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## ULTRA LOW POWER BLUETOOTH BASED ON NOKIA'S WIBREE TECHNOLOGY

### INTRODUCTION:

Ultra low power Bluetooth technology is an open, globally viable wireless technology for small devices allowing compatibility and interoperability with existing devices. Ultra low power Bluetooth technology can be built into products such as watches, wireless keyboards, gaming and sports sensors, which can then connect to host devices such as mobile phones and personal computers. It is essentially the missing link between small devices and mobile phones/personal computers.

### HISTORY:

Ultra low power Bluetooth technology originated in 2001, when Nokia Research Center uncovered many interesting use cases for tiny low power devices, such as sensors, but realized that there was no suitable wireless solution for connecting them to devices such as mobile phones and personal computers. Therefore, Nokia began to develop the technology, then branded as Wibree to cover this gap. Wibree was launched to the marketplace as a new low-power, low-cost radio technology in October 2006. To this day Broadcom, Casio, CSR, Epson, ItoM (Semiconductor Ideas to the Market), Logitech, Nordic Semiconductor, STMicroelectronics, Suunto, Taiyo Yuden and Texas Instruments have contributed to the interoperability specification, profiles and use case definition in their respective areas of expertise and will continue this work in the Bluetooth SIG working groups. Several new companies, including terminal, watch and access systems manufacturers will join the finalization of the specification. Once the specification is finalized, the technology will be made broadly available to the industry via the Bluetooth SIG.

### MARKETPLACE NEED:

Ultra low power Bluetooth technology differentiates itself in a market full of local connectivity solutions through its: 1) ease of implementation both independently and in coexistence with classic Bluetooth technology, 2) low cost associated with integration, 3) power handling and 4) resistance to interference.

Ultra low power Bluetooth technology addresses a segment of devices not previously served by classic Bluetooth technology: smaller (button cell battery-powered) devices that have lower power capacity. It will enhance existing use cases and enable new ones, while providing access to previously untapped markets for Bluetooth technology such as sports & wellness, healthcare, automotive and for entertainment and toys. Therefore, the addition of ultra low power Bluetooth technology widens the marketplace for Bluetooth technology, allowing it to extend to a variety of devices of different sizes with varying power needs.

### ULTRA LOW POWER BLUETOOTH TECHNOLOGY BASICS:

Because both ultra low power Bluetooth technology and classic Bluetooth technology use the same Radio Frequency, ultra low power Bluetooth functionality can be added inexpensively to Bluetooth circuitry without compromising the ability to design low peak power transceivers.

Ultra low power Bluetooth technology was designed with two equally important implementation alternatives: stand-alone and dual-mode. Small devices like watches and sports sensors will be based on a stand-alone implementation of ultra low power Bluetooth technology.

A dual-mode implementation of ultra low power Bluetooth technology uses parts of classic Bluetooth technology hardware and is achieved by sharing one physical radio and antenna. For this reason, ultra low power Bluetooth technology's power consumption in dual-mode is ultimately dependent upon the implementation and usage of classic Bluetooth technology.

*June 2007***SUMMARY**

Ultra low power Bluetooth technology, based on Nokia's Wibree technology, opens new markets for Bluetooth technology that did not previously exist due to size and power constraints. With this inclusion, Bluetooth technology can increase its position in the marketplace and extend to a vast range of products and applications with varying power requirements thereby shaping the future of wireless technology.