

The decision spells out conditions for using ultra-wideband technology across the European Union.

By Claire Swedberg

March 1, 2007—The [European Commission](#) (EC) has formally adopted an ultra-wideband (UWB) frequency range from 3.4 to 4.8 GHz and 6 to 8.5 GHz, for use in EC member countries. This will establish several frequency limitations requiring UWB vendors to alter their technology to meet those limits. The EC opinion mandates that all 27 participating European countries accept UWB frequencies for devices used within their borders. Member countries have six months to ratify the decision.

The EC's UWB frequency range is not as far-reaching as that of the [U.S. Federal Communications Commission](#) (FCC), however, which permits the use of 3.1 to 10.6 GHz by UWB devices in the United States. The EC decision designates the frequency bands of 3.4 to 4.8 GHz and 6 to 8.5 GHz for use by UWB RFID tags and interrogators, as well as for other applications, such as data networking. UWB devices utilizing frequencies between 4.2 GHz and 4.8 GHz will be permitted only until Dec. 31, 2010, by which time they must convert to the 6 to 8.5 GHz band, according to a spokesperson for the [Radio Spectrum Committee](#) (RSC), which assists the EC in the development and adoption of measures aimed at ensuring harmonized conditions for the available and efficient use of radio spectrum.



Jay Cadman

UWB is a wireless technology designed primarily to transmit data over short distances. Unlike HF or UHF RFID signals, which operate over a narrow frequency band, UWB devices transmit over a wide spectrum at low power, raising some concerns about interference with other technologies.

While the FCC sanctioned the use of UWB in 2002, few UWB products have yet hit the market, says Robert Fontana, president of [Multispectral Solutions Inc.](#) (MSSI), a provider of UWB RFID tags and readers. As such, interference has not yet been an issue.

The [European Conference of Postal and Telecommunications Administrations](#) (CEPT) undertook research for the mandate approved by the EC. CEPT developed the decision's technical conditions following compatibility studies showing how UWB transmissions might affect other spectrum uses.

The EC's decision is good news for both end users and vendors, claims the RSC spokesperson. Of 253 votes, only 17 members from Finland and Sweden voted against the measure, while several others abstained.

British UWB technology vendor [Ubisense](#) applauded this development. The company is marketing a UWB real-time location system (RTLS) that operates between 5.8 and 7.2 GHz. The company, which

markets its products in both the United States and Europe, sits on a subcommittee for the working group that made recommendations to CEPT.

"For us, this is an excellent development," says Jay Cadman, vice president of business development at Ubisense. "It means we can begin shipping product without going through each country's regulatory board to get licenses. It opens the door for us to expand at a much more rapid pace."

Ubisense has customers using its RTLS tags and interrogators—which can pinpoint the location of an item for manufacturing use within 6 inches—in a number of countries, including the United Kingdom, Ireland, Germany, Italy, Spain, Belgium and the United States (see [UWB to Help Sales Staff Fish for Leads](#)).



Robert Fontana

"I think, from the [European Union](#) perspective, this allows a very exciting technology to enter the environment," Cadman says. "It's an explosion from our perspective of UWB projects in Europe. The demand there is enormous."

But the explosion will require some transitions for certain other providers of UWB systems, Fontana notes. He says UWB devices operating in the 5.925 to 7.250 GHz band (which the FCC opened up in March 2005) are close enough to the EC band to translate well to EC standards. Systems in this range include various low-speed communications systems, such as radar, real-time location systems and RFID.

"Thus, initially we forecast that the European market will see such devices becoming generally available," Fontana says. "MSSI is very happy with the mandate, as for more than eight years we have been building our UWB systems above 6 GHz [both government and commercial]."

The EC's sanctioning of UWB bandwidth, Fontana reports, will benefit end users around the world. "It's good for Canada, Australia, New Zealand, South America—everyone who has been waiting to see what Europe does. I believe Europe is the initial domino." He predicts the decision will lead to adoption of UWB-friendly regulations throughout the globe.

RTLS solutions company [Parco Merged Media](#), which provides 3.6 GHz UWB tags and interrogators for RTLS applications, has also been awaiting the EC sanction of the UWB spectrum. CEO Scott Cohen is less enthusiastic about the frequencies included in the mandate, but indicates the decision was still good for his firm.

"This gives us the ability to sell our location systems in Europe [without going through individual government license applications]," he says. "We have the ability to reprogram our tags" to work with the approved frequencies.

EC Spectrum Decision Expected to Boost UWB RFID Adoption

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