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## As Certified: Intel and USB-IF comment on their vision of unwired USB, part two

*Vyacheslav Sobolev, DigiTimes.com, Taipei [Monday 17 April 2006]*

DigiTimes.com recently had an opportunity to talk with Intel technology strategist Jeff Ravencraft, chairman and president of the USB Implementers Forum (USB-IF), about Certified Wireless USB, its relationship to wired USB and the outlook for the future of the technology.

*This is Part II of a two-part interview. Part I appeared on 14 April.*

**Q:** There is a lot of talk within the industry about just how close Certified Wireless USB is to its wired analogue and whether it is a wireless extension of USB or a completely new technology that exploits a concept similar to USB. We know, for example, that protocols differ in their methods of data packetization. How would you characterize the proximity between these two technologies? In particular, can developers support Certified Wireless USB, using the same silicon that provides wired USB functionality?

**A:** The most important thing is that Certified Wireless USB works just like wired USB. It utilizes the same star topology, so the host controls all the communications like, just as with wired USB. You may also see drivers developed for Certified Wireless USB devices by the community. They all look and operate the same way as we are used to with "usual" USB drivers. This is what the most consumers want, in my opinion. Consumers do not care about specifications that much. Technologies should just work, right?

Of course, there are some differences because our specification is optimized for the chosen radio platform. Yes, we use data bursting to maximize bandwidth utilization. Yes, there are also minimal changes in the driver stack and OS support. As for your question regarding the silicon, the answer is, "No." Delivering the Certified Wireless USB functionality, you cannot use the same silicon that you used for wired USB. Combo devices will have two pieces of silicon: one for wired USB and another one for Certified Wireless USB. By the way, this is true for competitive solutions also. You cannot get the high-speed short-range wireless connectivity without a different silicon.

**Q:** Will Certified Wireless USB have an extension similar to wired USB On-The-Go that will allow USB peripherals to communicate directly with each other when a PC is not available?

**A:** In the Certified Wireless USB specification, the Wireless USB Promoter Group defines the ability to have dual role devices. This capability allows a device to serve as either a device or as a host in certain situations. This is similar to Wired USB On-The-Go. For example, when a camera, with dual role capability, is connected to a PC, it will always act as a device. However, when the same camera is connected to a printer, it could act as the host allowing the transfer of images directly from the camera to the printer.

**Q:** Last year, I heard from Intel that Wireless USB could be bootable in a way similar to the Boot-to-USB function implemented on some Intel desktop motherboards, but that this would entirely depend on the BIOS. Can you confirm this on behalf of USB-IF?

**A:** I am not ready to confirm it. This is not a focus for Certified Wireless USB.

**Q:** Can we expect Certified Wireless USB to be supported by Intel chipsets, in the near future?

**A:** Well, you will not see that initially, and I would not make any product announcements. I can just say that the typical transition to new technology starts with dongles and add-in cards. The next level of integration into a platform will probably be a chip on a motherboard. After that, the next step would be some form of integration with the chipset.

**Q:** Can you tell about certification terms for Certified Wireless USB? What is the testing procedure and how do you plan to announce results? What are the main benefits for companies to proceed testing and certification?

**A:** The Certified Wireless USB specification defines product design targets at the level of interfaces and mechanisms. To complement the specification and enable measurement of compliance in real products, the USB-IF will conduct the compliance program I mentioned before. That program provides documented procedures and testing opportunities that allow manufacturers to qualify components directly against a set of specification requirements. Suppliers will be able to participate in these compliance workshops, and the USB-IF has partnered with the WiMedia Alliance to provide “one-stop” compliance testing for WiMedia UWB radios and Certified Wireless USB. Products that pass this level of acceptability are added to the Integrators List, which is posted on the USB-IF website. They also have the right to license the Certified Wireless USB Logo, which will communicate the brand promise to an end user.

**Q:** Do you think that Certified Wireless USB can completely replace wired USB in the future?

**A:** For the foreseeable future we see Certified Wireless USB and conventional wired USB technologies co-existing. It takes a long time to transition out legacy technologies, and there will remain a need for some wired applications at much higher data rates.

**Q:** Certified Wireless USB is one of several implementations that utilize ultra-wideband (UWB), a radio technology that enables the transmission of data within short range at high bandwidths while using little power. The Bluetooth Special Interest Group (SIG), for example, has also announced its intention to work with UWB developers to combine the strengths of both technologies. Last October at IDF Taiwan, you said this will benefit the industry. How do you see the co-existence of Certified Wireless USB and Bluetooth when both technologies target personal area network (PAN) applications and are based on the same UWB concept? Do you plan to make Wireless USB interoperable with Bluetooth?

**A:** Each of these two technologies is an option when working with the WiMedia UWB Common Radio Platform. Certified Wireless USB and Bluetooth co-exist because WiMedia UWB can support multiple application stacks that will run simultaneously with equal and fair access to the same radio. Having the support for WiMedia UWB from the Bluetooth SIG is good for the industry in the following ways. First, it means interference reduction, so there are not as many radios to have to compete with. Second, it drives volumes and brings down costs by using the same radio. Third, both options have a defined feature set, so manufacturers will deliver the protocol that offers the features and benefits they want to give the end users.

Certified Wireless USB will not interoperate with Bluetooth. The technologies are built differently. For example, you could think of Bluetooth and Certified Wireless USB as two different languages – each technology speaks to the radio via a different language. It would be like one of us trying to communicate over the telephone with someone speaking a different language than our own. We have the ability to talk to each other via the telephone, but we communicate differently.

**Q:** No Taiwan companies are mentioned in the current Certified Wireless USB specification as participants in its development. What do you think about their role in developing the technology and delivering it to the market? Do you see any of them as innovators? Or do you think that the Taiwan IT industry needs to be pushed more by big players to increase its interest in Certified Wireless USB?

**A:** To clarify, the Certified Wireless USB specification only references the seven companies that comprise the Wireless USB Promoter Group. There are hundreds of other companies involved with USB-IF, including some that are Taiwan-based, such as Realtek Semiconductor, Faraday Technology, AboCom Systems and Trendchip Technologies. For example, Realtek has participated in the development of Certified Wireless USB technology, and Realtek is also one of the first companies to demonstrate the technology. The contributions delivered by Realtek and other Taiwan companies have helped to drive the success of Certified Wireless USB.

**Q:** Do you think markets worldwide are ready for Certified Wireless USB? Which regions do you expect to see playing a key role in its adoption?

**A:** Yes, the industry is ready for Certified Wireless USB. With more than two billion legacy wired USB connections in the world today, USB is the most successful interface in the history of the personal computing industry. Wired USB has also migrated heavily into consumer electronics and cellular communications. Consumers are ready for these same fast, interoperable connections to become available without wires, and because Certified Wireless

USB is based on the WiMedia UWB Common Radio Platform, it is important for USB-IF to help ensure that WiMedia UWB is adopted in all major geographic regions.

Certified Wireless USB will also benefit from the ongoing effort to promote WiMedia UWB within international standards bodies and regulatory institutions. Last year, it got approvals from FCC in the US and Ecma International. Before the end of July, the EU and Japan will likely issue their rules for the technology to be approved for commercial use. Later this year, presumably in the third quarter, it is also expected to be ratified as an ISO standard. Respective specifications were submitted to ISO in January 2006.

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*Jeff Ravencraft, chairman and president of the USB Implementers Forum.  
Photo: Vyacheslav Sobolev, DigiTimes.com*

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