



**Canadian  
Association of  
Broadcasters**

**L'Association  
canadienne des  
radiodiffuseurs**

Dr. R. W. McCaughern  
Director-General  
Spectrum Engineering Branch  
Industry Canada  
300 Slater St.  
Ottawa ON K1A 0C8

Dear Dr. McCaughern:

**Re: Canada Gazette Notice SMSE-002-05 — “*Consultation Paper on the Introduction of Wireless Systems Using Ultra-wideband Technology*”**

1. The Canadian Association of Broadcasters (CAB), representing the vast majority of Canadian broadcasters – including private television and radio stations and networks, and specialty television services – is pleased to have this opportunity to provide its comments with respect to the above-noted ***Canada Gazette*** notice, dated 28 January 2005.
2. Our members have a considerable interest in the possible deployment of ultra-wideband (UWB) technology in Canada because they operate licensed radiocommunication facilities in spectrum that may have to be shared, in some fashion, with this new service. Broadcasters therefore have obvious concerns about the potential of UWB to interfere with their signals, thus affecting their ability to discharge service commitments to the Canadian public.
3. As the Department is aware, some radiocommunication facilities licensed to broadcasters are used solely for internal operations. Examples include two-way VHF/UHF communication links, terrestrial microwave systems for inter-city program transmission, studio-to-transmitter links (STL), remote pick-up links (RPU), as well as C-band/Ku-band satellite uplink transmitters and downlink receivers. Any increased interference experienced by these auxiliary broadcast facilities could require licensees to incur expenses in modifying or replacing existing equipment, in order to continue carrying out their day-to-day operations.

4. However, it is important to realize that the bulk of the spectrum that is licensed to broadcasters is for the purpose of transmitting terrestrial signals carrying programming intended for reception by the general public. These functions are mainly carried out in the MF/HF/VHF/UHF broadcast bands from 535 kHz to 806 MHz; however, broadcasting services can also be found at L-Band (DAB) and at S-Band (MDS). Moreover, direct reception in Canada of foreign S-Band broadcast satellites (DARS) may also be approved in the near future.
5. The CAB believes it is important for Industry Canada spectrum policy-makers to remember that, when new services are allowed to share spectrum that has traditionally been allocated exclusively for broadcasting, the primary burden of any increased interference is borne by the general public. Unlike most other types of radio licensees, broadcasters have no control over the receiving devices consumers use in order to access their services. Whereas other licensees may be able to replace and update receiving equipment to compensate for any increased interference that may occur over time, this option does not exist for broadcasters. All this suggests that caution needs to be exercised whenever extensive sharing of Canada's broadcasting bands is being considered.
6. The CAB has reviewed carefully the issues raised in the Department's UWB discussion paper. It seems very clear that a substantial case can be made for allowing various forms of UWB technology to be utilized in Canada. Perhaps the most compelling of these is that the US has already done so. Absent an effective means of keeping Canadians from importing consumer-level devices that are (or will be) readily available in the US, the most prudent course of action may be to accept the reality that we must live with them and strive to achieve an effective means of limiting damage to our existing radiocommunication infrastructure.
7. Our assessment of the situation, based upon the Department's discussion paper, the current FCC rules and investigative work carried out recently by the Radio Advisory Board of Canada (RABC), suggests that there are four main aspects of UWB that would be of concern to broadcasters:
  - Potential increased interference to terrestrial L-Band DAB services;
  - Potential increased interference to S-band MDS and DARS;
  - Potential increased interference to fixed-satellite communications, largely from the anticipated plethora of license-exempt UWB devices emitting signals in the allocated satellite bands from 3.1-10.6 GHz, especially C-Band from 3.4-4.2 GHz; and,
  - Potential increased interference to FM/TV services from non-consumer UWB devices, such as ground-penetrating radars (GPR) and imaging systems, that may be operated in the heavily-used broadcasting bands below 960 MHz.
8. With respect to permissible license-exempt UWB emission levels above 960 MHz, the CAB supports the RABC's recommendations, especially in the 1452-1492 MHz band (DAB), S-Band spectrum (DARS and MDS), as well as the C/Ku/Ka satellite up-link/down-link

bands<sup>1</sup>. We participated extensively in the preparation of the RABC's recommendations and we believe that the adoption of the Board's proposed technical measures would provide reasonable assurance that broadcasting services would not be severely affected by the advent of UWB in Canada.

9. With respect to GPR and imaging UWB systems operating below 960 MHz, we note that the preference of Industry Canada appears to be to limit the use of these devices to specialized user groups and to require some form of licensing (or registration). We agree with both these proposals and we do not see that this would create any hardship for UWB operators. We also note that this would be consistent with the rules adopted by the FCC for these types of UWB operations<sup>2</sup>.
10. GPR and imaging systems are very specialized and few in number. There is no reason why they cannot be regulated and authorized only for a specific list of users. Through-the-wall imaging systems are largely intended for use by police and security services. Licensing or registration would be an effective means of ensuring that Canadians are protected against unauthorized privacy invasions. Were such devices to be granted license-exempt privileges, it is almost certain that they would become readily available to consumers, who might misuse them.
11. But the main reason for licensing or registration, when these UWB systems operate in heavily used bands below 960 MHz, is to ensure that corrective action is possible when interference does occur. Were they to operate on a license-exempt basis, those affected by interference would have little recourse because the interferers would probably be difficult or impossible to locate. Consequently, the CAB would strongly oppose any notion that UWB operations below 960 MHz could be license-exempt, even though they may operate on a no-protection, no-interference basis with respect to broadcasting.
12. The CAB also considers that any UWB systems that are authorized to operate between 30-960 MHz, which includes the FM and TV broadcasting bands, should be required to meet the field strength/distance limits specified in Table 3 of RSS-210<sup>3</sup>. Moreover, in the unlikely event that UWB systems should wish to operate in the AM band (535-1705 kHz) or the short-wave broadcasting bands, we recommend that their emissions be required to comply with Section 6.2 of RSS-210. We note that this action in Canada would be consistent with the rules adopted by the FCC for UWB operations from 30-960 MHz<sup>4</sup>.

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1 Ref: "Radio Advisory Board of Canada Response to Canada Gazette Notice, SMSE-002-05, dated 2005-05-05; Consultation Paper on the Introduction of Wireless Systems Using Ultra-Wideband Technology"; May 2005

2 Ref: Appendix D; "*Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems*"; FCC Docket ET 98-153; First Report And Order; February 14, 2002

3 "*Low Power Licence-Exempt Radiocommunication Devices (All Frequency Bands)*"; Industry Canada RSS-210; Issue 5 November 2001

4 As specified in Part 47, Section 15.209, of the FCC Rules.

13. The RSS-210 emission limits have proven to work reasonably well over the years, when allocated bands must be shared by low-power devices. In our view, there is no valid reason to make a special-case exception to accommodate UWB. Were this to happen, it would be the thin edge of the wedge for the Department, which would likely receive similar requests from proponents of other low-power technologies who may have found it a challenge to sell equipment that complies with the RSS-210 emission constraints.
14. The CAB also strongly recommends that all UWB equipment, licensed or not, be required to meet the requirements of RSS-210 with respect to permissible antennas (Section 5.5), as well as the Section 5.8 prohibition on the used of external power amplifiers. As part of the certification process, manufacturers should be required to demonstrate that these provisions cannot be by-passed by end-users. Only those devices that meet such standards should be legal for retail sale in Canada and a sticker stating compliance with Canada's certification requirements should be permanently affixed to every device sold.
15. In conclusion, the CAB appreciates the opportunity to comment on the UWB issue. We trust that our submission will be helpful and we are prepared to meet with Department officials to expand on any of the comments or recommendations made herein.

All of which is respectfully submitted this 6th day of May 2005.

A handwritten signature in black ink, appearing to read 'D. K. O.', is written above a horizontal line.

for

THE CANADIAN ASSOCIATION OF BROADCASTERS / L'ASSOCIATION  
CANADIENNE DES RADIODIFFUSEURS