USING THE NOKIA A032 AS WIRELESS BRIDGE AND REPEATER

QUICK GUIDE

Contents

Legal Notice

1. INTRODUCTION

This guide explains how to use the Nokia A032 as a wireless MAC bridge or repeater. After reading this quick guide, you should understand the concepts of planing and implementing wireless bridges and repeaters.

Nokia wireless LAN products and specific network planning are not explained in this guide. Wireless LAN security is not covered in this guide but is available in a separate Nokia wireless LAN security document.

2. CONFIGURING FOR WIRELESS BRIDGE / REPEATER OPERATION

Before a Nokia A032 can be used as a bridge it must be configured and told specifically which other Nokia A032s are available as bridge partners. This manual configuration must be done accurately and carefully to ensure that the correct Nokia A032s are specified and that no loops are created.

2.1 STEP BY STEP PROCEDURE

2.1.1 Gathering the Information

First draw a map showing all the Nokia A032s you plan to include in the bridging / repeating function. On the map show the bridge partner relationships and make sure that there are no loops. An example of a map is shown in Figure 1 involving four access points. In this case, Nokia A032 (A) and Nokia A032 (D) act as wireless bridges. Nokia A032 (B) acts as a wireless bridge and repeater, having a local LAN attached. Nokia A032(C) acts only as a repeater.

Having established the connection map, it is now necessary to determine the MAC address of the radio in each Nokia A032. This information can be obtained by using the serial port / telnet interface to the Nokia A032 or by using the diagnostics screen of the web interface. Power up each Nokia A032 and write down the MAC address of the radio in the unit as indicated in the diagnostics Web screen or in the **config** command of the serial port / Telnet interface. An example of the Web diagnostics screen is shown in Figure 2. – the radio MAC address can be seen clearly.
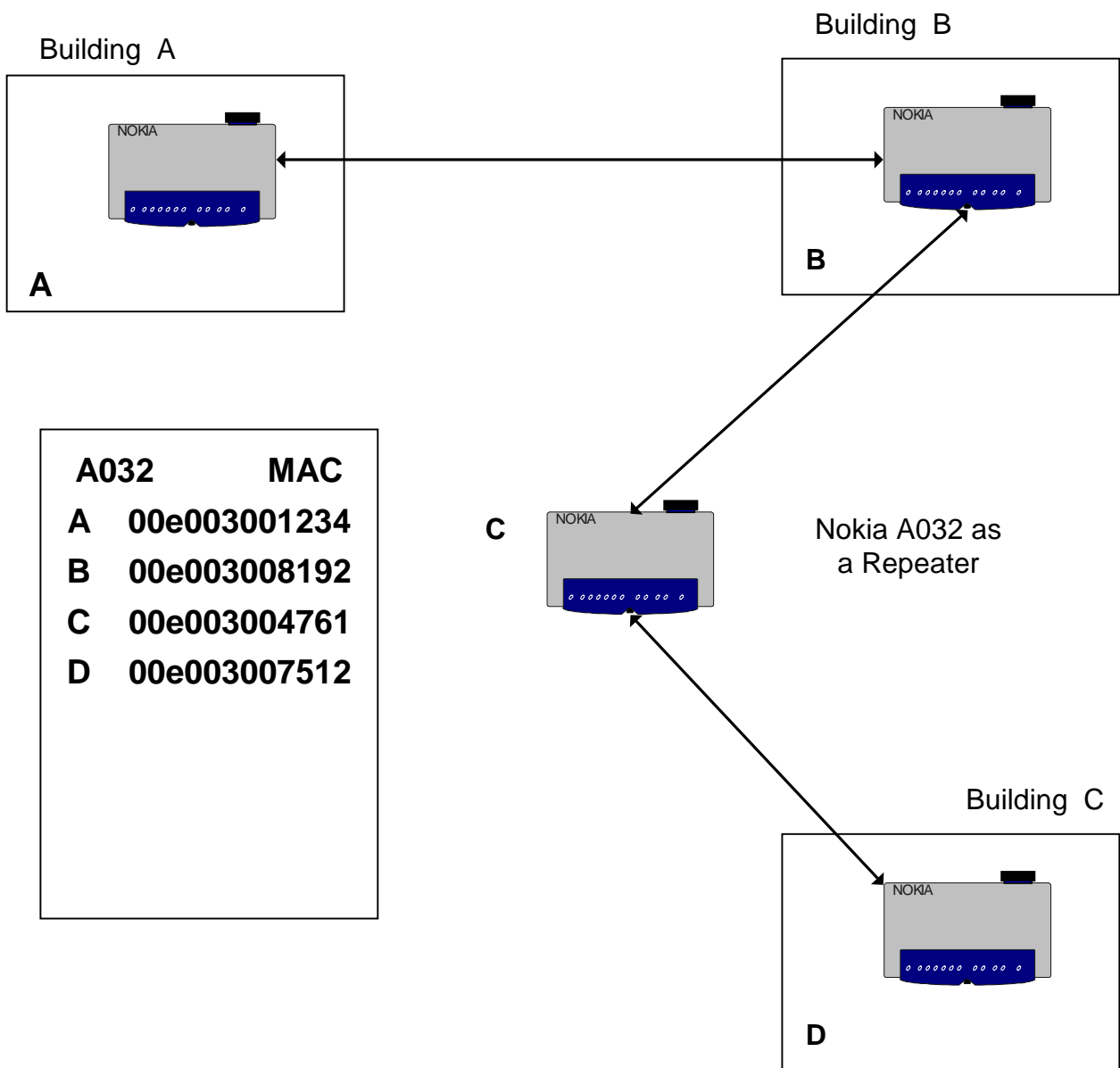
Building A

Building B

NOKIA

A

NOKIA

B

A032	MAC
A	00e003001234
B	00e003008192
C	00e003004761
D	00e003007512

NOKIA

C

Nokia A032 as
a Repeater

Building C

NOKIA

D

Figure 1: *Map of bridges and repeaters*

In the map of the plan (Figure 1), the MAC address of each access point has been written on the left-hand side of the paper. This information will be required during set-up.
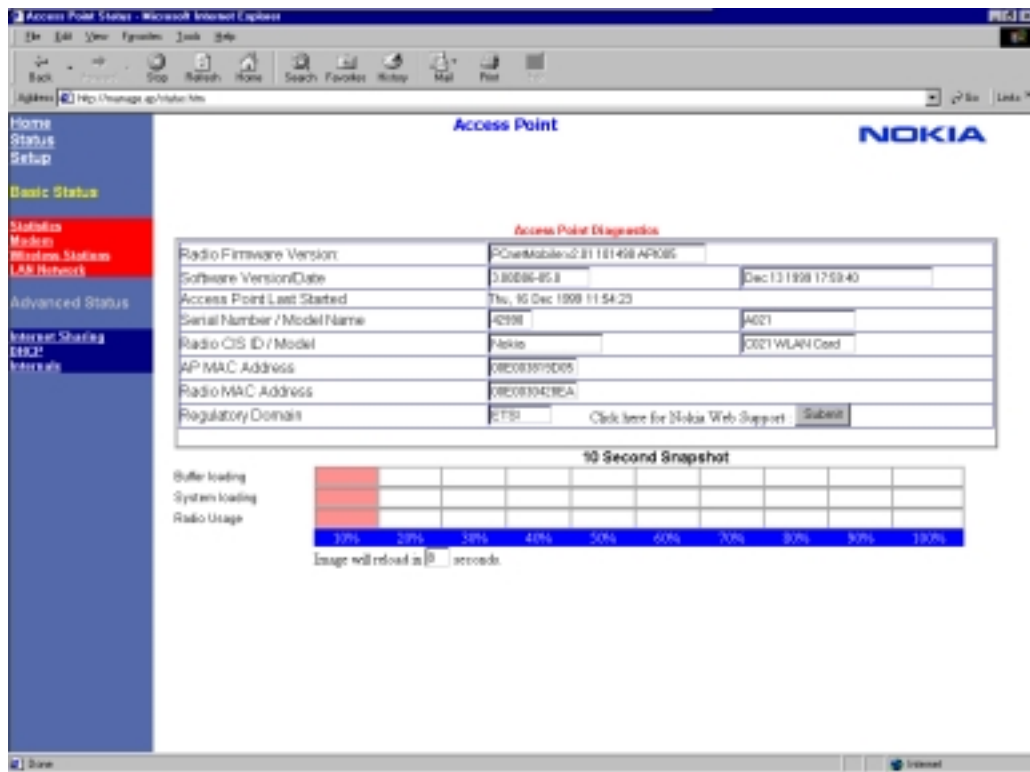
Figure 2: *Diagnostics Web screen showing Radio MAC Address*

2.1.2 Setting up the Nokia A032s

Each Nokia A032 must be separately programmed to identify its bridge partner(s). This can only be done using the serial port / Telnet interface.

Power up the Nokia A032 and log into the serial port / Telnet interface program. The information is entered using the **bridge** command, which has the format:

> **Bridge add {MAC(NID)} {Name}**

Where **{MAC(NID)}** is the MAC address of a bridge partner and **{Name}** is a user-friendly name up to 9 characters which you may choose.

In the example of Figure 1 the following set-ups would be used:

Nokia A032 (A):

> **Bridge add 00e003008192 bridgeB**

Nokia A032 (B):

> **Bridge add 00e003001234 bridgeA**
> **Bridge add 00e003004771 bridgeC**

Nokia A032(C):

> **Bridge add 00e003008192 bridgeB**
> **Bridge add 00e003007512 bridgeD**

Nokia A032 (D):

Bridge add 00e003004771 bridgeC

You may use the command **bridge list** to show the entries. Also you may use the command **bridge delete** to remove entries made in error or no longer required.

When all the entries have been made the Nokia A032s must be restarted and the connections should be established. To check that the connections are working, go to the wireless status screen in the web interface or use the **Show a** command in the serial port / Telnet monitor. The bridge partner(s) should be shown by their user-friendly name and listed as `Is Bridging`. It may take up to 30 seconds after starting for the bridge partner(s) to connect.

> ⚠️ **Caution:** MAC bridges can only be configured in two WEP Modes Open and WiFi WEP. WiFi WEP uses open system authentication and all traffic is passed encrypted.

2.1.3 Restarting the Nokia A032s

Once all the Nokia A032s are operating they will automatically learn where the various network-attached computers reside and bridge data to the correct location. If one or more of the Nokia A032s are restarted, this information will be temporarily lost. This may result in loss of communication in the network for up to 5 minutes until the information is re-learned from the network.

> ⚠️ **Caution:** This version of the Nokia A032 does not support roaming by wireless stations from one bridge to another. To avoid this problem each Nokia A032 used as a bridge should be assigned a unique ESSID (Network Name) which is different from the others. This will prevent inadvertent roaming.

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