**BLUEJACKING**

Nikita M. Ganwir Amarjeet G. Thakur

Dept. of I.T. Engg 6th sem Dept. of I.T. Engg 6th sem

V.D.C.E.T Mauda V.D.C.E.T Mauda

9665292467 8180819014

nikitaganwir.ng@gmail.com devroc90@gmail.com

**Abstract**

Bluejacking is the sending of unsolicited messages over Bluetooth to Bluetooth-enabled devices such as mobile phones, PDAs or laptop computers, sending a vCard which typically contains a message in the name field (i.e. for bluedating or bluechat) to another Bluetooth enabled device via the OBEX protocol. Bluetooth has a very limited range; usually around 10 meters on mobile phones, but laptops can reach up to 100 meters with powerful transmitters. Bluejacking allows phone users to send business cards anonymously using Bluetooth wireless technology. Bluejacking does not involve the removal or alteration of any data from the device. Bluejackers often look for the receiving phone to ping or the user to react. In order to carry out a bluejacking, the sending and receiving devices must be within 10 meters of one another. Phone owners who receive bluejack messages should refuse to add the contacts to their address book. Devices that re set in non-discoverable mode are not susceptible to bluejacking. As a communicative device, the mobile phone has been gradually taken up in ways that move beyond merely providing a channel for mediated conversation. One such appropriation is bluejacking, the practice of sending short, unsolicited messages via vCard functionality to other Bluetooth-enabled phones. To choose the recipients of bluejacks, senders complete a scan using their mobile phones to search for the available Bluetooth-enabled devices in the immediate area. A bluejacker picks one of the available devices, composes a message within a body of the phone’s contact interface, sends the message to the recipient, and remains in the vicinity to observe any reactions expressed by the recipient.

**Introduction**

The messages tend to be anonymous since the recipient has no idea who has sent the bluejack, and the recipient has no information about the bluejacker, except for the name and model of the bluejacker’s mobile phone. Because of Bluetooth’s short-range networking capabilities, bluejacking can only occur between actors who are within 10 meters of each other, which makes this activity highly location-dependent. Contrary to what the name suggests, the bluejack recipient’s phone is not hijacked; that is, the phone is at no time under the control of the bluejacker.

**History**

This bluejack phenomenon started after a Malaysian IT consultant named “Ajack” posted a comment on a mobile phone forum. Ajack told IT Web that he used his Ericsson cellphone in a bank to send a message to someone with a Nokia 7650.

Becoming bored while standing in a bank queue, Ajack did a Bluetooth discovery to see if there was another Bluetooth device around. Discovering a Nokia 7650 in the vicinity, he created a new contact and filled in the first name with ‘Buy Ericsson!' and sent a business card to the Nokia phone.

“A guy a few feet away from me suddenly had his 7650 beep. He took out his 7650 and started looking at his phone. I couldn't contain myself and left the bank,” he says.

Ajack then posted the story on a mobile Web site and other people started trying it out.

“I gave it the name bluejacking (taken from the words Bluetooth and hijacking) and it has just taken off from there.”

He says bluejacking is common in Malaysia and is happening everywhere there are lots of Bluetooth devices.

Bluejacking has become popular among young people wanting to play practical jokes. A 13-year-old named Ellie from Surrey in the UK has started a dedicated bluejacking site called bluejackq. The site explains what bluejacking is and also has forums where people can share their bluejacking experiences.

**How To Bluejack**

Assuming that you now have a Bluetooth phone in your hands, the first thing to do is to make sure that Bluetooth is enabled. You will need to read the handbook of the particular phone (or PDA etc) that you have but somewhere in the Menu item you will find the item that enables and disabled Bluetooth.

Now, remember that Bluetooth only works over short distances, so if you are in the middle of Dartmoor then BlueJacking isn't going to work for you (unless the sheep have mobile phones these days!) so you need to find a crowd. BlueJacking is very new so not everyone will have a Bluetooth phone or PDA so the bigger the crowd the more likely you will have of finding a 'victim'. The Tube (yes, Bluetooth works underground), on the train, in a Cafe or standing in line are all good places to start.

You will now need to create a new Contact in your Phone Book - however rather than putting someone's name in the Name field you write your short message instead - so for example rather than creating a contact called Alan Philips you would write - "Hey, you have been BlueJacked!" instead (or whatever message you want to send)

Now select the new contact and from the Menu of the phone choose "Send via Bluetooth". This is a facility available within the Mobile Phone that was designed to send a Contact to someone else - useful in Business when trading names and addresses, however we are now going to use it to send our message that was contained in the Name field of the contact - clever eh?

Your phone or PDA will start to search the airwaves for other devices that within range. If you are lucky you will see a list of them appear, or it will say that it cannot find any. If the latter happens then relocate to another crowd or wait a while and try again. If you have a list of found devices then let the fun begin.

Unfortunately, almost every Bluetooth enabled device will not yet be configured with a useful name - so you are going to have to guess. Some devices will be called by their Phone manufacturer (e.g. Nokia, Sony) or maybe a random string. Try one at random and look around to see who grabs their phone and then looks perplexed when they read your message :) If you want to name your Phone so it appears as a name in the list on a BlueJackers phone see how to name our phone .You can build a library of contacts with predefined messages.

**Mobile**

The various steps involve in this are as follows:

1. First press the 5-way joystick down.

2. Then choose options.

3. Then choose "New contact"

4. Then in the first line choose your desired message.

5. Then press done.

6. Then go to the contact.

7. Then press options.

8. Then scroll down to send.

9. Then choose "Via Bluetooth"

10. Then the phone will be searching for enabled Devices.

11. Then press "Select"

**The Bluetooth Architecture**

 The Bluetooth architecture is divided into two specifications: the core and the profile specifications. The core specification discusses how the technology works while the profile specification focuses on how to build interoperating devices using the core technologies.



Figure 1:

**The RF Layer**

 The Bluetooth air interface is based on a nominal antenna power of 1mW (0dBm) with extensions for operating at up to 100 mW (20dBm) worldwide. The nominal link range is 10 centimeters to 10 meters, but can be extended to more than 100 meters by increasing the transmit power to 100 mW.

**The Bluetooth Baseband**

 The basic radio is a hybrid spread spectrum radio that operates in a frequency hopping manner in the ISM band. As stated earlier, the band is divided into 79 one Megahertz channels that the radio randomly hops through while transmitting and receiving data. A piconet is formed when one Bluetooth radio connects to another Bluetooth radio. Both radios then hope together throughout the 79 channels. The Bluetooth radio system supports a large number of piconets by providing each piconet with its own set of random hoping patterns.
 The Bluetooth frame consists of a transmit packet followed by a receive packet. Each packet can be composed of multiple slots (1, 3, or 5) of 625 us. Below is a single slot frame.

 Figure 2:

**Usage Of Bluejacking**

Bluejacking can be used in many fields and for various purposes. The main fields where the bluejacking is used are as follows:

- Busy shopping centre

- Starbucks

- Train Station

- High Street

- On a train/ tube/ bus

- Cinema

- Café/ restaurant/ pub

- Mobile phone shop

- Electronics shop (e.g. Dixons)

The main use of bluejacking tools or bluejacking is in advertising purpose and location based purpose. Advertising on mobile devices has large potential due to the very personal and intimate nature of the devices and high targeting possibilities. We introduce a novel B-MAD system for delivering permission-based location-aware mobile advertisements to mobile phones using Bluetooth positioning and Wireless Application Protocol (WAP) Push. We present a thorough quantitative evaluation of the system in a laboratory environment and qualitative user evaluation in form of a field trial in the real environment of use. Experimental results show that the system provides a viable solution for realizing permission-based Mobile advertising.

**Conclusion**

Bluejacking is technique by which we can interact with new people and has ability to revolunerise market by sending advertisement about the product, enterprise etc. on the Bluetooth configured mobile phone so that the people get aware about them by seeing them on the phone.

Now a day it is used in sale promotion or sale tools and in dating. This technique is used in many fields like cinema , train station, shopping malls ,mobile phone shops etc. now a days there are new tools available in the markets by which bluejacking can be done. The basic technology behind bluejacking is similar to Bluetooth because we can do bluejacking in the mobile or PADs or computers or laptop configured with Bluetooth.

Now a day new and new techniques are developing using Bluetooth. Some of the latest news is :

Bluetooth Technology Now Standard in Cars ,BlueParrott Bluetooth B100 Wireless Headset ,Motorola & Burton Launch Bluetooth Snowjackets ,Bluetooth shipment units 3m a week ,O'Neil Launches 'The Hub' Bluetooth Snowboard Jacket ,CellStar Launches Bluetooth Web Surfer ,Emergence of new Bluetooth usage\_models ,Heart Monitor Sends Crucial Information to Cell Phones ,Impulsesoft Delivers Stereo Music Over Bluetooth ,TDK Systems builds on the benefits of Bluetooth ,Impulsesoft Delivers Stereo Music Over Bluetooth .

So we conclude that in future this technology become the key for advertising and to interact with world and to get the location messages on the phone when you are somewhere out. Bluejacks are location specific. We first wanted to determine the types of places where bluejacks took place. The data indicate that bluejacking is an activity that primarily occurs in public spaces, outside of the home. Bluejacks frequently occurred in public transportation locales (23.4%), stores and shopping malls (32.1%) and restaurants (9.8%), bars (11.2%) and cafes (7.3%) but almost never at home (0.7%). This suggests that bluejackers are targeting strangers, presumably taking advantage of anonymity, opportunities for interaction and available Bluetooth enabled devices afforded by densely populated public spaces.There are few security issue which can be minimized by taking some simple precaution like when you do not want to be blue jacked just off your Bluetooth.

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