MapsAlive® User Guide

Mobile Devices and Touch Screens

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Mobile Devices and Touch Screens

1   Introduction

What is this guide about?

This guide explains how MapsAlive interactive maps work on mobile devices and touch screens. A *mobile device* is a portable unit like a tablet or smart phone. A *touch screen* is a PC or Mac computer that has a touch screen monitor. A *desktop browser* is one that runs on a PC or Mac that has a conventional monitor and mouse.

The current release of MapsAlive supports these mobile devices: iPad, iPhone, and iPod touch running OS 4.3 or higher. MapsAlive also works on Android, but some Android devices and browsers do not support all MapsAlive features.

Who this guide is for

This guide is for anyone who wants their interactive maps to work on mobile devices or touch screens as well as on PCs and Macs.

How to get more information or assistance

If you need more details, a better explanation, or just a little bit of hand-holding, we are here to help. Please email questions to support@mapsalive.com.

You can find other MapsAlive User Guides at http://www.mapsalive.com/LearningCenter.

2   Enabling a Tour to Work on Mobile Devices

The floor plans and maps that you make interactive with MapsAlive automatically detect what device they are on and display using the right technology. For desktop browsers it's Flash and for mobile devices it's HTML5. This section explains what you need to do to make new or existing tours work on mobile devices. It also tells you what mobile device related options are available.

> The MapsAlive web application at www.mapsalive.com requires a browser that supports Flash. Although you can run the web application on a non-Flash device like an iPad, you will not be able to place or move markers on the map and you will not be able to upload images.

2.1   New Tours

When you create a new tour it is automatically enabled for mobile devices. You can set specific options as explained in the *Mobile Internet Options* section below. If you want to embed the tour into a web page, the **Code Snippets** on the **Tour Preview** screen will provide the HTML you need.

2.2   Existing Tours

A tour that was created before the mobile internet feature was available will not run on mobile devices until you enable it to do so and then republish the tour. Just follow these steps:

1. Run the MapsAlive Tour Builder in the usual way on your PC or Mac.
2. Select the tour you want to use on a mobile device.
3. Choose **Tour > Tour Manager** from the menu.
4. Check the **Enable Mobile Internet Options** box.
5. Publish your tour and then try it on your mobile device.

Existing tours that are directly embedded in web pages

If you have an existing tour that is directly embedded in a web page, you will need to add an additional <script> tag to the embed code. Without the tag, your mobile device will display the dialog shown at right when you run the tour. See your tour's code snippets to get this new line of code that brings in the file named `mapviewer.js`. Code snippets are on the **Tour Preview** screen.

2.3   Mobile Internet Options

MapsAlive provides a number of options related to mobile devices. Each option is turned on or off with a checkbox on the **Tour Manager** screen in the Mobile Internet Options section.

Make Small Markers Easier To Touch

When this option is checked, markers having a width or height of less than 44 pixels will get an invisible touch area of 44x44 pixels (the Apple recommended minimum dimensions for touchable graphics). Choosing this option will not affect the appearance of the marker. This option works with symbol,

circle, and rectangle markers. It does not apply to polygon, line, or hybrid shape markers. Using this option can make your interactive map much easier to use on touch devices, but don't use it if your markers are very close together because it will cause their touchable areas to overlap.

Select Hotspot On Touch Start

When this option is checked, a hotspot will be selected as soon as your finger touches the screen. When the option is unchecked, the hotspot will not be selected until after your finger leaves the screen. Note that if the MapZoom feature is enabled, you need to touch the screen to pan or zoom the map. If this option is selected, you may inadvertently select a hotspot when you pan or zoom.

Disable Blend Effect on Mobile Browsers

This option prevents the marker style blend effects from being applied when the map is displayed in HTML5 on a mobile browser. The purpose of this option is to improve performance in cases where use of the blend effect makes the map slow to render due to the lack of native support in HTML5 for blend modes. If you choose to use this option, consider using marker styles that have enough fill color transparency to produce a pleasing appearance even when the blend effect is turned off. This option has no effect when the map is displayed on a desktop browser or when displayed in Flash on a mobile browser.

Disable Smooth Panning

This option is used to control whether or not a zoomable map pans as you drag your finger (smooth panning enabled) or when you drag and then lift your finger (smooth panning disabled). Smooth panning can give the best user experience, however, if the map is large and has a lot of hotspots (or your mobile device is slow), smooth panning can be jerky. In that case you might find that disabling it gives a better user experience.

Show Zoom Control On iOS Browsers

This option lets you choose to show the zoom control on Apple mobile devices (iPad, iPhone, and iPod touch) that run the iOS operating system. The zoom control is not needed on iOS because you can use the pinch gesture to zoom the map, but if you want the control to display anyway, select this option. On other touch devices like Android, or on desktop browsers, the control is the only way to zoom in or out. When the map is zoomed out, the control displays a plus (+). When the map is zoomed in the control displays a minus (-). This option has no effect unless **Enable MapZoom** is checked on the **Map Setup** screen *and* the **Show Zoom And Pan Controls** option is checked on the **Advanced Map Options** screen.

Make Entire Popup Visible

When this option is checked, a popup will appear on top of its hotspot if the entire popup would not fit in the browser window if positioned above, below, right, or left of the hotspot. When this option is unchecked, a popup will never completely obscure its hotspot, but part of the popup may be clipped on one or two sides if there is not enough room to display the entire popup.

Enable Image Preloading on Mobile Browsers

This option is used to control whether or not a zoomable map pans as you drag your finger (smooth panning enabled) or when you drag and then lift your finger (smooth panning disabled). Smooth panning can give the best user experience, however, if the map is large and has a lot of hotspots (or your mobile device is slow), smooth panning can be jerky. In that case you might find that disabling it gives a better user experience.

Make Tour Web App Capable

This option controls whether MapsAlive emits Apple specific meta tags that allow someone to launch this tour on an iPad or iPhone from an App icon and have the tour appear in a browser in full-screen mode to look like a native application. When using full-screen mode, Safari does not display an address bar. If you don't choose this option, a user can still create an App icon for the tour as described above to act as a shortcut to load the tour in Safari, but it will not display in full-screen mode. *For more information and how-to steps, see section o below*.

Default to HTML5 for Desktop Browser

When this option is checked, the map will be displayed using HTML5 instead of Flash provided that the browser supports HTML5. If the option is unchecked, or if the browser does not support HTML5, the map will be displayed using Flash. Note that a desktop browser is one that runs on a PC or a Mac.

Default to Flash for Mobile Browser

When this option is checked, the map will be displayed using Flash instead of HTML5 provided that the browser supports Flash. If the option is unchecked, or if the browser does not support Flash, the map will be displayed using HTML5. Note that a mobile browser is one that runs on a mobile device such as an iPad, iPhone, iTouch or similar device.

Prevent Scaling

Checking this option causes iPad and iPhone browsers to lock the size of your tour so that a user cannot make it bigger or smaller by using the pinch gesture. It also prevents the tour from changing size when the user changes their device's orientation from portrait to landscape and vice versa. A user can still zoom their map when this option is checked, but they cannot enlarge or shrink the non-map portions of the tour.

Use Touch User Interface for Desktop Browser

Select this option if your tour is going to be running on a PC or Mac computer that has a touch screen (as opposed to a mobile device like an iPad). When this option is selected, MapsAlive will use larger text and graphics to make it easier for users to use your tour on the touch screen. Note that the touch user interface is used automatically for mobile devices.

2.4   Query String Parameters

In addition to the options shown in the previous section, there are a few things you can do using query string parameters.

showtouch=1

When this parameter is specified, the map will display a red square wherever you touch and it will show an outline around a touched hotspot. It can be helpful if your map does not seem to be responding correctly to touches and you want to see where you actually touched the glass of your device. This option is provided for diagnostic purposes only and its behavior is subject to change. An example of using this option looks like this:

```
tour.mapsalive.com/1234?showtouch=1
```

html5=1

This parameter will force the map to display using HTML5 even if it would normally display using Flash. If the browser does not support HTML5, the map will display an error message.

html5=0

This parameter will force the map to display using Flash even if it would normally display using HTML5. If the browser does not support Flash, the map will display an error message.

3   How MapsAlive Works with Both Mobile and Desktop Browsers

A MapsAlive tour that is enabled to work on mobile devices (see section 2 above) *automatically* detects whether it is running on a mobile browser or on a desktop browser. On mobile browsers the map displays using HTML5 and on desktop browsers it displays using Flash. It's the same map displayed the best way for the browser.

3.1   HTML5 and Flash

Until recently most web pages that displayed interactive or animated graphics used a proprietary technology from Adobe called Flash. That is, until Apple decided not to allow Flash on the iPad, a tablet that has been a phenomenal success. Enter HTML5, a non-proprietary web standard (well almost) that is supported by Safari, Firefox, Chrome, Opera, and IE9. HTML5 works great on the iPad, but it doesn't work on IE 6, 7, or 8 which together had more than 46% of market share as of March 2011. What this all means is that if you want the millions of iPad and iPhone users to be able to view your interactive maps and you want your maps to work on legacy desktop browsers, your maps need to work in both Flash and HTML5.
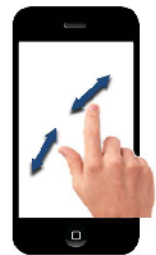
4   Things that are Different on Mobile Devices

Most interactive map features work the same on a mobile device as on a desktop, but there are some notable differences mostly due to the fact that you navigate by touch instead of with a mouse. The differences are summarized in the list below and discussed in more detail in the sections that follow.

- There are only two zoom levels — all the way zoomed out and all the way zoomed in.

- There are no pan/zoom controls. You zoom by pinching and pan with your finger.

- The map inset shows how the map is zoomed, but you cannot use it to pan the map.

- There are no scroll bars. Use two finger scrolling on long text or directories.

- You can display different instruction text for mobile users than for desktop users.

- There's no equivalent to mouse-over and mouse-out — you can only touch.

- Popups stay open until you close them using a large close "X".

- Glow, shadow, and blend effects may appear differently.

4.1   MapZoom

On mobile devices, there are just two levels of map zooming – all the way zoomed out and all the way zoomed in. You zoom in by spreading your fingers and you zoom out by pinching them (see the image at right).

Map inset

The map inset only appears when the map is zoomed in. It shows which region of the map is visible, but you cannot drag the region to make the map zoom like you can on a desktop browser. When the map is zoomed out, the inset goes away.

Initial map zoom and pan lock

If you have used the lock icon on the **Map** screen to fix the initial pan and zoom position of the map, the result on a mobile device will be as follows. If the map is locked while zoomed in more than half way, it will initially appear on the mobile device zoomed in all the way, otherwise it will appear zoomed out.

If the map is locked while zoomed in more than half way and it is panned, the map will initially appear on the mobile device zoomed in all the way and panned so that the center of the map when zoomed in is about the same as the locked center of the map as it appears on the **Map** screen. In other words, it will be panned approximately the same way even though the map will be zoomed in all the way on the mobile device, but might not be zoomed in all the way on the **Map** screen.

4.2   Scrolling

The iPad and iPhone do not display scroll bars when text or lists are taller or wider than the area in which they appear. In a MapsAlive tour you may need to scroll a long directory or long text that appears as hotspot content.

On an iPad or iPhone you scroll by dragging with two fingers (or one finger and thumb) as shown in the image at right. Using this gesture you can scroll up and down or left and right, the same as if you could use vertical and horizontal scroll bars.

4.3   Showing Different Instructions for Mobile Users

If you are using the **Show Instructions When Map Loads** feature (available on the **Advanced Map Options** screen) you can display one message for desktop users and another for mobile device users. You do this by appending ### (three hash marks) to the text for your desktop instructions and immediately follow the marks with text for mobile instructions. Here's an example:

```
Move your mouse over the arrows.###Touch the arrows. Scroll the directory with two fingers.
```

Note that this only works if the mobile device is displaying the map using HTML5. If you have chosen the option to use Flash on mobile devices that support it, the text that precedes the hash marks will display on both desktop and mobile browsers.

4.4   Hotspot Actions

Choosing which mouse action to perform

If a hotspot on your map performs a different action for a mouse-over then it does for a click, you need to tell MapsAlive which one to perform when a user touches that hotspot. Why? Because with a touch device there is no distinction between mouseover and click – there is only touch, so only one action or the other can be performed.

To specify which action is performed, go to the **Hotspot > Hotspot Actions** screen and choose one of the two options for **When a hotspot is touched**. The options are **Execute the Mouseover Action** and **Execute the Click Action** (see image at right).

When hotspot content is shown

The Hotspot Actions screen has another option called **Show this hotspot's content when**. On a desktop browser you can use this option to control whether a hotspot's content displays when you mouse over the hotspot, when you click the hotspot, or never. On a mobile browser, the hotspot content displays when either the **Mouse moves over marker** or the **Marker is clicked** option is chosen.

4.5 Popup Behavior

On a touch device, a popup stays visible until you close it by touching the close **X** in the upper right corner of the popup. A popup will close automatically if MapZoom is enabled and you pan or zoom the map.

Popup Location

On a touch device, these two choices result in the same behavior – the popup appears next to the marker.

- **Next to marker. Allow mouse onto popup** (popup overlaps marker)
- **Next to marker. Don't allow mouse onto popup** (popup is offset from marker)

On a touch device, these two choices result in the same behavior – the popup appears near where you touched.

- **Mouse Cursor. Allow mouse onto popup** (popup overlaps touch point)
- **Mouse cursor. Popup follows mouse while over marker** (popup is offset from touch point)

On a touch device, this choice displays a popup in a fixed location and the popup remains visible until you close it:

- **Fixed location. Visible while mouse is over marker.**

4.6 Glow, Shadow, and Blend Effects

Marker shapes that use the shadow, glow, or blend effects may appear differently when rendered on a mobile browser in HTML5 than they do rendered in Flash on a desktop browser. The differences may be more noticeable on shapes that have very thick borders. This happens due to the difference in graphics capabilities of the two technologies.

You should test your maps on both desktop and mobile browsers to identify any differences that you might consider unacceptable and then adjust your marker styles in a way that produces pleasing results with both Flash and HTML5.

Blend effect

The blend effect is a powerful Flash feature which unfortunately is not supported by HTML5. In MapsAlive we have done our best to reproduce the effect in HTML, but some blend modes work better than others and the **Invert** blend mode is not currently supported.

Note that use of the blend effect can significantly slow performance if used for large shapes. If your tour seems sluggish on iPad and you think it might be due to use of the blend effect, try checking the box for the **Disable Blend Effect on Mobile Browsers** option on the Tour Manager screen.

Glow or shadow but not both

In HTML5 the glow and shadow effects are mutually exclusive – you can have one or the other. If both are specified, shadow takes precedence.

5   Tips for Using Video

Your videos should work fine on iPad and iPhone unless you are using the new YouTube style embed code that has an <iframe> tag instead of an <object> tag. With the <iframe>, the video may display with the wrong dimensions. This is an iPad and iPhone phenomena that we have no control over, but to avoid it we recommend using the old embed code that uses the <object> tag.

Keep in mind that not all video works on the iPad. If you are having trouble displaying video in a hotspot, chances are the video doesn't work on iPad. Also, some videos play on iPad, but not on iPhone. Try typing the video's URL that you are using in the embed code for MapsAlive into the address bar in Safari to see if the video will play. If it does not play when viewing it by itself in the browser, it will not play when viewing it in your MapsAlive tour.

6   Using SVG Maps

If you have a tour that uses an SVG map, you can use that tour on a mobile device, but first you'll need to upload an alternate map image to use on the mobile device. The alternate image should be a jpg file and it must have <u>exactly the same dimensions </u>as the SVG image.

> If you don't upload an alternate image, or if the dimensions of the alternate image do not exactly match the SVG image, a blank white map will display on the mobile device.

To upload the alternate image, go to the **Choose Map Image** screen and upload the jpg that goes with the SVG's SWF file. Until you do so you'll see a warning that no mobile image has been uploaded yet.

If you are creating a new map and want to use a SWF file for the map image, first browse for and upload the SWF and then browse for and upload the jpg. You must do theuploads in that order: SWF first, jpg second.

If you want to upload a new version of either the SWF or the jpg, you can do so without having to upload the other file again. To delete both images, click the **Remove Map** link at the bottom of the **Choose Map Image** screen.

Map and Marker Zoom Limit options
The SVG options on the **Map** screen for **Map Zoom Limit** and **Marker Zoom Limit** are not honored on mobile devices.

7   Using Interactive Maps on iPad

MapZoom performance
If you find that panning your map on iPad is jerky or sluggish, there are two possible causes. The first is that your map is occupying nearly the entire iPad screen which makes the device work harder to redraw the image as you pan it. If you can make your map area smaller, you may see a performance improvement.

The second cause is that your map, or the web page containing it, is being scaled down by the iPad in order to fit on the screen. This can happen just by rotating the iPad's orientation from landscape to portrait. It also happens when your web page is wider than the iPad screen and needs to be scaled to fit. We have observed that whenever a map is scaled, especially if the map is occupying a large part of the screen area, the iPad's performance degrades significantly. You'll get the best performance if you can size your web page and map to fit the iPad screen without being scaled. Also see the **Prevent Scaling** option is section 2.3 of this user guide.

Note that the iPad 2 is faster overall than the original iPad.

Avoid iFrames if possible
When you run an interactive map in an iFrame on Safari, it runs more slowly than it would without the iFrame. Therefore for best performance of interactive maps that are integrated with your web pages, use the direct embedding method instead of using an iFrame. See the *MapsAlive User Guide for Integrating Interactive Maps with Web Pages* to learn about how to embed a map in a web page.

8   Using Interactive Maps on Android Devices

Your interactive maps will work on Android devices, but we have found that each combination of device and browser works differently and not all combinations display interactive maps correctly. Android support for HTML5 is not as mature as it is on the iPad and Android support for Flash is not as robust as it is on PCs and Macs. Both are likely to improve in the future, but in the meantime if you need your maps to work on Android, here are some things to keep in mind.

MapZoom
The MapZoom features works on Android, but you cannot zoom the map using the pinch gesture like you can on the iPad because Android does not support that gesture. On Android, MapsAlive displays a zoom control in the upper left corner of the map that you can touch to zoom the map in or out. When the map is zoomed out, the control displays a plus sign (+) and when the map is zoomed in the control displays a minus sign (-). Note that you must have checked the **Show Zoom And Pan Controls** box on the **Advanced Map Options** screen in order for the zoom control to display.

Firefox on Android

The Firefox browser on Android does not use the same touch interface as other mobile browsers. The current version of MapsAlive does not recognize the Firefox Android browser as a touch device and therefore your interactive maps will not work correctly on it using HTML5.

Flash on Android

By default the interactive maps you create with MapsAlive will render in HTML5 on Android; however, you can use the **Default to Flash for Mobile Browser** option (see section 2.3 above) to have the maps use Flash instead.

Be aware that Flash on Android generally does not work as well as Flash on PC and Mac browsers. The display of graphics and photos is sometimes very course and response to touch events often does not work the same as when using a mouse with a desktop browser.

Also, on some Android devices Flash does not honor stacking levels and so sometimes the map will appear on top of other elements on the web page that should be beneath it. To avoid that problem, you can use a tiled layout in your tour instead of using popups.

Blend and Shadow Effects

Some blend effects do not work correctly on some Android devices. In some cases, instead of blended colors you'll see very bright colors. Be sure to test your use of the blend effect to make sure it looks okay on Android. Or, to avoid this problem altogether, simply don't use the blend effect in your marker styles.

If you use the shadow effect, you may see that Android devices display the shadow in the opposite direction on the Y axis on compared to iPad or desktop browsers. This is a known Android issue which will hopefully be fixed in a future Android update.

Sound

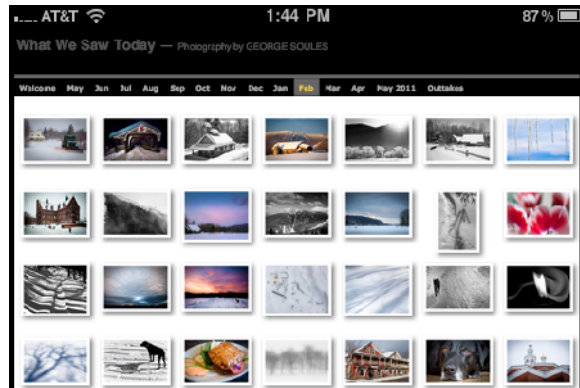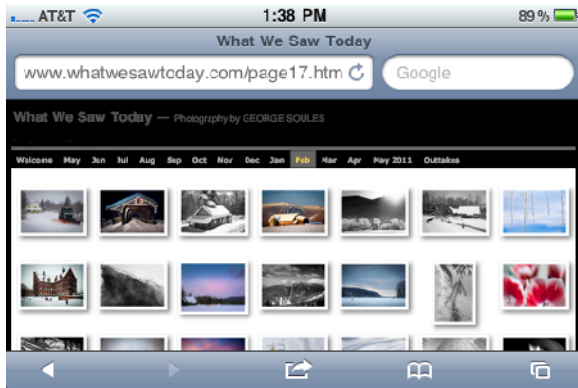The MapsAlive sound features do not work on some Android devices.

Pop-up Blocker

If the pop-up blocker is enabled on the Android web browser, you will not be able to open a web page in a new browser window by clicking on a hotspot that has its click action set to link to a URL opened in a new window. MapsAlive will detect that the new window was blocked and display a dialog asking if you want to open the page in the current window instead. This may not be acceptable behavior if the tour is running in an iFrame because the new window will open in the iFrame instead of in its own browser window.

You can turn off the pop-up blocker by going to the browser's menu and choosing **More**. Then choose **Settings** and uncheck the box labeled **Block pop-up windows**.

9   How to Launch a Tour from an App Icon on your iPad or iPhone

This section explains how you can launch a web page with one touch of an app icon on your iPad or iPhone. This not only saves you the steps of launching Safari and typing a URL (see left image below), but your page will come up in full-screen mode (see right image below). It works with any tour that you create with MapsAlive.

Left: Tour shown in browser.   *Right:* The same tour launched as a web app.

Apple describes this feature as making a web page "web app capable." Notice how much extra room is available to the map when launched as a web app thanks to the absence of the address bar at the top and the icon bar at the bottom.

Making a tour web app capable only takes a minute. The first step is to allow the tour to be launched with one touch and the second is to create an app icon for your home screen. Both steps are described below.

Step 1 – Make the tour web app capable
1.   Go to the **Tour Manager** screen in the MapsAlive Tour Builder.
2.   Check the box that says **Make Tour Web App Capable**.
3.   Preview and publish the tour.

If you are embedding your tour in another web page, you can still get this behavior, but not by using this option. Instead of steps 1 and 2 above, add the meta tags shown below to the web page containing your map and then follow the instructions below to create an app icon.

```
<meta name="apple-mobile-web-app-capable" content="yes" />
<meta name="apple-mobile-web-app-status-bar-style" content="black"/>
```

Step 2 – Create an app icon for the tour's URL.
1.   Launch Safari and enter the URL for the tour.
2.   Wait for the map to load.

3. Tap the icon that looks like an arrow coming out of a box. On iPad it's at the top of the screen (see top image at right). On iPhone it's at the bottom.

4. Choose **Add to Home Screen**.

5. An Add to Home dialog appears (see bottom image at right). Type a short name for the app icon.

6. Click the **Add** button.

7. An icon that looks like the tour then appears on your home screen.

8. On your home screen, touch the new icon and the tour will launch with no address bar.

If you want to get rid of an app icon that you have created this way, just press on the icon until it starts to vibrate and an X appears next to it. Touch the X to remove the icon from your home screen.

10 How to Use a Tour without Wi-Fi or 3G

This section explains how you can run a tour on an iPad without access to Wi-Fi or 3G. You do it by copying the tour's files onto your iPad into an app called GoodReader (www.goodreader.net). You can then use GoodReader's built-in browser to view them. Once the files are on your iPad, you no longer need an internet connection to use your tour. By following the step-by-step instructions below, you can make this work in a few minutes.

1. Make sure your tour has been enabled to run on your iPad. You do this by checking the **Enable Mobile Internet Options** box on the **Tour Manager** screen in MapsAlive.

2. Now get the files for your interactive map. In the MapsAlive Tour Builder, choose **Tour > Export** and then click **Download Published Tour**. This gives you a zip file containing everything you need.

3. If you don't have it already, buy and install GoodReader for iPad ($4.99 from the iTunes Store).

4. With your iPad connected to your Mac or PC, open iTunes, select your iPad from the **Devices** section, and then click **Apps** in the top menu bar. Then click on GoodReader in the **File Sharing** section near the bottom of the screen.

5. Drag your zip file onto the GoodReader Documents section or click the **Add** button to browse for it. This copies the zip to your iPad.

6. Now launch GoodReader on your iPad. The zip file will appear in the **My Documents** section on the left. When you touch the file name, GoodReader will prompt you to unzip it. Note that if there is a circle to the left of the file name, then touching the file name only selects it. In that case, touch the Unzip button in the **Manage Files** pane on the right and then click the blue **Done** button.

7. GoodReader will create a folder having the same name s the zip file. Touch the folder name to see the files in the folder. If there is a circle to the left of the folder name, touching the name

will only select it so first click the **Done** button in the **Manage Files** pane, then touch the folder name to open it. At this point you can delete the zip file if you like.

8. Inside the folder locate the file named `index.htm`. It's the HTML page that launches your interactive map.

9. Touch `index.htm` and your interactive map will display in the GoodReader browser. To make it easier to find this file the next time, you could rename it to `__index.htm` so that it will sort at the top (that's two underscores in front of the file name)

10. To verify that your interactive map will work without Wi-Fi or 3G, put your iPad into Airplane Mode. GoodReader will display a dialog telling you to turn it off, but just press **OK**.

> URLs used with GoodReader are case-sensitive. If your tour links to other web pages when you click a hotspot and those pages are also stored on your iPad using GoodReader, be sure that the letter casing in the hotspot action URL matches the lettering casing of your GoodReader folders.

We have provided these instructions for your convenience, but we have no affiliation with GoodReader nor can we provide support related to that application.

11 Using Interactive Maps on a Touch Screen Computer

An interactive map on a touch screen provides a very friendly user interface for certain types of applications such as kiosks. This chapter provides information that will help you understand how to create the best possible touch screen experience for your users.

11.1 Hardware Requirements

You can use your interactive maps as-is on touch screen monitors. The only hardware requirement is that the computer can run one of the standard browsers – IE, Firefox, Safari, or Chrome.

We have used MapsAlive on the HP TouchSmart with Windows 7 and on the Apple Mac with OS X and an Apple Cinema monitor using a touch sensitive overly from Troll Touch..

11.2 Touch Screen versus Mouse

Working with a touch screen is not difficult, but be aware that there are some important differences between a touch screen computer and one that uses a mouse. With a traditional computer you can click the mouse buttons, click and drag with the mouse, and you can hover over sections of the screen by moving the mouse on top of the area of interest. On a touch screen you can press and lift your finger, drag or flick your finger, and also perform gestures such as pinching or spreading two fingers.

In order for a touch screen to work with existing software that was designed for use with a mouse, the touch screen hardware actually sends mouse movements and clicks to the computer when you touch with your finger. Most software, unless it was written specifically with touch in mind, doesn't even know

that it is running on a touch screen computer. Unfortunately, there is not a 100% direct translation between touching and mousing and the subtle differences can have a big effect on the user experience.

The most notable difference is that the hover or mouse-over action that so many web pages take advantage of is not supported by most touch screens. Mouse-over is especially important with a MapsAlive interactive map because you normally move your mouse over a hotspot to see its content, that is, the photo or text associated with it.

Some touch actions translate into unexpected or undesirable mouse actions. In particular, on Windows 7, pressing and holding your finger without lifting it is the same as right-clicking with a mouse. In a browser, a right-click causes a content menu to appear, something you won't want people to see or use on a kiosk. Other touch actions such as the pinch gesture can cause a web page to shrink, another undesirable behavior on a kiosk.

Fortunately there are ways to address these issues and we'll tell you how in the sections that follow.

11.3 Restricting and Altering Touch Screen Behavior for Interactive Maps

This section explains how to get around the issues mentioned in the previous section.

Disabling Gestures

On a touch screen used with Windows 7, the contents of a browser window like IE or Firefox will grow if you move two fingers apart, or shrink if you pinch them together. If the page contains Flash content, as does a MapsAlive interactive map, only some of the content may grow or shrink and some may stay its normal size. This behavior would be unacceptable on a kiosk. To prevent it, you can uncheck the **Enable multi-touch gestures and inking** option on the **Pen and Touch** dialog as shown in the figure below. To get to this dialog, go to **Start**, choose **Control Panel > Hardware and Sound > Pen and Touch** and then click the **Touch** tab.
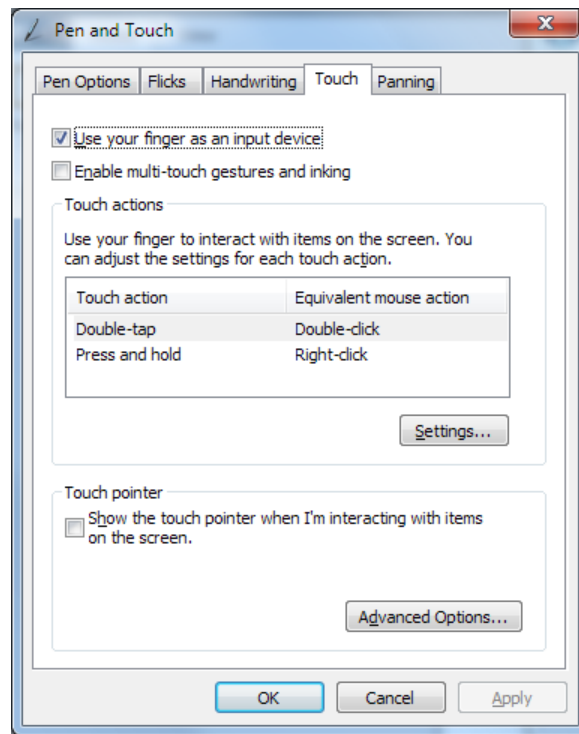
Figure 1 - Windows 7 dialog used to disable multi-touch gestures

Click versus Mouse-Over (Tap versus Touch)

Many touch screens treat a tap as a mouse left-click. You tap by touching and removing your finger. When you tap a hotspot on an interactive map, you won't see the hotspot's content until you lift your finger. This behavior is perfectly acceptable and is what many people are used to because popular mobile devices like the iPhone behave the same way.

If you want to see hotspot content on touch without lifting your finger, the touch screen needs to translate a touch into either a mouse-over or mouse-click action. On the Troll Touch you do this by running in Click on Touch mode. On Windows 7 you can uncheck the **Enable press and hold for right-clicking** option on the **Press and Hold Settings** dialog as shown in the figure below. To get to this dialog, first go to the **Pen and Touch** dialog as explained in the previous section and click **Press and hold** in the **Touch actions** section, and then click the **Settings** button.
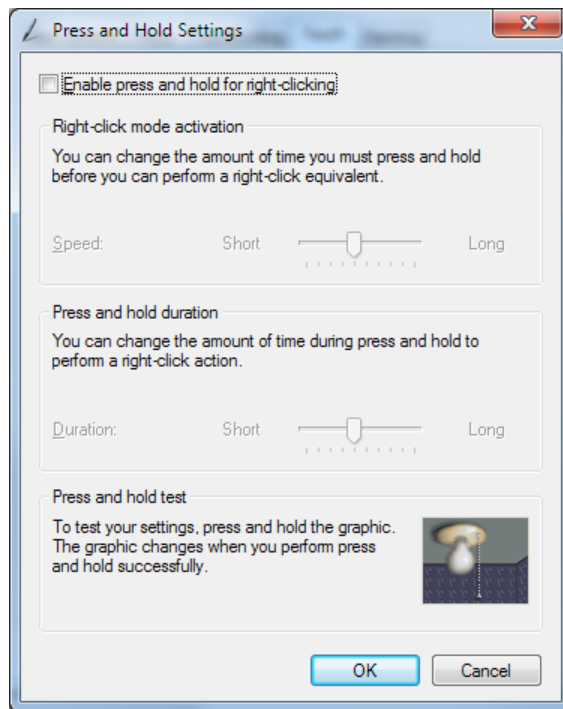
Figure 2 - Windows 7 dialog used to disable right-clicking

Disable Accelerators in IE 8

IE 8 displays an accelerator icon (a blue arrow in a blue box) when you select text on a web page by dragging across it with our finger. You can click the icon to display a menu of accelerators that perform an action on the selected text, for example, to look it up in a search engine. This is another feature that is undesirable on a kiosk. To disable it, click the **Tools** button in IE 8 and then click the **Advanced** tab. In the **Browsing** section, uncheck the box labeled **Display accelerator button on selection**.

Running a Browser in Kiosk Mode

Most browsers have an option, or have a 3rd party plugin available, to make the browser run in kiosk mode. In this mode, the browser occupies 100% of the screen and prevents access to any of the browser's menus. Kiosk mode is necessary when you want someone to be able to use your browser-based touch screen application, but not be able to change any of the browser settings or navigate to another page. You can run IE in browser mode from the Windows start menu by typing `iexplore -k` followed by a URL.

11.4 MapsAlive Considerations for Touch Screens

When creating an interactive map for a touch screen, the most important consideration is to use hotspot markers that are large enough to be easily touchable. Microsoft recommends a minimum size of 40 x 40 pixels.

Pan and Zoom Controls

The pan/zoom controls that appear in the upper left corner of the map when you have Map Zoom turned on are too small to be used comfortably on a touch screen. Also, because they were designed so that you can press and hold down the mouse button to perform continuous zooming and panning, they don't respond well on a touch screen. In a future release of MapsAlive we expect to provide JavaScript API functions that you can use along with your own custom pan and/or zoom controls. Note that you can pan the map on a touch screen by simply dragging your finger.

11.5 Showing Larger Text on Touch Screens

You can make your touch screen tour a little easier to use by having it display larger text in the directory and a large close X on popups. To do this go to the **Tour Manager** screen and check the box for the **Use Touch User Interface for Desktop Browser** option.

If you want complete control over how the directory appears, you can code your own CSS. See the **Using Custom CSS to Override MapsAlive Styles** section of the *MapsAlive User Guide to the JavaScript API* to learn how.

11.6 Further Reading

An excellent article on Touch can be found at https://msdn.microsoft.com/en-us/library/dn742468.aspx.