Web CAD SDK Reference

Contents

What's new

- **Different engines**
  The **DrawingManager.Engine** property has been added. It allows the user to change the type of the used library. You can find it in the **Global.asax.cs** file of the demo.

- **Loading drawings via Stream**
  The **LoadFromStream** method has been added to CADControl. This method requires two parameters:
  stream – the Stream itself;
  name – the file name to define what you want to load from it.

- **Changes in measuring instruments**
  Now measuring instruments send their results to the callback of the user who can manage it the way he/she wants. In the test example the `showMeasuring` callback displays the results in a separate window. Callback has the following signature:

  ```
  function (dist, area, perimeter, angle, deltaX, deltaY, isShow)
  ```

  dist – result of the distance measuring
  area –result of the area measuring
  perimeter – result of the perimeter measuring (for the instruments perimeter and area)
  deltaX – shift on the X-axis (for the instrument distance)
  deltaY – shift on the Y-axis (for the instrument distance)

isShow – true if measuring results are sent. Can be used to control display of the dialog box with measuring results.

Now measuring can be canceled by pressing **Esc** or finished by double-click. The measuring line is saved after double-clicking and the user can see what exactly has been measured. In the test example the window with measuring result also remains active after double-clicking.

- **Print**

Now PDF format is used for printing. At first a PDF document is generated which you can print or save to file for further processing. This way of printing has been chosen due to the fact that the previous way of printing a raster image distorted the drawing size. In the demonstration example print is sent to the callback that opens the preview window.

```
CADControl1.cad.onprint = function (e) {
    if (e.printUrl)
        window.open(e.printUrl, '', 'width=600,height=600');

    return false;
}
```

- **Snaps**

Limited support of snaps has been implemented. Now only anchors to segment ends and circle centers work. They can be switched on or off. In the demonstration example snaps are switched on in the following way:

```
CADControl1.cad.isShowSnap = true;
```

- **Merge**

Now it is possible to embed a drawing into another one without the layout restart with the help of the function
```
cad.merge(File file, string name, point pos, point scale, double rotation)
```

In the demonstration example you can look at the example of its use in

```
<input type="file" id="MergeFile"
onchange="CADControl1.cad.merge($('#MergeFile')[0].files[0], 'name', {x:5, y:5},
{x:1,y:1}, 0)" />
```

Introduction

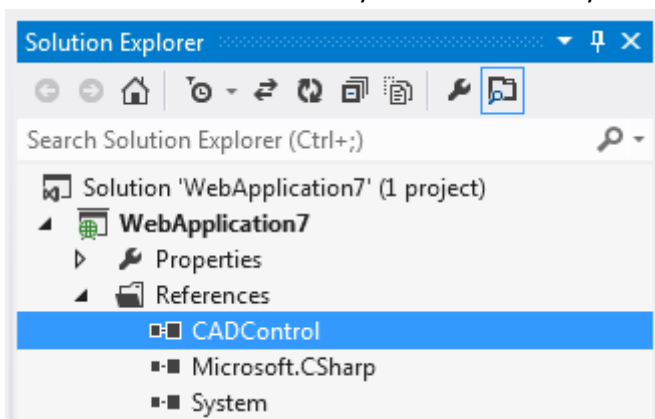Web CAD SDK is a developer library for viewing CAD formats online.
www.sharecad.org portal uses Web CAD SDK.

How to run

1. Unzip the archive.
2. Open **TestWebSite.sln** in your version of MS Studio, for instance: **Demo.VS2012\TestWebSite.sln**
You can use **VS Express for Web** which is free and can be downloaded at: www.microsoft.com
3. If required change the **DrawingManager.Engine** property in the **Global.asax.cs** project file to the required engine.
4. Run the demo. Debug -> Start debugging (F5)

How to add the control without design-time

Add the **CADControl.dll** library as a reference to your web project:

Please note: the control uses CAD.dll for CAD drawings import, so make sure that CADControl.dll and CAD.dll files are located in the same directory if you have selected the following engine: **DrawingManager.Engine = DrawingEngine.CADDLL**

Add the following code to the **.aspx** page where you plan to add the control:

```
<%@ Register Assembly="CADControl" Namespace="WebCAD" TagPrefix="sg" %>
```

After that you can add the control to a page by declaring it directly in the **.aspx** file:

```
<sg:CADControl runat="server" ID="CADControl1" Service="/draw" Height="600px"
Width="1200px"></sg:CADControl>
```

Service, one of the required parameters, represents the relative path to the handler that is part of the control and processes its queries.

The handler must be declared in the **Web.config** file of your web project (website):

```
<location path="draw">
  <system.webServer>
    <validation validateIntegratedModeConfiguration="false" />
    <handlers>
      <add name="CADHandler" path="*" verb="*" type="WebCAD.CADHandler" />
    </handlers>
  </system.webServer>
  <system.web>
    <httpHandlers>
      <add path="*" verb="*" type="WebCAD.CADHandler" />
    </httpHandlers>
  </system.web>
</location>
```

Where path is the path to your choice.

To load a drawing to the control, you can use the additional File parameter as shown below:

```
<sg:CADControl runat="server" ID="CADControl1" Service="/draw" Height="600px"
Width="1200px" File="d:\test\cad.dwg"></sg:CADControl>
```
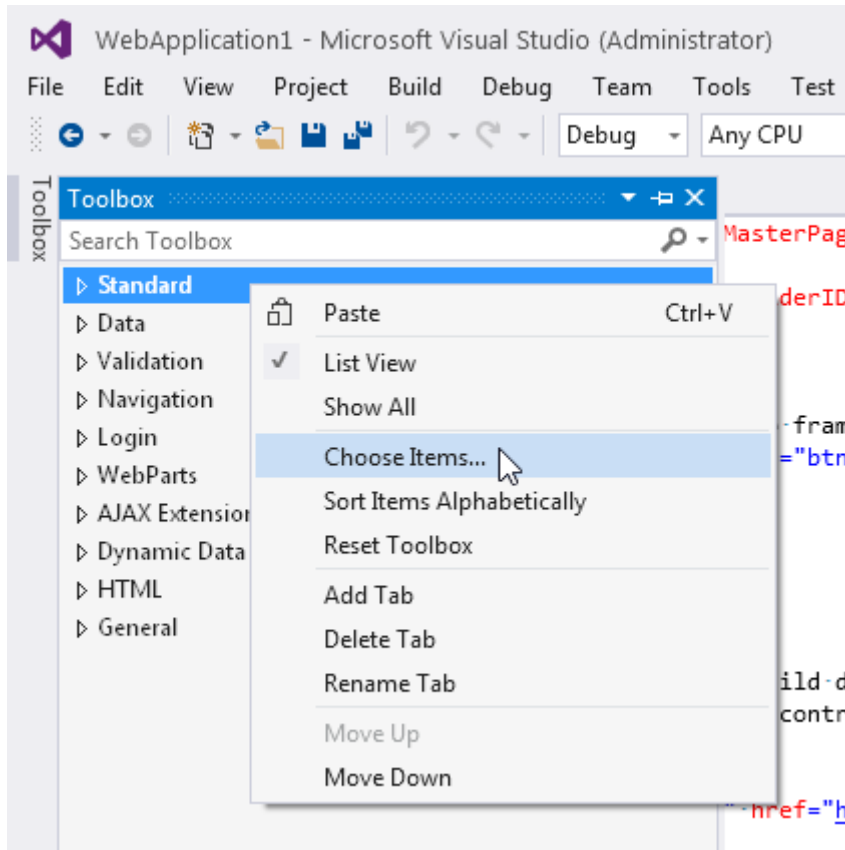
It is also possible to transmit a drawing to the control in code. For example, you can access the control by its name in the Page_Load event and specify the File property.

The control is at the stage of development and more features will be added. Please let us know if you need any custom enhancements, we will be happy to discuss them and make the control as convenient for you as possible.
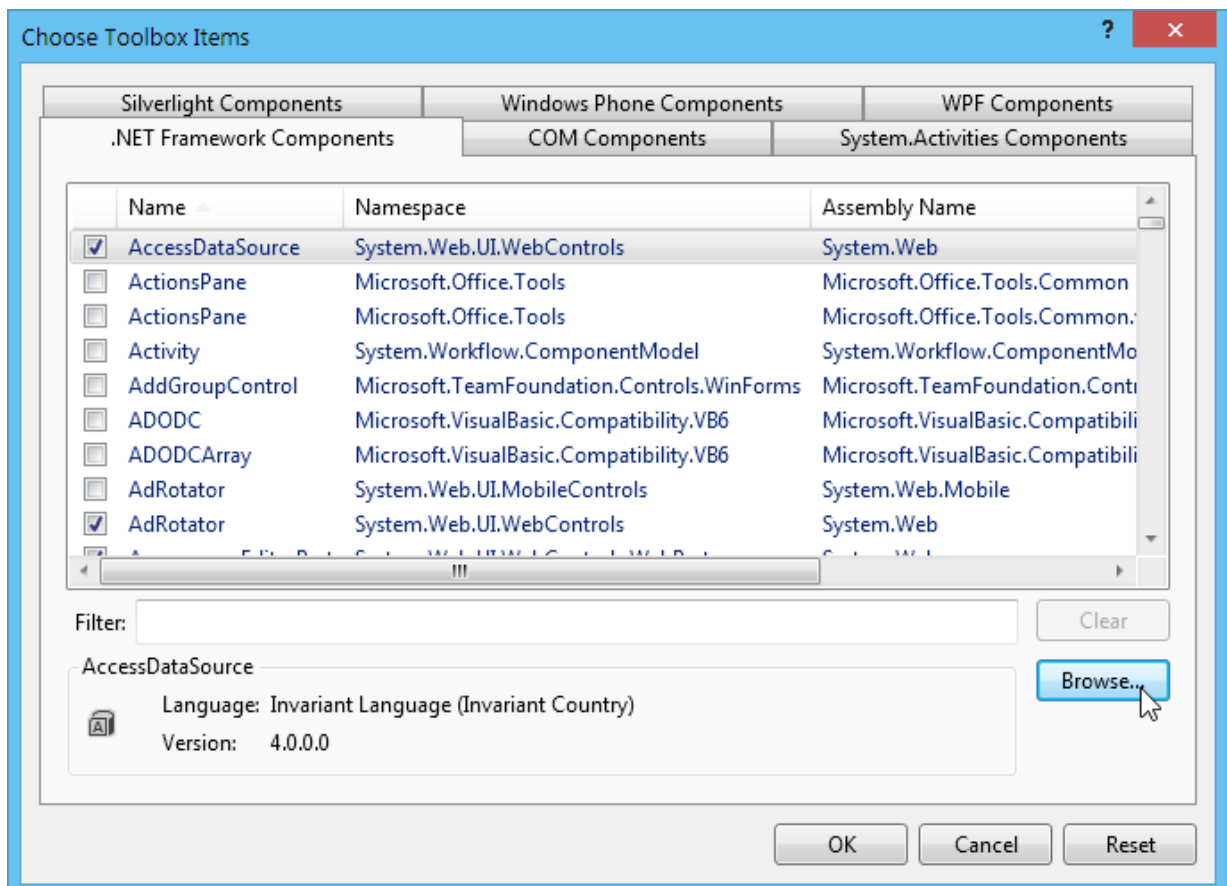
The project works under 32-bit environment. If the following engine is selected **DrawingManager.Engine = DrawingEngine.CADDLL**, then to use the 64-bit environment, please create the **x64** folder within the **bin** folder and place the 64-bit **cad.dll** there.
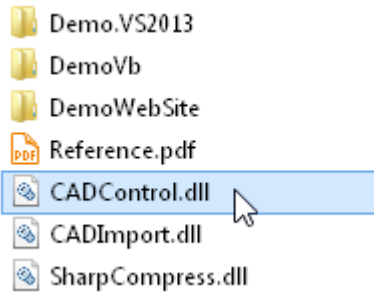
How to add design-time control

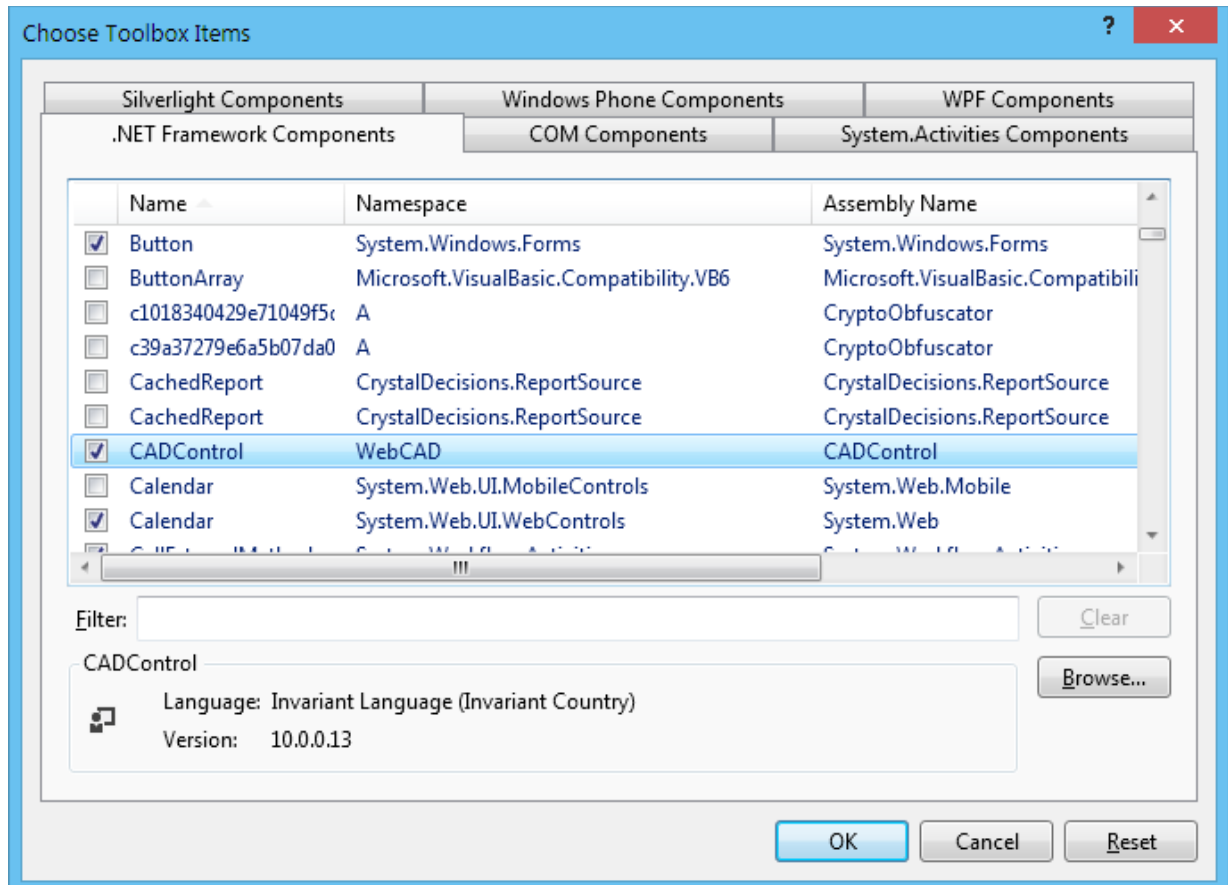1. **Toolbox > Right mouse button> Choose Items >**

The following dialog should appear:

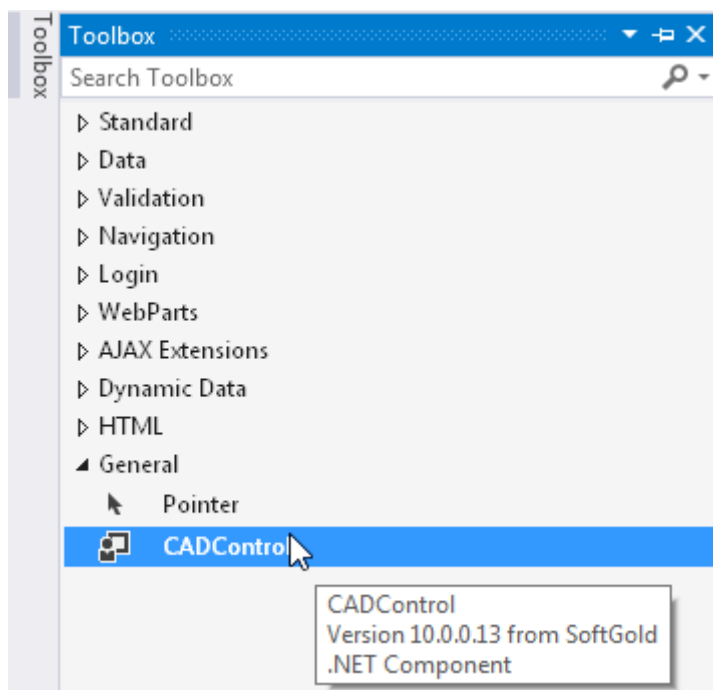Press Browse and select **CADControl.dll**

A new item, **CADControl**, should be visible in panel:

Press **OK**.

As a result we see **CADControl** in **Toolbox**:

How to set SHX fonts
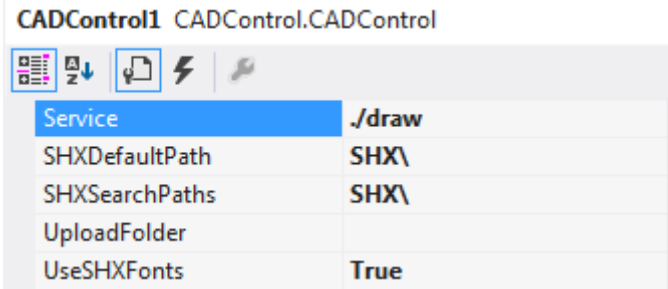
To set SHX fonts, use the following properties

`string` SHXSearchPaths – is a list of paths separated by ";". Relative paths are treated relative to the folder App_Data of the website.

`string` SHXDefaultPath – is the default path

`string` DefaultSHXFont – is the default font

`bool` UseSHXFonts – is a checkbox activating SHX fonts usage

In the demo example, fonts are stored in **App_Data\SHX**. **SHXSearchPaths**, **SHXDefaultPath** are specified there. All these properties are available in design time.

CADControl1 CADControl.CADControl

Service	./draw
SHXDefaultPath	**SHX**
SHXSearchPaths	**SHX**
UploadFolder	
UseSHXFonts	**True**

How to load file from the server

CADControl allows loading drawings uploaded earlier. The function **saveAsDXF** demonstrates this in the demo example:

```
var saveAsDXF = function () {
    location.href = cad.service + "/saveasdxf?id=" + CADControl1.cad.guid;
}
```

How to switch 3D views

To add switching 3D views, you only need to create an array of views names (their order is important) and call the `CADControl.cad.face.updateVDL` function that initializes the drop-down list for switching 3D views

```
var viewsNames = ["Initial View", "-", "Top View", "Bottom View", "Left View",
"Right View", "Front View", "Back View", "-", "SW Isometric", "SE Isometric", "NE
Isometric", "NW Isometric"];
    CADControl1.cad.face.updateVDL("viewsDownlist", viewsNames);
```

You can find this feature in the demo example.

Setting the Drawing Lifetime

You can set the lifetime of a drawing the following way:

First of all, please connect the **CADControl** module

```
using CADControl;
```

After the drawing is loaded, please add the following string:

```
DrawingState ds = DrawingManager.Get(CADControl1.DrawingID);
ds.UnloadTime = 1800000;
ds.DestroyTime = 1800000;
```

Time is defined in milliseconds. **UnloadTime** is the time till the drawing is unloaded from the control, and **DestroyTime** is the time till the link to the drawing in **CADControl** is deleted. It must be higher than **UnloadTime**.

An example of such a setting can be found in **Default.aspx.cs** in `protected void Button1_Click(object sender, EventArgs e)`

Merging without Any Change in Scale

To merge a drawing into another one without reloading the control, use the following method:

`cad.merge(File file, string name, point pos, point scale, double rotation).`

Here **file** is a component of the **File JavaScript** class, **name** is a text string, **pos** is an object with margins x and y, the **point** of insertion in the coordinate system, **scale** is an object with margins x and y that represents scale factor along the coordinate axes, **rotation** is a value with the floating point - rotation

Snap and Results of Measurements

Snap is activated by setting the **cad.isShowSnap** property. In the demo example please see

`CADControl1.cad.isShowSnap = true;`

To display the results of the measurements, use the callback `cad.measuring.onmeasuring(dist, area, perimeter, angle, isShow)`.

dist – the result of measuring distance

area – the result of measuring area

perimeter – the result of measuring perimeter (for the area and perimeter tools)

angle – the result of measuring distance (for the distance tool)

deltaX – shift on the X-axis (for the instrument distance)
deltaY – shift on the Y-axis (for the instrument distance)

isShow – a toggle that shows that the window with the results of the measurements will be displayed (true) or closed (false)

the demo example contains the demo handler:

`showMeasuring = function (dist, area, perimeter, angle , deltaX, deltaY, isShow)`

To create user messages before measuring, use the **cad.measuring.onmeasuring** callback. If a false value is returned, the measurement isn't performed. In the demo example, please refer to

```
CADControl1.cad.measuring.onmeasuring = function (e) {
    if (confirm('Are you sure?')) {
        return true;
    }
    return false;
}
```

Now measuring can be canceled by pressing **Esc** or finished by double-click. The measuring line is saved after double-clicking and the user can see what exactly has been measured. In the test example the window with measuring result also remains active after double-clicking.

Print

Now PDF format is used for printing. At first a PDF document is generated which you can print or save to file for further processing. This way of printing has been chosen due to the fact that the previous way of printing a raster image distorted the drawing size. In the demonstration example print is sent to the callback that opens the preview window.

```
CADControl1.cad.onprint = function (e) {
    if (e.printUrl)
        window.open(e.printUrl, '', 'width=600,height=600');

    return false;
}
```

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