

# **Wibree – the executive summary**

## **What is it?**

It's another wireless standard that's designed for devices that run off small batteries, yet need to last for a year or more on a button cell. The clever thing about it is that it can be built within an existing Bluetooth chip. That means that it adds almost no cost to make a mobile phone capable of talking to Wibree devices.

## **Why do we need another wireless standard?**

There's a big demand for wireless products that can transmit data to a central monitoring service, such as medical sensors. The problem is that they need to be very low power. The other problem is that if they are to use a mobile phone as a gateway to the network, then the same radio needs to exist within the phone. But phone vendors don't want to add yet another radio. That's where the clever bit about reusing parts of the Bluetooth chip comes in. It means Wibree will be almost free to put in a phone, and low power Wibree chips that just do the basic Wibree link will be cheaper than Bluetooth chips for the watches, sensors and other devices that need them.

## **So does it replace Bluetooth?**

Not at all. In fact they lead a symbiotic existence, as both need each other to enable the market for low power devices. It will just strengthen the case to add Bluetooth + Wibree to a larger percentage of handsets.

## **How does it work?**

The details are still confidential, but from what has been released in the past we know that it shares the same 2.4GHz spectrum as Bluetooth and 802.11. It gains its low power by being able to wake up, send data and return to sleep very quickly. And it should be frequency agile to help it work in the presence of interference.

## **What range will it have?**

Although the initial Wibree announcement said that it is aimed at a range of 5 metres, the quality of Bluetooth chips in which it will reside suggests that it is more likely to have a range of 50 – 100 metres. It's also possible to add power amplifiers to increase that to over 1 kilometre. Those are outdoor ranges in an open space. Indoors it will be less, but it should be able to communicate anywhere within a house. For devices such as watches, where range is not important, the power output can be turned down to give really long battery life.

## **What will it be used for?**

The application that is crying out for Wibree is medical sensors for remote health and wellbeing monitoring. These include simple sensors such as weight scales, and more sophisticated ones such as blood pressure monitors and glucosimeters.

It also has potential for safety devices, such as car airbags, which can use Wibree to transmit an emergency message through your phone, as well as applications in roadside information transmitters for intelligent traffic systems. In addition it can

be used for sending content to your phone display, such as bus information from a transmitter at a bus stop.

That's alongside the fashion applications such as enabling watches and other smart clothing. Plus it could make your mobile phone a useful remote control for all of your home appliances in a way that really is simple to use.

### **Why is it called Wibree?**

There's already debate about the derivation of the name. The Wi is short for Wireless and Nokia initially explained that "bree" is Old English for a crossroad or meeting place. The debate focuses in whether that's a real meaning for "bree" or a word that Tolkien made up. Other real meanings of "bree" include agitation and eyebrow. All of which seem strangely appropriate.

### **Who's responsible for Wibree?**

At the moment the standard is being developed by Nokia, with input from the initial supporters, which include Cambridge Silicon Radio and Broadcom. Nokia is currently in conversation with the Bluetooth SIG to examine the possibility of them encompassing the standard.

### **When will it be available?**

The standard is due to be released in the second half of 2007, with silicon available towards the end of that year. It is likely to be incorporated in phones in time for you to buy one for Christmas 2008.

### **When should I start using it?**

If you're working on a low power product design that needs to send its data back over the Internet, or talk to a mobile phone then you should start thinking about Wibree. The good news is that because the receiving device will probably use a dual mode Bluetooth + Wibree chip, you can start designing today with Bluetooth at both ends, knowing that you can transition the low power end to Wibree within the next 18 months.

EZURiO is planning to support Wibree modules as soon as the standard is stable and the silicon is available. These will be based on the same Universal format and development tools as our current 802.11 and Bluetooth modules ensuring a simple transmission.

### **Where do I find out more about it?**

There's a more detailed White Paper explaining Wibree available from EZURiO at [www.ezurio.com](http://www.ezurio.com). During the course of the year more information will also be made available on the [www.wibree.com](http://www.wibree.com) website.