SITE SURVEY TOOL

QUICK GUIDE

Contents

1.   INTRODUCTION

This guide offers an overview of the Site Survey Tool (SST) and how to use it in your Wireless network planning. After reading this quick guide, you should understand the concepts of using the SST and benefits of using it when network planning

Nokia wireless LAN products and specific network planning are not explained in this guide. Other aspects of Wireless LAN security including Wired Equivalent Privacy (WEP) are not covered in this guide. There is a separate guide available explaining WEP and how it is implemented in the Nokia Wireless Products.

2.   INTRODUCTION TO THE SITE SURVEY TOOL

The Site Survey Tool is a Windows application designed to map the coverage area of an Access Point. It does this by capturing the throughput and stability of communications between a client computer and the Access Point at a given location. This information is plotted onto a map and enhanced using colour to represent good and bad areas of coverage. When used with a floor plan this clearly shows all the features and characteristics within the coverage area that cause or may cause potential problems. Steps can then easily be taken to improve wireless coverage and resampled areas can be overlaid for analysis within the tool.

2.1   NET REFLECTOR

Before a survey is taken the Net Reflector program must be is running on the network. It is not important where on the network the Net Reflector is running but it is recommended that it is run on the Wired Network.
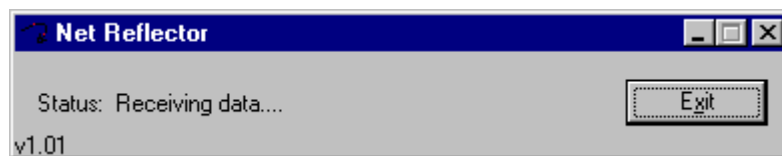
Note: The Net Reflector program must be running on the subnet as the SST as the site survey tool uses broadcast frames.

2.2   GETTING STARTED USING THE SITE SURVEY TOOL

The Site Survey tool should be run from a Wireless Station but can be run over a wired network. At start up the SST offers a checklist reminding the user that before the begin a survey they must have the following

> You have a bitmap floor-plan
>
> A working access point connected to the wireless station.

A clean radio environment (turn all other access points off)

Net Reflector is running on the network

Below the reminder list, the user is offered four choices for using the SST, the four options are :

Create a new floor plan for surveying.

A Survey Details window appears so that the user can add information about the survey. This allows the user to load a bitmap to plot over the top, it also allows the user to name the survey so that it can be saved for review.

Open an existing survey for analysis.

Selecting this option allows previously saved surveys to be loaded onto the SST and allows the user to do two things: View previously taken surveys and take a new survey over the top of the old survey for comparison. This is especially useful for comparing throughput on different channels or for building a 3D composite of a building

Have a detailed tutorial on the site survey tool.

This option takes the user through the using the Site Survey Tool step by step
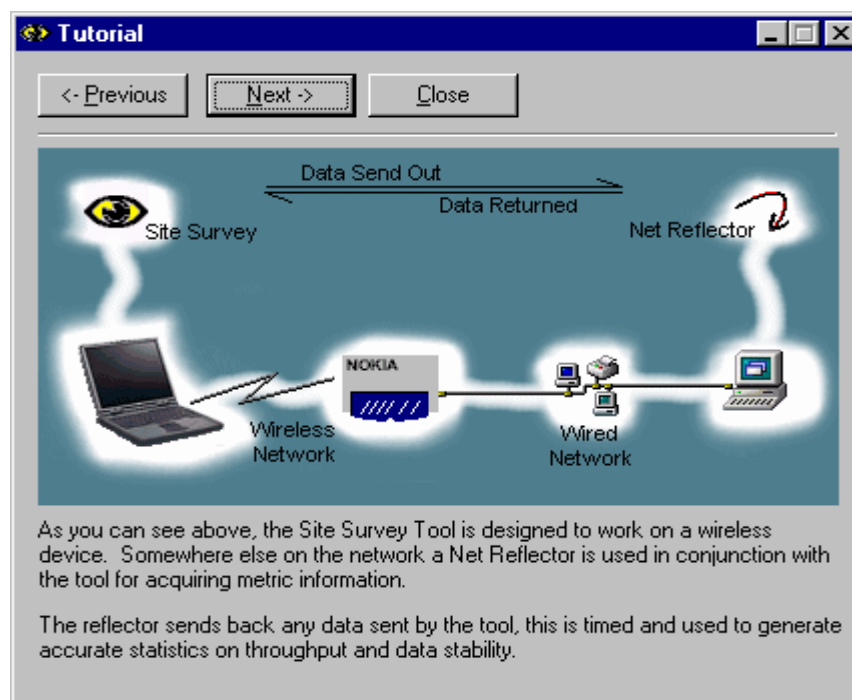
Just start using the application.

The SST is instantly ready to use but has no bitmap or survey name. This option is ideal for 'quick and dirty' surveys.

2.3 NAVIGATING THE TOOL BAR

Before a survey is taken it is prudent to get familiar with the tool bar on the site survey tool. Understanding the functions on the tool bar will make the survey a quicker, easier and more pleasant experience.

The tool bar is set out as above and a description for each icon is below.

Safe: Does not allow any sample points to be placed - this prevents accidental samples. No sample data can be edited when Safe is activated.

Add AP: Allows an access point reference point to be placed. It is placed in the location of the mouse cursor when the left mouse button is double clicked.

Add Sample Point: Allows a sample point to be placed. It is placed in the location of the mouse cursor when the left mouse button is double clicked

From left to right:

1. **New Survey**: Offers the user the option to save the survey in use and then allows the user to open a new survey.

2. **Properties**: Shows the properties for the current survey in a pop up window

3. **Open Survey**: Opens an existing survey

4. **Save Survey**: Saves the current survey

The **connection** symbol shows whether a Net Reflector is active on the network and how it is connected. If there is no symbol at all just a blue background then there is no Net Reflector present on the Network. The symbol in the icon on the left shows a wired to wireless link.

Reset: Pressing the Reset button deletes any old samples and initializes the taking 11 samples.

Samples Remaining: Samples Remaining shows the countdown of the samples being collected and are counted down from 11 to 0.

Fit to window: Changes the shape and size of the imported bitmap to fit the map window.

TCP/IP and MAC: Specifies what transport is used for sending and receiving data between the two computers.

The drop-down menu offers the user four options for reading the radio coverage mapping.

> **None**: Shows the radio coverage in red with no sample values
>
> **Throughput**: The radio coverage map shows the throughput in Kbytes/s
>
> **Stability**: The deviation in the throughput is shown the on radio coverage map
>
> **Both**: Shows a composite measurement for both the throughput and stability.

The gauges on the right hand side of the screen show the real time values for throughput and stability and the default values are Nokia defined. The threshold values can be user defined, this can be done in two ways

- Explicitly within the application's settings
- Interactively using the sliders on the user interface

3.   TAKING A SURVEY

In a nutshell there are 8 simple steps to carrying out a survey and they are

1. Start the Net Reflector tool
2. Open the Site Survey utility and import a bitmap to use
3. Check that the Net Reflector is seen by the Site Survey Tool by checking the Toolbar
4. Mark the access point on the bitmap in its relative location
5. Go to the location that you wish to take a sample from
6. Press RESET and wait for sample count to finish
7. Mark the relative position with sample point flag
8. Repeat 6 and 7 in new location

Steps 1 to 3 have been dealt with already, so once the SST has been started and a bitmap opened the next step is to mark the access point.

3.1   MARKING AN ACCESS POINT

Before taking a survey it is prudent to mark the relative location of the access point on the imported bitmap. This can be in two ways

Method One

Click on the access point icon on the toolbar (the mouse cursor will now show AP).

Double right mouse click on the relative location on the bitmap. The AP Details pop-up window will now appear, fill in the relevant information and press OK. The access point will now appear on the imported bitmap.

Method Two

Right mouse click on the relative location on the bitmap.

Choose 'Add Access Point'. The AP Details pop-up window will now appear, fill in the relevant information and press OK. The access point will now appear on the imported bitmap.

Note: Ensure that the access point is placed on the bitmap relative to the actual location.

3.2 PLOTTING RADIO COVERAGE

For any survey a minimum of three sample points are needed to plot the radio coverage. For each sample point the following three simple steps must be taken

Step 1. Go to the location from which you wish to take the sample point from.

Step 2. Press the RESET button on the toolbar and wait for sample count to count down to zero.

Step 3. Mark the relative position of where the sample point was taken on the imported bitmap with a sample point flag. There are two methods of marking the sample point flag.

On the third and following sample points the radio coverage will appear.

3.3 MARKING A SAMPLE POINT

Marking a sample point is very similar to marking the access point, again there are two methods of marking the sample point.

Method One

Click on the sample point icon on the toolbar (the mouse cursor will now show PT).

Double right mouse click on the relative location on the bitmap. The Sample Details pop-up window will now appear, fill in the relevant information and press OK. The sample point flag will now appear on the imported bitmap.

Method Two

Right mouse click on the relative location on the bitmap.

Choose 'Add Sample Point'. The Sample Details pop-up window will now appear, fill in the relevant information and press OK. The sample point flag will now appear on the imported bitmap.

Note: All points in between the sample points are mathematically plotted so the more sample points taken, the more accurate the survey! This is very important in buildings which have a lot of metal and glass.