal Navigator database (including postcodes if you have the correct license)

RtgOCX - lets you create routes

2 CoreOCX

This is the core ocx control; it must be present in every application.

This ocx control provides basic functionality for opening and closing maps. A map must be opened before using other controls' methods.

Each map has an ID (e.g. europe_ta) and language dependent NAME (e.g. Europe) - see mapGetNames method.

Map is composed from several sheets (britain_ta, france_ta,...) - see mapGetSheets method.

To open map with all sheets opened call mapOpenWhole("europe_ta", "ocx_set_1") or mapOpen("europe_ta", "", "ocx_set_1").

To open map with not all sheets opened call mapOpen("europe_ta", "britain_ta;spain_ta", "ocx_set_1").

To open or close sheets in already opened map use mapOpenSheets and mapCloseSheets methods.

Ocx controls (CoreOCX, MpvDataOCX, MpvViewOCX, DbcOCX, RtgOCX) are grouped to sets. Each set has a name (parameter 2 in mapOpenWhole or parameter 3 in mapOpen).

The sets (one CoreOCX control and any number of other controls) work on the same map opened by the CoreOCX control.

Typical usage:

```
CoreOCX.mapOpenWhole("europe_ta", "ocx_set_1");
```

```
MpvDataOCX.connect("ocx_set_1");
```

```
MpvViewOCX.connect("ocx_set_1");
```

Using more ocx controls in one application with different maps or sheets opened:

```
CoreOCX1.mapOpen("europe_ta", "britain_ta", "ocx_set_1")
```

```
MpvDataOCX1.connect("ocx_set_1")
```

```
MpvViewOCX1.connect("ocx_set_1")
```

```
CoreOCX2.mapOpen("europe_ta", "france_ta", "ocx_set_2")
```

```
MpvDataOCX2.connect("ocx_set_2")
```

```
MpvViewOCX2.connect("ocx_set_2")
```

This enables viewing Britain in one view and France in another one in the same application.

2.1 methods

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2.1.1 infoVersion

Get ocx controls version.

Syntax:

C++

```
HRESULT infoVersion([out,retval] BSTR* version);
```

Visual Basic

object.infoVersion version

| Part | Type | Description |
|---------|--------|----------------------|
| version | String | ocx controls version |

Return values:

S_OK (0x00000000) - succeeded
 S_FALSE (0x00000001) - version not found
 E_INVALIDARG (0x80070057) - invalid argument
 E_FAIL (0x80004005) - unspecified error

2.1.2 mapGetNames

retrieve all map ids and names (semicolon-separated values)

Syntax:

C++

```
HRESULT mapGetNames([out] BSTR* mapIDs, [out] BSTR* mapNames);
```

Visual Basic

object.mapGetNames mapIDs, mapNames

| Part | Type | Description |
|---------------------------------|--------|--|
| mapIDs available mapID's | String | output semicolon delimited string containing all available mapID's |
| mapNames available map names | String | output semicolon delimited string containing all available map names |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_DATA_INVALID_MODEL_TYPE (0x80040701) - model type is invalid
 E_FAIL (0x80004005) - unspecified error

2.1.3 mapGetSheets

Retrieves list of sheets ids and names map is composed of (the ids and names are semicolon-separated)

Syntax:**C++**

HRESULT mapGetSheets([in] BSTR mapID, [out] BSTR* mapSheetsIDs, [out] BSTR* mapSheetsNames);

Visual Basic

object.mapGetSheets *mapID*, *mapSheetsIDs*, *mapSheetsNames*

| Part | Type | Description |
|-------------------------------------|--------|--|
| mapID sheets | String | the map ID for which you want to list all available sheets |
| mapSheetsIDs available sheet ids | String | output semicolon delimited string containing all available sheet ids |
| mapNames available sheet names | String | output semicolon delimited string containing all available sheet names |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_COMMON_OCX_UNINITIALIZED (0x80040101) - ocx has not been initialized (possibly incorrect installation)
 E_MAP_INVALID_MAP_ID (0x80040202) - invalid map id
 E_FAIL (0x80004005) - unspecified error

2.1.4 mapOpen

Open map

mapSheetsIDsToOpen is a semicolon-separated list of sheets ids to be opened
 ocxSetName is the ocx set name

Syntax:**C++**

HRESULT mapOpen([in] BSTR mapID, [in] BSTR mapSheetsIDsToOpen, [in] BSTR ocxSetName);

Visual Basic

object.mapOpen mapID, mapSheetsIDsToOpen, ocxSetName

| Part | Type | Description |
|--|--------|---|
| mapID want to open | String | semicolon delimited string containing the mapID you |
| mapSheetsIDsToOpen you want to open | String | semicolon delimited string containing all Sheet Id's |
| ocxSetName disconnect DbsOCX, opened map | String | An string id that will be used to connect and MpvDataOCX, MpvViewOCX and RtgOCX to the |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_COMMON_OCX_UNINITIALIZED (0x80040101) - ocx has not been initialized (possibly incorrect installation)
 E_COMMON_OCX_INVALID_INSTALLATION (0x80040103) - missing or improperly installed ocx component
 E_COMMON_OCX_INVALID_CONFIGURATION (0x80040102) - invalid configuration
 E_MAP_INVALID_MAP_ID (0x80040202) - invalid map id
 E_LICENSE_INVALID (0x80040301) - license key is invalid
 E_LICENSE_EXPIRED (0x80040302) - license has expired
 E_LICENSE_OCX_FAILED (0x80040303) - license key does not allow running ocx
 E_LICENSE_MAP_FAILED (0x80040304) - license key does not allow using specified map
 E_LICENSE_DATA_ON_NETWORK (0x80040305) - license key does not allow running data from network
 E_FAIL (0x80004005)

2.1.5 mapOpenWhole

open map (with all sheets)
 ocxSetName is the ocx set name

Syntax:**C++**

HRESULT mapOpenWhole([in] BSTR mapID, [in] BSTR ocxSetName);

Visual Basic

object.mapOpenWhole mapID, ocxSetName

| Part | Type | Description |
|-------|--------|---|
| mapID | String | semicolon delimited string containing the mapID you |

want to open

| | | |
|--|--------|---|
| ocxSetName disconnect DbsOCX, opened map | String | An string id that will be used to connect and MpvDataOCX, MpvViewOCX and RtgOCX to the |
|--|--------|---|

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_COMMON_OCX_UNINITIALIZED (0x80040101) - ocx has not been initialized (possibly incorrect installation)
 E_COMMON_OCX_INVALID_INSTALLATION (0x80040103) - missing or improperly installed ocx component
 E_COMMON_OCX_INVALID_CONFIGURATION (0x80040102) - invalid configuration
 E_MAP_INVALID_MAP_ID (0x80040202) - invalid map id
 E_LICENSE_INVALID (0x80040301) - license key is invalid
 E_LICENSE_EXPIRED (0x80040302) - license has expired
 E_LICENSE_OCX_FAILED (0x80040303) - license key does not allow running ocx
 E_LICENSE_MAP_FAILED (0x80040304) - license key does not allow using specified map
 E_LICENSE_DATA_ON_NETWORK (0x80040305) - license key does not allow running data from network
 E_FAIL (0x80004005) - unspecified error

2.1.6 mapOpenSheets

opens closed map sheets

mapSheetsIDsToOpen is semicolon-separated list of sheets ids to be opened

Syntax:

C++

HRESULT mapOpenSheets([in] BSTR mapSheetsIDsToOpen);

Visual Basic

object.mapOpenSheets *mapSheetsIDsToOpen*

| Part | Type | Description |
|--|--------|--|
| mapSheetsIDsToOpen you want to open | String | semicolon delimited string containing all Sheet Id's |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

2.1.7 mapCloseSheets

closes opened map sheets
mapSheetsIDsToClose is semicolon-separated list of sheets ids to be closed

Syntax:**C++**

```
HRESULT mapCloseSheets([in] BSTR mapSheetsIDsToClose);
```

Visual Basic

```
object.mapCloseSheets mapSheetsIDsToClose
```

| Part | Type | Description |
|---------------------|--------|--|
| mapSheetsIDsToClose | String | semicolon delimited string containing all Sheet Id's you want to close |

Return values:

S_OK (0x00000000) - succeeded
E_INVALIDARG (0x80070057) - invalid argument
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_FAIL (0x80004005) - unspecified error

2.1.8 mapClose

close currently opened map

Syntax:**C++**

```
HRESULT mapClose();
```

Visual Basic

```
object.mapClose
```

Return values:

S_OK (0x00000000) - succeeded
E_FAIL (0x80004005) - unspecified error

2.1.9 mapGetOpenedMap

retrieve currently opened map id

Syntax:**C++**

```
HRESULT mapGetOpenedMap([out,retval] BSTR* mapID);
```

Visual Basic

```
object.mapGetOpenedMap mapID
```

| Part | Type | Description |
|-------|--------|---|
| mapID | String | output string containing the currently opened mapID |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument (mapID is null)
 E_FAIL (0x80004005) - unspecified error

2.1.10 settingsUnitSystem

Change the unit system
 unitSystem - "metric" (km, m) or "gb" (british miles, ...)

Syntax:**C++**

```
HRESULT settingsUnitSystem([in] BSTR unitSystem);
```

Visual Basic

```
object.settingsUnitSystem unitSystem
```

| Part | Type | Description |
|------------|--------|---|
| unitSystem | String | "metric" (km, m) or "gb" (british miles, ...) |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument (unitSystem is invalid)
 E_FAIL (0x80004005) - unspecified error

3 MpvView**Methods**

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Appendix I - relative/absolute zoom concept

relative zoom is value from interval $<0;100>$ - 0 means most detailed view, 100 is whole map. It depends on viewed map scale and map window size. It should be used for zoom setting by the Slider or similar control with fixed minimum/maximum values.

absolute zoom is positive value. It depends only on viewed map scale. It should be used for saving view parameters, because it does not depend on the map window size. After map window re-opening user can see always the same particulars.

3.1 methods

3.1.1 connect

connects a control to an opened map/sheet set

Syntax:

C++

```
HRESULT connect([in] BSTR ocxSetName);
```

Visual Basic

```
object.connect ocxSetName
```

| Part | Type | Description |
|--|--------|---|
| ocxSetName disconnect DbsOCX, opened map | String | An string id that will be used to connect and MpvDataOCX, MpvViewOCX and RtgOCX to the |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_COMMON_OCX_INVALID_INSTALLATION (0x80040103) - missing or improperly installed ocx component
 E_COMMON_OCX_UNINITIALIZED (0x80040101) - ocx has not been initialized (possibly incorrect installation)
 E_FAIL (0x80004005) - unspecified error

3.1.2 disconnect

disconnects a control from an opened map/sheet set

Syntax:**C++**

HRESULT disconnect();

Visual Basic*object.disconnect***Return values:**

S_OK (0x00000000) - succeeded
 E_FAIL (0x80004005) - unspecified error

3.1.3 viewConvertCoord

Coordinates conversion

Syntax:**C++**

HRESULT viewConvertCoord([out] LONG* xConverted, [out] LONG* yConverted, [in] LONG xToConvert, [in] LONG yToConvert, [in] LONG conversionType);

Visual Basic*object.viewConvertCoord xConverted, yConverted, xToConvert, yToConvert, conversionType***Parts***xConverted**yConverted**xToConvert**yToConvert**conversionType***Type**

LONG

LONG

LONG

LONG

LONG

Notes

converted x coordinate (easting)

converted y coordinate (northing)

original x coordinate (easting)

original y coordinate (northing)

1 - WIN_TO_PLAN

2 - PLAN_TO_WIN

3 - GEO_TO_PLAN

4 - PLAN_TO_GEO

5 - GEO_TO_WIN

6 - WIN_TO_GEO

Remarks:

converts xToConvert, yToConvert to xConverted, yConverted between specified coordinate systems. WIN means window coordinates, GEO geographical coordinates, PLAN planar coordinates (e.g. national grid in GB)

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.1.4 viewSetVisibleRectangle

moves map view to show given rectangle
 all coordinates are in milliseconds

Syntax:

C++

```
HRESULT viewSetVisibleRectangle([in] LONG minLongitude, [in] LONG minLatitude, [in] LONG
maxLongitude, [in] LONG maxLatitude);
```

Visual Basic

```
object.viewSetVisibleRectangle minLongitude, minLatitude, maxLongitude, maxLatitude
```

| Part | Type | Description |
|-------------------------|------|--|
| minLongitude mapview | Long | A longitude value (in milliseconds) of the bottom of the |
| minLatitude mapview | Long | A latitude value (in milliseconds) of the left of the |
| maxLongitude mapview | Long | A longitude value (in milliseconds) of the top of the |
| maxLatitude mapview | Long | A latitude value (in milliseconds) of the right of the |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.1.5 viewSetCenterPosition

moves map view to show given coordinates
 all coordinates are in milliseconds
 longitude, latitude - view center coordinates
 zoom - either relative or absolute zoom value (zoomIsRelative is true or false) - see appendix I

rotation - roattion of the view

Syntax:

C++

HRESULT viewSetCenterPosition([in] LONG longitude, [in] LONG latitude, [in] LONG zoom, [in] BOOL zoomIsRelative, [in] LONG rotation);

Visual Basic

object.viewSetCenterPosition longitude, latitude, zoom, zoomIsRelative, rotation

| Part | Type | Description |
|------------------------|---------|--|
| longitude mapview | Long | A longitude value (in miliseconds) of the centre of the mapview |
| latitude mapview | Long | A latitude value (in miliseconds) of the centre of the mapview |
| zoom | Long | A value representing the zoom level of the mapview between 0 - 100 for relative zoom and 333 - 11560275 for absolute zoom (in europe_ta) |
| zoomIsRelative zoom | Boolean | TRUE for relative zoom, False for absolute zoom |
| rotation | Long | the rotation of the map (0 is north up, valueas are between 0 and 360) |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.1.6 viewIsPointVisible

tests whether given coordinates are currently visible on the map
 all coordinates are in miliseconds

Syntax:

C++

HRESULT viewIsPointVisible([in] LONG longitude, [in] LONG latitude, [out,retval] BOOL* visible);

Visual Basic

object.viewIsPointVisible longitude, latitude, visible

| Part | Type | Description |
|-----------|------|---|
| longitude | Long | A longitude value (in miliseconds) of the test position |

| | | |
|---------------------------|---------|---|
| latitude | Long | A latitude value (in milliseconds) of the test position |
| visible is not visible | Boolean | TRUE if position is visible, FALSE if position is not visible |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.1.7 viewRedrawBlock

block redrawing of the view (e.g. when lots of models are being added)
 if you are adding lots of models at once this will speed things up considerably. Use `viewRedrawBlock()`, then add the models. After adding the models use `viewRedrawUnblock()`.

Syntax:**C++**

```
HRESULT viewRedrawBlock();
```

Visual Basic

```
object.viewRedrawBlock
```

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.1.8 viewRedrawUnblock

Unblock redrawing of the view.

If you are adding lots of models at once this will speed things up considerably. Use `viewRedrawBlock()`, then add the models. After adding the models use `viewRedrawUnblock()`.

Syntax:**C++**

```
HRESULT viewRedrawUnblock();
```

Visual Basic

```
object.viewRedrawUnblock
```

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.1.9 viewGetBitmap

retrieve bitmap from currently visible map rectangle
can be used to copy the bitmap to clipboard or for printing

Syntax:

C++

```
HRESULT viewGetBitmap([out] LONG* hBitmap);
```

Visual Basic

object.viewGetBitmap hBitmap,

| Part | Type | Description |
|---------------------|------|---|
| hBitmap map view | Long | returns handle to the bitmap of the current |

Return values:

S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_FAIL (0x80004005) - unspecified error

3.1.10 viewSaveBitmap

retrieve a bitmap from the currently visible map rectangle and save it to file in .BMP format

Syntax:

C++

```
HRESULT viewSaveBitmap([in] BSTR fileName);
```

Visual Basic

object.viewSaveBitmap fileName,

| Part | Type | Description |
|----------|--------|--|
| fileName | String | the file name to which the screen dump will be saved |

Return values:

S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_FAIL (0x80004005) - unspecified error

3.1.11 viewSetCursorMode

set the cursor mode within the mapview
possible modeName values : "zoom", "grabber_hand"

Syntax:

C++

HRESULT viewSetCursorMode([in] BSTR modeName);

Visual Basic

object.viewSetCursorMode modeName

| Part | Type | Description |
|---------------------|--------|---|
| modeName pointer | String | Set to "zoom" to enable zooming with the mouse and to "grabber_hand" to enable moving the map. |

Return values:

S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_VIEW_INVALID_CURSOR_MODE (0x80040901) - unknow cursor mode (modeName
parameter)
E_FAIL (0x80004005) - unspecified error

3.1.12 viewShowCompass

show/hide the compass on the map

Syntax:

C++

HRESULT viewShowCompass([in] LONG bShow);

Visual Basic

object.viewShowCompass bShow

| Part | Type | Description |
|-------|------|--|
| bShow | Long | Se to 0 to hide the compass and 1 to show it |

Return values:

S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_FAIL (0x80004005) - unspecified error

3.1.13 viewShowScrollBars

show/hide view surrounding controls

Syntax:

C++

```
HRESULT viewShowScrollBars([in] LONG bShow);
```

Visual Basic

```
object.viewShowCompass bShow
```

| Part | Type | Description |
|-------|------|---|
| bShow | Long | Se to 0 to hide the scrollbars and 1 to show it |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

3.2 events

3.2.1 viewCenterChanged

view center coordinates has changed
 all coordinates are in miliseconds

Syntax:

C++

```
void viewCenterChanged(LONG longitude, LONG latitude);
```

Visual Basic

```
Private Sub object_viewCenterChanged(ByVal longitude As Long, ByVal latitude As Long)
```

| Part | Type | Description |
|--------------------|------|--|
| longitude position | Long | A longitude value (in miliseconds) of the new centre |
| latitude position | Long | A latitude value (in miliseconds) of the new centre |

3.2.2 viewRotationChanged

view rotation has changed

Syntax:

C++

```
void viewRotationChanged(LONG rotation);
```

Visual Basic

```
Private Sub object_viewRotationChanged(ByVal rotation As Long)
```

| Part | Type | Description |
|----------|------|---|
| rotation | Long | the new rotation of the map (0 is north up, values are between 0 and 360) |

3.2.3 viewZoomChanged

view zoom has changed

Syntax:

C++

```
void viewZoomChanged(LONG relativeZoom, LONG absoluteZoom, LONG minimalZoom, LONG maximalZoom);
```

Visual Basic

```
Private Sub object_viewZoomChanged(ByVal relativeZoom As Long, ByVal absoluteZoom As Long, ByVal minimalZoom As Long, ByVal maximalZoom As Long)
```

| Part | Type | Description |
|--------------|------|--|
| relativeZoom | Long | The value representing the new zoom level of the mapview between 0 - 100 |
| absoluteZoom | Long | A value representing the new absolute zoom level of the mapview |
| minimalZoom | Long | A value representing the minimum absolute zoom level of the mapview |
| maximalZoom | Long | A value representing the maximum absolute zoom level of the mapview |

3.2.4 viewLeftClickedWnd

user left clicked on the view - window coordinates

Syntax:

C++

```
void viewLeftClickedWnd(LONG x, LONG y);
```

Visual Basic

```
Private Sub object_viewLeftClickedWnd(ByVal x As Long, ByVal y As Long)
```

| Part | Type | Description |
|------|------|---|
| x | Long | pixel window x coordinate of the left click event |
| y | Long | pixel window y coordinate of the left click event |

3.2.5 viewLeftClickedGeo

user left clicked on the view - geographical coordinates

Syntax:

C++

```
void viewLeftClickedGeo(LONG longitude, LONG latitude);
```

Visual Basic

```
Private Sub object_viewLeftClickedGeo(ByVal longitude As Long, ByVal latitude As Long)
```

| Part | Type | Description |
|-----------------|------|--|
| longitude event | Long | A longitude value (in miliseconds) of the left click event |
| latitude | Long | A latitude value (in miliseconds) of the left click event |

3.2.6 viewLeftDoubleClickedWnd

user left doubleclicked on the view - window coordinates

Syntax:

C++

```
void viewLeftDoubleClickedWnd(LONG x, LONG y);
```

Visual Basic

Private Sub *object_viewLeftDoubleClickedWnd*(ByVal x As Long, ByVal y As Long)

| Part | Type | Description |
|---------|------|--|
| x event | Long | pixel window x coordinate of the double left click |
| y event | Long | pixel window y coordinate of the double left click |

3.2.7 viewLeftDoubleClickedGeo

user left clicked on the view - geographical coordinates

Syntax:

C++

void viewLeftDoubleClickedGeo(LONG longitude, LONG latitude);

Visual Basic

Private Sub *object_viewLeftDoubleClickedGeo*(ByVal longitude As Long, ByVal latitude As Long)

| Part | Type | Description |
|-----------------------|------|--|
| longitude click event | Long | A longitude value (in milliseconds) of the left double click event |
| latitude click event | Long | A latitude value (in milliseconds) of the left double click event |

3.2.8 viewRightClickedWnd

user right clicked on the view - window coordinates

Syntax:

C++

void viewRightClickedWnd(LONG x, LONG y);

Visual Basic

Private Sub *object_viewRightClickedWnd*(ByVal x As Long, ByVal y As Long)

| Part | Type | Description |
|------|------|-------------|
|------|------|-------------|

| | | |
|---|------|--|
| x | Long | pixel window x coordinate of the right click event |
|---|------|--|

| | | |
|---|------|--|
| y | Long | pixel window y coordinate of the right click event |
|---|------|--|

3.2.9 viewRightClickedGeo

user right clicked on the view - geographical coordinates

Syntax:

C++

```
void viewRightClickedGeo(LONG longitude, LONG latitude);
```

Visual Basic

```
Private Sub object_viewRightClickedGeo(ByVal longitude As Long, ByVal latitude As Long)
```

| Part | Type | Description |
|-----------------|------|--|
| longitude event | Long | A longitude value (in milliseconds) of the right click event |
| latitude | Long | A latitude value (in milliseconds) of the rightclick event |

3.2.10 viewRightDoubleClickedWnd

user right doubleclicked on the view - window coordinates

Syntax:

C++

```
void viewRightDoubleClickedWnd(LONG x, LONG y);
```

Visual Basic

```
Private Sub object_viewRightDoubleClickedWnd(ByVal x As Long, ByVal y As Long)
```

| Part | Type | Description |
|---------|------|---|
| x event | Long | pixel window x coordinate of the double right click event |
| y event | Long | pixel window y coordinate of the double right click event |

3.2.11 viewRightDoubleClickedGeo

user right clicked on the view - geographical coordinates

Syntax:

C++

```
void viewRightDoubleClickedGeo(LONG longitude, LONG latitude);
```

Visual Basic

```
Private Sub object_viewRightDoubleClickedGeo(ByVal longitude As Long, ByVal latitude As Long)
```

| Part | Type | Description |
|--------------------------|------|---|
| longitude click event | Long | A longitude value (in milliseconds) of the right double click event |
| latitude click event | Long | A latitude value (in milliseconds) of the right double click event |

3.2.12 viewLeftClickedObject

user left clicked on a user object

Syntax:

C++

```
void viewLeftClickedObject(BSTR modelName, LONG objectCode);
```

Visual Basic

```
Private Sub object_viewLeftClickedObject(ByVal modelID As Long, ByVal objectCode As Long)
```

| Part | Type | Description |
|------------------|------|---|
| modelID event | Long | A longitude value (in milliseconds) of the left click event |
| objectCode | Long | A unique code for the object |

3.2.13 viewRightClickedObject

user right clicked on a user object

Syntax:**C++**

```
void viewRightClickedObject(BSTR modelName, LONG objectCode);
```

Visual Basic

```
Private Sub object_viewRightClickedObject(ByVal modelID As Long, ByVal objectCode As Long)
```

| Part | Type | Description |
|------------------------|------|---|
| modelID click event | Long | A longitude value (in milliseconds) of the left click event |
| objectCode | Long | A unique code for the object |

3.2.14 viewLeftClickedSprite

user left clicked on a sprite

Syntax:**C++**

```
void viewLeftClickedSprite(LONG spriteEntityCode);
```

Visual Basic

```
Private Sub object_viewLeftClickedSprite(ByVal spriteEntityCode As Long)
```

| Part | Type | Description |
|------------------|------|---------------------------|
| spriteEntityCode | Long | A unique srite identifier |

3.2.15 viewRepainted

the view has been repainted
(HDC)hPaintDC is map view paint device context handle
the paint DC handle must not be stored for future use

Syntax:**C++**

```
void viewRepainted(LONG hPaintDC);
```

Visual Basic

```
Private Sub object_viewRepainted(ByVal hPaintDC As Long)
```

| Part | Type | Description |
|----------|------|--------------------------------------|
| hPaintDC | Long | map view paint device context handle |

4 MpvDataOCX

Methods

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=====
Appendix I - Model Parameter Identifiers:
=====

This is the list of configurable model parameters (features) for use in mapSetModelParam and mapGetModelParam methods.

--Common (all entity types)

```

"model_type"   = "text" | "line" | "area" | "pict"
"enabled"      = "yes" | "no"
"zoom_min"     = <integer(multiplied by ZOOM_DETAIL)> | "minimum"
"zoom_max"     = <integer(multiplied by ZOOM_DETAIL)> | "maximum"

```

--Area entity type

```
"fill_style"    = "null" | "solid" | "horizontal" | "vertical" | "fdiagonal" | "bdiagonal" | "cross" | "diagcross" |
"50percent" | "25percent"
"fill_color"    = "rrggbb"
"frame_color"   = "rrggbb"
"frame_width"   = <integer(in pixels)>
"frame_zoom"    = <integer(multiplied by ZOOM_DETAIL)>
"close_bracket" = "flush" | "merge"
```

--Line entity type

```
"fill_style"    = "null" | "solid" | "horizontal" | "vertical" | "fdiagonal" | "bdiagonal" | "cross" | "diagcross" |
"50percent" | "25percent"
"fill_color"    = "rrggbb"
"frame_color"   = "rrggbb"
"frame_width"   = <integer(in pixels)>
"frame_zoom"    = <integer(multiplied by ZOOM_DETAIL)>
"line_width_min" = <integer(in pixels)>
"line_width"    = <integer(in pixels)>
"size_shrinking" = <integer(in percent)>
"close_bracket" = "flush" | "merge"
"join_type"     = "round" | "bevel" | "miter"
"end_type"      = "round" | "square" | "trapezium" | "flat"
```

--Pict entity type

```
"filename"      = <path(to ICO file)>
```

--Text entity type

```
"text_color"    = "rrggbb"           // font color
"enclosing"     = "yes" | "no"       // bounding rectangle around the text
"fill_color"    = "rrggbb"           // fill color of the bounding rectangle
"frame_color"   = "rrggbb"           // frame color of the bounding rectangle
"horizontal_align" = "left" | "center" | "right" // text horizontal alignment
"vertical_align" = "top" | "middle" | "bottom" // text vertical alignment
"underline"     = "yes" | "no"       // text underlined
"strikeout"     = "yes" | "no"       // text striked out
"font_ratio"    = <integer(letter width/height multiplied by 64)> // (width/height) * 64
"size_shrinking" = <integer(in percent)> // text size shrinking depending on current view zoom
"font_size"     = <integer(in pixels)> // font size
"filename"      = <path(to TTF file)> // font file name
```

```
=====
Appendix II - Entity data formats
=====
```

latitude (lat) or longitude(lon) is in miliseconds
diferrential latitude (lat) or longitude(lon) is in miliseconds - it determines text angle

```
MTYPE_PICT ... "lon,lat"
MTYPE_LINE ... "lon1,lat1;lon2,lat2;lon3,lat3..."
MTYPE_AREA ... "lon1,lat1;lon2,lat2;lon3,lat3..."
MTYPE_TEXT ... "lon,lat;TEXT;lon2,lat2"
```

(Text is placed along a line from lon,lat to lon2,lat2)


```
=====
Appendix III - Sprite parameters
=====
```

spriteSetEntityParam method parameters

"IconFile" ... full path to icon file name

"IconIndex" ... index of icon in the icon file (only when there are more icons in one .ico file)

```
=====
Appendix IV - Track parameters
=====
```

trackSetParam method parameters

"PositionBuffer" "INFINITE" | number of stored positions (length of trail); 0 means no trail

"IconFile" head icon's ICO file (full path to .ico)

"TrailPosFile" trail position's ICO file (full path to .ico)

"TrailDotFile" trail inter-position dot's ICO file (full path to .ico)

"IconIndex" index of picture in ICO file (for multiple icons .ico file)

"IconColor" "NOCOLOR" | rrgbbb color of icon

"TrailPosColor" "NOCOLOR" | rrgbbb color of trail position

"TrailDotColor" "NOCOLOR" | rrgbbb color of trail inter-position dots

"LabelDifferenceX" label corner horizontal difference from center of icon (in pixels)

"LabelDifferenceY" label corner vertical difference from center of icon (in pixels)

"TrailDifference" maximal length between two inter-position trail dots (in pixels)

```
=====
Sample code (Visual Basic 6)
=====
```

```
'open a map
coreOCX.mapOpen("europe_ta", "ocx_set_1")
mpvOCX.connect("ocx_set_1")
```

```
'add user icon
mpvOCX.modelCreate 13, "PICT"
mpvOCX.modelSetParam 13, "filename", "c:\something.ico"
mpvOCX.modelAddEntity 13, ListID, "0,187200000" 'longitude,latitude
```

```
=====
Sample code (Visual C++ .NET)
=====
```

```
ICoreWrapper is ICore generated wrapper class
ICoreWrapper m_ocxCore;
IMpvDataWrapper is IMpvData generated wrapper class
IMpvDataWrapper m_ocxMpvData;
```

create and load com objects

```
m_ocxCore.CreateDispatch("CoreOCX.Core.1");
m_ocxMpvData.CreateDispatch("MpvDataOCX.Dbs.1");
```

open a map

```
m_ocxCore.mapOpen("europe_ta", "ocx_set_1");
m_ocxMpvData.connect("ocx_set_1");
```

add user icon

```
m_ocxMpvData.modelCreate(13, "PICT"); call m_ocxMpvData.modelDestroy on exit
m_ocxMpvData.modelSetParam(13, "filename", "c:\\something.ico");
m_ocxMpvData.modelAddEntity(13, 42, "0,187200000"); longitude,latitude
```

```
add sprite
m_ocxMpvData.spriteAddEntity(42);
m_ocxMpvData.spriteSetEntityParam(42, "IconFile", "c:\\something.ico");
```

```
move sprite
m_ocxMpvData.spriteMoveEntity(42, aLongitude, aLatitude);
```

```
remove the sprite
m_ocxMpvData.spriteRemoveEntity(42);
```

```
add track
m_ocxMpvData.trackCreate(42);
m_ocxMpvData.trackSetParam(42, "IconFile", "c:\\something.ico");
m_ocxMpvData.trackSetParam(42, "LabelDifferenceX", "16");
m_ocxMpvData.trackSetParam(42, "LabelDifferenceY", "16");
m_ocxMpvData.trackSetParam(42, "PositionBuffer", "100"); trail contains 100 positions
```

```
add track position
m_ocxMpvData.trackNewPosition(42, aLongitude, aLatitude, "bubble text");
```

```
destroy the track
m_ocxMpvData.trackDestroy(42);
```

```
add fence
m_ocxMpvData.fenceAdd(42, aFenceLongitude, aFenceLatitude, aFenceRadius);
m_ocxMpvData.fenceSetParam(42, "fill_color", "0000F0");
m_ocxMpvData.fenceSetParam(42, "frame_color", "0000FF");
```

```
remove fence
m_ocxMpvData.fenceRemove(42);
```

4.1 methods

4.1.1 connect

connects a control to an opened map/sheet set

Syntax:

C++

```
HRESULT connect([in] BSTR ocxSetName);
```

Visual Basic

```
object.connect ocxSetName
```

| Part | Type | Description |
|--|--------|---|
| ocxSetName disconnect DbsOCX, opened map | String | An string id that will be used to connect and MpvDataOCX, MpvViewOCX and RtgOCX to the |

Return values:

| | |
|--|--|
| S_OK (0x00000000) | - succeeded |
| E_INVALIDARG (0x80070057) | - invalid argument |
| E_COMMON_OCX_INVALID_INSTALLATION (0x80040103) | - missing or improperly installed ocx component |
| E_COMMON_OCX_UNINITIALIZED (0x80040101) | - ocx has not been initialized (possibly incorrect installation) |
| E_FAIL (0x80004005) | - unspecified error |

4.1.2 disconnect

disconnects a control from an opened map/sheet set

Syntax:

C++

```
HRESULT disconnect();
```

Visual Basic

```
object.disconnect
```

Return values:

| | |
|---------------------|---------------------|
| S_OK (0x00000000) | - succeeded |
| E_FAIL (0x80004005) | - unspecified error |

4.1.3 mapMinMaxCoordinates

retrieves bounding rectangle of opened map
all coordinates are in milliseconds

Syntax:**C++**

```
HRESULT mapMinMaxCoordinates([out] LONG* minLongitude, [out] LONG* minLatitude, [out] LONG*
maxLongitude, [out] LONG* maxLatitude);
```

Visual Basic

```
object.mapMinMaxCoordinates minLongitude, minLatitude, maxLongitude, maxLatitude
```

| Part | Type | Description |
|-----------------------------------|------|---|
| minLongitude extent of the map | Long | A longitude value (in milliseconds) of the bottom |
| minLatitude the map | Long | A latitude value (in milliseconds) of the left extent of |
| maxLongitude the map | Long | A longitude value (in milliseconds) of the top extent of |
| maxLatitude the map | Long | A latitude value (in milliseconds) of the right extent of |

Return values:

```
S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_FAIL (0x80004005) - unspecified error
```

4.1.4 mapHighlightObject

highlights map object, all views (ocxMpvView) are affected
if one of redValue, greenValue, blueValue is invalid (<0 or >255), default color is used

Syntax:**C++**

```
HRESULT mapHighlightObject([in] BSTR objectID, [in] LONG redValue, [in] LONG greenValue, [in]
LONG blueValue, [in] BSTR action, [out,retval] BSTR* highlightID);
```

Visual Basic

```
object.mapHighlightObject objectID, redValue, greenValue, blueValue, action, highlightID
```

| Part | Type | Description |
|--|--------|--|
| objectID other ocx objects return this id | String | object universal identification - several methods from |
| redValue | Long | red color value in RGB color space - should be 0-255 |

| | | |
|---|--------|--|
| greenValue 255 | Long | green color value in RGB color space - should be 0- |
| blueValue 255 | Long | blue color value in RGB color space - should be 0- |
| action "repaint"/"showwhole"/"center"/"default" | String | repaint map type - possible values : - "repaint" - repaints map, does not zoom - "showwhole" - zooms map so that whole object is visible |
| visible the map "repaint"/"showwhole"/"center") | | - "center" - moves map so that object is centered on the map - "default" - default behaviour (one of "repaint"/"showwhole"/"center") |
| highlightID remove highlight later | String | unique highlight identification; store this value to remove highlight later |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_HIGHLIGHT_INVALID_OUID (0x80040401) - object id is invalid
 E_FAIL (0x80004005) - unspecified error

4.1.5 mapHighlightManyAddObject

adds object to a "highlight queue" - call mapHighlightManyAddObject as many times you need, then mapHighlightManyFinish to highlight all objects in the queue at once.

Syntax:**C++**

```
HRESULT mapHighlightManyAddObject([in] BSTR objectID);
```

Visual Basic

```
object.mapHighlightManyAddObject objectID
```

| Part | Type | Description |
|---|--------|---|
| objectID methods from other ocx objects return this id | String | object universal identification - several |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_HIGHLIGHT_INVALID_OUID (0x80040401) - object id is invalid
 E_FAIL (0x80004005) - unspecified error

4.1.6 mapHighlightManyFinish

Call mapHighlightManyAddObject as many times you need, then mapHighlightManyFinish to highlight all objects in the queue at once.

If one of redValue, greenValue, blueValue is invalid (<0 or >255), default color is used

Syntax:

C++

```
HRESULT mapHighlightManyFinish([in] LONG redValue, [in] LONG greenValue, [in] LONG blueValue,
[in] BSTR action, [out,retval] BSTR* highlightID);
```

Visual Basic

```
object.mapHighlightManyFinish redValue, greenValue, blueValue, action, highlightID
```

| Part | Type | Description |
|--|--------|--|
| redValue | Long | red color value in RGB color space - should be 0-255 |
| greenValue | Long | green color value in RGB color space - should be 0-255 |
| blueValue | Long | blue color value in RGB color space - should be 0-255 |
| action | String | repaint map type - possible values : |
| "repaint"/"showwhole"/"center"/"default" | | - "repaint" - repaints map, does not zoom - "showwhole" - zooms map so that whole object is visible |
| the map | | - "center" - moves map so that object is centered on the map |
| "repaint"/"showwhole"/"center") | | - "default" - default behaviour (one of "repaint"/"showwhole"/"center") |
| highlightID | String | unique highlight identification; store this value to remove highlight later |

Return values:

```
S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_HIGHLIGHT_INVALID_OUID (0x80040401) - object id is invalid
E_FAIL (0x80004005) - unspecified error
```

4.1.7 mapClearHighlight

clears map object, all views (ocxMpvView) are affected

Syntax:**C++**

```
HRESULT mapClearHighlight([in] BSTR highlightID);
```

Visual Basic

```
object.mapClearHighlight highlightID
```

| Part | Type | Description |
|-----------------------------------|--------|--------------------------------------|
| highlightID mapHighlightObject | String | highlight unique identification, see |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_HIGHLIGHT_INVALID_HID (0x80040402) - highlight id is invalid
 E_FAIL (0x80004005) - unspecified error

4.1.8 modelCreate

creates map model

Syntax:**C++**

```
HRESULT modelCreate([in] LONG modelID, [in] BSTR modelType);
```

Visual Basic

```
object.modelCreate modelID, modelType
```

| Part | Type | Description |
|--|--------|--|
| modelID | Long | user object ID |
| modelType values TEXT, LINE, AREA, PICT | String | set the type of object you want to create - possible |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_DATA_INVALID_MODEL_TYPE (0x80040701) - model type is invalid
 E_FAIL (0x80004005) - unspecified error

4.1.9 modelDestroy

Destroys a user model - every created model should be destroyed when not needed any more

Syntax:**C++**

```
HRESULT modelDestroy([in] LONG modelID);
```

Visual Basic

```
object.modelDestroy modelID
```

| Part | Type | Description |
|---------|------|----------------|
| modelID | Long | user object ID |

Return values:

```
S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_FAIL (0x80004005) - unspecified error
```

4.1.10 modelExists

Checks whether a model named modelName exists

Syntax:**C++**

```
HRESULT modelExists([in] LONG modelID, [out,retval] BOOL* isModel);
```

Visual Basic

```
object.modelExists modelID, isModel
```

| Part | Type | Description |
|----------------------|---------|--|
| modelID | Long | user object ID |
| isModel otherwise | Boolean | TRUE if the model already exist, FALSE |

Return values:

```
S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_INVALIDARG (0x80070057) - invalid argument (isModel is null)
E_FAIL (0x80004005) - unspecified error
```

4.1.11 modelSetParam

Sets model parameters

Syntax:

C++

HRESULT modelSetParam([in] LONG modelID, [in] BSTR variable, [in] BSTR value);

Visual Basic

object.modelSetParam modelID, variable, value

| Part | Type | Description |
|----------|--------|--|
| modelID | Long | user object ID |
| variable | String | name of the parameter |
| value | String | the value you want to set the parameter to |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_DATA_INVALID_MODEL_TYPE (0x80040701) - model type is invalid
 E_FAIL (0x80004005) - unspecified error

4.1.12 modelGetParam

Retrieves model parameters

Syntax:**C++**

HRESULT modelGetParam([in] LONG modelID, [in] BSTR variable, [out,retval] BSTR* value);

Visual Basic

object.modelGetParam modelID, variable, value

| Part | Type | Description |
|----------|--------|--|
| modelID | Long | user object ID |
| variable | String | name of the parameter |
| value | String | the value that the parameter is set to |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (value is null)

E_DATA_MODEL_DOES_NOT_EXIST (0x80040702) - model modelName does not exist
 E_FAIL (0x80004005) - unspecified error

4.1.13 modelAddEntity

Creates new entity (representation of an existing model - entityCode has to be in range <1-0x0FFFFFFF>)

Syntax:

C++

HRESULT modelAddEntity([in] LONG modelID, [in] LONG entityCode, [in] BSTR data);

Visual Basic

object.modelAddEntity modelID, entityCode, data

| Part | Type | Description |
|-------------|--------|---|
| modelID | Long | user object ID |
| entityCode | String | code of new entity - unique over the set of entities of one model |
| <u>data</u> | String | data (coordinates, angles, etc.) of the entity |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

NOTE:

When adding multiple entities, use viewRedrawBlock/viewRedrawUnblock methods for each ocxView object - this will significantly speed up the add process see Appendix II for details

4.1.14 modelRemoveEntity

Removes an existing entity

Syntax:

C++

HRESULT modelRemoveEntity([in] LONG modelID, [in] LONG entityCode);

Visual Basic

object.modelRemoveEntity modelID, entityCode

| Part | Type | Description |
|------|------|-------------|
|------|------|-------------|

| | | |
|-------------------|--------|---|
| modelID | Long | user object ID |
| entityCode map | String | code of the entity that you want to remove from the map |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.15 spriteAddEntity

Creates new sprite with unique code entityCode (entityCode has to be in range <1-0x0FFFFFFF>)

Syntax:**C++**

```
HRESULT spriteAddEntity([in] LONG entityCode);
```

Visual Basic

```
object.spriteAddEntity entityCode
```

| Part | Type | Description |
|-------------------------|--------|---|
| entityCode one model | String | code of new entity - unique over the set of entities of one model |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

NOTE:

When adding multiple entities, use viewRedrawBlock/viewRedrawUnblock methods for each ocxView object - this will significantly speed up the add process see Appendix II for details

4.1.16 spriteRemoveEntity

Removes a sprite

Syntax:**C++**

```
HRESULT spriteRemoveEntity([in] LONG entityCode);
```

Visual Basic

```
object.spriteRemoveEntity entityCode
```

| Part | Type | Description |
|-------------------|--------|---|
| entityCode map | String | code of the entity that you want to remove from the map |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.17 spriteMoveEntity

Moves sprite icon to given coordinates, all coordinates are in miliseconds.

Syntax:**C++**

```
HRESULT spriteMoveEntity([in] LONG entityCode, [in] LONG longitude, [in] LONG latitude);
```

Visual Basic

```
object.spriteMoveEntity entityCode, longitude, latitude
```

| Part | Type | Description |
|-------------------------|--------|---|
| entityCode one model | String | code of the entity - unique over the set of entities of one model |
| longitude | Long | the new longitude of the sprite |
| latitude | Long | the new latitude of the sprite |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.18 spriteSetEntityParam

Sets sprite parameters - see Appendix III for details

Syntax:

C++

HRESULT spriteSetEntityParam([in] BSTR spriteName, [in] LONG entityCode, [in] BSTR variable, [in] BSTR value);

Visual Basic

object.spriteSetEntityParam spriteName, entityCode, variable, value

| Part | Type | Description |
|------------|--------|--|
| entityCode | Long | user object ID |
| variable | String | name of the parameter |
| value | String | the value you want to set the parameter to |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_DATA_INVALID_MODEL_TYPE (0x80040701) - model type is invalid
 E_FAIL (0x80004005) - unspecified error

4.1.19 trackCreate

Creates new named track (trackCode has to be in range <1-0x0FFFFFFF>)

Syntax:**C++**

HRESULT trackCreate([in] LONG trackCode);

Visual Basic

object.trackCreate trackCode

| Part | Type | Description |
|-----------|------|---|
| trackCode | Long | code identifying the track you want to create |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_LICENSE_MAX_TRACKS_COUNT_EXCEEDED (0x80040307) - maximum tracks count allowed by license has been exceeded
 E_FAIL (0x80004005) - unspecified error

4.1.20 trackDestroy

Destroys named track

Syntax:

C++

HRESULT trackDestroy([in] LONG trackCode);

Visual Basic

object.trackDestroy trackCode

| Part | Type | Description |
|-----------|------|---|
| trackCode | Long | code identifying the track you want to remove |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.21 trackSetParam

Sets track parameter (see appendix IV)

Syntax:

C++

HRESULT trackSetParam([in] LONG trackCode, [in] BSTR variable, [in] BSTR value);

Visual Basic

object.trackSetParam trackCode, variable, value

| Part | Type | Description |
|-----------|--------|--|
| trackCode | Long | user object ID |
| variable | String | name of the parameter |
| value | String | the value you want to set the parameter to |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.22 trackNewPosition

Adds new track position

Syntax:

C++

```
HRESULT trackNewPosition([in] LONG trackCode, [in] LONG longitude, [in] LONG latitude, [in] BSTR label);
```

Visual Basic

object.trackNewPosition trackCode, longitude, latitude, label

| Part | Type | Description |
|------------------------|--------|---|
| trackCode one model | String | code of the entity - unique over the set of entities of one model |
| longitude | Long | the longitude of the new track position |
| latitude | Long | the latitude of the new track position |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.23 trackNewPositions

Adds new track positions (format lon1,lat1;lon2,lat2;...;lonn,latn)

Syntax:

C++

```
HRESULT trackNewPositions([in] LONG trackCode, [in] BSTR coordinates, [in] BSTR label);
```

Visual Basic

object.trackNewPosition trackCode, coordinates, label

| Part | Type | Description |
|------------------------|--------|---|
| trackCode one model | String | code of the entity - unique over the set of entities of one model |
| coordinates | Long | track positions (format lon1,lat1;lon2,lat2;...;lonn,latn) |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.24 fenceAdd

Adds new fence - a fence is a circle-like area defined by a radius distance from the given point. fenceCode has to be in range <1-0xFFFFFFFF>. All coordinates are in milliseconds.

Syntax:**C++**

HRESULT fenceAdd([in] LONG fenceCode, [in] LONG longitude, [in] LONG latitude, [in] LONG radius);

Visual Basic

object.trackCreate fenceCode, longitude, latitude, radius

| Part | Type | Description |
|------------------------|--------|---|
| fenceCode one model | String | code of the entity - unique over the set of entities of one model |
| longitude | Long | the longitude of the centre of the fence |
| latitude | Long | the latitude of the centre of the fence |
| radius | Long | the radius of the fence |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.25 fenceRemove

Removes a fence

Syntax:**C++**

HRESULT fenceRemove([in] LONG fenceCode);

Visual Basic

object.fenceRemove fenceCode

| Part | Type | Description |
|-----------|------|---|
| fenceCode | Long | code identifying the fence you want to remove |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.26 fenceSetParam

Sets fence parameter - see Appendix I (common and area parameters) for description of parameters and values.

Syntax:**C++**

```
HRESULT fenceSetParam([in] LONG fenceCode, [in] BSTR variable, [in] BSTR value);
```

Visual Basic

```
object.fenceSetParam fenceCode, variable, value
```

| Part | Type | Description |
|-----------|--------|--|
| fenceCode | Long | user object ID |
| variable | String | name of the parameter |
| value | String | the value you want to set the parameter to |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

4.1.27 fenceGetParam

Retrieves fence parameters. See Appendix I (common and area parameters) for description of parameters and values.

Syntax:**C++**

```
HRESULT fenceGetParam([in] LONG fenceCode, [in] BSTR variable, [out,retval] BSTR* value);
```

Visual Basic

object.fenceGetParam fenceCode, variable, value

| Part | Type | Description |
|-----------|--------|--|
| fenceCode | Long | user object ID |
| variable | String | name of the parameter |
| value | String | the value that the parameter is set to |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

5 DbsOCX

Methods

[connect](#)
[disconnect](#)
[categoriesList](#)
[categoryID2Name](#)
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[searchClearInputColumnValues](#)
[searchFetch](#)
[searchPostcodesFetch](#)
[searchResultGetMap](#)
[nearestFind](#)

```
=====
Sample code (Visual Basic 6)
=====
```

```
'open a map
coreOCX.mapOpen("europe_ta", "ocx_set_1")
dbsOCX.connect("ocx_set_1")
```

```
'add categories list to a combobox
Dim categoriesString As String
Dim categoriesList() As String
```

```
categoriesString = dbsOCX.categoriesList
categoriesList() = Split(categoriesString, ";")
For Each category In categoriesList()
    Combo3.AddItem category
Next

'let the user to select a category
...

'get input columns for selected category
Dim inputColumnsString As String
Dim inputColumnsList() As String
Combo4.Clear
inputColumnsString = dbsOCX.categoryInputColumnsList(Combo3.Text)
inputColumnsList() = Split(inputColumnsString, ";")
For Each Column In inputColumnsList()
    Combo4.AddItem Column
Next

'initialize the search
Dim searchID
searchID = dbsOCX.searchInit(Combo3.Text)

'set search restrictions
dbsOCX.searchSetInputColumnValue searchID, <an input column id>, <text to search>

'fetch all results
Dim data As String
Dim dataID As String
dbsOCX.searchFetch searchID, data, dataID
'data contains semicolon delimited list of output column values
'dataID contains UUID (universal object id) - string for communication with other mpfc com objects
While data > ""
    dbsOCX.searchFetch searchID, data, dataID
Wend

'end of search
dbsOCX.searchFree searchID

'highlight one of found records on the map (ocxMpvDataInterface is OcxMpvData.IMpvData object)
Dim highlightID As String
Set highlightID = ocxMpvDataInterface.mapHighlightObject(dataID, redValue, greenValue, blueValue,
"showwhole")
```

```
=====
Sample code (Visual C++ .NET)
=====
```

```
ICoreWrapper is ICore generated wrapper class
ICoreWrapper m_ocxCore;
IDbsWrapper is IDbs generated wrapper class
IDbsWrapper m_ocxDbs;

create and load com objects
m_ocxCore.CreateDispatch("CoreOCX.Core.1");
m_ocxDbs.CreateDispatch("DbSOCX.Dbs.1");
```

```

open a map
m_ocxCore.mapOpen("europe_ta", "ocx_set_1");
m_ocxDbS.connect("ocx_set_1");

add categories to a combobox
CString categoriesList = m_ocxDbS.categoriesList();
CString categoryID, categoryName;
int curPos;

categoryID = categoriesList.Tokenize(";", curPos = 0);
while (categoryID != "")
{
    get category name
    categoryName = m_ocxDbS.categoryID2Name(categoryID);

    add category to combobox
    m_CategoriesComboBox.SetItemDataPtr(m_CategoriesComboBox.AddString(categoryName), new
    CString(categoryID));

    get next categoryID
    categoryID = categoriesList.Tokenize(";", curPos);
}

get input columns for selected category
get selected item
int iSelectedItem = m_CategoriesComboBox.GetCurSel();

get selected category ID
CString categoryID = *(CString*)m_CategoriesComboBox.GetItemDataPtr(iSelectedItem);

get selected category input columns
CString inputColumnsList = m_ocxDbS.categoryInputColumnsList(categoryID);
CString inputColumnID, inputColumnName;
int curPos;

inputColumnID = inputColumnsList.Tokenize(";", curPos = 0);
while (inputColumnID != "")
{
    get input column name
    inputColumnName = m_ocxDbS.categoryInputColumnID2Name(categoryID, inputColumnID);

    add input column to listview
    m_InputColumnsListView.SetItemData(m_InputColumnsListView.InsertItem(m_InputColumnsListVie
w.GetItemCount(), inputColumnName), (DWORD)(new CString(inputColumnID)));

    get next input column ID
    inputColumnID = inputColumnsList.Tokenize(";", curPos);
}

start the search
long searchID = m_ocxDbS.searchInit(categoryID);

set search restrictions
m_ocxDbS.searchSetInputColumnValue(searchID, <an input column id>, <text to search>);

fetch all results
bool blsPostcodesCategory = m_ocxDbS.categoryIsPostcodes(categoryID);
BSTR data = 0;

```

```

BSTR dataID = 0;
long longitude, latitude;

while (true)
{
    fetch result
    if (blsPostcodesCategory)
        m_ocxDbx.searchPostcodesFetch(searchID, &data, &longitude, &latitude);
    else
        m_ocxDbx.searchFetch(searchID, &data, &dataID);

    test result
    CString strData(data);

    if (blsPostcodesCategory)
    {
        if (CString(data).IsEmpty())
            break; no other postcode
    }
    else
    {
        if (CString(dataID).IsEmpty())
            break; no other search result
    }

    do something with fetched data
    ...
}

end of search
m_ocxDbx.searchFree(searchID);

highlight one of found records on the map (m_ocxMpvDataInterface is OcxMpvData.IMpvData
wrapper class)
long highlightID = m_ocxMpvDataInterface.mapHighlightObject(dataID, redValue, greenValue,
blueValue, "showwhole");

```

5.1 methods

5.1.1 connect

connects a control to an opened map/sheet set

Syntax:

```

C++
HRESULT connect([in] BSTR ocxSetName);

```

Visual Basic

```

object.connect ocxSetName

```

| Part | Type | Description |
|------------|--------|---|
| ocxSetName | String | An string id that will be used to connect and |

disconnect DbsOCX,

MpvDataOCX, MpvViewOCX and RtgOCX to the

opened map

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_COMMON_OCX_INVALID_INSTALLATION (0x80040103) - missing or improperly installed ocx component
 E_COMMON_OCX_UNINITIALIZED (0x80040101) - ocx has not been initialized (possibly incorrect installation)
 E_FAIL (0x80004005) - unspecified error

5.1.2 disconnect

disconnects a control from an opened map/sheet set

Syntax:

C++

HRESULT disconnect();

Visual Basic

object.disconnect

Return values:

S_OK (0x00000000) - succeeded
 E_FAIL (0x80004005) - unspecified error

5.1.3 categoriesList

Retrieve a semicolon-separated list of all database category ids (e.g. "town_minor;hotel;street;bank")

Syntax:

C++

HRESULT categoriesList([out,retval] BSTR* categoryIDs);

Visual Basic

object.categoriesList categoryIDs

| Part | Type | Description |
|--------------------------|--------|--|
| categoryIDs ids (e.g. | String | a semicolon-separated list of all database category "town_minor;hotel;street;bank") |

Return values:

- S_OK (0x00000000) - succeeded
- S_FALSE (0x00000001) - succeeded but there are no search categories
- E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
- E_INVALIDARG (0x80070057) - invalid argument (categoryIDs is null)
- E_FAIL (0x80004005) - unspecified error

5.1.4 subCategoriesList

Retrieve semicolon-separated list of all database subcategories of given category

Syntax:

C++

HRESULT subCategoriesList([in] BSTR categoryID, [out,retval] BSTR* subCategoryIDs);

Visual Basic

object.categoriesList categoryID, subCategoryIDs

| Part | Type | Description |
|----------------|--------|--|
| categoryIDs | String | a category id (e.g. "town_minor;hotel;street;bank") |
| subCategoryIDs | String | a semicolon-separated list of all database subcategories of given category |

Return values:

- S_OK (0x00000000) - succeeded
- S_FALSE (0x00000001) - succeeded but there are no search categories
- E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
- E_INVALIDARG (0x80070057) - invalid argument (categoryIDs is null)
- E_FAIL (0x80004005) - unspecified error

5.1.5 categoryID2Name

Translate category id to user acceptable category name (e.g. town_minor -> city (small))

Syntax:

C++

HRESULT categoryID2Name([in] BSTR id, [out,retval] BSTR* name);

Visual Basic

object.categoryID2Name id, name

| Part | Type | Description |
|------|------|-------------|
|------|------|-------------|

| | | |
|----|--------|------------------------|
| id | String | a database category id |
|----|--------|------------------------|

| | | |
|------|--------|----------------------|
| name | String | Name of the category |
|------|--------|----------------------|

Return values:

| | |
|---|---|
| S_OK (0x00000000) | - succeeded |
| S_FALSE (0x00000001) | - succeeded but there is no translation available |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |
| E_INVALIDARG (0x80070057) | - invalid argument (name is null) |
| E_DATABASE_INVALID_CATEGORY(0x80040501) | - category id does not exist |
| E_FAIL (0x80004005) | - unspecified error |

5.1.6 categoryInputColumnsList

Retrieve semicolon-separated list of category input column ids (e.g. "name;county")

Syntax:**C++**

```
HRESULT categoryInputColumnsList([in] BSTR categoryID, [out,retval] BSTR* columnsIDs);
```

Visual Basic

```
object.categoriesList categoryID, columnsIDs
```

| Part | Type | Description |
|------------|--------|--|
| categoryID | String | a database category id. |
| columnsIDs | String | a semicolon-separated list of category input column ids (e.g. "name;county") |

Return values:

| | |
|---|---|
| S_OK (0x00000000) | - succeeded |
| S_FALSE (0x00000001) | - succeeded but there are no input columns |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |
| E_INVALIDARG (0x80070057) | - invalid argument (columnsIDs is null) |
| E_DATABASE_INVALID_CATEGORY(0x80040501) | - category id does not exist |
| E_FAIL (0x80004005) | - unspecified error |

5.1.7 categoryInputColumnID2Name

Translate input column id to input column name

Syntax:**C++**

```
HRESULT categoryInputColumnID2Name([in] BSTR categoryID, [in] BSTR columnID, [out,retval] BSTR* columnName);
```

Visual Basic

object.categoryInputColumnID2Name categoryID, columnID, columnName

| Part | Type | Description |
|------------|--------|---|
| categoryID | String | a database category id |
| columnID | String | the column ID for which you want to know the name |
| name | String | Name of the column |

Return values:

S_OK (0x00000000) - succeeded
 S_FALSE (0x00000001) - succeeded but there is no translation available
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (columnName is null)
 E_DATABASE_INVALID_CATEGORY(0x80040501) - category id does not exist
 E_DATABASE_INVALID_COLUMN(0x80040502) - column id does not exist
 E_FAIL (0x80004005) - unspecified error

5.1.8 categoryOutputColumnsList

Retrieve semicolon-separated list of category output column names

Syntax:

C++

HRESULT categoryOutputColumnsList([in] BSTR categoryID, [out,retval] BSTR* columnsIDs);

Visual Basic

object.categoryOutputColumnsList categoryID, columnsIDs

| Part | Type | Description |
|---------------------|--------|--|
| categoryID | String | a database category id |
| columnsIDs names | String | a semicolon-separated list of category output column names |

Return values:

S_OK (0x00000000) - succeeded
 S_FALSE (0x00000001) - succeeded but there are no output columns
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (columnsIDs is null)
 E_DATABASE_INVALID_CATEGORY(0x80040501) - category id does not exist
 E_FAIL (0x80004005) - unspecified error

5.1.9 categoryIsPostcodes

Test if a category is postcodes.

Syntax:

C++

HRESULT categoryIsPostcodes([in] BSTR categoryID, [out,retval] BOOL* isPostcodesCategory);

Visual Basic

object.categoriesList categoryID, isPostcodesCategory

| Part | Type | Description |
|------------|--------|------------------------|
| categoryID | String | a database category id |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument (isPostcodesCategory is null)
 E_FAIL (0x80004005) - unspecified error

5.1.10 searchInit

Initialize search for selected category id.
 Returns a search id which can be used in later calls to search interface methods.

Syntax:

C++

HRESULT searchInit([in] BSTR categoryID, [out,retval] LONG* searchID);

Visual Basic

object.searchInit categoryID, searchID

| Part | Type | Description |
|------------|--------|------------------------|
| categoryID | String | a database category id |
| searchID | String | the return search ID |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (columnsIDs is null)
 E_DATABASE_INVALID_CATEGORY(0x80040501) - category id does not exist
 E_LICENSE_POSTCODES(0x80040306) - license key does not allow searching postcodes data
 E_FAIL (0x80004005) - unspecified error

5.1.11 searchSubCategoryInit

Initialize search for selected category and subcategory id.
Returns a search id which can be used in later calls to search interface methods.

Syntax:

C++

HRESULT searchSubCategoryInit([in] BSTR categoryID, [in] BSTR subCategoryID, [out,retval] LONG* searchID);

Visual Basic

object.searchSubCategoryInit *categoryID*, *subCategoryID*, *searchID*

| Part | Type | Description |
|---------------|--------|---------------------------|
| categoryID | String | a database category id |
| subCategoryID | String | a database subcategory id |
| searchID | String | the return search ID |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (columnsIDs is null)
 E_DATABASE_INVALID_CATEGORY(0x80040501) - category id does not exist
 E_DATABASE_INVALID_SUBCATEGORY(0x80040506) - invalid subcategory
 E_LICENSE_POSTCODES(0x80040306) - license key does not allow searching postcodes data
 E_FAIL (0x80004005) - unspecified error

5.1.12 searchFree

End of search for specified category; must be called after fetching results is done.

Syntax:

C++

HRESULT searchFree([in] LONG searchID);

Visual Basic

object.searchFree *searchID*

| Part | Type | Description |
|----------|--------|--|
| searchID | String | the search ID you want to free up from memory. |

Return values:

S_OK (0x00000000) - succeeded

E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_DATABASE_INVALID_SEARCH_ID (0x80040503) - invalid searchID
 E_FAIL (0x80004005) - unspecified error

5.1.13 searchSetModifier

Change search modifier : 1 - value begins with specified text (default), 2 - searched text can be anywhere.

Syntax:

C++

HRESULT searchSetModifier([in] LONG searchID, [in] LONG searchModifier);

Visual Basic

object.searchSetModifier searchID, searchModifier

| Part | Type | Description |
|----------------|--------|---|
| searchID | String | the search ID you want to work with. |
| searchModifier | Long | the type of search you want to perform 1 - value begins with specified text (default) 2 - searched text can be anywhere in the string |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_DATABASE_INVALID_SEARCH_ID (0x80040503) - invalid searchID
 E_DATABASE_INVALID_MODIFIER (0x80040504) - invalid search modifier
 E_FAIL (0x80004005) - unspecified error

5.1.14 searchSetInputColumnValue

Set string to be searched in specified input column id (see categoryInputColumnsList)

Syntax:

C++

HRESULT searchSetInputColumnValue([in] LONG searchID, [in] BSTR inputColumnID, [in] BSTR inputColumnValue);

Visual Basic

object.searchSetInputColumnValue searchID, inputColumnID, inputColumnValue

| Part | Type | Description |
|---------------|--------|--|
| searchID | String | the search ID you want to work with. |
| inputColumnID | String | select which column you want to search |

| | | |
|-----------------|--------|-------------------|
| inputColumnName | String | the search string |
|-----------------|--------|-------------------|

Return values:

- S_OK (0x00000000) - succeeded
- E_INVALIDARG (0x80070057) - invalid argument
- E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
- E_DATABASE_INVALID_SEARCH_ID (0x80040503) - invalid searchID
- E_FAIL (0x80004005) - unspecified errorFs

5.1.15 searchClearInputColumnValues

Clear string to be searched in specified input column id

Syntax:

C++

HRESULT searchClearInputColumnValues([in] LONG searchID);

Visual Basic

object.searchClearInputColumnValues *searchID*

| Part | Type | Description |
|------------------------|--------|---|
| searchID strings from. | String | the search ID you want to clear all column search strings from. |

Return values:

- S_OK (0x00000000) - succeeded
- E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
- E_DATABASE_INVALID_SEARCH_ID (0x80040503) - invalid searchID
- E_FAIL (0x80004005) - unspecified error

5.1.16 searchFetch

Fetch next database row.
When there is no other data to fetch, data and dataID contains an empty string.

Syntax:

C++

HRESULT searchFetch([in] LONG searchID, [out] BSTR* data, [out] BSTR* dataID);

Visual Basic

object.searchFetch *searchID*, *data*, *dataID*

| Part | Type | Description |
|----------|--------|-----------------------------------|
| searchID | String | id of the query (see searchInit). |

| | | |
|--------|--------|--|
| data | String | a semicolon-separated list of output column values |
| dataID | String | object id - used to communicate with other ocx components (e.g. highlight object on the map) |

Return values:

| | |
|--|--|
| S_OK (0x00000000) | - succeeded |
| S_FALSE (0x00000001) | - succeeded but there is no other search result |
| E_INVALIDARG (0x80070057) | - invalid argument (data or dataID is null) |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |
| E_DATABASE_INVALID_SEARCH_ID (0x80040503) | - invalid searchID |
| E_DATABASE_INVALID_FETCH_USED (0x80040505) | - invalid fetch method used - for postcodes use searchPostcodesFetch |
| E_FAIL (0x80004005) | - unspecified error |

5.1.17 searchPostcodesFetch

Fetch the next database row.

When postcode location is not known, longitude and latitude equal 0.

Syntax:

C++

HRESULT searchPostcodesFetch([in] LONG searchID, [out] BSTR* data, [out] LONG* longitude, [out] LONG* latitude);

Visual Basic

object.searchPostcodesFetch *searchID*, *data*, *longitude*, *latitude*

| Part | Type | Description |
|-----------|--------|--|
| searchID | String | id of the query (see searchInit). |
| data | String | a semicolon-separated list of output column values |
| longitude | Long | postcode position longitude |
| latitude | Long | postcode position latitude |

Return values:

| | |
|--|---|
| S_OK (0x00000000) | - succeeded |
| S_FALSE (0x00000001) | - succeeded but there is no other search result |
| E_INVALIDARG (0x80070057) | - invalid argument (data or dataID is null) |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |
| E_DATABASE_INVALID_SEARCH_ID (0x80040503) | - invalid searchID |
| E_DATABASE_INVALID_FETCH_USED (0x80040505) | - invalid fetch method used - for non postcodes use searchFetch |

E_FAIL (0x80004005) - unspecified error

5.1.18 searchResultFindHouseNumber

find house number in a find street search result

Syntax:

C++

```
HRESULT searchResultFindHouseNumber([in] BSTR dataID, [in] BSTR houseNumber, [out] LONG* longitude, [out] LONG* latitude);
```

Visual Basic

object.searchResultFindHouseNumber *dataID*, *houseNumber*, *longitude*, *latitude*

| Part | Type | Description |
|-------------|--------|-----------------------------|
| dataID | String | ireult of a street search |
| houseNumber | String | house number to search for |
| longitude | Long | postcode position longitude |
| latitude | Long | postcode position latitude |

Return values:

S_OK (0x00000000) - succeeded
 S_FALSE (0x00000001) - house number not found
 E_INVALIDARG (0x80070057) - invalid argument (data or dataID is null)
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_FAIL (0x80004005) - unspecified error

5.1.19 searchResultGetMap

Get the map ID for the search result.

dataID - fetched object id

mapID - returned map name

Syntax:

C++

```
HRESULT searchResultGetMap([in] BSTR dataID, [out,retval] BSTR* mapName);
```

Visual Basic

object.searchResultGetMap *dataID*, *mapName*

| Part | Type | Description |
|------|------|-------------|
|------|------|-------------|

| | | |
|--------|--------|-------------------------|
| dataID | String | object id of the object |
|--------|--------|-------------------------|

| | | |
|---------|--------|---------------|
| mapName | String | return map ID |
|---------|--------|---------------|

Return values:

S_OK (0x00000000) - succeeded

E_INVALIDARG (0x80070057) - invalid argument (data or dataID is null)

5.1.20 searchCoordinateGetMap

Get the map ID for the search result.

dataID - fetched object id

mapID - returned map name

Syntax:**C++**

```
HRESULT searchCoordinateGetMap([in] LONG longitude, [in] LONG latitude, [out,retval] BSTR*
mapName);
```

Visual Basic

```
object.searchCoordinateGetMap longitude, latitude, mapName
```

| Part | Type | Description |
|------|------|-------------|
|------|------|-------------|

| | | |
|------------------------|--------|----------|
| longitude longitude | String | position |
|------------------------|--------|----------|

| | | |
|----------|--------|-------------------|
| latitude | String | position latitude |
|----------|--------|-------------------|

| | | |
|---------|--------|---------------|
| mapName | String | return map ID |
|---------|--------|---------------|

Return values:

S_OK (0x00000000) - succeeded

E_INVALIDARG (0x80070057) - invalid argument (mapName is null)

5.1.21 nearestFind

Find nearest object in specified category from specified location

Syntax:**C++**

```
HRESULT nearestFind([in] BSTR categoryID, [in] LONG longitude, [in] LONG latitude, [out] LONG*
distance, [out] BSTR* data, [out] BSTR* dataID);
```

Visual Basic

```
object.nearestFind categoryID, longitude, latitude, distance, data, dataID
```


| Part | Type | Description |
|--|--------|--|
| categoryID | String | a database category id |
| longitude | Long | postcode position longitude |
| latitude | Long | postcode position latitude |
| distance searched point | Long | distance of nearest found object in meters from the searched point |
| data | String | a semicolon-separated list of output column values |
| dataID components (e.g. highlight object on the map) | String | object id - used to communicate with other ocx |

Return values:

- S_OK (0x00000000) - succeeded
- S_FALSE (0x00000001) - succeeded but there is no other search result
- E_INVALIDARG (0x80070057) - invalid argument (data or dataID is null)
- E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
- E_NEAREST_INVALID_NEAREST_CATEGORY (0x80040801) - cannot look for nearest objects in category categoryID
- E_NEAREST_NO_OBJECT_FOUND (0x80040802) - failed to find nearest object in specified category (the category probably does not contain any objects)
- E_FAIL (0x80004005) - unspecified error

5.1.22 nearestFindMaxDistance

Find nearest object in specified category up to maxDistance meters from specified location

Syntax:

C++

HRESULT nearestFindMaxDistance([in] BSTR categoryID, [in] LONG longitude, [in] LONG latitude, [in] LONG maxDistance, [out] LONG* distance, [out] BSTR* data, [out] BSTR* dataID);

Visual Basic

object.nearestFind categoryID, longitude, latitude, maxDistance, distance, data, dataID

| Part | Type | Description |
|------------|--------|-----------------------------|
| categoryID | String | a database category id |
| longitude | Long | postcode position longitude |
| latitude | Long | postcode position latitude |

| | | |
|--|--------|---|
| distance searched point | Long | distance of nearest found object in meters from the |
| maxDistance | Long | maximum search distance from search center |
| data | String | a semicolon-separated list of output column values |
| dataID components (e.g. highlight object on the map) | String | object id - used to communicate with other ocx |

Return values:

| | |
|---|--|
| S_OK (0x00000000) | - succeeded |
| S_FALSE (0x00000001) | - succeeded but there is no other search result |
| E_INVALIDARG (0x80070057) | - invalid argument (data or dataID is null) |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |
| E_NEAREST_INVALID_NEAREST_CATEGORY (0x80040801) | - cannot look for nearest objects in category categoryID |
| E_NEAREST_NO_OBJECT_FOUND (0x80040802) | - failed to find nearest object in specified category (the category probably does not contain any objects) |
| E_FAIL (0x80004005) | - unspecified error |

5.1.23 nearestFindSubCategoryMaxDistance

Find nearest object in specified category restricted by specified type up to maxDistance meters from specified location

Syntax:**C++**

```
HRESULT nearestFindSubCategoryMaxDistance([in] BSTR categoryID, subCategoryID, [in] LONG longitude, [in] LONG latitude, [in] LONG maxDistance, [out] LONG* distance, [out] BSTR* data, [out] BSTR* dataID);
```

Visual Basic

object.nearestFind categoryID, subCategoryID, longitude, latitude, maxDistance, distance, data, dataID

| Part | Type | Description |
|---------------|--------|-----------------------------|
| categoryID | String | a database category id |
| subCategoryID | String | a database subcategory id |
| longitude | Long | postcode position longitude |
| latitude | Long | postcode position latitude |

| | | |
|--|--------|---|
| distance searched point | Long | distance of nearest found object in meters from the |
| maxDistance | Long | maximum search distance from search center |
| data | String | a semicolon-separated list of output column values |
| dataID components (e.g. highlight object on the map) | String | object id - used to communicate with other ocx |

Return values:

- S_OK (0x00000000) - succeeded
- S_FALSE (0x00000001) - succeeded but there is no other search result
- E_INVALIDARG (0x80070057) - invalid argument (data or dataID is null)
- E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
- E_NEAREST_INVALID_NEAREST_CATEGORY (0x80040801) - cannot look for nearest objects in category categoryID
- E_DATABASE_INVALID_SUBCATEGORY(0x80040506) - invalid subcategory
- E_NEAREST_NO_OBJECT_FOUND (0x80040802) - failed to find nearest object in specified category (the category probably does not contain any objects)
- E_FAIL (0x80004005) - unspecified error

6 RtgOCX

Methods

- [connect](#)
- [disconnect](#)
- [optimizationModes](#)
- [optimizationModelID2Name](#)
- [routeFind](#)
- [routeFindC2O](#)
- [routeFindO2C](#)
- [routeFindO2O](#)
- [routeDelete](#)
- [routeFirstEdge](#)
- [routeNextEdge](#)

=====
Sample code (Visual Basic 6)
=====

```
'open a map
coreOCX.mapOpen("europe_ta", "ocx_set_1")
rtgOCX.connect("ocx_set_1")
```

```
'find a route
Dim routeID As Integer
```

```

Dim roadNumber As String
Dim roadName As String
Dim roadType As String
Dim length As Long
Dim time As Long
Dim azimuth As Long
Dim isUrban As Long
Dim isBridge As Long
Dim isTunnel As Long
Dim isRoundabout As Long
Dim isRamp As Long
Dim isTollway As Long
Dim isPrivate As Long
Dim isJunction As Long
Dim isExit As Long
Dim dataID As String

```

```
routeID = rtgOCX.routeFind("fastest", longitudeFrom, latitudeFrom, longitudeTo, latitudeTo)
```

```
'fetch all route parts, highlight route on map (ocxMpvDataIMpvDataHighlights is kind of
ocxMpvData.IMpvDataHighlights)
```

```
'fetch first route part
```

```
rtgOCX.routeFirstEdge routeID, roadNumber, roadName, roadType, length, time, azimuth, isUrban,
isBridge, isTunnel, isRoundabout, isRamp, isTollway, isPrivate, isJunction, isExit, dataID
```

```
'highlight first route part on the map
```

```
ocxMpvDataIMpvDataHighlights.mapHighlightManyAddObject dataID
```

```
'fetch all other route parts
```

```
If dataID <> "" Then
```

```
Do
```

```
  'next edge
```

```
  rtgOCX.routeNextEdge routeID, roadNumber, roadName, roadType, length, time, azimuth, isUrban,
isBridge, isTunnel, isRoundabout, isRamp, isTollway, isPrivate, isJunction, isExit, dataID
```

```
  If (dataID <> "") Then
```

```
    'highlight next edge on the map
```

```
    ocxMpvDataIMpvDataHighlights.mapHighlightManyAddObject dataID
```

```
  End If
```

```
Loop While dataID <> ""
```

```
'end of highlight (show highlight on map)
```

```
ocxMpvDataIMpvDataHighlights.mapHighlightManyFinish redValue, greenValue, blueValue,
```

```
"showwhole"
```

```
Else
```

```
  MsgBox ("Route was not found")
```

```
End If
```

```
'do not forget to call rtgOCX.routeDelete routeID when the route is not used any more
```

```
=====
Sample code (Visual C++ .NET)
=====
```

```
// ICoreWrapper is ICore generated wrapper class
```

```
// ICoreWrapper m_ocxCore;
```

```
// IRtgWrapper is IRtg generated wrapper class
```

```
// IRtgWrapper m_ocxRtg;
```

```
// create and load com objects
```

```
m_ocxCore.CreateDispatch("CoreOCX.Core.1");
m_ocxRtg.CreateDispatch("RtgOCX.Rtg.1");

// open a map
m_ocxCore.mapOpen("europe_ta", "ocx_set_1");
m_ocxRtg.connect("ocx_set_1");

// fill in optimization modes to a combo
CString optimizationModesList = m_ocxRtg.optimizationModes();
CString optimizationModelID, optimizationModeName;
int curPos;

optimizationModelID = optimizationModesList.Tokenize(";", curPos = 0);
while (optimizationModelID != "")
{
    // get optimization mode name
    optimizationModeName = m_ocxRtg.optimizationModelID2Name(optimizationModelID);

    // add optimization mode to combobox
    m_optimizationsCombo.SetItemDataPtr(m_optimizationsCombo.AddString(optimizationModeName),
    new CString(optimizationModelID));

    // get next optimization mode
    optimizationModelID = optimizationModesList.Tokenize(";", curPos);
}

// find route
long routeID = m_ocxRtg.routeFind(choosedOptimizationMode, longitudeFrom, latitudeFrom,
longitudeTo, latitudeTo);

// fetch the route and highlight it on the map
BSTR roadNumber = 0;
BSTR roadName = 0;
BSTR roadType = 0;
BSTR dataID = 0;
long length, time, azimuth, isUrban, isBridge, isTunnel, isRoundabout, isRamp, isTollway, isPrivate,
isJunction, isExit;

m_ocxRtg.routeFirstEdge(routeID, &roadNumber, &roadName, &roadType, &length, &time, &azimuth,
&isUrban, &isBridge, &isTunnel, &isRoundabout, &isRamp, &isTollway, &isPrivate, &isJunction,
&isExit, &dataID);
while (CComBSTR(dataID).Length() > 0)
{
    // fill in route edge description somewhere

    // highlight
    // use method mapHighlightManyAddObject of ocxMpvData com object and IMpvDataHighlight
interface
    // mapHighlightManyAddObject(dataID)

    // next edge
    m_ocxRtg.routeNextEdge(routeID, &roadNumber, &roadName, &roadType, &length, &time,
&azimuth, &isUrban, &isBridge, &isTunnel, &isRoundabout, &isRamp, &isTollway, &isPrivate,
&isJunction, &isExit, &dataID);
}

// end of highlight
// use method mapHighlightManyFinish of ocxMpvData com object and IMpvDataHighlight interface
```

```
// mapHighlightManyFinish(redValue, greenValue, blueValue, "showwhole");
```

6.1 methods

6.1.1 connect

connects a control to an opened map/sheet set

Syntax:

C++

```
HRESULT connect([in] BSTR ocxSetName);
```

Visual Basic

```
object.connect ocxSetName
```

| Part | Type | Description |
|--|--------|---|
| ocxSetName disconnect DbsOCX, opened map | String | An string id that will be used to connect and MpvDataOCX, MpvViewOCX and RtgOCX to the |

Return values:

| | |
|--|--|
| S_OK (0x00000000) | - succeeded |
| E_INVALIDARG (0x80070057) | - invalid argument |
| E_COMMON_OCX_INVALID_INSTALLATION (0x80040103) | - missing or improperly installed ocx component |
| E_COMMON_OCX_UNINITIALIZED (0x80040101) | - ocx has not been initialized (possibly incorrect installation) |
| E_FAIL (0x80004005) | - unspecified error |

6.1.2 disconnect

disconnects a control from an opened map/sheet set

Syntax:

C++

```
HRESULT disconnect();
```

Visual Basic

```
object.disconnect
```

Return values:

| | |
|---------------------|---------------------|
| S_OK (0x00000000) | - succeeded |
| E_FAIL (0x80004005) | - unspecified error |

6.1.3 optimizationModes

Retrieve semicolon-separated list of optimization modes (e.g. "fastest;shortest;cheapest")

Syntax:

C++

HRESULT optimizationModes([out,retval] BSTR* modeIDs);

Visual Basic

object.optimizationModes *modeIDs*

| Part | Type | Description |
|---------|--------|--|
| modeIDs | String | a semicolon-separated list of all routing modes e.g. "fastest;shortest;cheapest" |

Return values:

S_OK (0x00000000) - succeeded
 S_FALSE (0x00000001) - succeeded but there are no modes (should not happen)
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (categoryIDs is null)
 E_FAIL (0x80004005) - unspecified error

6.1.4 optimizationModelID2Name

Translate optimization mode id to optimization name

Syntax:

C++

HRESULT optimizationModelID2Name([in] BSTR modeID, [out,retval] BSTR* modeName);

Visual Basic

object.optimizationModelID2Name *modeid*, *modeName*

| Part | Type | Description |
|------|--------|--------------------------|
| id | String | an optimisation id |
| name | String | Name of the optimisation |

Return values:

S_OK (0x00000000) - succeeded
 S_FALSE (0x00000001) - succeeded but there is no translation
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_INVALIDARG (0x80070057) - invalid argument (modeName is null)
 E_ROUTING_INVALID_OPTIMIZATION_MODE (0x80040601) - mode id does not exist
 E_FAIL (0x80004005) - unspecified error

6.1.5 setVehicleType

Set vehicle type to be used for route computation

Syntax:

C++

```
HRESULT setVehicleType([in] LONG vehicleType);
```

Visual Basic

object.setVehicleType vehicleType

| Part | Type | Description |
|-------------|------|--|
| vehicleType | Long | can be 0 for car or 1 for truck 2 for pedestrian |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_FAIL (0x80004005) - unspecified error

6.1.6 setTruckRestrictions

Translate optimization mode id to optimization name

Syntax:

C++

```
HRESULT setTruckRestrictions( [in] LONG weight, [in] LONG weightPerAxle, [in] LONG length, [in] LONG width, [in] LONG height, [in] BOOL transportsHazardousMaterial );
```

Visual Basic

object.setTruckRestrictions weight, weightPerAxle,length, width, height, transportsHazardousMaterial

| Part | Type | Description |
|-----------------------------|------|-------------|
| weight | Long | vehicle |
| weightPerAxle | Long | parameters |
| length | Long | go |
| width | Long | here |
| height | Long | |
| transportsHazardousMaterial | Long | |

Return values:

S_OK (0x00000000) - succeeded
 E_INVALIDARG (0x80070057) - invalid argument
 E_LICENSE_NO_TRUCKRESTRICTIONS (0x80040308) - no license for truck restrictions data
 E_COMMON_OCX_ARGUMET_OUT_OF_RANGE (0x80040104) - argument value out of range

6.1.7 routeFind

Finds route between specified points [longitudeFrom, latitudeFrom] -> [longitudeTo, latitudeTo]
 Optimization is desired optimization method (fastest, shortest, ...) - see optimizationModes
 Returns found route id; each route is stored in ocx's route cache until deleted by routeDelete method

Syntax:**C++**

HRESULT routeFind([in] BSTR optimization, [in] LONG longitudeFrom, [in] LONG latitudeFrom, [in] LONG longitudeTo, [in] LONG latitudeTo, [out,retval] LONG* routeID);

Visual Basic

object.routeFind optimization, longitudeFrom, latitudeFrom, longitudeTo, latitudeTo, routeID

| Part | Type | Description |
|---------------|--------|--|
| optimization | String | the optimisation mode that you want to use |
| longitudeFrom | Long | start point longitude |
| latitudeFrom | Long | start point latitude |
| longitudeTo | Long | end point longitude |
| latitudeTo | Long | end point latitude |
| routeID | Long | route id - each route is stored in ocx's route cache until deleted by routeDelete method |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_ROUTING_INVALID_OPTIMIZATION_MODE (0x80040601) - optimization mode id does not exist
 E_ROUTING_ROUTE_NOT_FOUND (0x80040602) - route was not found
 E_FAIL (0x80004005) - unspecified error

6.1.8 routeFindC2O

Finds route between specified points [longitudeFrom, latitudeFrom] -> [dataIDTo]
 Optimization is desired optimization method (fastest, shortest, ...) - see optimizationModes
 Returns found route id; each route is stored in ocx's route cache until deleted by routeDelete method

Syntax:**C++**

```
HRESULT routeFindC2O([in] BSTR optimization, [in] LONG longitudeFrom, [in] LONG latitudeFrom,
[in] BSTR dataIDTo, [out,retval] LONG* routeID);
```

Visual Basic

object.routeFindC2O optimization, longitudeFrom, latitudeFrom, dataIDTo, routeID

| Part | Type | Description |
|--|--------|---|
| optimization | String | the optimisation mode that you want to use |
| longitudeFrom | Long | start point longitude |
| latitudeFrom | Long | start point latitude |
| dataIDTo method) | String | end point data id (returned by DbsOCX searchFetch method) |
| routeID until deleted by routeDelete method | Long | route id - each route is stored in ocx's route cache |

Return values:

S_OK (0x00000000) - succeeded
E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
E_ROUTING_INVALID_OPTIMIZATION_MODE (0x80040601) - optimization mode id does not exist
E_ROUTING_ROUTE_NOT_FOUND (0x80040602) - route was not found
E_FAIL (0x80004005) - unspecified error

6.1.9 routeFindO2C

Finds route between specified points [dataIDFrom] -> [longitudeTo, latitudeTo]

Optimization is desired optimization method (fastest, shortest, ...) - see optimizationModes

Returns found route id; each route is stored in ocx's route cache until deleted by routeDelete method

Syntax:**C++**

```
HRESULT routeFindO2C([in] BSTR optimization, [in] BSTR dataIDFrom, [in] LONG longitudeTo, [in]
LONG latitudeTo, [out,retval] LONG* routeID);
```

Visual Basic

object.routeFind optimization, dataIDFrom, longitudeTo, latitudeTo, routeID

| Part | Type | Description |
|--------------|--------|--|
| optimization | String | the optimisation mode that you want to use |

| | | |
|--|--------|--|
| dataIDFrom method) | String | start point data id (returned by DbsOCX searchFetch |
| longitudeTo | Long | end point longitude |
| latitudeTo | Long | end point latitude |
| routeID until deleted by routeDelete method | Long | route id - each route is stored in ocx's route cache |

Return values:

| | |
|--|---|
| S_OK (0x00000000) | - succeeded |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |
| E_ROUTING_INVALID_OPTIMIZATION_MODE (0x80040601) | - optimization mode id does not exist |
| E_ROUTING_ROUTE_NOT_FOUND (0x80040602) | - route was not found |
| E_FAIL (0x80004005) | - unspecified error |

6.1.10 routeFindO2O

Finds route between specified points [dataIDFrom] -> [dataIDTo]

Optimization is desired optimization method (fastest, shortest, ...) - see optimizationModes

Returns found route id; each route is stored in ocx's route cache until deleted by routeDelete method

Syntax:

C++

HRESULT routeFindO2O([in] BSTR optimization, [in] BSTR dataIDFrom, [in] BSTR dataIDTo, [out,retval] LONG* routeID);

Visual Basic

object.routeFind optimization, dataIDFrom, dataIDTo, routeID

| Part | Type | Description |
|--|--------|--|
| optimization | String | the optimisation mode that you want to use |
| dataIDFrom method) | String | start point data id (returned by DbsOCX searchFetch |
| dataIDTo method) | Long | end point data id (returned by DbsOCX searchFetch |
| routeID until deleted by routeDelete method | Long | route id - each route is stored in ocx's route cache |

Return values:

| | |
|-------------------------------|---|
| S_OK (0x00000000) | - succeeded |
| E_MAP_NOT_OPENED (0x80040203) | - there is no map opened (call mapOpen first) |

E_ROUTING_INVALID_OPTIMIZATION_MODE (0x80040601) - optimization mode id does not exist
 E_ROUTING_ROUTE_NOT_FOUND (0x80040602) - route was not found
 E_FAIL (0x80004005) - unspecified error

6.1.11 routeDelete

Deletes found route from routes cache

Syntax:

C++

HRESULT routeDelete([in] LONG routeID);

Visual Basic

object.routeFind routeID

| Part | Type | Description |
|---------|------|--|
| routeID | Long | route id - each route is stored in ocx's route cache until deleted by routeDelete method |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_ROUTING_INVALID_ROUTE_ID (0x80040603) - optimization mode id does not exist
 E_FAIL (0x80004005) - unspecified error

6.1.12 routeFirstEdge

Retrieves first edge (link) parameters of specified route

Syntax:

C++

HRESULT routeFirstEdge([in] LONG routeID, [out] BSTR* roadNumber, [out] BSTR* roadName, [out] BSTR* roadType, [out] LONG* length, [out] LONG* time, [out] LONG* azimuth, [out] BOOL* isUrban, [out] BOOL* isBridge, [out] BOOL* isTunnel, [out] BOOL* isRoundabout, [out] BOOL* isRamp, [out] BOOL* isTollway, [out] BOOL* isPrivate, [out] BOOL* isJunction, [out] BOOL* isExit, [out] BSTR* dataID);

Visual Basic

object.routeFind routeID, roadNumber, roadName, roadType, length, time, azimuth, isUrban, isBridge, isTunnel, isRoundabout, isRamp, isTollway, isPrivate, isJunction, isExit, dataID

| Part | Type | Description |
|---------|------|--|
| routeID | Long | route id - each route is stored in ocx's route cache until deleted by routeDelete method |

| | | |
|--------------|---------|---|
| roadNumber | String | the road number of the link if it has one |
| roadName | String | the street name of the link if it has one |
| roadType | String | road type |
| length | Long | length of the link |
| time | Long | time of travel along the link |
| azimuth | Long | angle of turn |
| isUrban | Boolean | TRUE if the link is in an urban area |
| isBridge | Boolean | TRUE if the link is on a bridge |
| isTunnel | Boolean | TRUE if the link is in a tunnel |
| isRoundabout | Boolean | TRUE if the link is part of a roundabout |
| isRamp | Boolean | TRUE if the link is part of a slip road |
| isTollway | Boolean | TRUE if the link is on a Toll road |
| isPrivate | Boolean | TRUE if the link is on a private road |
| isJunction | Boolean | TRUE if the link is a Motorway Junction |
| isExit | Boolean | TRUE if the link is part of an exit |
| dataID | String | object id of the link |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_ROUTING_INVALID_ROUTE_ID (0x80040603) - optimization mode id does not exist
 E_FAIL (0x80004005) - unspecified error

6.1.13 routeNextEdge

Retrieves next edge parameters of specified route

Syntax:

C++

HRESULT routeNextEdge([in] LONG routeID, [out] BSTR* roadNumber, [out] BSTR* roadName, [out] BSTR* roadType, [out] LONG* length, [out] LONG* time, [out] LONG* azimuth, [out] BOOL* isUrban, [out] BOOL* isBridge, [out] BOOL* isTunnel, [out] BOOL* isRoundabout, [out] BOOL* isRamp, [out] BOOL* isTollway, [out] BOOL* isPrivate, [out] BOOL* isJunction, [out] BOOL* isExit, [out] BSTR* dataID);

Visual Basic

object.routeNextEdge routeID, roadNumber, roadName, roadType, length, time, azimuth, isUrban, isBridge, isTunnel, isRoundabout, isRamp, isTollway, isPrivate, isJunction, isExit, dataID

| Part | Type | Description |
|--------------|---------|--|
| routeID | Long | route id - each route is stored in ocx's route cache until deleted by routeDelete method |
| roadNumber | String | the road number of the link if it has one |
| roadName | String | the street name of the link if it has one |
| roadType | String | road type |
| length | Long | length of the link |
| time | Long | time of travel along the link |
| azimuth | Long | angle of turn |
| isUrban | Boolean | TRUE if the link is in an urban area |
| isBridge | Boolean | TRUE if the link is on a bridge |
| isTunnel | Boolean | TRUE if the link is in a tunnel |
| isRoundabout | Boolean | TRUE if the link is part of a roundabout |
| isRamp | Boolean | TRUE if the link is part of a slip road |
| isTollway | Boolean | TRUE if the link is on a Toll road |
| isPrivate | Boolean | TRUE if the link is on a private road |
| isJunction | Boolean | TRUE if the link is a Motorway Junction |
| isExit | Boolean | TRUE if the link is part of an exit |
| dataID | String | object id of the link |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_ROUTING_INVALID_ROUTE_ID (0x80040603) - optimization mode id does not exist
 E_FAIL (0x80004005) - unspecified error

6.1.14 routeDistance

computes the distance of a given point from a route (in meters)

Syntax:**C++**

HRESULT routeDistance([in] LONG routeID, [in] LONG longitude, [in] LONG latitude, [out] LONG* distance);

Visual Basic

object.routeDistance routeID, longitude, latitude, distance

| Part | Type | Description |
|-----------|------|-------------------------|
| routeID | Long | ID of the route |
| longitude | Long | longitude of the point |
| latitude | Long | latitude of the point |
| distance | Long | distance from the route |

Return values:

S_OK (0x00000000) - succeeded
 E_MAP_NOT_OPENED (0x80040203) - there is no map opened (call mapOpen first)
 E_ROUTING_INVALID_ROUTE_ID (0x80040603) - optimization mode id does not exist
 E_INVALIDARG (0x80070057) - invalid argument (distance is null)
 E_FAIL (0x80004005) - unspecified error

Endnotes 2... (after index)

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