



BCT.TELUS Communic
Floor 21D, 10020 100 St
Edmonton, Alberta
Canada T5J 0N5

Willie Grieve
Vice President
(780) 493-6590 Telephone
Government & Regulatory Affairs
(780) 493-6519 Facsimile

willie.grieve@telus.com

March 1, 2000

Sent electronically to:
pcs.scp@ic.gc.ca

Mr. Jan Skora
Director General
Radiocommunications and Broadcasting Regulatory Branch
Industry Canada
Room 1559D, Jean Edmonds Tower North
300 Slater Street
Ottawa, Ontario
K1A 0C8

Dear Mr. Skora:

Subject: Canada Gazette Notice No. DGRB-018-99, Consultation on the Proposed Policy and Licensing Procedures for the Auction of Additional PCS Spectrum in the 2 GHz Frequency Range

BCT.TELUS Communications Inc. is pleased to provide the attached comments in response to the above captioned Gazette Notice.

Yours truly,

Willie Grieve
Vice-President, Government & Regulatory Affairs

cc. Michael Helm
Earl Hoeg



Comments in Response to the PCS Spectrum Auction Consultation

Industry Canada Gazette Notice No. DGRB-018-99

**Consultation on Proposed Policy and Licensing Procedures for the
Auction of Additional PCS Spectrum in the 2 GHz Frequency Range**

March 1, 2000

BCT.TELUS Communications Inc. (TELUS), on behalf of its mobile wireless service providers TELUS Mobility Cellular Inc. and TELUS Communications Inc., is pleased to submit the following response to Industry Canada's "Consultation on the Proposed Policy and Licensing Procedures for the Auction of Additional PCS Spectrum in the 2 GHz Frequency Range" (the "Consultation"), contained in Canada Gazette Notice No. DGRB-018-99, as amended by Canada Gazette Notice No. DGRB-001-00.

PART I

Introduction

1. The Consultation document proposes to auction 40 MHz of spectrum capable of being used for PCS mobile wireless services. To employ auctions where demand for available spectrum resources exceeds supply is generally in keeping with the Department's Framework for Spectrum Auctions, dated August 1998. The Consultation document also proposes that the spectrum distributed in this round be fully tradable in both bandwidth and geographic dimensions. By auctioning spectrum and permitting its trading in secondary markets, the Department seeks to reap the benefits of competition in both the market for the spectrum itself and in the end-user or consumer markets.
2. TELUS has long supported the introduction of competition in telecommunications, including the introduction of auctions for the distribution of spectrum. Auctions ensure that market prices are established for the underlying spectrum resource through which mobile telecommunications services are provided. In order to ensure that the market value of spectrum is recognized and remains identifiable over time, as technology changes and the market for end-user services evolves, TELUS has urged the Department to move to a policy of open trading of spectrum in secondary markets. In TELUS' view, open trading not only allows the value of the spectrum to be realized over time but also ensures that spectrum will be used most efficiently and for its highest value use for customers in the market.
3. TELUS still supports these policies. However, the proposal to auction 40MHz of wireless spectrum¹ at this time and permit trading of that spectrum in secondary markets, while continuing to restrict secondary market trading of fully substitutable spectrum already distributed through the comparative selection process,² distorts the market at auction for the spectrum to be distributed in this round. The only spectrum available in the market under the current proposed rules will be the limited supply of 40MHz to be auctioned. As the spectrum demands of new services exceed those of services previously supplied, market participants seeking additional spectrum need an

¹ In this document, "wireless spectrum" is to be interpreted as frequency assignments for PCS at 2 GHz, cellular radiotelephony and similar public high mobility radiotelephony services in the 800 MHz range. TELUS notes that its definition is in accordance with that of the Department in Revision to the PCS Spectrum Cap and Timing for Licensing Additional PCS Spectrum, November 1999, at page 1.

² Consultation document, page 16.

opportunity to assess the value of the spectrum in a market that reflects the whole supply of potentially available spectrum. While the industry expects the Department will make additional wireless spectrum available in the future, there is no certainty about the timing of the release of this spectrum and/or the conditions under which it might be released.

4. The result of the limited amount of spectrum available in this round, the unavailability of currently allocated spectrum for trading in secondary markets and the uncertainty of when new wireless spectrum (and how much) might become available, places the industry in a difficult position in the bidding process. This planned distribution of spectrum will not serve to create a free market, as the market is distorted by supply of spectrum being limited and uncertainty about the amount and timing of future releases of spectrum. Under the proposals set out in the Consultation document, the wireless spectrum market, after the auction, will be characterized by 130 MHz of licensed spectrum in each geographic area that has been distributed through a comparative selection process and is unavailable for secondary market trading and 40 MHz of spectrum that has been auctioned and is available for secondary market trading.³
5. TELUS understands the difficulty faced by the Department in moving from a process of distribution of spectrum through comparative selection to a market based approach. Indeed, in the Consultation document, the Department recognizes that its management of spectrum is in a transitional period. The public policy challenge is to manage the transition in order to ensure that the industry can have some degree of certainty of government policies for the transition, specifically:
 - that policies for the transition are designed to be the least distortionary;
 - that the Department recognize the conditions under which existing licences have been awarded;
 - that the Department recognize the realities of the existing industry structure; and
 - that the end state of the transition, both in terms of when it is to be achieved and what the end state policies will be, is clearly articulated.
6. It is only when the industry has all of the relevant information that rational investment and service provisioning decisions can be made and a successful transition can be achieved. Therefore, in this response to the Department's Consultation document, TELUS sets out its proposal for how the forthcoming spectrum distribution can effect the transition from the current market structure to the market of the future in which market forces will determine industry structure.

³ The proportion of encumbered versus unencumbered spectrum includes the 50 MHz of substitutable cellular spectrum at the 800 MHz range that also remains subject to secondary market trading restrictions.

Transition of the Spectrum Market and Industry Structure

The Spectrum Market at the end of the Transition

7. Before considering policies for the transition, it is important to clearly articulate what it is the industry will be transitioning to. TELUS' preference is for the end state spectrum market to be one in which all substitutable spectrum (in terms of potential uses) is subject to the same conditions including conditions permitting secondary market trading. Therefore, TELUS recommends that the Department's response to this Consultation process include a clear statement indicating how much future wireless spectrum is to be released, the date at which the next release (two or three years from now) will be made, indicating the block size and quantity of that release.⁴ TELUS would encourage the Department to make a statement that after the next release of wireless spectrum the government will permit open trading in secondary markets of all wireless spectrum whether it has been distributed through a comparative selection process or through an auction.
8. With the release of further spectrum and open trading in secondary markets, the spectrum market in Canada will be governed by market forces and will determine its own optimal structure. TELUS' expectation, like that of the Department, is that the structure will be characterized by vigorous competition among a number of national service providers as this provides the greatest benefit to Canadian consumers.⁵

The Transition

9. Clearly articulating the end state that the transition is designed to achieve is only one step in developing an effective transition policy. It is also important to determine what the Department needs to achieve during the transition itself. The Consultation document recognizes some of the challenges of the transition. In particular, the Department recognizes that departmental requirements to which current spectrum holders are subject have required large capital outlays.⁶ This observation reflects the need to ensure that as the market moves to the end state, current licensees are not disadvantaged by existing licence conditions or confronted with a material change of conditions that cannot be accommodated. The Department recognizes that allowing new entry in this round may enhance competition but may also weaken the position of some current licence holders in the short term thereby leading to anti-competitive consolidation in the long-term.⁷ The Department concludes by suggesting that allowing possible entry but not identifying spectrum exclusively for new entrants could represent a balance between these two competing tensions.⁸

⁴ We note that the Department has committed in its Framework for Spectrum Auctions to ensuring full public consultation in advance of future releases, including in respect of issues relating to bandwidth and geographic dimension. Further, TELUS acknowledges the Department's recent efforts in the Guidelines on the Licensing Process and Spectrum Release Plan (RP-020, Issue 1, October, 1999)

⁵ Consultation document, page 11.

⁶ Consultation document, page 4.

⁷ Ibid.

⁸ Ibid.

10. The Department's analysis is instructive in determining what the government's concerns are. The Department has recognized that current industry participants have made significant investments in response to licence requirements. Clearly, the Department is concerned that permitting new entry of a possible 4 new entrants (each using 10 MHz) could weaken the industry in the short term. Significantly, this weakening would be likely to persist into the period during which more new spectrum is expected to be released (in two to three years). The suggested policy of permitting open bidding and not reserving some spectrum for new entrants seems to suggest that the Department is prepared to rely on market forces to determine whether new entry is economic.
11. Notwithstanding its analysis, the Department has adopted an approach that does not sufficiently recognize the realities of the current market. The creation of two regional service providers (TELUS in Alberta and British Columbia and the Bell Alliance⁹ in the rest of Canada) through the realignment of Mobility Canada, coupled with the increased demand for and availability of new services, requires that some current market participants add additional spectrum in some geographic areas to support either expansion of territory or services, or both. Indeed, throughout Canada, rapidly rising penetration rates are creating further demands for spectrum. In addition, the suggestion that the Department is prepared to rely on market forces to determine the structure of the market in this round does not recognize that the market at auction would be distorted by the unavailability of existing spectrum for trading, uncertainty about the amount and timing of future releases of new spectrum and the unique circumstances of the former Mobility Canada members who can no longer be considered one national player. In TELUS' opinion, the outcome of this current distribution cannot, by its terms, result in a real market outcome.
12. TELUS submits that the distribution of spectrum in this round can be most effectively employed by the government to position the Canadian industry for the last step in the transition to a fully competitive industry structure in which all wireless spectrum is openly traded in secondary markets. Through its policy and manner of spectrum distribution, the Department should ensure that the current industry participants are capable of making the transition in the least disruptive way possible for Canadians.

Stabilizing the Market Structure

13. The Department has stated that one of the potential outcomes of this distribution of spectrum is the enhancement of competition in the PCS market.¹⁰ In TELUS' view, while entry of new players in the market would likely increase competitive pressures, there is no concern that the current market for end-user services is not competitive now. Indeed, with the recent resale arrangement between the Bell Alliance and TELUS, there will be five national providers of wireless services in Canada in the

⁹ Bell Mobility, SaskTel Mobility, MTS Mobility, MTT Mobility, NewTel Mobility, Island Tel Mobility, NBTEL Mobility, and NorthwTel Mobility.

¹⁰ Consultation document, page 4.

retail or end user market. Canadians already enjoy a choice of suppliers and services, as well as prices that are among the lowest in the world. The Department's concerns for the effects of new entry on the current licence holders should be given significant weight. At the same time, however, the Department can achieve the benefits of enhanced competition (in terms of price and service introduction on a national scale) during the transition by permitting the two regional licence holders (the Bell Alliance and TELUS) to have access to spectrum outside of their traditional operating territories.¹¹

14. The paramount consideration in the government's choice of policies for the transition should be to ensure the continuation of consumer benefits in a vigorously competitive industry structure. This can best be achieved by permitting the two regional licensees to have access to spectrum outside of their traditional territories at market based prices (thereby becoming national facilities-based providers) while permitting the current holders of national spectrum an opportunity to acquire more spectrum for their increased needs.
15. The transition is not a one step process from a system of comparative selection for the distribution of spectrum to a system of auctions and open trading in secondary markets. By the terms of the Consultation document, it is at least a two step process of limited new distribution with different conditions attached to the new spectrum and, later, further distribution with eventual open trading in secondary markets. It is also an opportunity for the Department to stabilize the current market to one in which all licensees are national facilities-based providers.
16. The Department has exerted considerable influence over the establishment and characterization of the existing market. Its historical approach to spectrum allocation was based on ensuring a national roll-out of service by each competitor¹² (indeed, this has rightfully been a point of pride within the Department) and ensuring sufficient access to spectrum to support these roll-outs. The obligations and privileges enjoyed by the licensees went hand in hand with the Department's goals. The move to spectrum auctions signals a step into the future. TELUS' primary concern, however, is that the introduction of new elements (e.g. competitors with varying levels of obligations and expertise, and enhanced flexibility of operations) into a previously closed and managed system creates asymmetric obligations and distorts the market further rather than moving towards one determined by market forces.
17. While the Department has managed the structure of the market, the current market structure is not what the Department envisioned when it distributed the PCS spectrum. The spectrum was distributed so as to create four national providers of service. Those four national providers were Mobility Canada, Rogers, Microcell and Clearnet. With the break-up of Stentor and the realignment of Mobility Canada, there will be five national wireless competitors at the retail level. However, at the same

¹¹ For TELUS, this includes all provinces east of the Alberta/Saskatchewan border as well as Canada's territories. For the Bell Alliance, this refers to the provinces of Alberta and British Columbia

¹² Consultation document, page 10.

time, there are only three national holders of spectrum and two regional holders of spectrum.

18. Current allocations of high mobility wireless spectrum at 800 MHz and 1.9 GHz are very similar to those originally granted by the Department:
 - TELUS currently holds 35 MHz of wireless spectrum in its operating territories, including its original allocations of 25 MHz at the 800 MHz range and 10 MHz at the 1.9 GHz range
 - Members of the Bell Alliance each hold, at minimum, the same 25 MHz and 10 MHz allocations as TELUS in each of their respective operating territories
 - Rogers AT&T Wireless, as the original competitor to the established phone companies in Cellular 800 MHz, received the same allocations as TELUS and the Bell Alliance, albeit on a national basis
 - ClearNET received a 30 MHz allocation, on a national basis, at the 1.9 GHz range to support deployment of competitive PCS services. ClearNET also has incremental holdings of mobile wireless spectrum of approximately 10 MHz in various regions throughout the country to support its Mike service
 - Microcell, like ClearNET, was granted a 30 MHz spectrum allocation at the 1.9 GHz range on a national basis
19. The existing players, with two notable exceptions, have the national networks best suited to leverage the use of the available spectrum into results consistent with the Department's goals of competitive markets and continuous innovation. The notable exceptions, TELUS and the Bell Alliance, although having proven abilities to contribute to the ongoing achievement of the Department's goals for national competitive services provisioning, do not have national, facilities-based networks. Resale though capable of providing national coverage, is a short-term solution without long-term viability. Further, competition based on resale is not sustainable. Resellers do not typically undertake advanced research activities, technical and market trials, and innovative activities. To drive the market and truly increase the value proposition for consumers, a service provider needs to own and operate sufficient facilities to justify efforts aimed at achieving pioneering and groundbreaking advances. Without the ability to access national spectrum, the two regional licensees will be restricted in their ability to effectively contribute to the development and introduction of new national service offerings currently available and under development. Access to national and international markets is becoming increasingly necessary to make financially viable research activities and the introduction of advanced products and services.
20. Substantial spectral resources are required to support the expansion of the current market as well as the evolution into advanced wireless applications such as Internet access and higher speed data. The spectrum to be made available in this round cannot serve to support both the entry of new licensees as well as the innovations the market demands. If parties other than the existing licensees acquire spectrum, the growth and innovation required of current licensees to support new service development and

rising penetration rates will be frustrated. Therefore, TELUS submits that the Department should focus its attention on allowing for the stabilization of the market during the transition to a market with five proven national facilities-based carriers.

21. TELUS Mobility's accomplishments in the promotion and development of the Canadian mobile wireless industry serve as incontrovertible evidence of its ability to leverage its regional successes into national ones. The Bell Alliance has also proven its abilities to deliver on its licence conditions and effectively serve the market. Clearly, consigning these licensees to their current licence areas would not be in the public interest. The public interest would be best served by ensuring that in this period of transition, the two regional licensees be permitted to acquire spectrum outside their traditional operating territories. At this time, five experienced national facilities-based competitors will achieve the Department's objectives of enhancing competition without causing disruption in the market prior to the next distribution of spectrum and the opening of the market to new entrants combined with open trading of spectrum in secondary markets. Such an outcome will ensure that new wireless services are rolled out in a timely fashion thereby providing early benefits to consumers and stability in the marketplace. With a clear statement of government policy for the next round of spectrum distribution, including the amount of spectrum and the timing of its release, all market participants can adjust their business plans from those established in accordance with current conditions of licence to those that will be necessary to accommodate new entry in both the retail market and the market for the spectrum itself.

PART II

The TELUS Approach

22. As noted above, TELUS believes that the Department should recognize that this distribution of spectrum will create a transitional market structure between one created by the comparative selection process of the past and open spectrum markets of the future. It is necessary, therefore, for the Department to consider what it wants to achieve during the transition. In TELUS' submission, providing an opportunity for the establishment of five experienced national licensees by limiting participation in this round to the current three national licensees and the two regional licensees, will serve to create the balance the Department seeks. It will provide for the establishment of market prices for spectrum among the five licensees at a time when spectrum is required for new services, enhance competition in the end-user market, provide for the roll-out of the new generation of wireless services, recognize the significant capital investments made by existing licensees in compliance with their licences, avoid the potential weakening of existing licensees with the concomitant potential for anti-competitive consolidations, and permit the Department to move to an open spectrum market after the next release of spectrum, thereby achieving a fully competitive wireless market both on the supply side and demand side.

23. While TELUS recognizes that the Department has generally chosen to forego the process of allocating spectrum directly when demand exceeds supply, TELUS would urge the Department to consider all of the regulatory tools available to it to achieve its objectives during the transition. The Department's Framework for Spectrum Auctions states that the use of auctions by the Department comes only after the Minister of Industry's determines that "reliance on the marketplace to select licensees is in the public interest."¹³ TELUS suggests to the Department that its objectives and the public interest can best be met during the transition by the establishment of five experienced national facilities-based providers. The most direct way of achieving that outcome would be for the Department to distribute some of the 40 MHz to be released directly to the Bell Alliance in Alberta and British Columbia and to TELUS in the rest of Canada with the price for the spectrum to be determined on the basis of the prices established in the auction for the remaining spectrum.
24. Such an approach could be implemented as follows:
- Prior to auction, the Department would set aside two contiguous 10 MHz sub-blocks of C/C' block spectrum for allocation to each of TELUS and the Bell Alliance at a "market price" in regions outside their respective existing territories¹⁴
 - The remaining 10 MHz sub-block available in each of the C/C' and the E/E' blocks would be made available at an auction open only to Category 1 and 2 bidders¹⁵
 - Each of the four 10 MHz sub-blocks would be licensed pursuant to Tier 2 service areas
25. If such an approach were adopted, a market-based price would be paid for the allocated spectrum in recognition of the Department's obligation to maximize on behalf of the Canadian taxpayers the revenues generated from the distribution of access rights to a federally controlled resource. To this end, in part from a recognition that the proposed minimum bids represent a floor and not necessarily a market price, and in recognition of the reduced risk to TELUS and the Bell Alliance, a price for the allocated spectrum could be established for each sub-block at the higher of two times the proposed minimum bid for a given service area or the average of the price paid at auction for the areas' two remaining sub-blocks.
26. Such an allocation of spectrum coupled with auctioning of the remaining 20 MHz in two regional 10MHz blocks, would directly achieve all of the Department's objectives and would serve to stabilize the market prior to the establishment of fully open spectrum markets. Such an allocation should naturally carry with it the corresponding obligation on TELUS and the Bell Alliance to roll out networks and service in all service areas. Since the price for the allocated spectrum would be

¹³ Page 2

¹⁴ For greater clarity, TELUS is proposing that its allocation be Tier 2 Service Areas 2-14 and 2-01 through to 2-11 inclusive, as described in Table 2 on page 32 of the Consultation document.

¹⁵ Category 1 bidders, as described on page 4 of the Consultation document, are taken to be Rogers AT&T, Microcell and ClearNET. Category 2 bidders are taken to be TELUS and the Bell Alliance.

determined with reference to the auction price, it would seem reasonable to permit secondary market trading of the spectrum. However, since the spectrum would be allocated, the Department may wish to restrict secondary market trading of the allocated spectrum until the spectrum market is fully opened up to secondary market trading in the future.

27. TELUS submits that such an approach would be entirely consistent with the goals of the Department for this transitional period and be in the public interest. Such an approach would be supported by TELUS.
28. If the Department does not choose to achieve its goals for the transition period directly and, instead, chooses to auction all of the 40MHz of spectrum available in this round, TELUS proposes the following approach:
 - The C/C' block be sub-divided to make available three 10 MHz blocks and the E/E' block be left intact as a fourth 10 MHz block
 - Each of the four 10 MHz sub-blocks would be licensed pursuant to Tier 2 service areas
 - The auction of all blocks would be open only to Category 1 and 2 bidders
29. As noted above, it is TELUS' view that the 40 MHz of spectrum to be released in this round is not sufficient to support both the requirements for additional spectrum to support new services and the addition of new entrants beyond the five current PCS licensees. Therefore, in order to provide the best opportunity for the market to stabilize at auction during this transition period, the auction participants should be limited to current PCS licensees.
30. Auctioning the spectrum regionally in four blocks of 10 MHz provides maximum flexibility for spectrum aggregation by all five licensees. It permits the regional licensees the opportunity to acquire spectrum outside of their current licence areas thereby permitting the opportunity for the establishment of two national carriers while at the same time permitting licensees to satisfy their spectrum needs regionally. If auctions are chosen for all 40 MHz, the auctioning of regional (Tier 2) licences would best achieve these public policy objectives.
31. Regional licences permit all existing licensees to pursue regions and aggregations consistent with business needs while avoiding the inefficiencies of over-purchasing as the sole means of securing a desired licence. Finally, prices paid for regional licences are more likely to reflect the relative value of spectrum across regions. The Department's experience in the recent auction of 24/38 GHz spectrum licences has shown the great disparity in the valuations accorded some markets (e.g. Toronto) versus others (e.g. Winnipeg).
32. TELUS strongly urges the Department to give its proposals due consideration, as it believes the interests of Canadians will be best served by the Department first determining what the most optimal transitional market structure would be. In TELUS' submission, such a market structure would be one having five strong,

experienced, national facilities-based carriers, each having the opportunity to augment its spectrum regionally to meet growing consumer demand for both existing services and new services requiring more spectral resources. The direct approach is to allocate 20 MHz of spectrum to the Bell Alliance and TELUS outside of their current operating territories. If the direct approach is not adopted, the auctioning of four 10 MHz blocks on a regional basis, and limiting eligible bidders to the existing five licensees, would have the greatest probability of achieving the government's objective for the transition.

PART III

Further Comment on Issues Related to the Licensing of the Additional PCS Spectrum

33. For ease of reference, TELUS addresses below the specific issues of concern contained in the Consultation in a format consistent with the manner in which the issues were raised. TELUS considers, however, that its submissions in prior pages best represent its position.
- *The Department seeks comments as to whether and how the public interest would be served by limiting the eligibility of any potential applicants to participate in the auction. (section 3.2)*
34. TELUS submits that the public interest would best be served by limiting eligibility in this auction to existing cellular and PCS licensees, including those whose present authority is limited to providing service within a particular region but may wish to expand beyond that region. As described at length in Part II above, TELUS considers that a transitional framework designed to secure an industry comprised of strong, national competitors must come before steps to open the market to new entrants.
- *In addition, the Department would be interested in any views as to whether a certain amount of spectrum should be identified for which only new entrants would be eligible to bid. (section 3.2)*
35. As TELUS believes that Category 3 new entrants should not be eligible to participate in this particular auction, no such action is necessary.
- *The Department invites comments as to how it should view the potential eligibility of any party that is licensed for the provision of personal communication services under the Radiocommunication Act but is not in compliance with its existing license conditions. (section 3.2)*
36. TELUS is fully in compliance with its existing license conditions. No participant in Canada's wireless industry would support or encourage non-compliance with license conditions. A general industry consensus has been reached on this point among

members of the Canadian Wireless Telecommunications Association (CWTA). TELUS supports the CWTA's position on this point.

- ***The Department solicits input on any other factors that respondents believe are relevant to the eligibility of entities to participate in the auction. (section 3.2)***

37. TELUS considers that Category 3 new entrants should not participate in this auction. In respect of any party seeking to participate in the auction, TELUS submits that it is imperative to the maintenance of the competitive marketplace that the following conditions apply:

- Eligibility be contingent of demonstration of the requisite technical expertise and financial backing; and
- Participants must comply (on an ongoing basis commencing at time of registration) with the Canadian ownership and control requirements of the *Radiocommunication Regulations* and the *Telecommunications Act* to be consistent with the obligations of existing licensees.

- ***The Department seeks comment on the minimum size of frequency sub-blocks that would support practical implementation of 2G and the initial deployment of 3G (IMT-2000) services, given the frequency block size of the C/C' and E/E' blocks. (section 4.2.4(i))***

38. TELUS considers that the minimum practical block size for introducing 2G services is 10 MHz (5+5). As for 3G, 20 MHz are required to support effective deployment of voice and data service. While the TELUS response is presented from the perspective of a 2G network deployed using CDMA technology with anticipated evolution into CDMA 3G, similar concerns would apply in the case of other access technologies. Of note however, is that CDMA is the most widely used digital cellular technology in North America and it also enjoys the fastest growth rate of all PCS technologies.

- ***The preferred sub-block structure of the spectrum in the C/C' and E/E' blocks. (section 4.2.4(ii))***

39. TELUS considers that the preferred sub-block structure in the C/C' and E/E' blocks is three 10 MHz sub-blocks (C/C') and a 10 MHz block (E/E'); all available on a regional (Tier 2) basis. All current licensees could benefit from such a sub-block structure. TELUS considers that the proposed block structure permits the regional licensees the opportunity to acquire spectrum outside their current licence areas while at the same time permitting national licensees the opportunities to pursue optimal regional aggregations according to their respective needs. TELUS further notes that no individual licensee could pursue more than 20 MHz in its existing operating territories. The requested allocation and the restrictions on eligibility are elements of the TELUS proposal that contribute to the strengthening of the market. As only facilities-based competition among financially sound and technically proficient competitors can provide the continuing benefits enjoyed by Canadian mobile wireless consumers, the sub-block structure should operate to permit desired aggregations.

Industry wide innovation and evolution into advanced services can only occur where licensees have the spectral resources, as may be required in a given market, capable of supporting the development of advanced services.

- ***The implications on roaming and cross border sharing arrangements of the sub-division of the C/C' and E/E' blocks. (section 4.2.4(iii))***

40. Any implications arising from the subdivision of the C/C' and E/E' blocks on roaming and cross-border sharing arrangements are minor. Slight cost increases and the requirements of unique solutions pose no substantial barrier and are more than offset by the anticipated consumer benefits that would flow from opportunities for growth and innovations gained by existing service providers.

- ***The technical challenges that would exist in the context of 2G deployment initial 3G deployment, and the anticipated evolution from 2G to 3G. (section 4.2.4(iv))***

41. In the context of CDMA, evolution is anticipated to proceed to 3G by upgrading the existing IS-95 2G carriers. The first upgrade to the 1XRTT 2.5G CDMA standard will provide the capability to mobile data speed of 144 Kbps and increased voice capacity. The continuing evolution plan to 3G then assumes that three contiguous 1XRTT 2.5G carriers will be upgraded to 3G, occupying a contiguous bandwidth of 5 MHz. The 3G network would then support mobile data speeds of up to 384 Kbps and fixed data speeds of 2 Mbps. Deployment of networks that support these high-speed packet data services would require a single CDMA carrier of a 5 MHz bandwidth. An effective rollout would require additional carriers, and therefore additional spectrum blocks will be required.

- ***The need for operators to have contiguous spectrum blocks in the band 1850 – 1990 MHz.(section 4.2.4)***

42. The greater the block size, the greater the efficiency. It is clear that evolving existing 2G networks to 3G and deploying new 3G networks will require dealing with spectrum blocks of at least 5+5 MHz. At this point in time it is not clear whether the 3G network will need to be optimized separately for voice, fully mobile data and semi-mobile/portable data applications. Also, it is not precisely known at this time, what the mix (and therefore bandwidth requirements for) each of these services will be. If current trends in data traffic growth prevail, a single network operator will over the term of the license, require access to multiple blocks of 5+5 MHz spectrum. In order to minimize use of guard bands, which waste spectrum, each user should be assigned contiguous blocks of spectrum. It is TELUS' view that a prudent spectrum policy would facilitate the aggregation of smaller blocks, where practical, in order to create larger blocks of contiguous spectrum.

- ***The need, if any, to adjust the spectrum block structure to align with asymmetrical traffic flows, taking into account the growing developments in IP-based services over cellular/PCS systems. (section 4.2.4)***

43. TELUS believes that the current policy of allocating cellular and PCS spectrum as symmetrical paired blocks should be maintained for the foreseeable future. Asymmetric applications such as those associated with ADSL arise as much from the limitations of the channel and technology as from the needs of the marketplace. ADSL and cable modem technology for example are largely confined to the residential consumer market and should be viewed as a subset of the total market requirements. PCS operators, to be successful must address the business market as well as consumer markets. Business applications typically require transfer of large amounts of data in both directions. Not surprisingly, these are considered the best market opportunities for symmetrical technologies such as LMCS. It would, in TELUS' view be a step backward if spectrum utility were reduced by converting valuable and versatile symmetrical paired spectrum to asymmetric allocations. Moreover, it would be inconsistent with the Department's intent to permit successful bidders the freedom to determine the timing, technology and services associated with their use of spectrum.

- ***The need for special provisions to accommodate Time Division Duplexing (TDD) technology in the frequency block structure. (section 4.2.4)***

44. TELUS believes that it is very premature to consider special spectrum block allocation optimized for widespread deployment of TDD in the Cellular/PCS environment. There is very little published information to assess the suitability of this technique to networks containing the number of cells usually encountered in a typical PCS network. There are several issues that need to be addressed, for example:

- Latency – Uncertainty as to the inherent latency of TDD systems on data applications that will operate at 3G speeds
- Reciprocity –TDD systems typically perform a channel measurement in one direction and use the result to pre-distort the channel in the opposite direction. In a vehicular mobile environment with rapidly changing paths, the reciprocity of the path may not be sufficiently preserved
- Duty Cycle Synchronization – TDD systems use the same frequency to transmit and receive. In order to control inter cell interference, the duty cycles of adjacent sectors, adjacent cells, and possibly adjacent cell networks may need to be precisely synchronized. To date there is no evidence that this has been successfully demonstrated on a large-scale deployment of a multi-cell network
- TDD Duty Cycle – One of the advantages attributed to TDD is the capability to change the duty cycle to accommodate different transport rates in the upstream and downstream directions. However, if transmit and receive duty cycles must be synchronized, then each sector, adjacent cell, possibly the entire network, may need to have identical synchronized duty cycles, which could only be changed in concert. Network operations considerations may limit such changes to at most

once daily or once weekly, making this feature of TDD much less useful and possibly, impractical to implement.

45. In any event, the imposition of special provisions to accommodate TDD is inconsistent with the flexibility associated with spectrum acquired at auction.
- ***Geographic Dimension of Licences for Spectrum in Blocks ‘C’ and ‘E’(section 4.3.2)***
46. TELUS agrees with the use of standard Tier 2 licence areas.
- ***If regional PCS licensees previously under the former Mobility Canada consortium were eligible to bid for additional spectrum to expand their coverage beyond their present serving areas, would it be desirable as a public policy to require them to serve all regions of Canada? If such a policy were desirable, how might this objective be achieved? (section 4.3.2)***
47. TELUS considers that consistency of obligation and opportunity among existing licence holders would contribute greatly to the achievement of an effective transition period. TELUS has advanced in this document several arguments favouring the strengthening of the Canadian mobile wireless market through ensuring the presence of strong national service providers prior to opening the market to the world. TELUS has described both direct and indirect means by which the Department could achieve its goals during this time of transition. If the Department chooses to auction the full 40 MHz of spectrum on a regional basis, the use of a bidder specific obligation such as this distorts greatly the market at auction. TELUS discourages the Department from imposing varied conditions on select categories of bidders. Consistency of opportunity demands that the obligations associated with an auctioned licence should be equivalent across all bidders.
- ***If spectrum were identified specifically for new entrants, would it be desirable that they be required to serve all regions of Canada? If such a policy were desirable, how might this objective be achieved? (section 4.3.2)***
48. TELUS believes that new entrant participation in this auction is not in the public interest. There are simply not enough spectrum resources being distributed to accommodate both new entrants and the needs of existing licensees to support growth and continued innovation.
- ***If new entrants were eligible to participate in the auction but with no spectrum specifically identified for them, would it be desirable that they be required to serve all regions of Canada? If such a policy were desirable, how might this objective be achieved? (section 4.3.2)***
49. TELUS believes that new entrant participation in this auction is not in the public interest. There are simply not enough spectrum resources being distributed to

accommodate both new entrants and the needs of existing licensees to support growth and continued innovation.

- ***Industry Canada seeks comments on accelerating the existing transition provisions for all licensed PCS spectrum (1850-1910/1930-1990 MHz) so that Canadians, wherever they live, can benefit from new PCS services over a relatively short implementation period. (section 4.4)***

50. TELUS, in accordance with Industry Canada's policy to clear spectrum for PCS services over the past four years, has replaced or removed virtually all fixed microwave systems in the band 1850-1900 MHz operating near major communities that represent prime market areas for PCS. For these areas, TELUS supports and does not foresee any difficulty in meeting, the proposed accelerated transition provisions of Section 4.4 of the Consultation document. The remaining TELUS 2 GHz systems are located primarily in northern British Columbia and Alberta, and serve remote communities, that would not be considered prime market opportunities for PCS. Many of these radio hops are located near highways. It should be noted however, that for coverage of highway corridors in remote areas, the 800 MHz band is generally preferred, both by TELUS and by PCS operators via roaming agreements with TELUS, as an alternative to building less efficient cell sites at 2 GHz. Accordingly, TELUS proposes that the Department, when establishing geographic areas for a 2002 notification to cease fixed operations within one year, exclude such remote areas from the provisions of the accelerated transition policy.

- ***The Department also seeks comment on whether it would be appropriate, and to what extent, that similar accelerated provisions apply to the license-exempt PCS spectrum in the sub-band 1910-1930 MHz. (section 4.4)***

51. SP-1910 provides minimum notification periods for displacement of fixed systems users in 1900-1910 MHz to accommodate unlicensed PCS devices. The notification periods are 2 years and 3 years for non-nomadic and nomadic devices respectively. It is TELUS' view that most non-nomadic unlicensed PCS systems will be deployed in the same prime market areas as licensed PCS systems. The proposed accelerated provisions for displacing fixed systems to accommodate licensed PCS systems could be applied to non-nomadic unlicensed PCS systems in these prime market areas, where TELUS has already removed all 2 GHz fixed systems. In remote areas, where TELUS still operates fixed 2 GHz systems, the existing 2-year notification period specified in SP-1910 should be retained.

52. Nomadic unlicensed PCS devices may be problematic, even in remote areas. At this time there is very little known about the nature of these devices, how and where they will be used. For example, a vehicular application for use along highway corridors could impact existing fixed 2 GHz systems that serve remote communities. As no interference studies have yet been undertaken by the RABC, it would be premature to consider an accelerated displacement procedure to accommodate these devices.

TELUS recommends that the existing provision for a 3-year notification period of SP-1910 be retained.

- ***Licence Term and Tenure (sections 4.5 and 6.1.1)***

53. TELUS supports the Department's proposal that Licences have a ten-year term and a high expectation of renewal. This is consistent with the Framework for Spectrum Auctions and appropriate from a business planning perspective. TELUS, in this context, reminds the Department of our previous submissions respecting renewal fees. TELUS has consistently suggested that these fees cover only the administrative costs related to that specific spectrum block.

54. On the subject of licence conditions generally, TELUS urges to the Department to refrain applying excessive and onerous terms and obligations on newly licensed spectrum such that the new spectrum carries the historical encumbrances of the old. To do so would be inconsistent with a market-based method of distribution and the flexibility in post-auction dealings involving the acquired spectrum.

- ***Transferability and Divisibility (sections 4.6 and 6.1.2)***

55. TELUS supports the Department's proposals in respect of transferability and divisibility of licenses. TELUS commends the Department on its recognition that a market-based approach to the reallocation of spectrum licenses ensures optimal use of the underlying spectrum resources. TELUS has always advocated that a license holder should be granted the maximum flexibility to transfer and sub-divide their license. The development of an effective and efficient secondary market depends on this flexibility.

- ***Displacement of Microwave Existing players (section 6.1.5)***

56. TELUS, as a PCS service provider, currently complies with the transition policy and relocation procedures outlined in CPC-2-109 for displacement of existing 2 GHz fixed users. TELUS supports the Department's proposal of Section 4.4 of its Consultation document for accelerating the transition process, subject to our proposal stated earlier with respect to fixed systems operating in non-prime PCS market areas.

- ***Radio Station Installations (section 6.1.6)***

57. TELUS is prepared to operate its PCS Network in accordance with the technical requirements specified in RSS-133 and SRSP 510. We are pleased to note that the Department in RSS-133, Section 5.11 recognizes that the Industry operates in an environment of rapid technology evolution and is prepared to evaluate on a case-by-case basis, the use of new technologies that may not conform to existing standards.

- ***Lawful Intercept (section 6.2.11)***

58. These standards may be amended from time to time following consultation with the Solicitor General of Canada and licensees. TELUS suggests the Department consult with both licensees and the Solicitor General to address issues related to technological developments which may inhibit continuing compliance.

- ***Research and Development (section 6.2.12)***

59. TELUS considers that this should not be a condition of licence. TELUS believes competition provides the necessary incentive to innovate.

- ***Auction Design (section 7)***

60. TELUS supports the Department's proposal to use a simultaneous multiple-round auction format, especially one run electronically and allowing the participation by bidders remotely.

61. TELUS favours the proposal by the Department to impose an additional penalty of at least 2% of the withdrawn bid amount for each standing high bid withdrawn after a bidder has withdrawn bids in more than five different rounds of the auction. This penalty was sufficient deterrent in the recently completed 24/38 GHz auction and should prove likewise in the present auction.

62. With respect to bid increments the Department is considering the use of a mechanism which would set the bid increment for each license in relation to recent levels of bidding activity for that license. TELUS supports this concept as it will assist in the efficiency of the auction process to the benefit of all participants by ensuring that those licenses that are most active will find their final value more quickly while allowing the less sought after licenses to find their final value without impeding the more active areas.

63. TELUS feels that the Department should ensure that bidders are given additional waivers should the pace of the auction go beyond five rounds per day.

64. The Consultation document outlines the advantages and disadvantages of non-discretionary bidding. TELUS is not persuaded that the advantages outlined outweigh the disadvantages. The use of single increment non-discretionary bidding introduces the time-stamp problem. If there are widely varying valuations on each license the time stamp problem may not affect the outcome on a specific license. However given the auction design and eligibility point rules, achieving or not achieving high bid status can affect bidding strategy, particularly as a bidder approaches their budgetary limits. The ability to gain high bid status allows these bidders to keep their eligibility points an additional round. This allows the bidder an extra round to assess activity on various licenses before they have to either re-allocate or give up these eligibility points, perhaps prematurely. TELUS, during the recently

completed 24/38 GHz Spectrum Auction found that there appears to be an inherent latency in the network due to distance. Regardless of computer speed, if two bids were entered simultaneously, the one at greater distance would be at a disadvantage. With regard to time stamp there is also a software design issue. When a bidder either is topping an existing high bid or not fully using all eligibility points they are required to navigate an additional screen that tells them this. This eliminates any possibility of being standing high bid through the time stamp rule. If the Department was to continue with the time stamp rule then they should also provide an official system clock on their web site. In any event TELUS supports, for the reasons outlined in the Consultation document, the Department's use of multiple increment bidding.

65. TELUS supports ensuring that the identities of all bidders, the licenses on which they are qualified to bid, and their initial eligibility levels be made public prior to the commencement of bidding. We also support the proposal to ensure that full information on all bids placed by all bidders be made available after each round.

66. TELUS supports the Department in its proposal to re-auction, within a reasonable period of time, any licenses that remain unassigned after the auction.

- *Opening Bids (section 8.1)*

67. In the Consultation Document the Department seeks comment on the absolute and relative level of proposed opening bids. The Consultation Document describes the proposed absolute levels as being conceptually linked to the revenues generated by licenses for similar spectrum in the 800 MHz and 2 GHz PCS bands. Recognizing that the Department "needs a place to start," TELUS does not object to the absolute level of proposed opening bids.

68. With respect to the relative levels of opening bids, although actual experience will be the final arbiter, they appear to be correct.

- *Pre-Auction Deposits (section 8.2)*

69. TELUS supports the levels of pre-auction deposits proposed by the Department.

PART IV

Summary and Conclusion

70. TELUS appreciates the opportunity to participate in the present Consultation. TELUS considers that consultations such as these can serve to give the Department valuable insights into areas of concern within the industry as well as issues of importance to Canadian consumers.

71. It was clear from the Department's analysis of issues pertinent to the release of new wireless spectrum that the Department recognizes the competing tensions between its

responsibilities to the existing licensees and its desire to more fully employ market forces in the distribution of spectrum. TELUS submits that reconciliation of this tension can best be achieved through using this time of transition to ensure the desired end state of competitive markets among strong, national, facilities-based service providers. As substantial spectral resources are required to support the expansion of the current market as well as the evolution into advanced wireless applications such as Internet access and higher speed data, the limited spectrum to be made available in this round cannot serve to support both the entry of new licensees as well as the innovations the market demands.

72. TELUS submits that policies for this time of transition must be of a nature to facilitate the transformation of the regional licensees into national ones while permitting the existing national licensees the opportunity to satisfy their spectrum needs regionally. This transitional step better prepares the market as it moves from one characterized by limited and controlled distribution of spectrum resources to one in which new and existing spectrum resources alike are acquired and traded in fully open markets. TELUS encourages the Department to recognize that this distribution of spectrum will create a transitional market structure and to determine that what is really needed at this time, is a stabilization of the market. TELUS has described two approaches that could achieve the necessary stabilization, and invites the Department to consider these approaches as reasonable vehicles for the achievement of its goals for the transition.

All of which is respectfully submitted this 1st day of March, 2000