



**Submission of  
the Canadian Association of Broadcasters**

**in the matter of:  
Canada Gazette Notice DGTP-010-09:**

***“Consultation on the Spectrum Allocations and  
Spectrum Utilization Policies for  
the Frequency Range 1435-1525 MHz (L-Band)”***

**Submitted  
12 March 2010**

## Submission Summary

Radio broadcasters represented by the CAB have a vested interest in the outcome of this L-Band policy review because the future disposition of this spectrum will have a critical bearing on their ability to develop innovative digital services that can provide the public with much more than basic stereo audio programming, especially new multimedia content and datacasting services.

The CAB has a single key message to convey in this submission. Specifically, we believe that the public interest will best be served if our industry continues to be provided with a substantial, exclusive band of spectrum, in the range 1452-1492 MHz, within which new digital broadcasting services can be authorized via traditional means of government licensing. By this, we mean that the following practices should continue to be followed:

- Geographically allotted channels should be made available by Industry Canada;
- Broadcasting licences should be issued by the CRTC, following public competitive processes to choose among qualified applicants;
- Broadcasting Certificates for programming services licensed by the CRTC should be issued by Industry Canada;
- Annual licensing fees should continue to be employed as the sole means of providing direct financial compensation for the use by broadcasters of publicly-owned radio spectrum.

Notwithstanding broadcasters' diligent efforts to implement L-Band digital radio broadcasting (DRB) from 1998-2006, the transitional model that was developed by the industry and the regulators was not successful, for a variety of well-known reasons. The CRTC made significant strides in 2006 to set a new policy that would allow innovative and attractive digital services to develop. But the radio broadcasters' opportunity to re-configure their approach to digital services has been delayed by Industry Canada's 2007 announcement that the L-Band spectrum-use policy was to be reviewed and no further Broadcasting Certificates would be issued until this is completed.

Because of technical limitations, neither analog nor in-band digital technologies operating in the current MF and VHF bands are capable of providing the types of advanced multimedia services that broadcasters will require to remain competitive. Moreover, as demonstrated during recent CRTC hearings, the demand for additional radio broadcasting spectrum to accommodate AM conversions and normal growth in FM radio continues unabated.

The CAB believes that the continued availability of a substantial allocation of conventionally-licensed digital broadcasting spectrum in the range 1452-1492 MHz will ensure that the Section 3 objectives of the *Broadcasting Act* can be furthered over the next 30 years. All potential broadcast sectors would be able to contribute to the provision of flexible new digital services, rather than leaving this field to larger players who are able to pay high auction fees to acquire the necessary spectrum. Moreover, this procedure will permit the social benefits associated with the provision of broadcast programming to the general public to be taken into account in overall evaluations of spectrum worth.

The CAB urges Industry Canada to complete the Allotment Plan modifications phase of this review as quickly as possible and proceed without delay to its promised “*...future public consultation [that] will address the policy and licensing framework for the band 1452-1492 MHz.*”

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the Frequency Range 1435-1525 MHz (L-Band)”*

## Introduction

1. The Canadian Association of Broadcasters (CAB) - the national voice of Canada's private broadcasters, representing the vast majority of Canadian programming services, including private television and radio stations, networks and specialty, pay and pay-per-view television services - is pleased to submit the following comments in response to Canada Gazette Notice DGTP-010-09.
2. The CAB's radio members have a vested interest in the outcome of this L-Band spectrum policy review because it will affect significantly the extent to which broadcasters will be able to meet the increasing demand by the Canadian public for new local over-the-air (OTA) services within the next thirty years. Moreover, the future disposition of this spectrum will have a critical bearing on the ability of broadcasters to develop innovative digital services that can provide the public with much more than basic stereo audio programming, especially new multimedia content and datacasting services.
3. The CAB has a single key message to convey in this submission. Specifically, we believe that the public interest will best be served if our industry continues to be provided with a substantial, exclusive band of spectrum, in the range 1452-1492 MHz, within which new digital broadcasting services can be authorized via traditional means of government licensing. By this, we mean that the following practices should continue to be followed:
  - (a) Geographically allotted channels should be made available by Industry Canada;
  - (b) Broadcasting licences should be issued by the CRTC, following public competitive processes to choose among qualified applicants;
  - (c) Broadcasting Certificates for programming services licensed by the CRTC should be issued by Industry Canada;
  - (d) Annual licensing fees should continue to be employed as the sole means of providing direct financial compensation for the use by broadcasters of publicly-owned radio spectrum.
4. As part of this submission, in Appendix I, the CAB comments on Industry Canada's specific proposals, as presented in Notice DGTP-010-09. Our comments in this regard relate to the extent to which the Department's proposals would impinge upon the broadcast uses that we foresee being required within the band 1452-1492 MHz.

## Radio broadcasters have been diligent about digital conversions

5. As noted in DGTP-010-09, Broadcasting is currently allocated co-primary use of the 1452-1492 MHz band, along with the Fixed Service (FS). The FS licensees are primarily grandfathered Subscriber Radio Services (SRS)<sup>1</sup>. All of these are subject to Footnote C29 in the Canadian Allocation Plan, which gives precedence to broadcasting<sup>2</sup>.
6. Broadcasters made a substantial effort to implement nation-wide Digital Radio Broadcasting (DRB) services in L-Band spectrum in the period 1992-2006, given the regulatory conditions under which they were working and the state of the art in digital radio technology that prevailed at that time. By the early 1990s, broadcasters had foreseen the public's interest in new digital sound media (e.g. CDs) and recognized the need to implement some form of digital radio as quickly as possible. In the Eureka-147/DAB technical system, broadcasters found merit in the benefits of a wide-band, multi-carrier approach. Experiments with terrestrial DRB were conducted in our largest markets and Canadian broadcasters attempted to work with our Mexican and US colleagues on a common, new-band DRB approach for North America. Our industry also participated extensively in WARC 92 and broadcasters were rewarded with the allocation of 1452-1492 MHz for DRB on an almost-exclusive basis in Canada.
7. During this same period, broadcasters co-operated with other industry and government representatives, through the DRB Task Force, in developing a national digital radio strategy. Subsequently, many of the CAB's members assisted Industry Canada in:
  - (a) the development of a bilateral L-Band spectrum agreement with the US;
  - (b) the preparation of a national allotment plan for the 1452-1492 MHz band; and
  - (c) the development of a transmission standard for L-Band DRB (Eureka 147/DAB).
 As well, broadcasters worked with the CRTC to develop a streamlined digital radio application process, applied for and rolled out services in all four of the largest radio markets and experimented with L-Band DRB in several smaller ones.
8. Broadcasters did not stint in their efforts to roll out DRB services under the "transitional" implementation policy set by the CRTC. Considerable capital was invested in transmission infrastructure, which resulted in digital radio programming being available to about two-thirds of Canada's population. Through Digital Radio Roll-out Inc (DRRI), radio broadcasters developed public awareness campaigns and lobbied consumer product retailers to stock DRB receivers. Local radio stations donated a substantial amount of free air-time to promote DRB with listeners.
9. These efforts notwithstanding, audio-only DRB services did not catch on with the public. L-Band DRB receivers were in short supply, primarily because there was an initial preference for VHF (Band III) among broadcasters outside North America. This resulted in the absence of a suitable consumer product distribution infrastructure for L-Band-only receivers in Canada, since Canadian receiver imports tend to be a sub-set of supply to the larger US market. Unfortunately, this could not be

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<sup>1</sup> According to the Spectrum Direct database, 46 FS operations (20 transmit and 26 receive) are licensed in 1452-1477 MHz, the sub-band which provides 84% of all DRB allotments in Canada. An additional 246 (139 transmit and 107 receive) operate in 1477-1492 MHz.

<sup>2</sup> Footnote C29: *"In the band 1452-1492 MHz, existing fixed stations may continue to operate provided these installations do not cause interference nor claim protection from, stations of the broadcasting service operating in accordance with the domestic allotment plan implemented under C30".*

corrected by domestic regulation, since Industry Canada has no mechanisms to mandate the design features of broadcast receivers. A compounding factor was that auto manufacturers were reluctant to offer OEM L-band DRB receivers in their Canadian vehicles<sup>3</sup>. As well, consumers were found to be increasingly reluctant to invest in stand-alone, single-purpose, radio broadcast receiving devices.

10. It also became clear as time went on that Canada's L-Band-only model for DRB would not be adopted elsewhere. US broadcasters decided not to seek a new-band solution for their own digital radio implementations, fearing that this would simply invite a host of new competitors into their markets. As an alternative, they developed a hybrid digital/analog technical alternative for the AM/FM bands, called HD Radio™. After more than 10 years in the making, this technology is still undergoing extensive refinement, due to the severe technical limitations imposed by this attempt to add digital signals to the crowded analog bands. European DRB deployment also changed direction from our initial understanding of their plans, with countries taking much longer to move to L-Band than had been anticipated.
11. However, perhaps the largest factor was that the regulators and the broadcasters originally decided to adopt a "service replacement strategy" for DRB. This turned out to be not particularly attractive to listeners, since it was essentially a simulcast of existing AM/FM programming. To add to this restriction, the CRTC decided to limit the number of audio services that could be transmitted per multiplex to only five. The initial roll out of services was designed for less than the maximum coverage on the expectation that receiver availability and penetration would justify further expansion later. However, very high capital and operating costs were projected for expanding services to wider geographic areas at L-Band using this hobbled "service replacement" model. Ultimately no reasonable business case could be made for continuing with it.
12. Ironically, almost immediately after the CRTC made large strides in late 2006 to deal with these systemic problems and set the stage for broadcasters to correct them<sup>4</sup>, Industry Canada froze any further DRB development at L-Band, pending the conclusion of the present spectrum review<sup>5</sup>.

### **Changes in the broadcast environment suggest a bright future for digital services**

13. In 2006, the CRTC amended its DRB policy to encourage broadcasters to develop new programming streams that would provide owners of new receivers with material available only on a digital platform. The Commission also foresees the possibility of using enhanced technology to provide listeners with multimedia and datacast content. This change in regulatory direction enhances the ability of digital radio licensees to develop services that have a better chance of success in the very competitive environment that now exists in Canada. But these new services will need to be developed in spectrum that can properly accommodate them, which is not the case with the current AM and FM bands.
14. Outside of Canada, there is a lack of further growth room in Band III in many countries that used this band for DRB, and L-Band interest is growing as a result. Under the Maastricht Plan of 2002, most European countries have developed domestic L-Band terrestrial broadcasting allotment plans based on nominal 1.7 MHz channels. The exception is the UK, which has auctioned the entire 40 MHz of

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<sup>3</sup> Although General Motors announced that it would offer optional DRB receivers in Canadian vehicles beginning in the 2003 model year, the company never carried through with this commitment.

<sup>4</sup> Ref: Public Notice CRTC 2006-160

<sup>5</sup> Ref: Industry Canada SAB-001-07 "*Spectrum Planning Activities and Review of the 1995 Transitional Digital Radio Policy*", May 28, 2007

spectrum to a private entity. A number of major EU countries have actually rolled out L-Band broadcasting services or are actively experimenting with business models. However, recognizing that digital audio services alone may not be what the public desires, the EU countries are looking at allowing the L-band allotments to be used in a more flexible manner for new forms of broadcasting, much along the lines of the multimedia services described by the Department in Notice DGTP-010-09. Even in the UK, the expectation is that the multimedia services that develop in the recently-auctioned L-Band spectrum will be either broadcasting or broadcast-like.

15. The Eureka partnership has also developed certain technology improvements (e.g. DAB+) that greatly improve spectrum efficiency by more than doubling the number of audio programming services possible in each multiplex. A compatible digital multimedia broadcasting (DMB) service can now be transmitted within the 1.5 MHz occupied bandwidth available in channels allocated for DRB. This has been demonstrated in Canada by CBC/Radio-Canada, which continues to transmit its English and French news specialty channels via its L-Band DRB transmitters in Montreal, Toronto and Ottawa.
16. Another encouraging sign for broadcasters is that the implementation of broadcast reception capability in wireless handsets throughout North America now looks far more promising as a result of:
  - (a) consumers looking to single devices to cover all of their needs for telephone, messaging, internet access, radio and TV;
  - (b) the need for North American wireless carriers to respond to broadcast reception capabilities that are being provided in iPods, laptops, etc;
  - (c) the push in Europe and elsewhere to add broadcast receivers to all wireless handsets;
  - (d) the world-wide push for open-source handsets that are not controlled by wireless providers.
17. Finally, there is a growing consumer interest in portable and mobile receiving devices that converge internet & broadcasting. Terrestrial broadcast services that will feed such devices would best be accommodated in the 1-2 GHz range. This is because the short wavelengths require only very small receiving antennas and permit signals to penetrate modern buildings very effectively.

### **The demand for radio broadcast spectrum is not diminishing**

18. As with all other forms of radiocommunication, local broadcasting services will need to deploy digital delivery platforms in order to meet public demand and remain competitive. But for radio licensees, continuing to offer only audio programming to the public will not permit them to compete effectively in the long term with a host of new services now being delivered to the public by satellite and the internet. Analog radio broadcasters are currently restricted as to what they can offer in the way of appealing and innovative multimedia services, due primarily to bandwidth limitations related to the narrow channels required in the current MF and VHF bands.
19. In addition to existing FM licensees that will wish to migrate their operations to digital platforms, newly-licensed players may increasingly be reluctant to implement legacy analog services, preferring to progress immediately to digital. Perhaps more importantly, however, is that fact that 206 local radio stations remain confined to the AM band, in many cases because they cannot be accommodated in the current FM band due to spectrum congestion. Most of these stations provide vital local services to their communities and they either will have to transition to new spectrum or they will inevitably cease operating, as recently happened to two Corus AM stations (one English, one French) in Montreal.

20. Highly vocal demands for a greater supply of viable local radio channels were also made during the 18 January 2010 CRTC public hearings on community and campus radio<sup>6</sup>. At this hearing, the Commission was presented with the difficult dilemma that there is simply no reasonable way to provide adequate, technically-acceptable, regular broadcasting channels for new services in these two genres in many markets. As the FM band is usually well saturated in locations where such services are in highest demand, there are few long-term prospects for accommodation in this spectrum. Neither campus nor community operators see the AM band, internet delivery, or the use of LPFM transmitters as a long-term solution. The only realistic option for meeting this demand is new broadcasting spectrum, where a national allocation plan can be developed that addresses the future needs of all radio broadcasters, including the growth objectives of campus and community radio services.

### **Broadcasters cannot meet the public demand without L-Band spectrum**

21. The principal reason why it will not be possible to employ the FM band to implement new forms of multimedia broadcasting is that the available channel bandwidth in each channel is insufficient. Unfortunately, the technical rules for this band cannot be modified to accommodate wider bandwidths in Canada, as a result of the harmonized nature of spectrum use on both sides of the Canada-US border.
22. In fact, even the normal growth requirements for radio in Canada cannot be met with the current supply of FM radio spectrum. In light of the well-known technical deficiencies of the AM band, Industry Canada is coming under ever-increasing pressure to accommodate more radio broadcasting services in the FM band. While some adjustments to the technical rules have been made in an effort to “shoe-horn” more stations into this band, the potential for further accommodation via this technique is now virtually exhausted in the larger markets. Any further efforts to slot more stations into highly-congested radio markets will produce two results:
- (a) a higher degree of incremental interference will be caused to existing stations; and,
  - (b) the new allotments that would be generated would themselves only achieve small coverage areas and most of them would be subject to severe incoming interference from larger, existing stations.
- The latter factor is particularly problematic because new stations with poor coverage usually cannot sustain themselves in the long term and inevitably either go dark or are amalgamated into larger operations.
23. The US broadcasters’ HD Radio approach to DRB implementation may be employed by some Canadian FM broadcasters on an interim basis, if the developers’ current efforts to achieve adequate coverage and overcome indoor reception difficulties are successful. But this technology is unlikely to be able to fully achieve broadcasters’ future requirements, for the following reasons:
- (a) HD Radio’s primary purpose is to simulcast existing analog programming in digital, which has already proven not to be appealing to listeners in Canada and elsewhere.
  - (b) The need to protect same-band analog operations greatly restricts the technical capability and reliability of any in-band, on-channel technology.
  - (c) Unlike the simulcast main-channel programming, additional audio services carried in the HD Radio multiplex (HD2/HD3) have no analog fall-back and are therefore unreliable.
  - (d) Some new HD Radio automotive receivers (e.g. Volkswagen) are not designed to decode extra audio channels carried in the main multiplex, probably due to cost factors and fears about signal failures.

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<sup>6</sup> All documentation for this hearing is available at <http://www.crtc.gc.ca/eng/broadcast.htm#a2009418>

- (e) HD Radio is not capable of supplying the requirements of a true multimedia service because there is insufficient data capacity available, once basic audio services are accommodated.
24. Employing the AM band to achieve the broadcasters' long-term objectives and provide for future growth in the number of services is simply not practical due to its well-known technical deficiencies<sup>7</sup>. With 10 kHz channel spacing, this band can certainly not accommodate anything other than audio services. Digital radio operations in the AM band, whether via HD Radio or Digital Radio Mondiale (DRM), would not be capable of accommodating more than a single stereo audio service per station, which will not encourage listeners to acquire new digital receivers.
25. The CAB agrees that re-allocating VHF TV Channels 5 and 6 for digital radio broadcasting could help solve frequency shortage problems for local, audio-based, radio services. It could also alleviate the situation for AM broadcasters that need to convert to digital. For these reasons, broadcasters encourage further exploration of this option by the Department. However, the probability of making this spectrum available anytime soon is low. Specifically, it is not reasonable to count on this option as an alternative to continued availability of wide-band broadcasting channels in the 1452-1492 MHz band, since:
- (a) It would be impractical for Canada to proceed unless the US agrees to remove its existing DTV services from Ch 5 and 6, which could take years to negotiate.
  - (b) The 76-88 MHz band would not be suited for multimedia applications because channel bandwidth would likely have to be less than that currently employed in the 88-108 MHz FM band, simply to accommodate all the audio programming needs of both Canada and the US.
26. Many broadcasters are already using internet delivery as a supplement to their over-the-air (OTA) radio services. Multimedia content elements are increasingly being added to these service offerings and this is proving very popular. But employing the internet for primary delivery of local radio programming is not an efficient way to reach large numbers of listeners simultaneously. Radio broadcasters continue to need to be able to reach the public directly, using their own point-to-multipoint transmission infrastructure, without having to rely on intermediate facilities controlled by others. Moreover, the listening public demands that radio be a very mobile medium and that it continue to be available free of charge, which is not the case for internet delivery. As a result, broadcasters eventually must find ways to accomplish multimedia transmission via regular OTA broadcasts. Delivery of radio's audio and multimedia components solely via mobile internet reception would require ubiquitous, wide-area wireless (Wi-Max) access which will not be available for years and in any event may be too costly for the average listener.

### **A well-planned L-Band digital allocation can meet both regulatory and industry expectations**

27. For the foreseeable future, the Canadian public will continue to demand local radio services for which they do not have to pay subscriber fees. They will also expect broadcasters to move toward digital transmission technologies, especially as they acquire multi-purpose receiving devices that can take advantage of a wide variety of digital content, including multimedia material.
28. L-Band spectrum is optimal for the provision of free, wideband digital audio and multimedia services to local communities because:
- (a) frequent channel re-use is possible due to limited signal range, thus providing highly efficient overall band use;

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<sup>7</sup> Specifically, impulse noise levels can be severe in urban areas; moreover the prevalence of high levels of skywave interference after dark precludes consistent day/night coverage.

- (b) services can be tailored, through on-channel repeaters and directional antennas, to conform to very specific geographic markets, without excessive market overlaps;
- (c) high-gain antennas can be used that will allow high effective radiated power to be generated with minimal transmitter power;
- (d) employing a band where no current services exist permits a high degree of flexibility in the types of services provided, given that legacy services do not have to be protected.

29. Consequently, the CAB proposes that, in the decisions flowing from Notice DGTP-010-09, the Department should set aside a suitably-sized band segment, in the range 1452-1492 MHz, that would continue to be designated exclusively for conventional terrestrial broadcast use. The following guidelines are recommended:

- (a) This segment should be one contiguous piece, beginning at 1452 MHz, so as to provide a wide buffer with AMT services above 1492 MHz.
- (b) Eligible transmission formats for this band should include standard DAB+ audio, DMB, and possibly others that would facilitate multimedia operations.
- (c) The band should be open for use by all radio broadcasting sectors, including public, private commercial, campus, community and ethnic stations.
- (d) The exact size of the required segment should be left open until completion of the second phase of the spectrum review described in Section 4.2 of Notice DGTP-010-09.
- (e) This determination should be made following direct consultations with:
  - all the broadcast sectors mentioned above;
  - the CRTC; and,
  - Heritage Canada,
 to determine how much spectrum may be required to ensure that the objectives of the Broadcasting Act can be fully met with respect to radio.
- (f) The implementation time-frame for this revised broadcasting band should be 2011 - 2040.

30. In considering the appropriate size for this broadcasting band sector, the following basic principles should be considered:

- (a) Individual allotments for the band segment described above should continue to be based on using nominal 1.5 MHz bandwidth channels, with a 1.744 MHz raster plan.
- (b) The allotment plan architecture should make it possible for licensees to employ either single channels for DAB+ and DMB services or else combine several contiguous 1.5 MHz allotments to provide innovative services that require larger bandwidths.
- (c) Minimum permissible spectrum-efficiency standards should be set for various channel uses.
- (d) Allotments should be provided in all existing radio markets, with the required number determined roughly by market population based on historic growth patterns.
- (e) Specific service areas for each allotment should be tailored to each CMA's geography.

31. The L-Band Broadcasting segment described above should be regulated according to existing rules and procedures, specifically:

- (a) This band should not be auctioned; rather, broadcast licensees should be selected by applying conventional CRTC public processes and licensing policies.
- (b) Licensees should pay for the use of spectrum through annual licensing fees, consistent with current practice.
- (c) Broadcasting Certificates for the technical facilities required by successful CRTC licensees should continue to be issued by Industry Canada at no annual (or up-front) cost.

32. For further clarity, the CAB believes that conventional broadcast licensing in this new band is desirable because it will ensure that:
- (a) licensee selection is based on each applicant's ability to meet the Section 3 objectives of the *Broadcasting Act*;
  - (b) smaller entities can contribute to the provision of flexible new digital services, rather than leaving this field to larger players who are able to pay high auction fees to acquire the necessary spectrum;
  - (c) social benefits associated with the provision of broadcast programming to the general public can be taken into account in overall evaluations of spectrum worth.
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33. The CAB trusts that these comments, as well as our specific responses to the DGTP-010-09 questions, as provided in Appendix I, will be useful as the Department proceeds with this spectrum policy review. In the event that further information on the broadcasters' comments and recommendations would be helpful, we would be pleased to make arrangements for appropriate discussions.

34. All of which is respectfully submitted this 12<sup>th</sup> day of March 2010.

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

## Appendix I

### Comments on the Department's specific DGTP-010-09 proposals

#### **Item 1: [concerning the Band 1492-1525 MHz]**

*The Department proposes to designate the band 1492-1525 MHz for aeronautical mobile telemetry. The Department seeks comments on this proposal, and on the potential locations of AMT test areas, and particularly whether they would be across Canada or only in certain areas.*

Broadcasters find the proposed 33 MHz allocation to be extremely generous, considering that there are only two potential Canadian AMT users, the fact that these frequencies will only be used sporadically, and that this spectrum will only be employed in two well-defined test ranges across Canada. The CAB recommends that the Department carefully examine whether this valuable spectrum could not be shared with other types of services in areas outside the proposed test ranges.

#### **Item 1: [concerning the Band 1452-1492 MHz]**

*The Department also seeks comments on whether other portions of the range 1452-1525 MHz could be used for AMT.*

According to the Department, the primary purpose of the present consultation, with respect to 1452-1492 MHz, is to make changes to the Allocation Plan that will allow its flexible use in the future. DGTP-010-09 states, "A future public consultation will address the policy and licensing framework for the band 1452-1492 MHz." This implies that this 40 MHz of spectrum may well be licensed for a variety of services, once this second phase of the consultation has taken place. The CAB believes that allowing temporary AMT operations in 1452-1492 MHz, that would extend beyond the time at which licences are granted to other types of services, would severely limit the ability of these new licensees to achieve timely implementation in spectrum that they have either purchased at auction or been awarded through conventional licensing processes.

We question why the requirement for temporary accommodation of AMT within 1452-1492 MHz should be considered by the Department to be any more urgent than the requirements that other prospective users, including broadcasters, have identified for this same band (e.g. for Fixed Services and Mobile). As noted in the main body of this submission, broadcasters have not been able to proceed with any new services in this band because they have been waiting for two and a half years for the present review to even commence. They believe that their business needs are just as urgent as those of the AMT service.

Consequently, the CAB recommends that the best course of action with respect to the 1452-1492 MHz band is for the Department to proceed to make decisions on its proposed Allocation Plan changes and then move without further delay to the second phase of the public consultation, which will address the policy and licensing framework. AMT use of this band should not be authorized unless the operators agree to vacate the spectrum within 6 months of the granting of any of this spectrum to another user.

#### **Item 2: [concerning the Band 1492-1525 MHz]**

*The Department proposes to rescind the designation for narrowband multipoint communications systems (N-MCS) in the band 1493.5-1496.5 MHz.*

The CAB has no comment.

**Item 3:[concerning the Band 1492-1525 MHz]**

***The Department proposes the following transition policy for SRS in the band 1492-1525 MHz:***

- *SRS which may cause or be subject to harmful interference from existing or planned AMT systems will be subject to a transition policy.*
- *The transition policy would provide a five-year notification period during which SRS are protected and may operate as licensed. Five years after receiving such notification, these systems may continue to operate on a no interference, no protection basis. Notification would be issued on an “as required basis.”*

Please see our response to Item 1 with respect to possible sharing between the AMT and other services, such as SRS.

**Item 4: [concerning the Band 1452-1492 MHz]**

***The Department proposes to rescind the DAB [sic] Allotment Plan for the band 1452-1492 MHz, including all associated channels to FM and AM stations across the full band 1452-1492 MHz.***

The current DRB Allotment Plan was based on the original digital radio implementation policy for Canada, which was extensively modified by the CRTC in 2006. Since new types of multimedia broadcasting services are contemplated by both the Commission (Ref: CRTC Public Notice 2006-160, para 58-60) and the Department (Ref: DGTP-010-09, Section 4.2), it follows that a different type of allotment plan would be required in L-Band spectrum that remains allocated to broadcasting.

**Item 5: [concerning the Band 1452-1492 MHz]:**

***The Department proposes to adopt a spectrum utilization policy allowing for flexible use of the spectrum to support a variety of services and technologies for subscription broadcasting, multimedia, fixed and mobile broadband applications.***

The CAB considers that the word “*subscription*” in this proposal is inappropriate. Subscription broadcasting is a sub-set of the generic “*Broadcasting*” service. Whether a licensed broadcasting operation is supported by subscriptions or other types of revenue is a determination to be made at a later date, when these services are being authorized. The means of financial support for any given service should not be a factor in making spectrum allocation decisions anymore than would be the case for the content carried.

The CAB notes that International Footnote 5.345 limits the use of the band 1452-1492 MHz by the Broadcasting Service to “digital audio broadcasting”. This issue may need to be addressed if some of the new services mentioned in DGTP-010-09 are actually to be implemented. In this regard, we note that Region 1 administrations are proposing a variety of multimedia services in this band, including Mobile TV and Digital Multimedia Broadcasting (DMB), so it would appear that flexibility in applying this footnote is possible.

**Item 6: [concerning the Band 1435-1452 MHz]**

***The Department seeks comments on a suitable band plan and technical criteria (including the need for guard bands) that can facilitate planning the use of this band {i.e. 1435.1452 MHz}.***

The CAB has no comment.

**Item 7: [concerning the Band 1435-1452 MHz]**

*The Department seeks comments on the following:*

1. *Should the designation to SRS be maintained;*
2. *Should the spectrum utilization allow for flexible use of the spectrum, for both fixed and mobile, and for both narrowband and broadband services;*
3. *Should the spectrum be available only in rural areas, using the first-come, first-served licensing mechanism, and reviewed for use in urban areas in a few years, or should the spectrum be made available in urban areas immediately;*
4. *If the spectrum is to be made available in urban areas immediately, what service and applications should be considered for a spectrum utilization policy?*

The CAB has no comment.

**Item 8: [Concerning the Band 1435-1452 MHz]**

*Should the spectrum be reserved only for rural areas, the Department seeks comments on a suitable definition of rural and urban areas for the application of the spectrum utilization policy for the band 1435-1452 MHz.*

The CAB has no comment.

**Item 9: [Concerning the Band 1435-1452 MHz]**

*Considering the characteristics of the new equipment for SRS, the Department seeks comments on a suitable band plan for implementation of TDD technologies.*

The CAB has no comment.

**Item 10: [Concerning the band 1435-1525 MHz]**

*The Department is seeking comments on the spectrum requirements of each application (AMT, SRS, and flexible use), the band plan and band division, and any issue that may impact the economic and social benefits that Canadians could derive from the use of this band. In particular, the Department seeks comments on how the different policy proposals could affect the cost of operation, the cost to subscribers, or competition. In addition, the Department is planning or has already initiated various other consultation initiatives. As a result, the Department seeks guidance as to the timing to implement the outcomes of this consultation, including additional consultation exercises that may be required concerning licensing approaches, etc.*

The CAB's comments on the demand for broadcasting spectrum in the range 1452-1492 MHz are detailed in the main body of this submission. To summarize, broadcasters recommend that the Department should set aside a suitably-sized band segment, within this range, that would continue to be designated exclusively for conventional terrestrial broadcast use. The following guidelines are recommended:

- (a) This segment should be one contiguous piece, beginning at 1452 MHz, so as to provide a wide buffer with AMT services above 1492 MHz.
- (b) Eligible transmission formats for this band should include standard DAB+ audio, DMB, and possibly others that would facilitate multimedia operations.
- (c) The band should be open for use by all radio broadcasting sectors, including public, private commercial, campus, community and ethnic stations
- (d) The exact size of the required segment should be left open until completion of the second phase of the spectrum review, described in Section 4.2 of Notice DGTP-010-09:

- (e) This determination should be made following direct consultations with:
- all the broadcast sectors mentioned above,
  - the CRTC, and
  - Heritage Canada,
- to determine how much spectrum may be required to ensure that the objectives of the Broadcasting Act can be fully met with respect to radio
- (f) The implementation time-frame for this revised broadcasting band should be 2011 - 2040.

**Item 11:**

*The Department proposes to remove allocation entry for the mobile-satellite service from the Canadian Table of Frequency Allocations in the bands 1518-1525 MHz and associated footnotes 5.348, 5.348B, 5.351A and C31, as outlined in Annex 1. Also, the Department proposes to adopt international footnote 5.343 next to the mobile allocation.*

The CAB has no comment.

**Item 12:**

*The Department proposes to merge the two sub-bands 1492-1518 MHz and 1518-1525 MHz, and to adopt international footnote 5.343 next to the mobile allocation.*

The CAB has no comment.

**Item 13:**

*The Department proposes to remove the allocation entry of broadcasting-satellite service (BSS) from the Canadian Table of Frequency Allocations in the band 1452-1492 MHz and suppress associated footnotes 5.208B, C28 and C40, as outlined in Annex 1.*

The 1998 T-DAB/AMT agreement between Canada and the US states, “Implementation of a broadcast satellite service could only proceed subsequent to completion of such an agreement between Canada and the U.S. Any such agreement would have to fully protect the interference-free use of the 1435-1525 MHz band for aeronautical telemetry by the United States.”<sup>8</sup> As it would be impractical to implement a BSS service in Canada that would not interfere with US AMT, and there is little likelihood that the US would waive this protection, there is no practical value in retaining this allocation entry.

**Item 14:**

*The Department proposes to elevate the status of mobile service to co-primary with broadcasting and fixed services in the band 1452-1492 MHz, as outlined in Annex 1.*

The CAB notes that current Broadcasting use of the 1452-1492 MHz band substantially protects this spectrum, on Canadian soil, against any interference from US AMT. This flows from the Canada-US 1998 agreement on T-DRB/AMT sharing in the L-band, mentioned in our response to Item 13. If any spectrum in this range is re-allocated for Mobile use in Canada, licensees using this spectrum may become subject to the provisions of International Footnote 5.343 which states, “In Region 2, the use of the band 1435-1535 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service”. This would appear to make any new Mobile service operating in border areas subject to possible interference from AMT operations in the United States.

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<sup>8</sup> Ref: “Technical Conditions for Implementation of Digital Radio Broadcasting (DRB) Services in Canada in the Bands 1452-1492 MHz and Digital Radio by Satellite (DARS) Services in the United States in the Bands 2320-2345 MHz”, December 1998

While new agreements might be sought with the US to cover any new Mobile broadband operations that may be contemplated, Canada's experience with the 1998 T-DAB/AMT agreement demonstrates that these take a long time to negotiate. Moreover, unlike 1998 the situation where the US had an incentive to negotiate a T-DRB/AMT agreement at L-band in order to gain Canada's agreement to a cross-border arrangement covering the 2.3 GHz satellite radio band, there is little incentive for the US to negotiate now. This mainly because Canada's use of the band for broadband mobile services would not be harmonized with any similar use of the same band south of the border.

On the other hand, new multimedia Broadcasting services licensed in this spectrum would likely continue to fall under the protective umbrella of the current agreement, especially if the technologies and channel utilization are very similar to the current DRB situation. Therefore, the CAB considers that it is in Canada's best interests to take advantage of the current agreement to maintain as much protected use as possible in the 1452-1492 MHz band by retaining a large Broadcasting allocation.

**Item 15:**

*The Department proposes to suppress Canadian footnotes C29 and C30 to reflect the co-primary nature of all allocations in the band 1452-1492, as outlined in Annex 1.*

At present in the band 1452-1492 MHz, the Fixed service shares co-primary status with Broadcasting. However, Footnote C29 ensures that members of the public who buy consumer receivers in order to access new broadcasting services will not later find them adversely affected by Fixed services that may be currently operating or that may come into operation.

DGTP-010-09 states, "*A future public consultation will address the policy and licensing framework for the band 1452-1492 MHz.*" Assuming that Broadcasting services continue to operate in this band, the public protection requirements of Footnote C29 will continue to exist. In fact, they may need to be modified to include any new Mobile services that may be authorized in this same band. Therefore, it would not be appropriate to suppress Footnote C29 completely at this time.

Assuming Proposal Item 4 proceeds, Footnote C30 could be suppressed, so long as Footnote C29 is amended to read:

*"In the band 1452-1492 MHz, existing fixed stations may continue to operate provided these installations do not cause interference nor claim protection from authorized stations of the broadcasting service ~~operating in accordance with the domestic allotment plan implemented under C30.~~"*

In the CAB's opinion, the latter part of the current C29 text is redundant, since no licensed broadcasting service can operate without the Department's authorization and this requires conformity with whatever allotment plan may be in place at the time.

**Item 16:**

*The Department proposes to add international footnote 5.343 for the frequency range 1429-1452 MHz.*

The CAB has no comment.

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