

Franson GpsTools <http://franson.com/gpstools>

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TIP! Use [GpsGate](#) to simulate a GPS during development.

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Franson GpsTools .NET

Install

[Install GpsTools SDK](#) describes how to install GpsTools for .NET development.

Develop

[Getting started with VB.NET](#)

describes how to install GpsTools .NET and start writing VB.NET applications.

[Getting started with C#](#)

describes how to install GpsTools .NET and start writing C# applications.

[Getting started with ASP.NET in VB](#)

describes how to install GpsTools .NET and start writing web applications in VB.NET.

[Getting started with ASP.NET in C#](#)

describes how to install GpsTools .NET and start writing web applications in C#.

Distribute

[Distribution](#) how to distribute your GpsTools .NET application.

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More usage of GpsTools:

[GpsTools + GpsGate integration.](#)

Run multiple GPS applications at the same time, sharing the same GPS.

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: [More samples](#) The SDK conatins many
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[Access GPS from Internet Explorer](#)

Get GPS coordinates into your HTML page using GpsTools.

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Technical support can be found in the user forum. We will constantly monitor and answer questions in the forum. The forum also includes frequently asked question (FAQ).

[General FAQ for GpsTools](#)

[Browse the Technical support forum!](#)

[Search the Technical support forum!](#)

Install GpsTools SDK

Steps to install:

1. [Download](#) and unzip GpsTools SDK.
2. Run `Setup.exe`

NOTE! The Visual Basic 6.0 runtime environment must be installed for `GpsTools Studio` to work. If you don't have it

installed already it can be downloaded from Microsofts ftp-server <ftp://ftp.microsoft.com/softlib/mslfiles/vbrun60sp3.exe>

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Getting started with VB.NET and GpsTools .NET

Examples The best and easiest way to get started is to take a look at the examples.

The samples can be found in the `.NET Desktop Framework\Samples\VB.NET` directory.

Sample 1 - SerialPort

Reads data from the serial port and parses NMEA 0183 data (standard GPS protocol). Presents position as latitude, longitude, UTM coordinates, (or other supported national coordinate system). Displays speed and satellite information. Depends on **GpsToolsNET.dll**

Sample 2 - SimpleMap

Demonstrates the new **raster map** functionality. Connects a GPS to a map. Draws and handles graphical objects on a map, zoom and rotation and much more. Handles mouse events. And more...

Create your own MapLibs using [GpsTools Studio](#).

Depends on **GpsToolsNET.dll, GpsViewNET.dll**

Sample 3 - Layers

Draw objects on several of layers and how to manage layers.

Depends on **GpsToolsNET.dll, GpsViewNET.dll**

Sample 4 - MultiMap

Switch between different raster maps. Use and define blank maps.

Depends on **GpsToolsNET.dll, GpsViewNET.dll**

Sample 5 - Grid

Samples for **coordinate conversion** in both directions between latitude/longitude and national grids. E.g. UTM, British Grid, Irish Grid, Swiss Grid and Swedish Grid. [List of supported grids](#)

Depends on **GpsToolsNET.dll**

Sample 6 - ShapeDrawer

Draws polygons, polylines and multipoint.

Depends on **GpsToolsNET.dll, GpsViewNET.dll, GpsShapeNET.dll**

Sample 7 - ShapeFileViewer

Load and display ESRI shapefiles.

Depends on **GpsToolsNET.dll, GpsViewNET.dll, GpsShapeNET.dll**

A License key is necessary to use GpsTools. During development the key found [here](#) can be used. To distribute the component as part of your application you need to [purchase](#) a license. The [License.LicenseKey](#) property must be set to a valid license key by your application or else the component will refuse to work properly.

Emulator. GpsTools can be run in the Pocket PC emulator if you have a GPS to connect to the desktop PC. Read more [here](#) about how to set up the emulators serial port.

Steps to set up project

You always need to make a reference to GpsToolsNET.dll

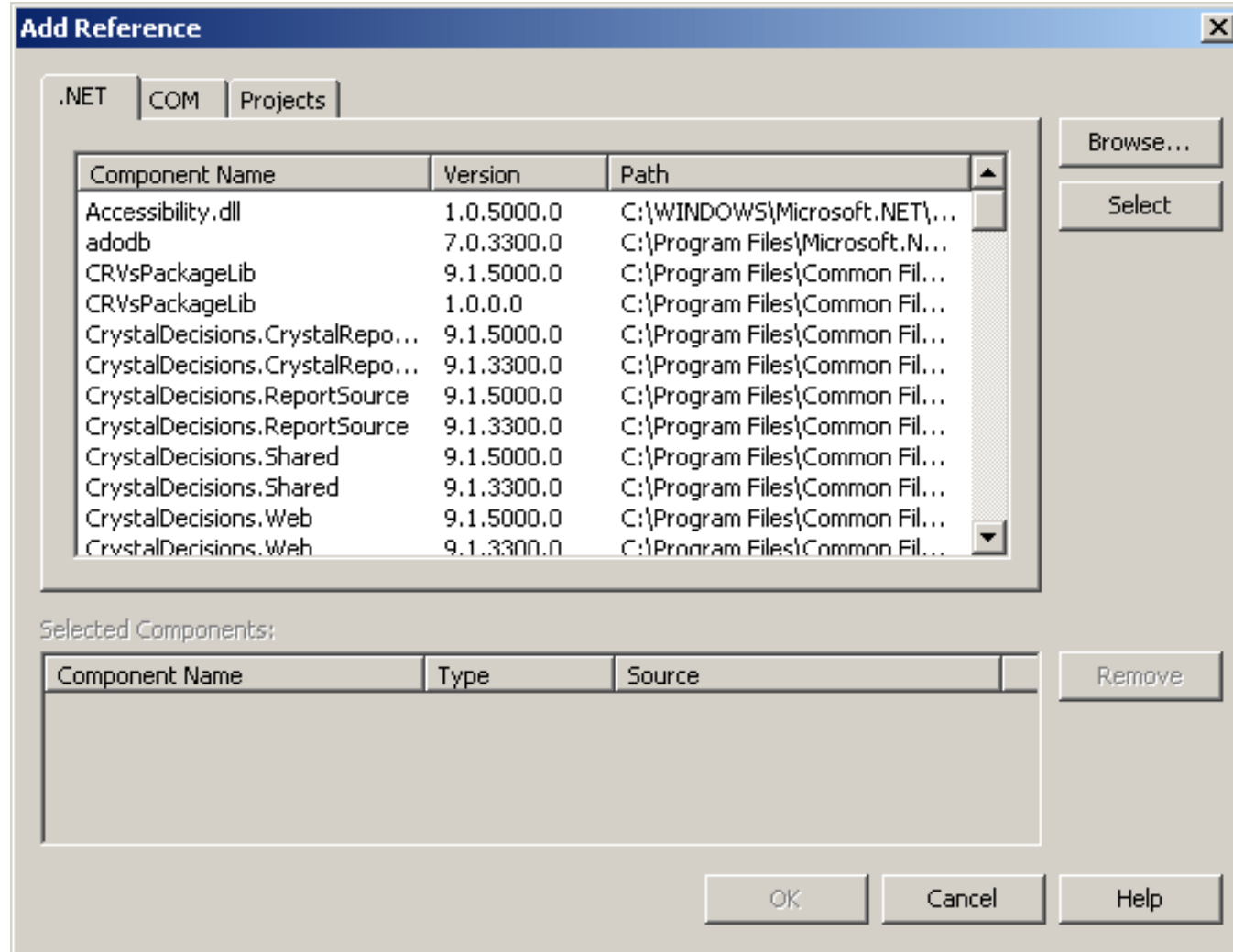
. To use the raster map feature you also need to make a reference to GpsViewNET.dll and add GpsViewNET.dll to the Toolbox to be able to draw the map control to the form during design time.

For polygon, polylines and ESRI shapefiles a reference to GpsShapeNET.dll is necessary.

1. Open a sample project.

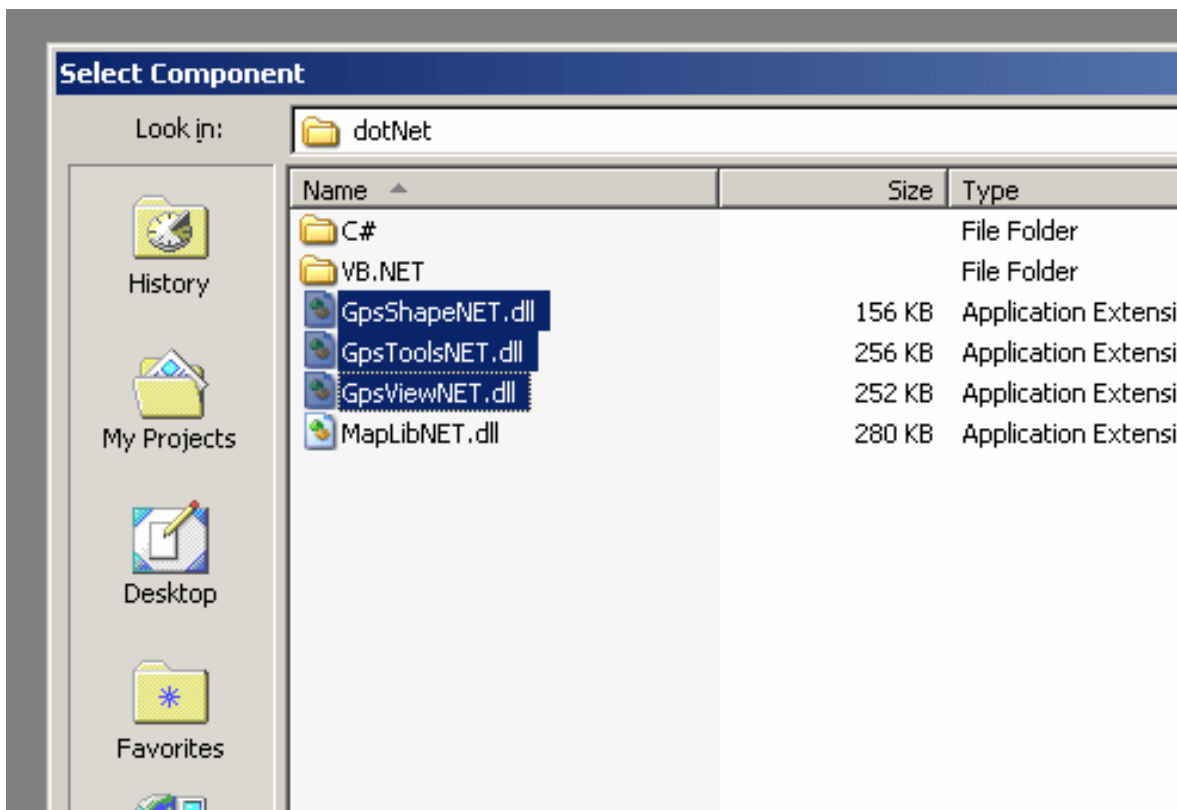
2. Right click on "References" and select "Add reference..."

A dialog opens:



3. Click "Browse..."

4. Go up two directories.



5. Select the DLLs you need to reference. Select all if you feel unsure. You can remove them later when you understand which you do need, and which you don't need. Then click open.

6. Click "OK" in the "Add reference" dialog".

7. Find the row which says License.Key = "...", replace that key with the one you requested from us.

8. Run your sample!

NOTE! Due to an error in VS.NET 2002 you need to set the "Copy Local" property to false for the referenced DLL:s or else VS.NET 2002 will issue an error when trying to display the form. This bug is fixed in VS.NET 2003.

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A few things about the GPS. Remember that a GPS works poorly indoors. Sometimes it is possible to get a fix near a window, but usually not. The GPS must be configured to transmitt NMEA data.

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Getting started with C# and GpsTools .NET

Examples The best and easiest way to get started is to take a look at the examples.

The samples can be found in the `.NET Desktop Framework\Samples\C#` directory.

Sample 1 - SerialPort

Reads data from the serial port and parses NMEA 0183 data (standard GPS protocol). Presents position as latitude, longitude, UTM coordinates, (or other supported national coordinate system). Displays speed and satellite information. Depends on **GpsToolsNET.dll**

Sample 2 - SimpleMap

Demonstrates the new **raster map** functionality. Connects a GPS to a map. Draws and handles graphical objects on a map,

and much more. Handles mouse events. And more...

Create your own MapLibs using [GpsTools Studio](#).

Depends on **GpsToolsNET.dll, GpsViewNET.dll**

Sample 3 - Layers

Draw objects on several of layers and how to manage layers.

Depends on **GpsToolsNET.dll, GpsViewNET.dll**

Sample 4 - MultiMap

Switch between different raster maps. Use and define blank maps.

Depends on **GpsToolsNET.dll, GpsViewNET.dll**

Sample 5 - ShapeDrawer

Draws polygons, polylines and multipoint.

Depends on **GpsToolsNET.dll, GpsViewNET.dll, GpsShapeNET.dll**

Sample 6 - ShapeFileViewer

Load and display ESRI shapefiles.

Depends on **GpsToolsNET.dll, GpsViewNET.dll, GpsShapeNET.dll**

A License key is necessary to use GpsTools. During development the key found [here](#) can be used. To distribute the component as part of your application you need to [purchase](#) a license. The [License.LicenseKey](#) property must be set to a valid license key by your application or else the component will refuse to work properly.

Steps to set up project

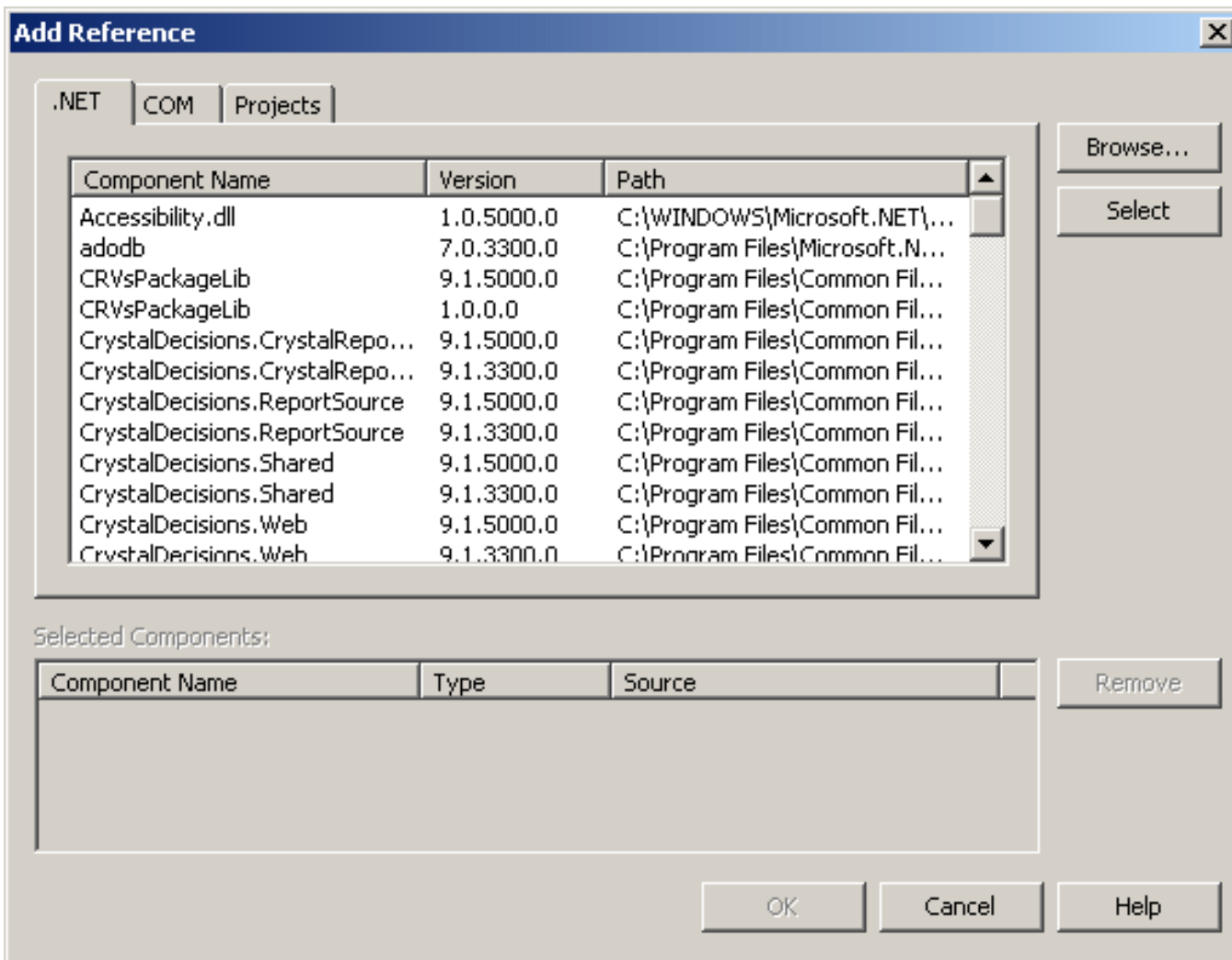
You always need to make a reference to GpsToolsNET.dll

. To use the raster map feature you also need to make a reference to GpsViewNET.dll and add GpsViewNET.dll to the Toolbox to be able to draw the map control to the form during design time.

For polygon, polylines and ESRI shapefiles a reference to GpsShapeNET.dll is necessary.

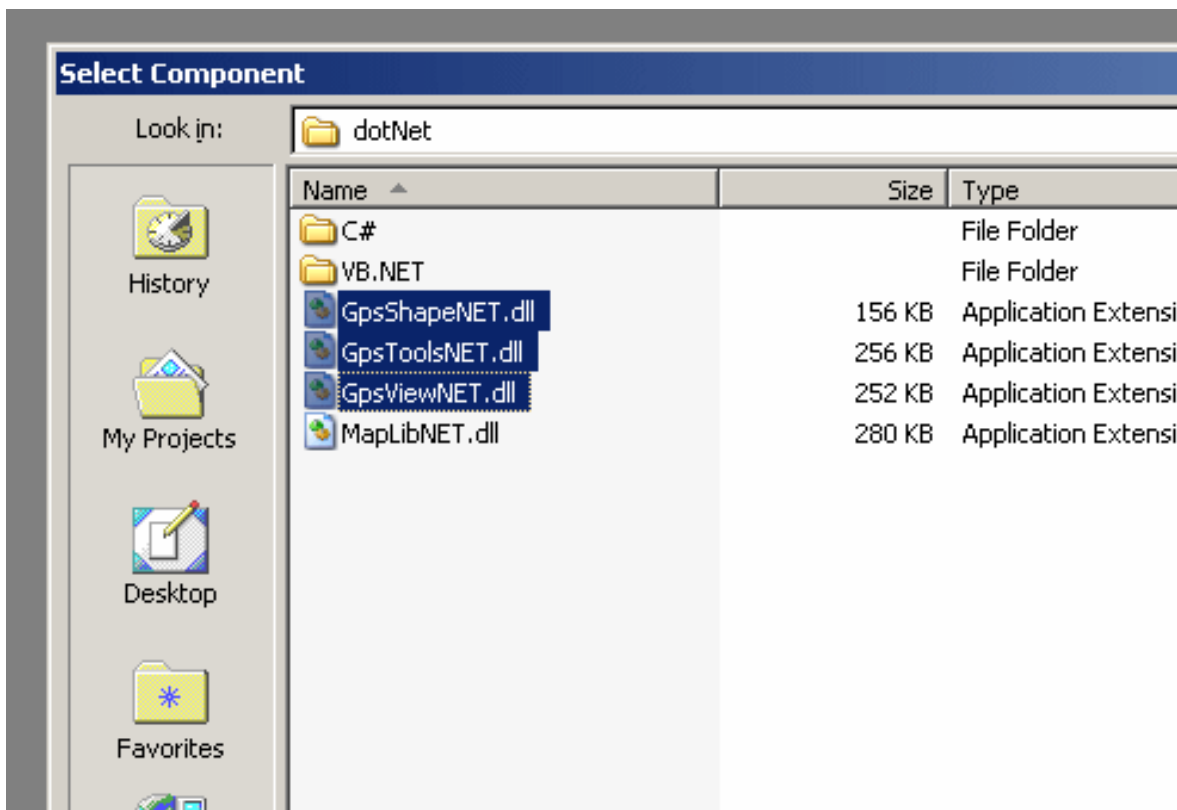
1. Open a sample project.
2. Right click on "References" and select "Add reference..."

A dialog opens:



3. Click "Browse..."

4. Go up two directories.



5. Select the DLLs you need to reference. Select all if you feel unsure. You can remove them later when you understand which you do need, and which you don't need. Then click open.

6. Click "OK" in the "Add reference" dialog".

7. Find the row which says License.Key = "...", replace that key with the one you requested from us.

8. Run your sample!

NOTE! Due to an error in VS.NET 2002 you need to set the "Copy Local" property to false for the referenced DLL:s or else VS.NET 2002 will issue an error when trying to display the form. This bug is fixed in VS.NET 2003.

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Getting started with VB.NET and GpsTools .NET (for ASP.NET)

Examples The best and easiest way to get started is to take a look at the examples.

The samples files can be found in the .NET Framework\Samples\VB.NET directory.

Sample 1 - VbSimpleMapASP

Is a web application that demonstrates some features of GpsTools abilities in Web environment. It shows how a map interacts with mouse click and adjusts itself according mouse positions. Drawing, deleting and getting information about Icons, Ellipses and other shapes on the map. Zoom and rotation of a map. Viewing certain part of a map that corresponds to a fetched position from a GPS receiver. And more...

Create your own MapLibs using [GpsTools Studio](#).

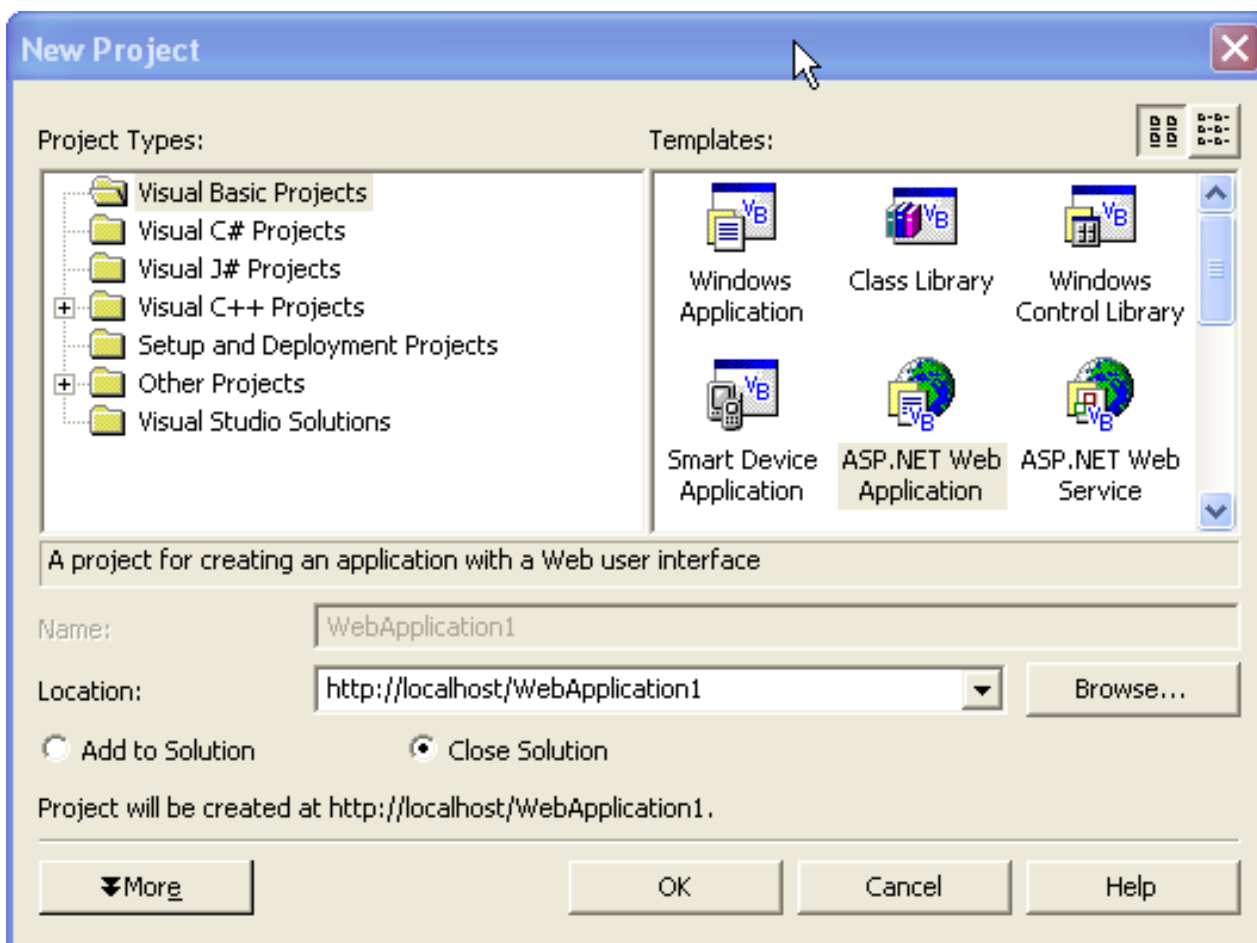
Sample 2 - VbStaticMapASP

Is a web application that demonstrates how to view a simple static map on a web page using a GpsTools. Create your own MapLibs using [GpsTools Studio](#).

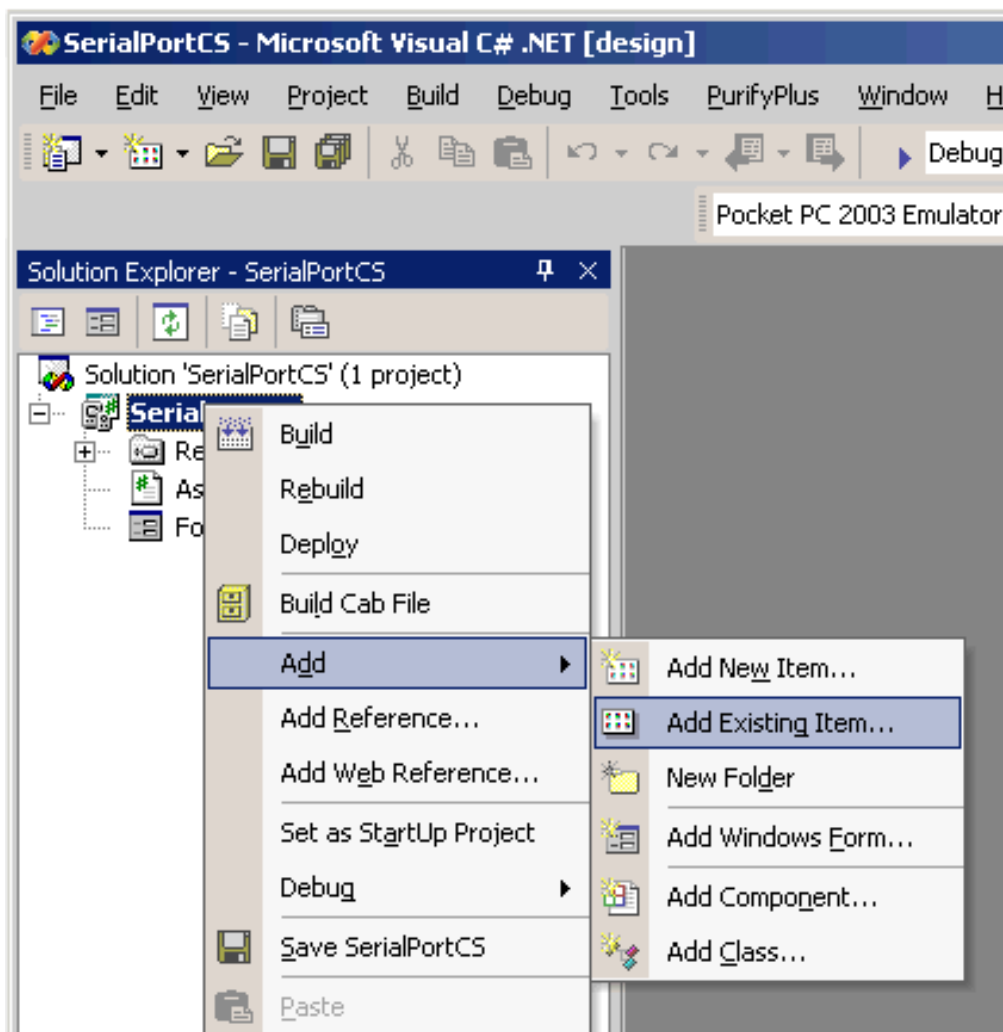
A License key is necessary to use GpsTools. During development the key found [here](#) can be used. To distribute the component as part of your application you need to [purchase](#) a license. The [License.LicenseKey](#) property must be set to a valid license key by your application or else the component will refuse to work properly.

Steps to setup project

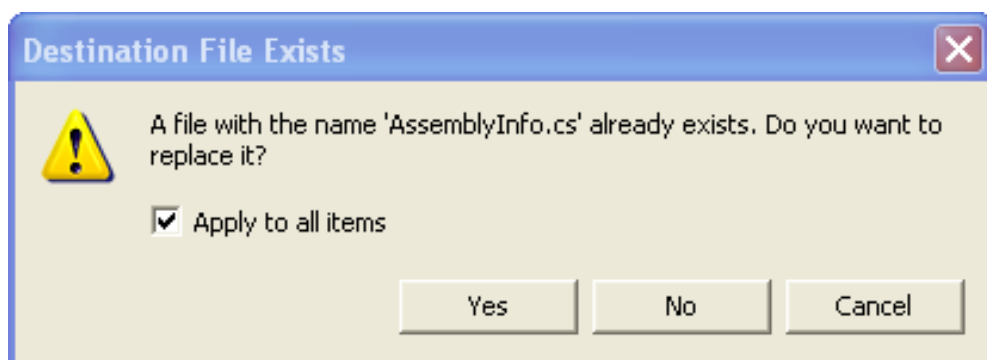
1. Make sure you have both Visual Studio 2003 .NET and IIS installed.
2. Download and install [GpsTools SDK 2.2](#)
3. Start Visual Studio 2003 .NET and create a new web application by choosing File->New->Project. The following dialog will then appear. Type an application name (WebApplication1 in this example) and press OK.



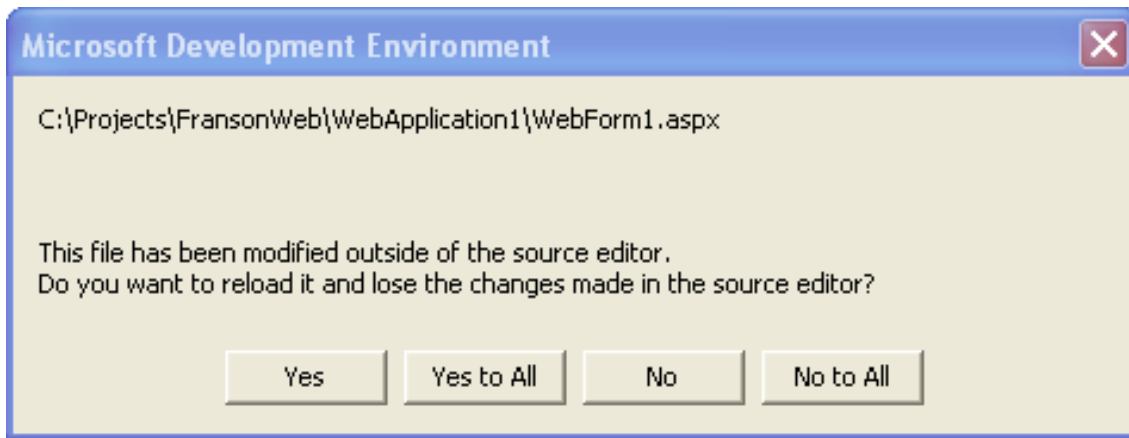
4. Import all files resides in the `.NET Framework\Samples\VB.NET` directory into your web application by right-clicking on the project name Add->Add Existing Item as shown in the picture below. **From "Add Existing Item dialog box" Select all files(*.*) from files of type drop down list.**



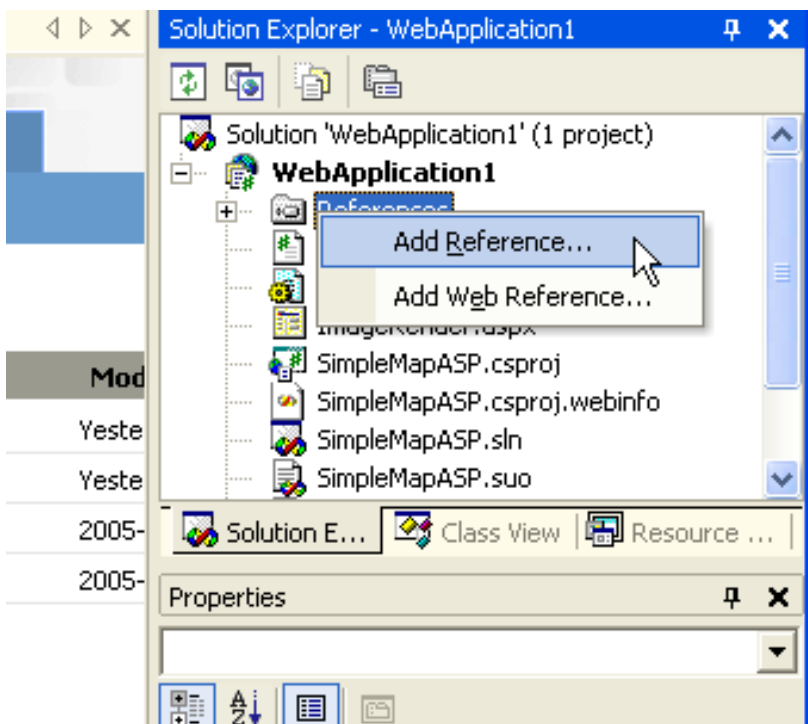
Choose apply to all Items and press Yes

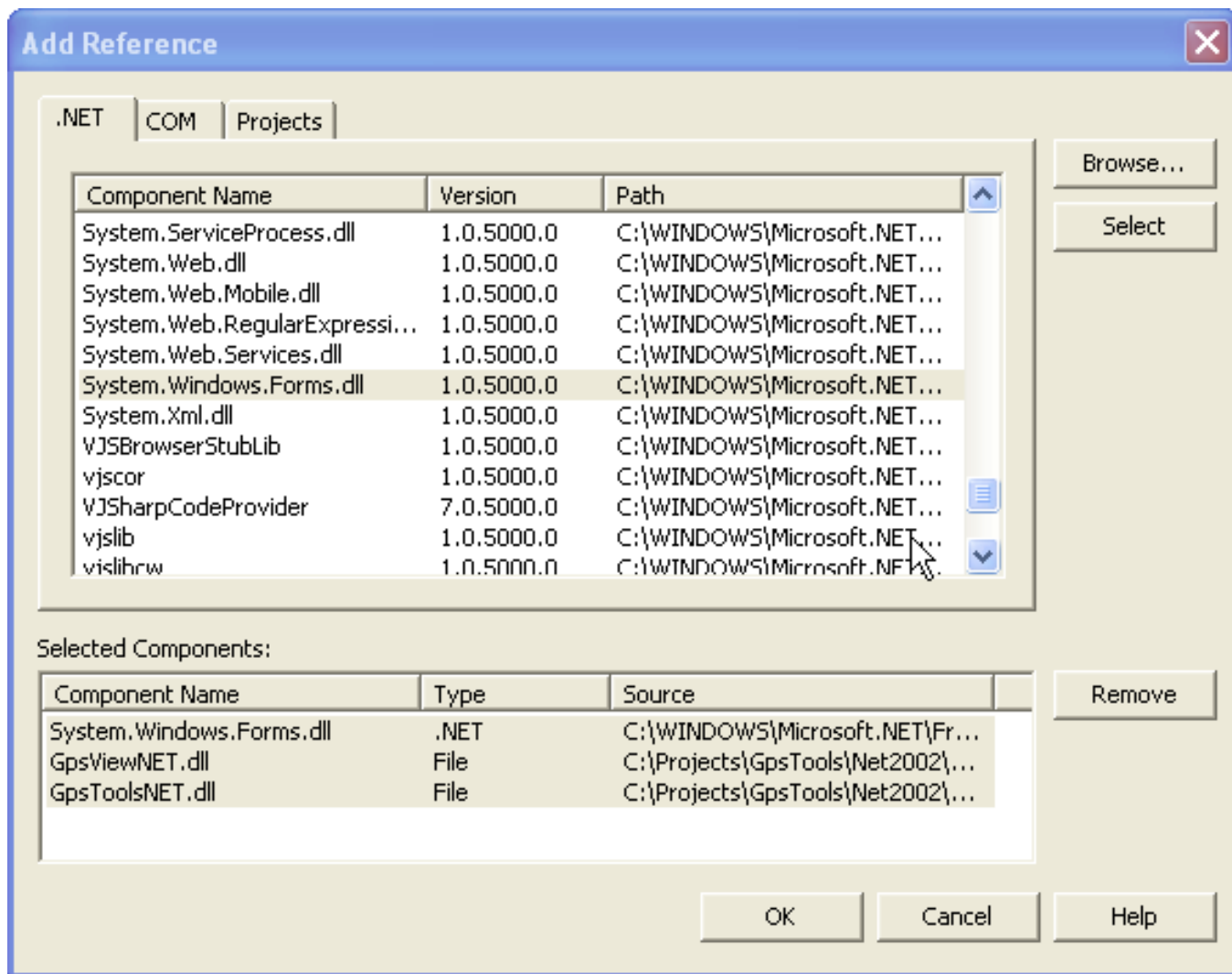


If the following dialog appears, press Yes to All.

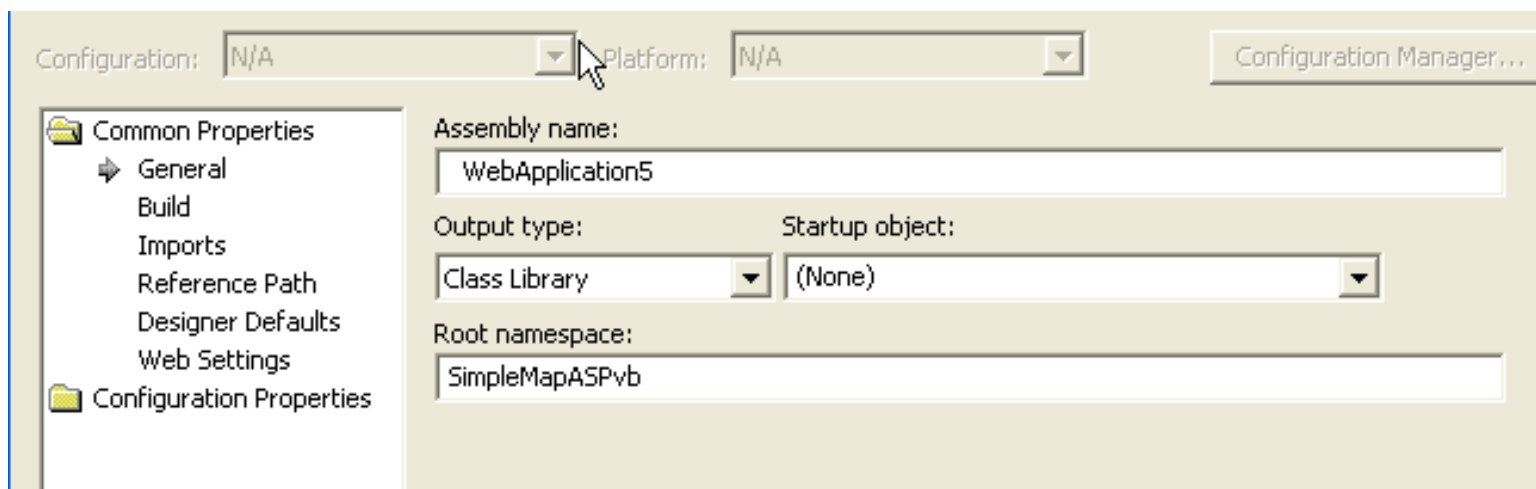


5. Add reference to modules GpsViewNET.dll, GpsTools.dll and **System.Windows.Forms.dll** . The first two modules are located at ..\GpsTools\Net2002\Distribution\Web. Right-click on Reference and select Add Reference as shown in the picture below.





6. Right-Click on project and select property. **Change Root namespace to SimpleMapASPvb.**



7. ImageRender.aspx (*The page that does the actual drawing*) has now a different namespace which has to be changed to the web application's namespace (SimpleMapASPvb).

1- Open ImageRender.aspx and select HTML mode. The @page directive should look as follow:

```
<%@ Page language="vb" Codebehind="ImageRender.aspx.vb" AutoEventWireup="false"
Inherits="WebApplication1.ImageRender" %>
```

2- Change **WebApplication1** OR the name of your web application to **SimpleMapASPvb**.

3- Save the file.

8. Run the application .

A few things about the GPS. Remember that a GPS works poorly indoors. Sometimes it is possible to get a fix near a window, but usually not. The GPS must be configured to transmit NMEA data.

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Getting started with C#.NET and GpsTools .NET (for ASP.NET)

Examples The best and easiest way to get started is to take a look at the examples. The sample files can be found in the .NET Framework\Samples\C#.NET directory.

Sample 1 - SimpleMapASP

Is a web application that demonstrates some features of GpsTools abilities in Web environment. It shows how a map interacts with mouse click and adjusts itself according mouse positions. Drawing, deleting and getting information about Icons, Ellipses and other shapes on the map. Zoom and rotation of a map. Viewing certain part of a map that corresponds to a fetched position from a GPS receiver. And more...

Create your own MapLibs using [GpsTools Studio](#).

Sample 2 - StaticMapASP

Is a web application that demonstrates how to view a simple static map on a web page using a GpsTools.

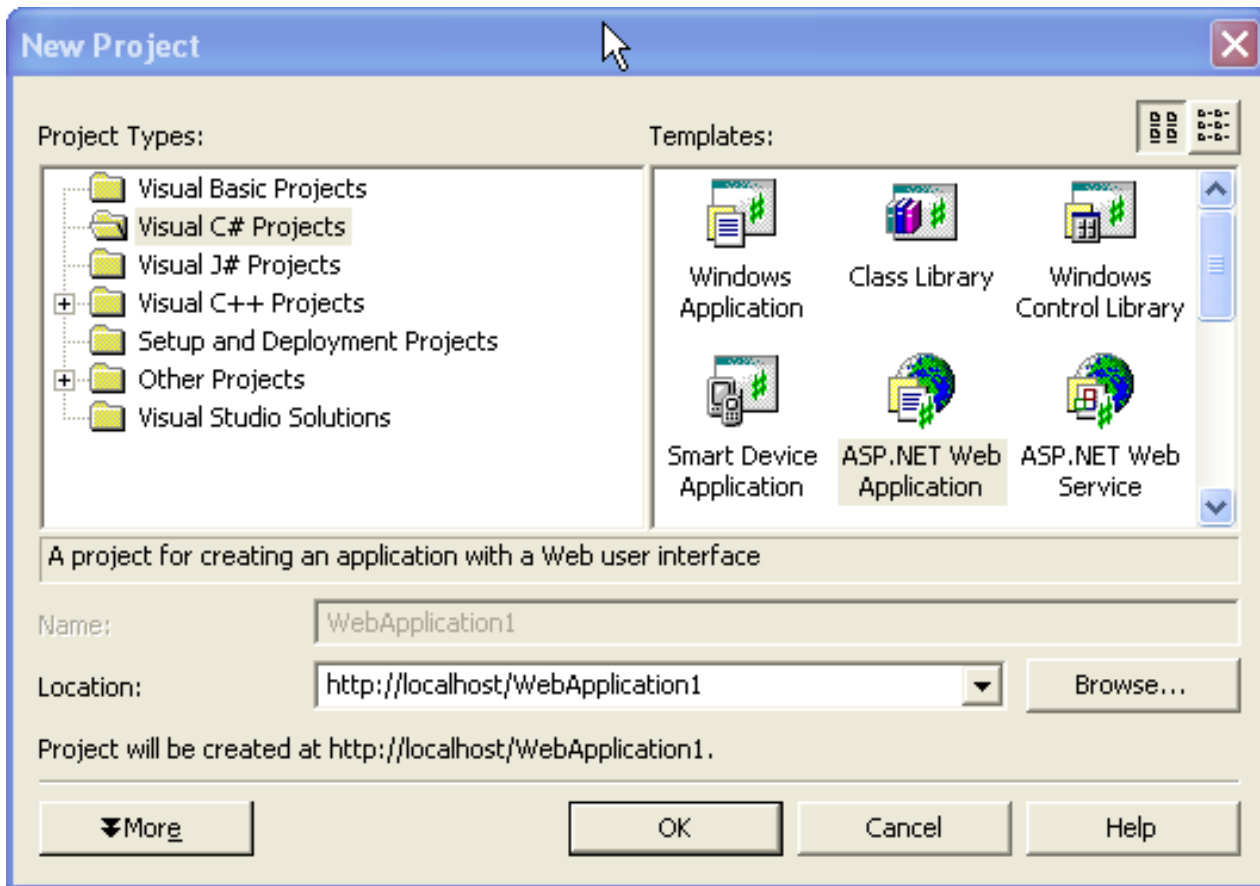
Create your own MapLibs using [GpsTools Studio](#).

A License key is necessary to use GpsTools. During development the key found [here](#) can be used. To distribute the component as part of your application you need to [purchase](#) a license. The [License.LicenseKey](#) property must be set to a valid license key by your application or else the component will refuse to work properly.

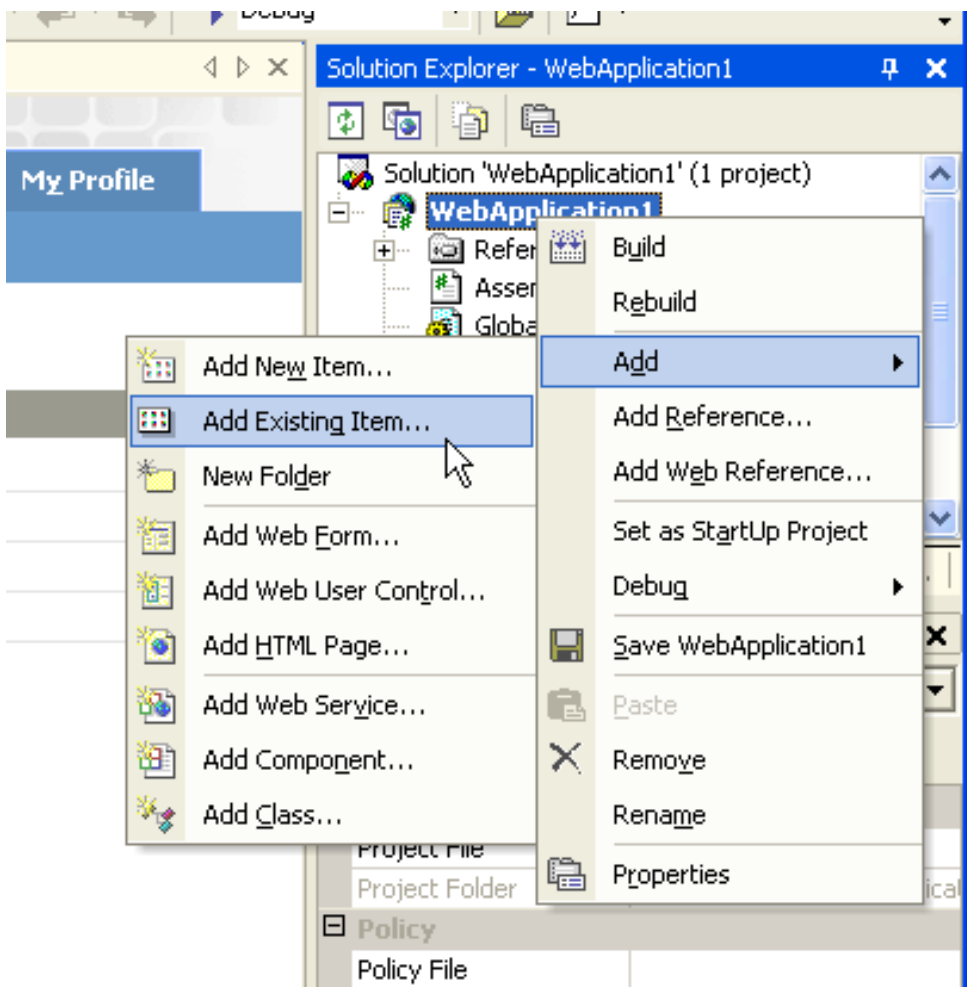
Steps to setup project

1. Make sure you have both Visual Studio 2003 .NET and IIS installed.
2. Download and install [GpsTools SDK 2.2](#)

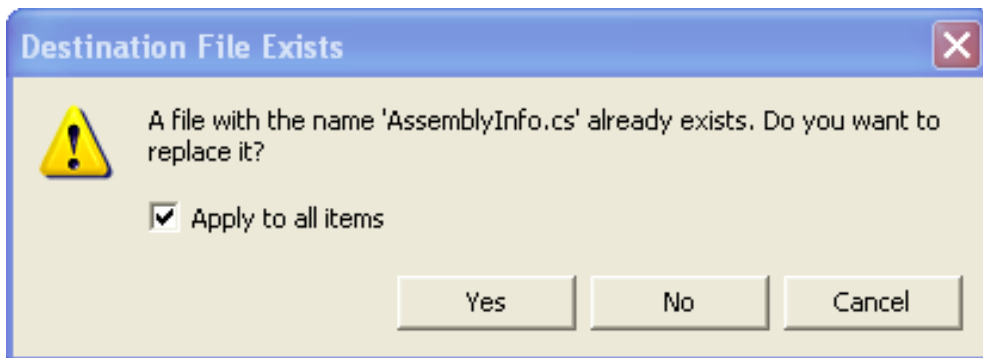
3. Start Visual Studio 2003 .NET and create a new web application by choosing File->New->Project. The following dialog will then appear. Type an application name (WebApplication1 in this example) and press OK.



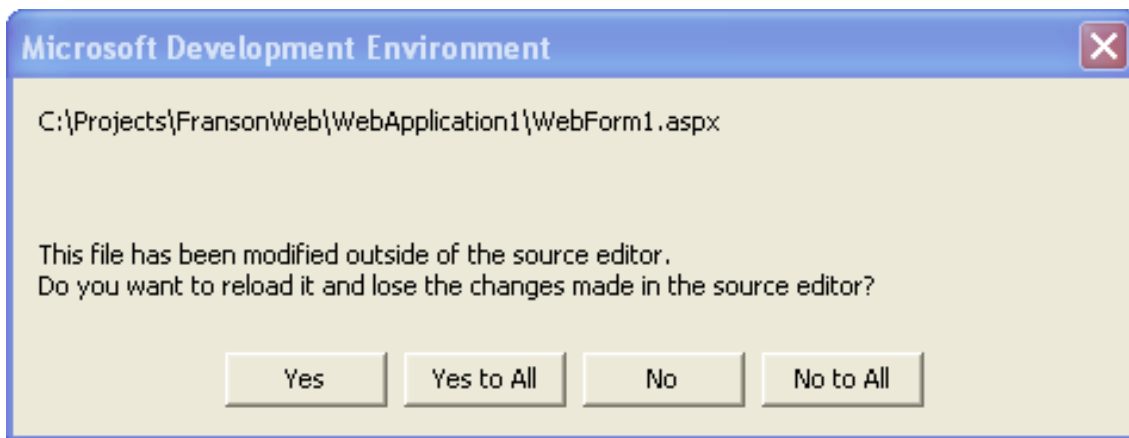
4. Import all files resides in the .NET Framework\Samples\C#.NET directory into your web application by right-clicking on the project name Add->Add Existing Item as shown in the picture below. **From "Add Existing Item dialog box" Select all files(*.*) from files of type drop down list.**



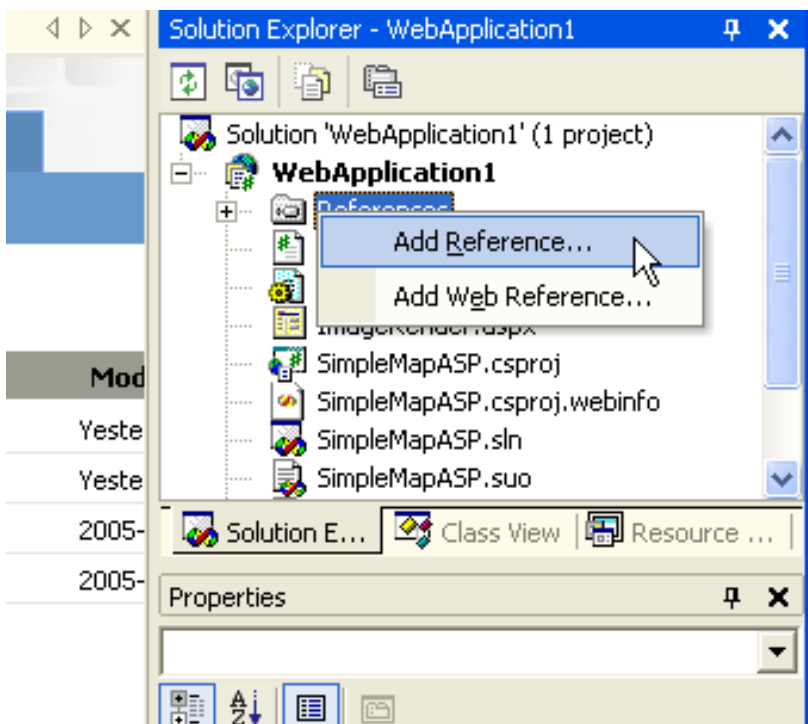
Choose apply to all Items and press Yes

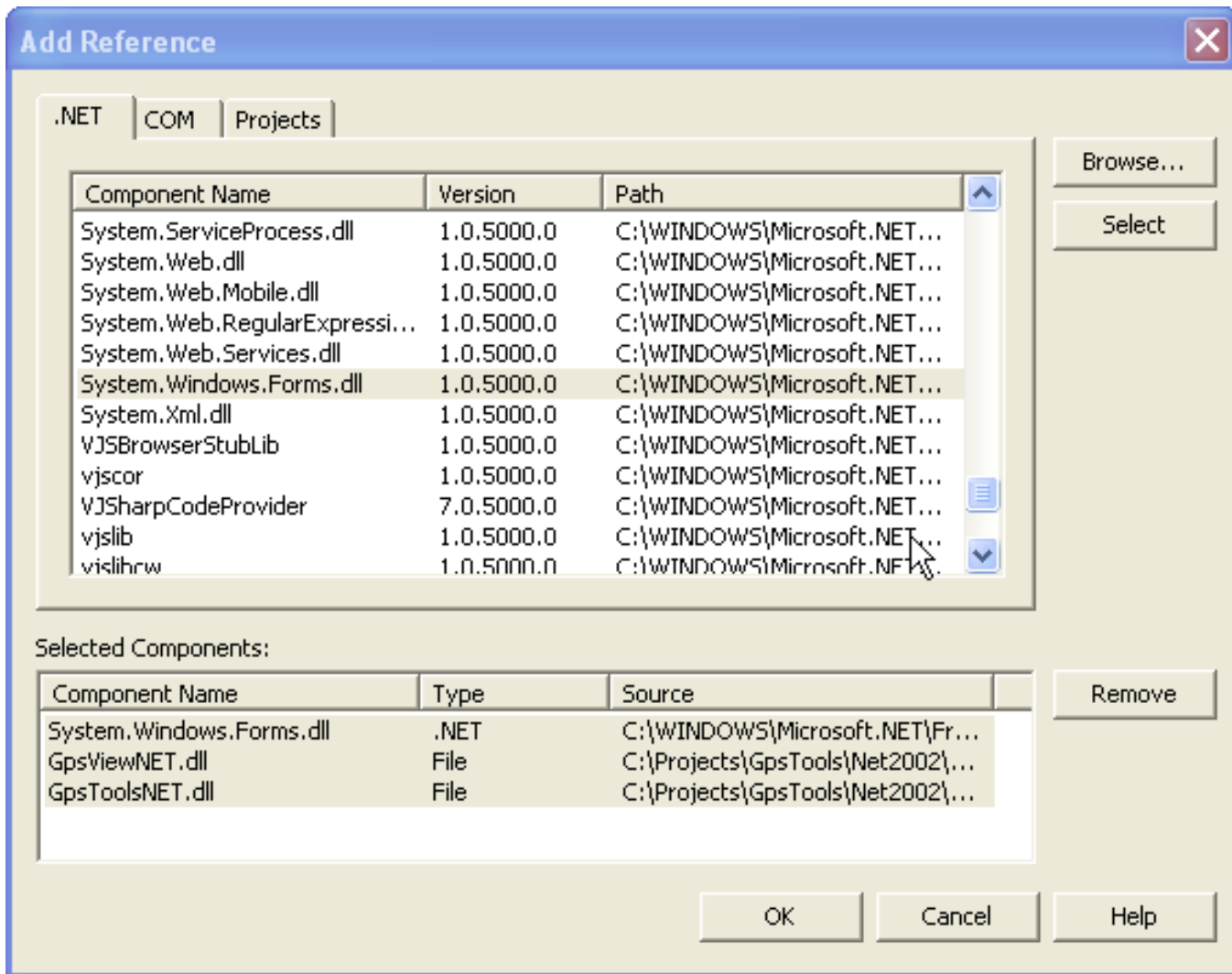


If the following dialog appears, press Yes to All.



5. Add reference to modules GpsViewNET.dll, GpsTools.dll and **System.Windows.Forms.dll** . The first two modules are located at ..\GpsTools\Net2002\Distribution\Web. Right-click on Reference and select Add Reference as shown in the picture below.





6. Run the application .

A few things about the GPS. Remember that a GPS works poorly indoors. Sometimes it is possible to get a fix near a window, but usually not. The GPS must be configured to transmitt NMEA data.

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Developer's Guide - GpsTools Studio

NOTE! If you want a library (.NET/ActiveX) that can make MapLibs out of BMP and GIF files, take a closer look at the MapLibXP/MapLibNET components. Start reading about the [zMapLib](#) class.

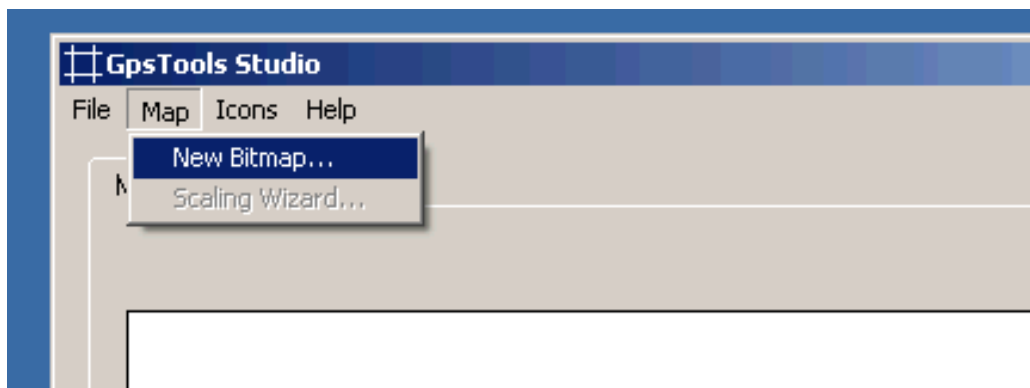
GpsTools Studio is used to create and edit MapLibs. A MapLib contains a raster map and icons to be used in your application.

After installing GpsTools SDK 2.0 (or later) you can find GpsTools Studio under Start->Programs->GpsTools SDK->GpsTools Studio

Create a new MapLib

You need to have a raster map in GIF or BMP format.

To create a map from a bitmap:



The raster map must be **conformal**.(*) This means lines from south to north must be orthogonal to lines that goes from west to east. The map can be rotated. The scale can be different (or same) in north/south direction than west/east direction.

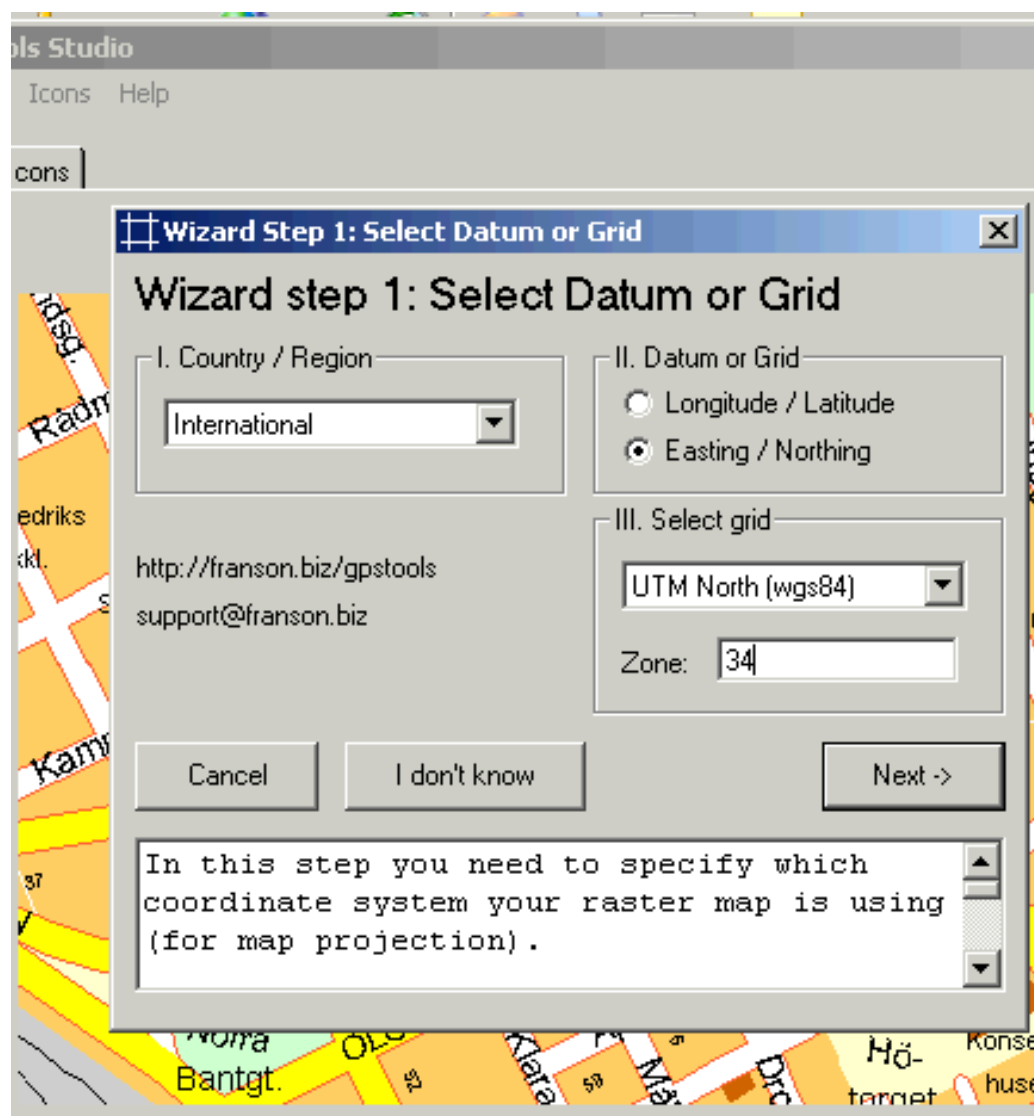
After the bitmap is loaded a wizard will start to scale the raster map. What you need is three positions on the map with know geographic coordinates. You also need to know which coordinate system the map is using. If you are unsure use UTM, and use the method presented under "Verify scaling" below to see if you made the right choice.

Wizard step 1 - Select Datum or Grid.

In this step you need to specify which coordinate system your raster map is using.

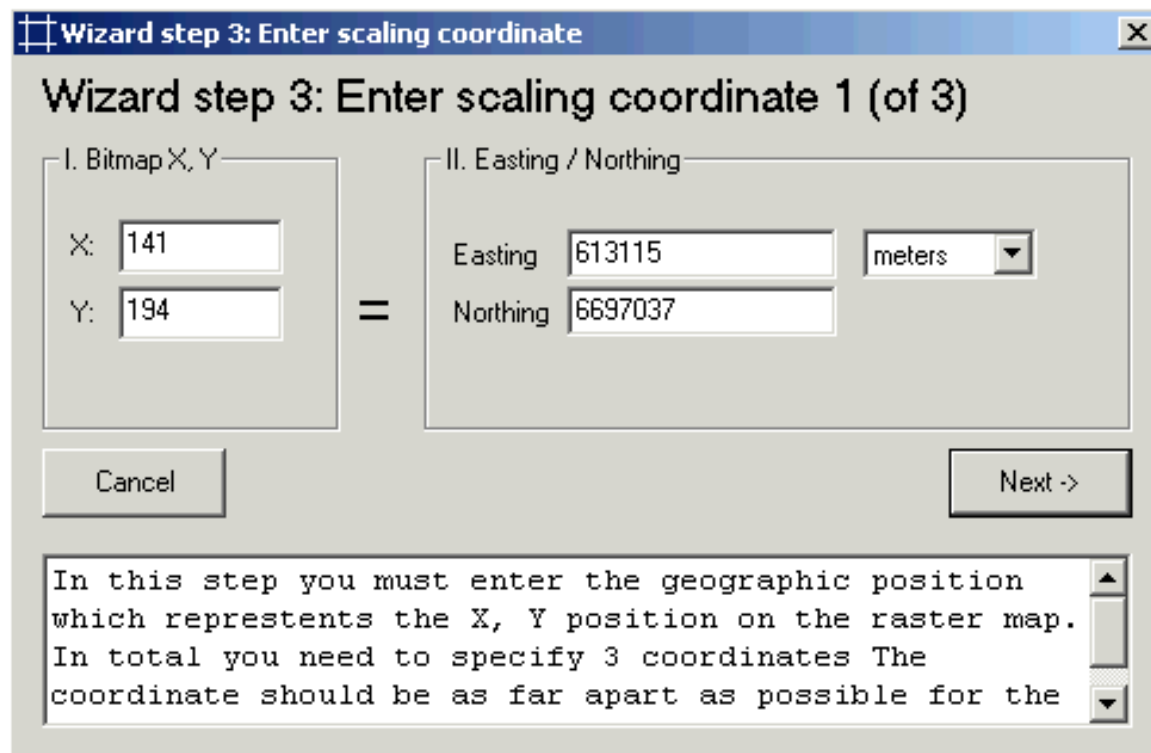
- I. Select a Country / Region.
- II. Select if the coordinates are specified in lat/lon or easting/northing
- III. Select the a grid or datum.

The coordniate system choosen is that in which the map is conformal.



Enter coordinates

After selecting coordinate system, click somewhere on the map and this dialog shows up:



You must enter the geographic position which represents the X, Y position on the raster map. In total you need to specify 3 coordinates The coordinate should be as far apart as possible for the best results. Try to place them in opposite corners.

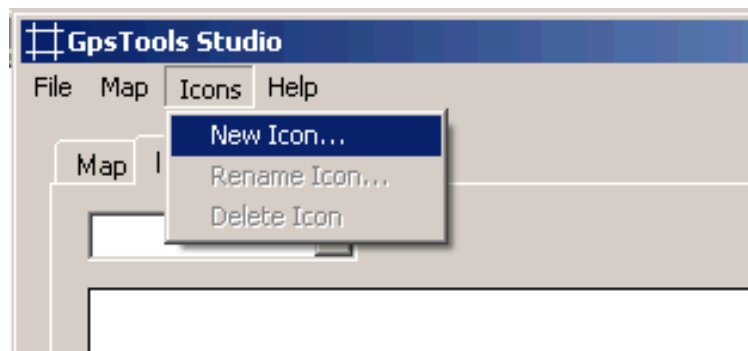
Verify scaling

To verify that everything is ok, click on some other known position on the map and verify that the geographic coordinate show in the bottom line of the window is correct.

Create Icons

You can create icons (bitmaps) which you later can be drawn on the map in your application.

To create a new icon select:



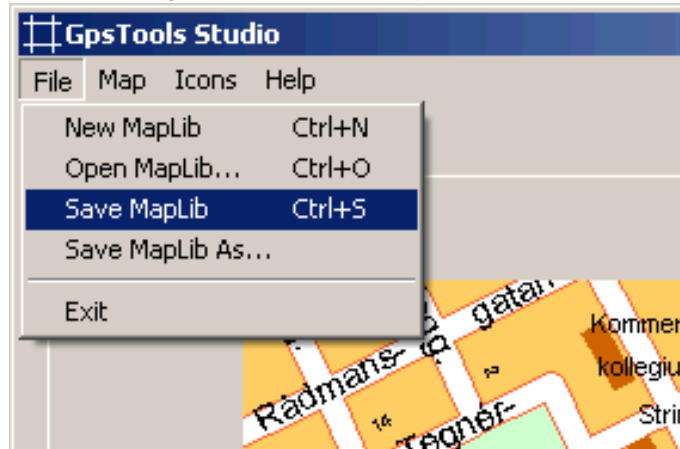
The Icon's bitmap must be a BMP or GIF. If the GIF has a transparent color, it will be transparent in the MapLib as well. After loading the bitmap, you need to name the Icon. This name will be used to refer the Icon in your application. See `Map`.

[NewIcon](#)

Any number of Icons can be created. Use the menu to rename, delete and create new Icons.

Save MapLib

After creating a Map and Icons, you need to save the MapLib:



Now the MapLib is ready to be used by your application. See [Map . Open](#).

(*)Conformality expressed in a more formal way:

When the scale of a map at any point on the map is the same in any direction, the projection is conformal. Meridians (lines of longitude) and parallels (lines of latitude) intersect at right angles. Shape is preserved locally on conformal maps.

[Here you can find some online map resources](#)

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.NET Distribution

Make sure `GpsToolsNET.dll` and `GpsViewNET.dll` is copied to the same directory as your application EXE file.

`GpsViewNET.dll` is only necessary if you use the raster map feature.

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License	Pro + GpsGate OEM
Version	GpsTools 2.20 (or later) GpsGate 1.10 (or later)

Share the GPS using GpsTools and GpsGate

GpsTools and [GpsGate](#) enables you to write GPS applications that can run at the same time as other applications sharing one single GPS. This can be very useful when for example developing an application that is a complement to a mapping or navigation program.

You can think of GpsGate as a program that turns a GPS into a shared "multi-GPS" and you can think of GpsTools as a toolkit for programmers who want to develop their own GPS applications in Visual Studio.

The standard way to access a GPS is by using a serial port. GpsGate provides virtual serial ports which emulates GPS receivers. Applications connecting to those virtual ports think they have connected to a real GPS (exclusively).

GpsTools can make use of GpsGate in a very clever way. It can detect if GpsGate is installed and use GpsGate in that case. For detailed information on how this is done see `NmeaParser`. [PortEnabled](#) (Method 4 - GpsGate Direct and Method 1 - Auto detection).

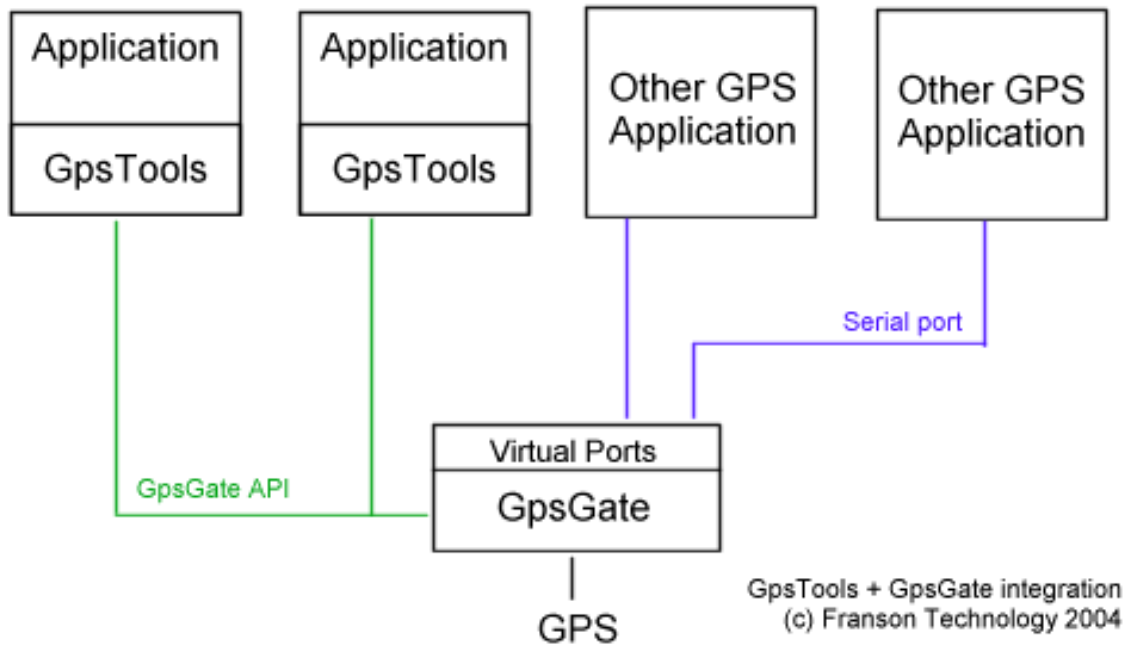
GpsTools uses [GpsGate API](#) to start GpsGate and get access to GPS data, this is done without any use of virtual serial

ports. This takes away some configuration from the end user and makes the whole solution simpler to use and more robust.

Note that GpsTools handles all calls to GpsGate API. Applications that wants to use GpsGate without GpsTools can do that by accessing [GpsGate API](#) directly, or by using the virtual serial ports created by GpsGate.

GpsTools can be used to acces GPS data from a normal **HTML** page in **Internet Explorer**. In this case it is particular well suited to use GpsGate, since it enables several opened browser windows to share the GPS at the same time.

The end user must also have a valid GpsGate license or your application must call `License.GateLicense` to install a valid GpsGate Express license.



You can bundle your application based on GpsTools Pro with GpsGate Express for a [low fixed price](#). Using this solution your application can co-exist with other GPS applications and run at the same time using the same GPS. This will be experienced as a great benefit to your users/customers.

GpsGate Express has two virtual ports which any 3rd party GPS application can connect to. And GpsGate API, which any number of GpsTools based or other GpsGate API enabled application can connect to. In most cases this means you can share the same GPS with two other GPS applications. For an unlimited number of virtual ports GpsGate Standard is required.

Distribution GpsGate must be installed as a separate application on the end users computer/device. Those links can be used for the latest version of GpsGate:

Windows:

<http://franson.biz/gpsgate/download.asp?section=oem&partner=generic&platform=winxp>

Pocket PC:

<http://franson.biz/gpsgate/download.asp?section=oem&partner=generic&platform=ppc>

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License	Standard (ActiveX)
Version	GpsTools 1.30 (or later)

Access GPS from Internet Explorer HTML page

Using **GpsTools** you can access a **GPS** connected to your laptop or Pocket PC from Internet Explorer (or PIE). This means you can include position information into a normal **HTML form** and post it up to a web server!

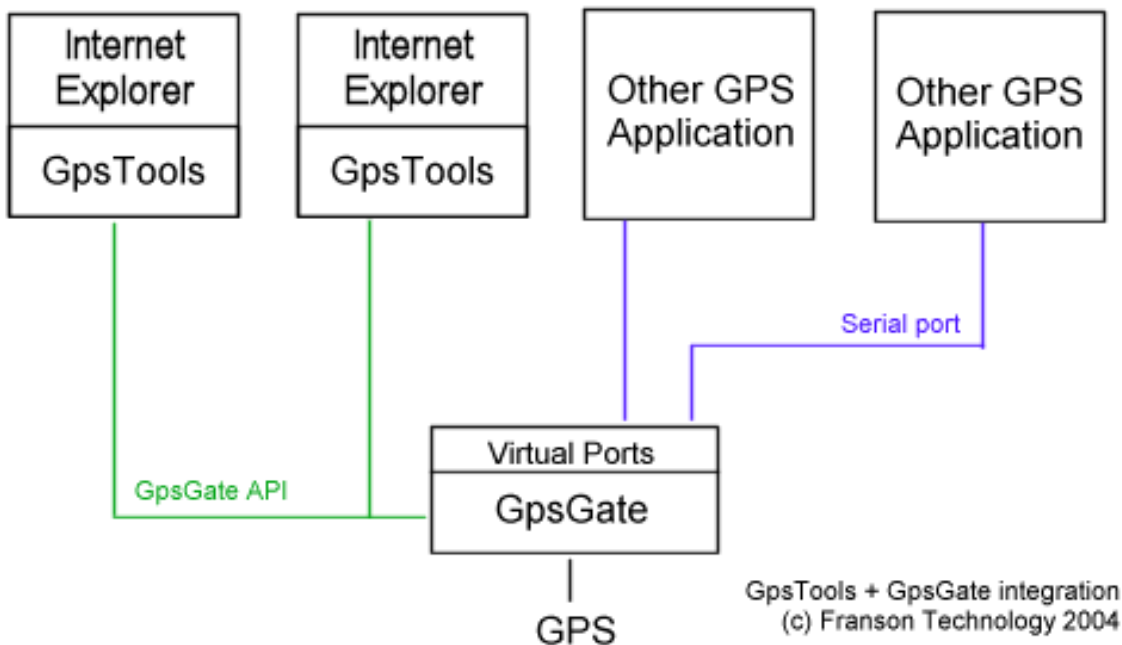
GpsTools SDK includes samples for Windows and Pocket PC / Windows CE.

The connection to the GPS will be exclusive which means only one browser can connect to the GPS at a time, and no other GPS applications can use the GPS while the web page using the GPS is opened.



For a more flexible solution you can use GpsGate in combination with GpsTools. This will allow any number of web pages, and any number of GPS applications share the GPS at the same time. No limitations.

[Read more about GpsTools + GpsGate integration here.](#)



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If you got any project based on GpsTools you want to **share**, please let us know and we'll publish it here. [Use this form to contact us](#)

NAVPDA

By **Robbie Robinson**, robbiex@bellsouth.net

NAVPDA provides a Pocket PC display of speed, digital compass heading, compass points, elapsed distance, latitude, longitude and coordinated universal time (UTC).

[Read more...](#)

Download [NAVPDA \(VB.NET CF\)](#)

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Shapefile Cutter. This sample can split an ESRI shapefile into smaller parts. If you have a huge shapefile from which you only need a part, you can use this sample application to cut the file into smaller files, covering smaller areas.

Download [Shapefile Cutter \(C# .NET\)](#)

Download [Shapefile Cutter \(Visual Basic, 6kB\)](#)

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If you got any project based on GpsTools you want to **share**, please let us know and we'll publish it here. [Use this form to contact us](#)

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