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∞ What is WiBree?

- Wibree is a short range (10metres/30feet), wireless technology now under development designed for ultra low power consumption.

- This specifically target connectivity between mobile devices such as smart phones or PCs and small battery-powered devices such as watches, wireless keyboards, toys & sport sensors.

∞ Origin & Development

- Around 2001; the Nokia Research Center was looking at options for future personal wireless networking
- They thought low power devices such as sensors, but realized that there was no suitable technology connecting those to larger devices such as a mobile phone.
- It made them to develop a technology called Wibree to meet the requirements of low power consumption, small size, and low cost interoperability based on open specification.
- Nokia decided to create a new open wireless protocol along with its partners Broadcom Corporation, CSR, Epson, and Nordic semiconductor, is working to bring it to market.

∞ WiBree Device Architecture

- Nordic semiconductor is a key player in Wibree architecture.

- Wibree specification has been in modes namely:
  - Dual-mode
  - Stand-alone-mode

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- In the **dual mode** implementation the Wibree functionality is an add-on feature inside Bluetooth circuitry sharing a great deal of existing functionality resulting in a minimal cost increased compared to existing products.

- In the **Stand-alone** Wibree chips would be implemented in small, low cost devices such as wireless mouse and keyboards, sensors, toys, sports, and human interface device (HID) product categories.

∞ WiBree (Stand Alone Mode)

- Only Wibree enabled chip is used.
- Designed for devices with low hardware specifications.
- Used when quantities of data transferred are small
- Commonly implemented in:
  - Watches
  - Sport / wellness devices
  - Wireless Keyboards
  - Wireless mouse

∞ WiBree (Dual Mode)

- Combination chip is used.
- Wibree functionality is integrated with Bluetooth
- A combination chip communicates independently of dongles.
- Commonly implemented in:
  - Mobile phones.
  - Personal computers.
  - Dongles.

∞ Is WiBree the Bluetooth Killer?

- No, absolutely not. It has its own advantages and disadvantages over Bluetooth. Likewise Bluetooth also.
- It's up to 10 times more energy efficient than Bluetooth.
- This wireless system can transfer data at speeds of up to 1 mbps, about a third of the speed of current Bluetooth technology.
- This system has longer battery life and more compact devices When Wibree has become a standard.

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- Like Bluetooth—used to link cell phones with headsets, computers and printers to transfer calls, calendar items, documents, songs and pictures.
- While Bluetooth is looking for ultra high frequencies above 6 gigahertz for new faster connections, Wibree will operate in the 2.4 gigahertz band.
- Wibree packets will be dynamic in size, unlike the fixed-length Bluetooth packets, so there is some power-saving there if small amounts of data are being sent.

∞ WiBree & Wireless Zoo

- Wibree is complementary to existing technologies; it does not replace them.
- Nokia believes that Bluetooth, as we today understand it, serves some use cases very well, but is not well equipped to serve others.
- The same will apply to Wibree, meaning that there will be room for both technologies.
- Wibree will broaden CSR's portfolio of wireless technologies including Bluetooth, WiFi and UWB.

	Bluetooth	Wibree	Zigbee
Band	2.4 GHz	2.4 GHz	2.4GHz,868MHz,915 MHz
Antenna/hw	Shared	Shared	Independent
Power	100mW	~10mW	30mW
Target Battery life	Days-months	1-2 years	6 months-2 years
Range	10-30 m	10m	10-75 m
Component cost	$3	Bluetooth	$2
Network topologies	Ad hoc, point to point, star	Ad hoc, point to point, star	Mesh, Ad hoc, star
Security	128-bit encryption	128-bit encryption	128-bit encryption
Time to wake	3s	TBA	15ms

∞ Advantages

- WiBree is the first wireless technology to solve the following needs in a single solution.
  - Ultra low peak and average power consumption in both active and idle modes
  - Ultra low cost & small size for accessories & human interface devices (HID)
  - Minimal cost & size addition to mobile phones & PCs.
  - Global, intuitive & secure multi-vendor interoperability

∞ Applications

- Healthcare
  - You can monitor your heart rate and blood at home to improve your personal diet.
  - Wibree makes being healthy easier and more fun.

∞ Applications

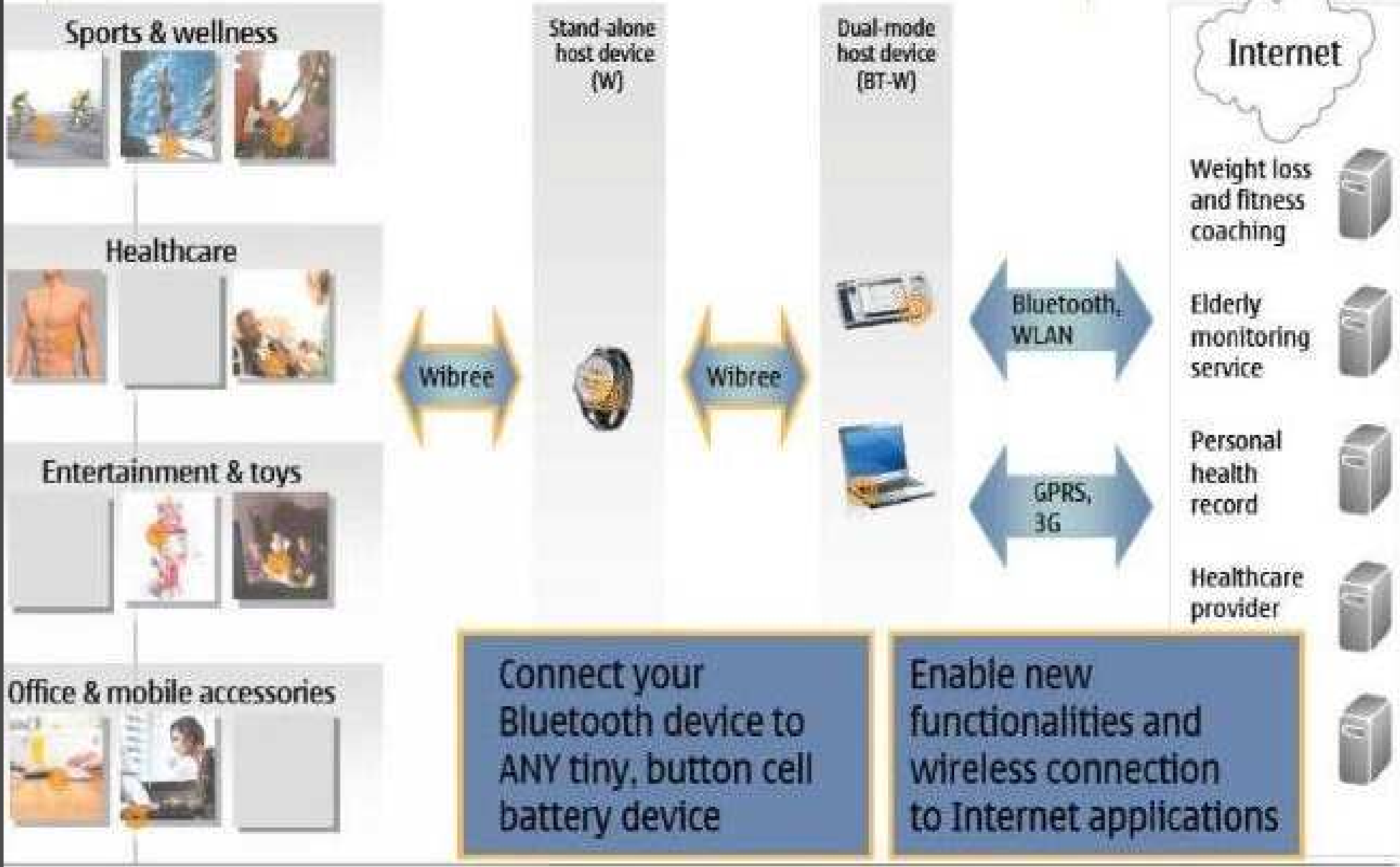
- Sports
  - Wibree enabled products can provide the measurement and consequent optimization of a professional athlete's performance during a work out session.
  - It enables the automatic selection of suitable music from your mp3 player to match your heart rate while bicycling to work.
  - You can feed continuous data to the mobile phone so you can later analyze on your mobile phone while jogging listening to music.
  - The heart rate meter around your chest and the accelerometer and compare your performance. Pressing the answer button on your wrist watch you can manage your pulse rate

∞ Applications

- Entertainment
  - Steer your little racing car clear of obstacles with your mobile phone.
  - Wibree enabled toys and gadgets take play to the next level.

A new world of wireless connectivity for small devices

NOKIA
Connecting People



∞ Conclusion

- Wibree is a Nokia solution. However the major Bluetooth chip vendors including Cambridge Silicon Radio and Broadcom will support the Wibree.
- Wibree will also dramatically extend the battery lifetime of existing wireless devices such as keyboards, mice and remote controls.
- It's up to 10 times more energy efficient than Bluetooth.
- The firm said it expected dual Bluetooth- Wibree devices such as mobile phones to hit the market by Dec 2011.

Thank you!!!