



DATA & AUDIO-VISUAL  
ENTERPRISES

May 25, 2007

Leonard St-Aubin  
Director General  
Telecommunications Policy Branch  
Industry Canada  
300 Slater Street  
Ottawa, Ontario  
K1A 0C8

**Re: DGTP-002-07 – Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services**

Dear Mr.St-Aubin,

Please find enclosed our submission with respect to the consultation process regarding the framework to auction spectrum in the 2 GHz range.

Our submissions are in PDF format, Windows XP operating system.

Yours Sincerely,

DATA & AUDIO-VISUAL ENTERPRISES INC.

Encl.

**DATA & AUDIO-VISUAL ENTERPRISES INC (DAVE)**

**COMMENTS RELATING TO DGTP-002-07**

***CONSULTATION ON A FRAMEWORK TO AUCTION SPECTRUM IN THE 2GHz RANGE  
INCLUDING ADVANCED WIRELESS SERVICES***

### **About DAVE:**

Data & Audio-Visual Enterprises Inc (“DAVE”) is a new media company dedicated to providing innovative personal data, audio and video entertainment options distributed through wireless spectrum across Canada.

DAVE is looking to participate in the upcoming AWS auction in order to develop a distribution platform for its services.

### **Responses to Consultation Document:**

*1) In consideration of the present circumstances, the Department seeks comments on whether there is a need for measures intended to enable market entry in the AWS spectrum auction. (pg. 22)*

In short, YES!

The “Big 3” wireless carriers (Rogers, Bell and Telus) have done a great job fostering and developing the Canadian wireless market. However, like all companies in the industrial cycle, with size comes opportunities for new players, and the time to allow others to penetrate the Canadian wireless market is now.

In the early 1980’s, when Bell (and other regional phone companies including Telus’ former companies in Alberta, BC, and parts of Quebec) and Rogers developed the wireless industry, it was primarily during a time where spectrum was granted for free or at minimal cost. This allowed the chosen few to focus their limited resources on building infrastructure and marketing to customers in the early years. In other words, “going after customers” was where they spent the preponderance of their dollars. Each of the “Big 3” did a great job of educating and serving the Canadian consumer and wireless industry by taking financial risk in order to develop a very important consumer use. However, as the subscriber bases of the “Big 3” grew, so did the barriers to entry. In the mid 1990’s, two new national wireless companies were formed, Clearnet and Microcell. After much initial success, both of these ‘new entrants’ were eventually acquired by Telus and Rogers respectively.

The “Big 3” are so dominant today that a new entrant needs to be protected during its formative years and given the same financial incentives so that they can focus on “going after customers”. This will allow new entrants to build on the success of the “Big 3” and enhance the Canadian consumer experience, as well as improve the adoption and usage of Canada’s wireless spectrum. If new entrants are required to bid against the entrenched incumbents for the same spectrum, their limited resources will be consumed during the auction and they will not have enough resources to deploy the infrastructure and marketing funds required to create a viable business.

In a perfect scenario, just like the “Big 3” before them, new entrants would not need to pay for spectrum acquisition so that they can be focused on the infrastructure and marketing costs required to have a viable business plan.

However, due to today's realities, somewhere between these two extremes lies a compromise whereby new entrants would still be viable. As put forth for comment by Industry Canada, a hybrid approach would be best, whereby the auction

1. Is not a total "free market" but "partially-free" through the use of spectrum set asides
2. Participants can rely on mandated roaming and tower sharing to minimize redundant infrastructure costs
3. New entrants can spend the bulk of their financial resources on gaining new customers by offering advance wireless services

If the Department deems that the "Big 3" are adequately serving the needs of today's and tomorrow's Canadian consumer, and that no new competition is required, then DAVE will not bid at the auction. However, if the Government of Canada believes that more choice and competition would benefit the Canadian wireless consumer, and the above three requirements are addressed to some degree, then presumably ourselves and others will bid to take Canada's wireless penetration and usage to the "next level" and hopefully make Canada a global leader in new wireless services.

Several well-publicized studies have been released indicating Canadian wireless penetration is less than 60%. This penetration is fairly low in comparison to other member states of the Organisation for Economic Co-operation and Development (OECD), and in fact, Canada rates 27<sup>th</sup> out of the top 30 countries. European countries with similar demographics, income stratification and geographic makeup to Canada have penetration rates that exceed 100%. Regardless of minor differences in each particular region, the fact is that the penetration levels in similar countries are significantly higher than in Canada. Additionally, the Conference Board of Canada says 50% of Canadians use wireless devices as compared to 70% in US and almost 100% in Europe.

These statistics all indicate that there is a significant portion of the Canadian population that is being underserved by today's wireless incumbents.

In summary, we believe it is incumbent on the Department to take proactive measures to enable market entry in the AWS spectrum auction for the following reasons:

- Current Market Structure: Incumbents have a 20 year head start and considerable resources to bid up spectrum and do not require the same level of capex spend as a new entrant. Without setting aside spectrum, an new entrant will face considerable challenges creating a viable business because:
  - Barriers to entry in wireless space are extremely high:
    - Spectrum requires significant capital
    - Wireless infrastructure requires significant capital expenditures for the following:
      - Base station equipment
      - Finding & building communication sites
      - Backhaul and interconnection
      - Network operations and maintenance
      - Billing and subscriber management systems
      - Consumer equipment development and distribution

- Operating expenses will be significant with no promise of return of capital: In order to establish a viable competitor, capital must be employed on various market development activities to establish a new brand, acquire subscribers and subsidize equipment. Throughout this process, there is considerable risk that such an investment will never be profitable.
- Market Rivalry/Pricing: Without setting aside spectrum, assuming a new entrant could acquire significant spectrum in an open bidding process, the capital required to win such a process may ultimately force the new entrant to be unable to compete on pricing with established players
- Excess Concentration of Spectrum Beyond Current Needs: Incumbents have more than enough spectrum as evidenced by the number of MVNOs that also run on their networks, specifically:
  - Bell - Solo Mobile, PC Mobile, Virgin Mobile
  - Telus – AMP'd Mobile
  - Rogers - 7-Eleven Speak Out Wireless, DCI Telecom
- Effect on Innovation: Without aggressive competition, incumbents may continue to find themselves somewhat reluctant to develop new technologies in anything but the most lucrative urban markets, as is evidenced by the limited availability of 3G networks across most smaller urban markets in Canada.
- Other Service Offerings: Existing incumbents have successfully employed “bundling” strategies with the many other communications and broadcasting services they offer. Without allowing new entrants to join the marketplace in an efficient and cost effective manner, it will be difficult to compete against entrenched competition leveraging other service offerings.

**2) The Department seeks comments as to whether a certain amount of spectrum should be set aside for new entrants. Comments should include a precise description of those who should or should not be entitled to bid.**

Yes, a certain amount of spectrum should be set aside for new entrants. Ideally, the set aside would include “any company that is not currently a Cellular or PCS licensee of any form in Canada”. The set aside would exclude the following:

- Any current Cellular and/or PCS licensee, regardless of the geographic or spectral size of license held
- Any company partnered with or controlled by a current Cellular and/or PCS licensee
- Any MVNO partnered with a current Cellular and/or PCS licensee

The existing incumbent carriers began their operations with a form of set aside. Specifically, all national and regional incumbents were given spectrum at one point or another, as opposed to going through an auction process. A high level summation of historical spectrum grants is below:

[Source: A Brief History of Cellular and PCS Licensing, Industry Canada]

- December 14, 1983: CANTEL (now Rogers Wireless) was given 20MHz (tier 1)
  - Rogers was given an additional 5 MHz in 1989 (tier 1)
- July 1, 1985: Telecommunication Common Carriers were accorded the opportunity to launch services with 20 MHz of spectrum within the operating areas where they provide public switched telephone service. An additional 5 MHz of spectrum was given in 1989.
  - Bell Mobility
  - Tele-Mobile Company (Telus)
  - MTS Mobility Inc.
  - Saskatchewan Telecommunications
  - Aliant Telecom Inc.
- December 1995: PCS spectrum awarded to 14 companies including
  - 30 MHz (tier 1) given to Clearnet PCS (now Telus)
  - 30 MHz (tier 1) given to Microcell Networks (now Rogers)
  - 10 MHz (tier 1) given to Rogers Wireless

**a) Comments are sought on the amount of spectrum that could potentially be set aside. Comments should include whether a single block should be set aside or if the set-aside could be broken up into 2 or more blocks.**

As a result of the comments above, we believe that a significant portion of spectrum should be set aside. Specifically we think it would be reasonable to consider setting aside at least two-thirds of the AWS spectrum up for auction, or 60 MHz in total. Additionally, we would suggest creating a total of six blocks for the auction as opposed to the Department’s suggestion of 5, in order to create a healthy but equitable competitive environment for both incumbents and new entrants.

Of the six blocks proposed, we believe that three should be specifically set aside for new entrants. Of the remaining three blocks, we believe that all interested parties should have access to bid. This will allow existing licensees to expand, augment or fill in gaps in their spectrum assets as well as permit existing MVNOs to pursue alternative business models that include owning their own spectrum and infrastructure.

Illustrated graphically, our proposal would incorporate the following changes to the Department's block and tier sizes:

<b>Block</b>	<b>Size</b>	<b>Tier</b>	<b>Set Aside?</b>
A	5 + 5	4	No
B	5 + 5	4	No
C	5 + 5	3	No
D	10 + 10	2	Yes
E	10 + 10	2	Yes
F	10 + 10	1	Yes

In consideration for the spectrum set aside for new entrants, we further suggest that the PCS extension band (1910-1915 and 1990-1995 MHz) should be correspondingly set aside for existing PCS license holders.

***b) Comments should stipulate how such provisions would be in the public interest, and provide supporting evidence or rationale.***

If the Department agrees with the premise that more competition in wireless services would be positive for Canadian public interest, then a set aside would be required to make new, effective competitors.

We believe three blocks encompassing 60 MHz are required to effectively create a viable new regional or national entrant that will be able to compete with incumbents whose spectrum requirements are already met to a large degree. Without a set aside of this magnitude, new entrants will not be able to efficiently acquire enough spectrum to be able to offer bandwidth-intensive services in the future. New entrants would effectively be constrained in offering the same voice, data and limited video offerings in place today without enough bandwidth to develop future-oriented new unicast services.

Overall, we believe a set aside provision would be in the public interest because increased competition brings the following positive externalities:

- Competitive pricing for similar services
- Accelerated access to new technology and services as competitors make their products better in order to differentiate themselves
- More choice of service provider motivating competitors to improve customer service
- Increased efforts to add new consumers not currently subscribing or maximizing their usage

Finally, setting aside spectrum helps to ensure that new competitors will be viable since they can spend their money on building infrastructure rather than on buying spectrum.

***c) Comments are sought on the implementation of the set-aside post auction and the duration of any conditions of licence specific to the set-aside that may affect the licence such as divisibility and transferability. (p.22)***

We submit that no specific conditions of license related to set-aside, divisibility and transferability should be created in order to allow maximum flexibility when attempting to launch a new business against well-established competitors.

If the public interest is to be met, the new entrant's viability is paramount. Therefore, the new entrant should be able to have some competitive flexibility in how it operates its business and whatever partnerships or alliances it may contemplate.

***3) The Department seeks comments as to whether an auction spectrum aggregation limit should be placed on the amount of spectrum that can be acquired by a single wireless service provider and its affiliates. Comments should include the amount of spectrum for the auction spectrum aggregation limit, to which bands it should apply and the duration. (p.23)***

We believe that the best way to foster new effective competition is to set aside spectrum and, as a result, a spectrum aggregation limit would not be required.

***4) The Department invites comments on mandating incumbent mobile wireless operators to offer roaming services – to both competing and non-competing Canadian carriers – to foster the development of competitive wireless communication services. (p. 25)***

***a) Comments are invited on the extent to which the lack of mandated roaming could be a barrier to entry into the wireless market.***

We believe that incumbent wireless operators should be mandated to offer roaming services to both competing and non-competing Canadian carriers. Clearly, domestic service coverage area and international roaming agreements are important criteria for a growing number of Canadian consumers when selecting between wireless providers. As such, a new entrant would not be viable without being able to offer reasonable coverage levels from the time of launch forward. An unfortunate result of the current roaming environment is that foreigners entering Canada often have better roaming coverage within Canada when compared to domestic subscribers because of the selective arrangements that Canadian wireless incumbents have made with international providers rather than amongst themselves.

The network infrastructure required to support high coverage levels over a large area is extremely expensive to build, maintain and upgrade, and the provision of roaming services is key to bridge the time period between launch and full infrastructure rollout. A lack of mandated roaming could financially cripple a new entrant during the long network build-out phase. Further, consumers may not seriously consider signing up with a new entrant until they offer similar coverage as incumbents in the consumer's market area – which could require years of investment and lost revenue which may ultimately prevent a new entrant from emerging.

If there is a lack of cooperation between incumbents and/or new entrants on shared infrastructure, the result is that multiple base station sites must be developed and built within very short distances of each other. This site redundancy is unnecessary, wasteful and promotes a negative public opinion for wireless companies. Further, rural areas will continue to be under served if each carrier is forced to justify an expensive business case to build redundant infrastructure to cover areas with low population densities.

As a result, we believe that mandated roaming should be extended to include mandated site sharing in order to build true regional telecommunication networks that are financially feasible. It will be difficult to create a truly competitive wireless network without reasonable roaming arrangements with established carriers who have had a twenty year head start. The benefit of mandated roaming to consumers and wireless providers was demonstrated when existing cellular carriers were forced to provide roaming access to new PCS providers as digital networks were being built out.

***b) Comments are sought on what services should be included in any mandated roaming and to what specific frequency band(s) roaming should apply.***

Basic wireless services, such as voice, SMS, and limited data should be included in mandated roaming. Mandated roaming should apply to existing cellular, PCS and AWS frequency bands to maximize coverage in both urban and especially rural areas.

***c) Comments are sought on the mechanisms that would best implement the policy objectives regarding roaming. (p.25)***

In order to create a level playing field for all market participants, we believe that fixed, per minute wholesale roaming costs should be established for mandated roaming spectrum. Additionally, incumbents should have to offer mandated site sharing which may reduce the burden or reliance on roaming – in that a wireless operator would rather build their own site than have to rely on roaming if the costs were comparable and sites are available.

**5) Comments are sought by the Department as to whether:[1710 – 1755 & 2110 – 2155]**

***1. the band plan shown in Figure 1 should be adopted in Canada — if not, please provide specific alternative options and the rationale justifying your suggestion;***

We agree with the band plan as proposed, other than the suggested changes to the blocks sizes and the creation of a sixth block (block 'F') as previously mentioned.

***2. the Department should allow TDD operation in these sub-bands if they meet the conditions listed above — if not, please provide the rationale supporting your view. (p.27)***

Yes, we agree with allowing TDD operation if they meet conditions above.

**6) Comments are sought by the Department as to whether:[1670 – 1675]**

***1. the band plan as proposed should be adopted in Canada — if not, please provide specific alternative options and the rationale supporting your suggestion;***

We agree with the suggested band plan as it is harmonized with that of other developed countries.

***2. the technological neutrality related to duplexing should be adopted in Canada — if not, please provide the rationale supporting your view. (p.27)***

We agree that technological neutrality should be adopted in Canada.

**7) Comments are sought by the Department as to whether: [1910 – 1915 & 1990 – 1995]**

***1. the band plan as proposed should be adopted in Canada -- if not, please provide specific alternative option and the rationale supporting your suggestion;***

We agree with the band plan as proposed.

***2. the standards for PCS should be applicable to this spectrum -- if not, please provide the rationale supporting your view. (p.28)***

We agree with the PCS standards.

**8) Comments are sought on the proposed tier sizes for AWS spectrum:**

<b>Block Licences</b>	<b>Pairing</b>	<b>Amount of Spectrum Proposed</b>	<b>Tiers</b>	<b>Tiers</b>
• A	1710-1715 MHz and 2110-2115 MHz	2 x 5 MHz	4	172
• B	1715-1720 MHz and 2115-2120 MHz	2 x 5 MHz	4	172
• C	1720-1730 MHz and 2120-2130 MHz	2 x 10 MHz	3	59
• D	1730-1740 MHz and 2130-2140 MHz	2 x 10 MHz	3	59
• E	1740-1755 MHz and 2140-2155 MHz	2 x 15 MHz	2	14

**a) Comments are sought on whether the block and tier sizes given above will allow the entry of new carriers in the market. (p.29)**

The proposed block sizes will allow the entry of new carriers in the market as a 20+ MHz block of spectrum is enough to create a new, viable service. Unfortunately, the proposed tier sizes on blocks C and D are too large and will hinder entry of new carriers in the market.

Under the proposed block and tier sizes, new regional or national entrants will all be driven to bid on block E. To ensure viability, new entrants require continuous licenses that cover a reasonable geographic size and population base. Individual tier 2 licenses offer the geographic continuity and population base required. Winning a single tier 2 license would satisfy the requirements of certain new regional entrants while winning several tier 2 licenses could satisfy the requirements of a new national entrant. New entrants would be hesitant to bid for tier 3 and 4 blocks because of the significant risk of license fragmentation. Without any set asides, there would be a large number of bidders all vying for the same licenses in small, densely populated areas. A new entrant would have a difficult and expensive time cobbling together enough licenses for the many small geographic chunks of spectrum required to have a regional or national service.

The design of the blocks and tiers suggest that licenses would be fragmented post auction with no one really getting what they need to enter the market – this would lead to a lot of license swapping post auction that would delay or inhibit the launch of new entrants as the exchanges would likely be to the benefit of the incumbents. In conclusion, the blocks and tier sizes suggested by the Department will not effectively allow new carriers in the market, and may dissuade them from attempting to acquire spectrum altogether.

Our proposal for block sizes and corresponding tier sizes is below:

<b>Block</b>	<b>Pairing</b>	<b>Tiers</b>	<b>Licences</b>
A	1710-1715 MHz and 2110-2115 MHz	4	172
B	1715-1720 MHz and 2115-2120 MHz	4	172
C	1720-1725 MHz and 2120-2125 MHz	3	59
D	1725-1735 MHz and 2125-2135 MHz	2	14 (set aside)
E	1735-1745 MHz and 2135-2145 MHz	2	14 (set aside)
F	1745-1755 MHz and 2145-2155 MHz	1	1 (set aside)

We would advocate making two major changes – one to the block size and one to the tier size. In addition to adding an additional block of spectrum, we believe new carriers would benefit from establishing three 10 x 10 MHz blocks as opposed to one large 15 x 15 MHz. The reason for this

is that we believe multiple 10 x 10 MHz blocks will ensure that new carriers have the greatest possible chance at acquiring a decent amount of spectrum in the national or regional market of their choice. It will ensure a healthy appetite among these new competitors, as they will have multiple blocks to bid on in the same region. Blocks of this size that are set aside may also attract more competition than previously estimated, as competitors presently sitting on the sidelines may believe that a smaller new entrant may actually have a chance to acquire a viable amount of spectrum, as opposed to ceding the opportunity to larger new entrant that already has significant interests in other telecom and media ventures.

Additionally, we would create an additional 5 x 5 MHz block, which we suggest not be set aside and likely be acquired by the incumbents, who in total would be poised to acquire an additional 30 MHz (three 5 x 5 MHz blocks) plus an additional 10 MHz already advocated as part of the PCS extension.

In our opinion, this will create the most level playing field where new entrants are free to compete and develop services across three 10 x 10 MHz blocks, and incumbents are free to compete and develop new services across three 5 x 5 MHz blocks.

With respect to tier sizes, we are advocating that two of the 10 x 10 MHz blocks be allocated as tier 2, and the remaining 10 x 10 MHz block as tier 1 – national. We continue to believe that large tier sizes coupled with multiple set aside blocks is the most effective way to encourage new wireless carriers who intend to provide new services on both a national and regional scale.

***9) Comments are sought on the proposal of Tier 2 service areas. (p.29) [1910-1915 MHz and 1990-1995 MHz]***

We support Tier 2 service areas in this band.

***10) Comments are sought on the proposal of Tier 2 service areas. (p.29) [1670-1675 MHz]***

We support Tier 2 service areas in this band.

***11) Comments are requested on technical considerations for AWS systems in the applicable bands. (p.30)***

We believe technical neutrality should be mandated to give auction winners complete flexibility in utilizing their frequency bands. Further, services offered in the AWS spectrum should be based on technologies that emphasize high speed data and packet-switch voice transmission. These technologies are commonly referred to as 3<sup>rd</sup> Generation and 4<sup>th</sup> Generation.

***12) Comments are requested on technical considerations for sharing of AWS systems with other services in the applicable bands. (p.31)***

We have no comment on the sharing requirements other than to agree it should be done on a voluntary basis.

**13) Comments are sought on the licence term, implementation and renewal proposals. Specifically, comment is sought on:**

- ***the proposal to use a 10-year licence term;***

We believe the licence term should be extended to 15 years to better align with standards of other developed countries.

- ***whether an interim implementation requirement should be imposed;***
  - ***if yes, respondents should provide a rationale and an explanation of the implementation parameter(s) the Department should consider, the time frame for such a measure and the means of determining compliance (e.g. technical measurement methods, affidavit, number of subscribers in area);***

We believe interim implementation requirements are useful, but it would be difficult to create definitive measurement objectives at this time without confirming the final tiers, block sizes and whether or not there will be set asides, as such elements of the auction will create differing financial obligations. This in turn, will affect roll out timelines.

However, we can suggest that the time frame should be two fold – at one-third and two-thirds of the licence period (ie 5 and 10 years) and should require a general business plan to be filed by the successful bidder with the Department within 120 days of the completion of the auction. The business plan shall contain the planned rollout of the spectrum. If such spectrum is not utilized by one of the review points at 5 or 10 years, then the Department should be permitted to create new mandates to be met at review points established at its own discretion, and failing satisfactory progress by the licensee, the Department may consider revocation of part or the entire spectrum.

- ***whether the renewal expectancy provisions and process are suitable;***

We believe the renewal provisions and process are suitable.

- ***if not, respondents should provide a description of the rationale for different approaches***

We believe they are suitable.

- ***whether requiring application for renewal 2 years before licence expiry is appropriate;***

We believe the application for renewal process is appropriate.

- ***the means of determining compliance (e.g. technical measurement methods, affidavit, number of subscribers in area); and***

As previously stated, this would depend on the final determination of the spectrum auction and the impact this would have on the business plan of the wireless offering. However, generally speaking we are in agreement that the means of determining compliance are appropriate, in that the licensee should have to demonstrate a) that it has a business plan to provide a service or services in the areas where it has acquired spectrum b) that it is currently providing that service or

services in those areas and c) that it has accumulated a reasonable number of subscribers to that service or services.

- ***the provisions the Department should consider when a licensee is determined to not fully meet the renewal expectancy requirements (e.g. the revocation for part or all of the spectrum or geography). (p.35)***

We believe revocation of all spectrum should be used as a last resort, and perhaps a revocation of certain geographical regions (as the tiers are primarily regional or smaller) might be appropriate as a warning to licensees who have not fully met renewal requirements.

***14) The Department seeks comments on the proposed conditions for the AWS, PCS expansion and 1670-1675 MHz spectrum bands. (p.38)***

The proposed conditions are appropriate subject to the comments made previously about licence term, renewal and interim implementation requirements.

***15) The Department seeks comment on all aspects of the proposed post-auction licensing process for AWS, PCS expansion and 1670-1675 MHz spectrum. (p.39)***

We believe it would be premature to comment on a post-auction process for un-auctioned spectrum as it would depend on the final outcome of the current auction process. Therefore, a short public consultation process would be appropriate for any spectrum not acquired as a result of the current auction.

***16) The Department seeks comments on the opening bids and pre-auction deposits for AWS licences. (p.41)***

We agree with the proposed \$4,000 per eligibility point for the first 200 points and \$6,000 per eligibility per point requested thereafter.

However, if the Department takes the position that set asides, block sizes and tiers should be established in a manner that would encourage a new entrant, then the Department should also look to reassess the bid payment requirements that have been established in DGTP-002-07. A short timeframe favours large, well capitalised businesses and hinders new entrants. Specifically, it is not reasonable to hold a new entrant to the same, tight 30-day payment terms as an incumbent with significant liquid cash reserves. Also, the business plan of a new entrant may change significantly at the close of the auction when compared to expectations beforehand. These changes will take time to evaluate and may even require a new business plan. We believe that the commitment and willingness to proceed of a new entrant would not be threatened or questioned if the time period for bid payment was 180 days as opposed to 30. Therefore, we would like to see a 180 day time period for the 80% balance of the high bids. The 10 day period for 20% payment of high bids and 100% of withdrawal penalties should not be affected.