



**TELUS Mobility**  
Floor 16  
200 Consilium Place  
Scarborough, Ontario  
Canada M1H 3J3

**Ed Prior**  
Director,  
Government & Regulatory Affairs

416 279 7523 Telephone  
416 279 3166 Facsimile  
ed.prior@telus.com

April 30, 2002

Michael Helm  
Director General  
Telecommunications Policy Branch  
Room 1642 – B  
Industry Canada  
300 Slater Street  
Ottawa, Ontario  
K1A 0C8

Dear Mr. Helm:

**Subject: Canada Gazette Notice DGTP-001-02 – Consultation on Revisions to Spectrum Utilization Policies in the 3-30 GHz Frequency Range**

## **1. Introduction**

TELUS is pleased to file the following comments in response to the Gazette Notice No. DGTP-001-02 – *Consultation on Revisions to the Spectrum Utilization Policies in the 3-30 GHz Frequency Range*, as published in the *Canada Gazette, Part I*, dated January 19, 2002. TELUS participated in the drafting of the response to this Gazette Notice by the Radio Advisory Board of Canada (RABC) and generally supports that response. There are instances in that response where the Board was unable to reach consensus, in these instances TELUS supports the positions taken by the Fixed Service.

### **1.1 Executive Summary**

- Given the heavy use of the C bands (3500-4200 MHz and 5925-6425 MHz), particularly the 6 GHz band (5925-6425 MHz), by digital radio systems in the fixed service, TELUS strongly suggests that it is not practical to migrate the conventional C band from co-primary fixed service (FS) and fixed-satellite service (FSS) to a primary designation for FSS at this time.
- The proposals to allow for the introduction of domestic fixed-satellite services in the allotment C and Ku bands, in particular the Upper 6 GHz band (6725-7075 MHz) and the 11 GHz band (10.7-11.7 GHz), should not be permitted due to the adverse impact on the growth of FS systems in these bands. The spectrum utilization policies in the allotment bands should be harmonized with those of the FCC, which do not permit domestic FSS services.

- Opportunities for improvement in priority use communication capabilities requiring access to spectrum in the frequency range 3-30 GHz, particularly harmonization with similar FCC initiatives on new “homeland” security policy priorities should be given urgent consideration.
- The spectrum utilization policies for the proposed fixed services in the Ka bands (18/28 GHz) should be harmonized with those of the FCC, in view of similar service requirements and potential equipment cost advantages through economies of scale.
- TELUS currently has a large number of 18 GHz FS systems operating in bands 18.58-18.82 and 18.92-19.16 GHz in accordance with SRSP-318.5. When finalizing the policy proposals which emphasize the designation for FSS systems in the bands 18.58-18.8 GHz and 18.8-19.3 GHz, the Department is strongly urged to ensure the continued protection of our FS systems on a co-primary basis, either on a permanent basis or at a minimum for a 10 year period. This protection would be similar to the protection period given by the FCC to the FS systems operating in their corresponding bands.
- TELUS supports the harmonization of spectrum utilization policy for the proposed multimedia fixed-satellite services in the Ka bands (19.7-20.2/29.5-30.2 GHz) with that of the FCC in view of common service coverage areas involving both Canada and the US.
- The use of the Department’s “soft-partitioning” approach involving the sharing of a band by a number of services is strongly supported especially where some measure of exclusivity of operation by one service is desirable.

## **2. Detailed Comments – *keyed to the paragraphs in the consultation paper.***

### **2.0 Discussions**

In supporting the Department’s assessment that the need for broadband access and advanced telecommunications services to consumers and business are continuing to grow globally, TELUS would like to add that demand for spectrum has increased dramatically as a result of explosive growth in wireless communications.

TELUS notes that similar deliberations are currently taking place in the US on the development of policies for the allocation/designation of spectrum for use by specific services in the 3 to 30 GHz frequency range. TELUS urges the Department to ensure that the spectrum utilization policies in the frequency bands under discussion in the paper would be generally harmonized with those of the FCC. This is particularly important in those cases where the service needs are same, where the service coverage extends to both Canada and the US, and where potential equipment cost advantages may be realized through economies of scale.

## 2.1 High Density Deployments

In the case of high-density deployments in fixed service frequency bands, TELUS recommends that the Department continue to harmonize the spectrum utilization policies for these bands, to the extent desirable, with those of the FCC. This would coincide with what has already been done in the 2300 MHz (WCS), 2.5 GHz (MCS), 24 GHz, 28 GHz and 38 GHz bands.

Harmonization in these bands was felt necessary because of common service requirements, potential equipment cost advantages through economies of scale and creation of opportunities for Canadian manufacturers. Such harmonization is generally desirable but not always possible as in the case of FWA systems in the 3.5 GHz band. In this case the FCC has yet to finalize their FWA policy and TELUS supported the Department's initiatives to harmonize instead with similar FWA allocations in a number of other countries. This allowed the Department to meet immediate FWA service needs in Canada, and at the same time to potentially take advantage of equipment economies of scale benefits. In spite of this exception TELUS remains of the view that geographic harmonization benefits Canadian industry and consumers and should be pursued as a first objective.

In the case of multimedia satellites in the fixed-satellite service (FSS) as currently allocated in portions of the Ku and Ka bands, TELUS recommends that the spectrum utilization policies for such FSS systems should be fully harmonized with those of the FCC. This is because the service coverage areas of such FSS satellites will likely include both Canada and the US.

TELUS supports the Department's proposed "soft partitioning" approach in cases where some measure of exclusivity of operation by one service is desirable. Such an approach, besides retaining more flexibility to achieve the desired level of exclusivity, will also result in more efficient use of spectrum.

## 2.2 Low and Medium Capacity Fixed Systems

*(i) The Department's proposal: For these reasons, this document will include proposals in many cases to allow for the accommodation of all capacities within the same band.*

TELUS generally agrees with the Department's assessment that there is increased pressure to find new bands to support LC and MC systems. However, each proposal to allow for the accommodation of all capacities within the same band would need to be examined on a band by band basis to ensure that there are no adverse impacts.

In the 4 GHz and 6 GHz bands, for example, which are shared on a co-primary basis by the FS and the FSS, the proposal for accommodating all capacities in each band will not work if the sharing approach is changed from current "soft partitioning" to a first-come, first-served basis.

In another case where MC and HC deployments currently heavily use a band, such as in the upper 6 GHz band, the addition of LC designation of spectrum would have an adverse impact on the growth of MC/HC deployments. In this particular band such flexibility should not be employed.

However, where the nature of the type of deployments has dramatically altered, for example the lack of heavy-route and high capacity radio systems needs in the upper 4 GHz and 8 GHz digital radio bands, the proposed flexibility of allowing LC systems would appear to be beneficial.

- (ii) ***The Department seeks comments on the suitability of including traffic rates of less than 1.544 Mb/s in the definition of low capacity systems for microwave bands above 1 GHz.***

TELUS sees no requirement for the provision of fractional T1 links in microwave bands above 1 GHz. Therefore, TELUS suggests that there is no need to change the definition of low capacity systems as currently defined in SP 1-20 GHz. Furthermore, the current note in SP 1-20 GHz stating that “Smaller system capacities are also permitted in LC bands on a case-by-case basis” is adequate to meet any unforeseen demand for traffic rates less than 1.544 Mb/s. It should be noted that FCC Part 101 rules do not permit the use of traffic rates less than DS-1 in all radio systems employing digital modulation and operating below 19.7 GHz.

## **2.3 Fixed-Satellite Service**

TELUS draws the Department’s attention to the FCC Report and Order (FCC 02-23; ET Docket No. 98-142) released on February 7, 2002 making new spectrum available on a co-primary basis to the FSS. These FSS allocations will provide necessary feeder link spectrum for a number of NGSO MSS systems. Specifically, the FCC has allocated the bands 5091-5250 MHz and 15.43-15.63 GHz for Earth-to-space transmissions (uplinks) and the band 6700-7025 MHz for space-to-Earth transmissions (downlinks). The use of these FSS allocations is limited to feeder links for 2 GHz MSS and Big LEO MSS service links. TELUS will be making reference to these FSS allocations in response to the Department’s proposals as appropriate.

### **2.3.1 Canadian Domestic Footnote C16A**

It is important that due consideration be given to maintaining full harmonization of spectrum utilization policies in the allotment C and Ku bands with those of the FCC. The current Canadian sharing approach between FS and FSS in C16A is based on a soft partitioning approach, i.e. sharing between FS and FSS is based on the deployment of a few FSS earth stations. The FCC has a similar sharing approach of permitting a few FSS gateway stations, but not permitting the deployment of domestic FSS services in the allotment C and Ku bands. Therefore, in line with similar FCC policy, TELUS does not support any relaxation of current policies that restrict the deployment of domestic FSS services in the allotment C and Ku bands. TELUS is opposed to the Department’s proposals to allow the deployment of FSS earth stations on a co-ordinated first-come, first-served basis with the fixed service in the allotment C and Ku bands. This is primarily because of the adverse impact such earth station deployments will have on the deployment and growth of fixed service radio systems. It should further noted that due to the WTO agreement, there will be significantly more deployment of international FSS earth stations if such a proposal were adopted. This would seriously and negatively impact on FS systems growth

In view of the proposed spectrum utilization policies for FS and FSS in the Ka band in this consultation paper, it would appear that there is no further need to state the allocation and designation policies for Ka bands in domestic footnote C16A

Therefore, domestic footnote C16A should be revised as follows:

**C16A (CAN-00)** The use of spectrum for fixed-satellite services in the bands 4500-4800 MHz, and 10.7-11.45 GHz and ~~17.8-19.7 GHz~~ in the space-to-Earth direction and 6725-7025 MHz, and 12.75-13.25 GHz, and ~~28.35-29.5 GHz~~ in the Earth-to-space direction is presently limited to large antenna earth stations located in areas outside of urban centres. Domestic implementation of fixed-satellite services in these bands will be governed by spectrum utilization policies that will be formulated in the future. These policies will consider existing services, ITU Radio Regulations and operating criteria for sharing between services and systems.

### 2.3.2 Domestic Co-ordination Considerations

TELUS draws the Department's attention to the FCC's Second Report and Order (FCC 02-17; IB Docket No. 00-203) released on January 30, 2002. This Report and Order terminates the request for a ruling to require partial-band licensing of earth stations in the fixed-satellite service in bands shared on a primary basis with the terrestrial fixed service. The FCC concluded that the record in the proceeding provided an insufficient basis to impose the proposed conditions on the FSS earth stations in bands that are shared on a co-primary basis with fixed service operations.

TELUS notes that the partial-band co-ordination issue raised in the FCC's proceeding is a non-issue in Canada. The co-ordination procedure specified in RSP-114, which protects only the assigned frequency and the direction for the earth station, has thus far proven satisfactory to the operators of both earth stations and fixed stations. Therefore, TELUS does not see any need to provide comment on the partial band question raised in various shared bands in the consultation paper.

### 2.4 Priority Use

TELUS suggests that the Department undertake a specific consultation with industry on the subject of Priority Use. Priority Use can mean exclusive use of a band in a given geographic area or exclusive use of a portion of a commercial service in a given area for a given time. TELUS is more supportive of the latter approach. We also recognize the benefits of cross border harmonization. There is the potential to harmonize with the FCC's actions on new "homeland" security policy priorities, particularly the allocations and designations of spectrum in the 3-30 GHz range. It should be noted that the FCC has recently acted on the following two items in support of public safety, details of which are discussed elsewhere in this submission:

- (i) FCC's allocation of 50 MHz of spectrum in the 4940-4950 MHz band for fixed and mobile services and designating this band for use in support of public safety.
- (ii) FCC order permitting the marketing and operation of certain types of new licence-exempt devices under Part 15 rules incorporating ultra-wideband (UWB) technology. The UWB technology has the potential to provide a vast array of new applications for public safety, business and consumers, such as radar imaging of

objects buried under the ground or behind walls and short-range, high-speed data transmissions.

### **3.0 – 3.2 The C Band: Fixed-Satellite Service and Fixed Service Sharing Issues**

The Consultation document notes that Telesat has requested the Department consider a transition of the conventional C band allocation from co-primary FS and FSS to a primary designation for FSS. The rationale appears to be that the exclusive operation by FSS in the C band would improve the economics of satellite services. Further, Telesat has emphasized its primary requirement to connect rural and remote communities with medium to high capacity transport links for Internet service where such access cannot be provided by terrestrial means.

While the use, by the FS, of the lower 4 GHz band for heavy-route long haul microwave systems has declined substantially over the years with the advent of inter-city fibre optic systems, the FS continues to make extensive use of the lower 6 GHz band (5915-6425 MHz) and the upper 6 GHz band (6425-6930 MHz) fixed point-to-point bands. The FS expects continued growth within each of these bands, including expansion of existing systems, deployment of new systems, and the relocation of systems to other routes. TELUS is not planning to retire any systems operating in these bands for the foreseeable future.

Our ability to provide reliable service to high-cost serving areas depends in part on long-term consistency in the Department's spectrum utilization policies within these bands. Changes in policies related to the above noted bands will adversely affect our ability to maintain and improve telecommunications services in remote areas.

In fact the lower 6 GHz band appears to be the heaviest FS band in use in Canada. Therefore, the Telesat proposal for transition of the conventional C band from co-primary FS and FSS to a primary designation for FSS is impractical under the present conditions and should not be contemplated at this time.

Currently, FS/FSS sharing of the C bands is based on the "soft partitioning" approach, i.e. the C bands are used intensely by the FS but lightly by the FSS. The lighter use by the FSS occurs due to the Department's rule that requires 6/4 GHz earth stations to be located away from urban areas and away from heavy-route long haul 6/4 GHz microwave facilities. Given the diminished requirement for heavy route long-haul microwave facilities particularly in the 4 GHz band, Telesat has suggested that the Department's rule restricting the location of 6/4 GHz earth stations could be relaxed. This relaxation would allow full flexibility in the deployment of FSS earth stations on a coordinated first-come, first-served basis with the FS without regard to location. This relaxation of the FSS location rule would also invite significantly increased participation from the international 6/4 GHz FSS systems in the domestic FSS market in Canada thereby affecting the growth of 6/4 GHz terrestrial systems around urban areas. This would make the problem for the fixed service even worse.

TELUS, along with others in the FS community has a very large investment in systems in the lower 6 GHz band that would be needlessly harmed and whose growth would be needlessly inhibited by such a relaxation in the current rules. TELUS suggests that if Telesat is intending to provide medium/high capacity FSS facilities through ubiquitously deployed FSS earth stations,

then the use of 6/4 GHz FSS systems may not provide a practicable nor equitable solution. Instead, FSS systems making use of the exclusive Ku and Ka bands for FSS systems would seem to be in a better proposition to offer a more cost-competitive service with the capability of ubiquitous deployment without the interference concerns existing in the lower 6 GHz band. TELUS urges the Department not to relax the current rules in these bands.

### **3.2.1 Conventional C bands 3700-4200 MHz and 5925-6425 MHz**

**The Department seeks comments on the following issues, potential directions and public interest:**

- (i) *whether to migrate the conventional C band from co-primary FS and FSS to a primary designation for fixed-satellite service (discussed in section 3.1);*

TELUS reminds the Department that the Lower 6 GHz band is currently the heaviest used of all FS bands in Canada. Although a large number of Lower 4 GHz and Lower 6 GHz radio systems have been retired and more are planned to be retired in the near future, a large number of both Lower 4 GHz and Lower 6 GHz radio systems continue to be used. Many of these remaining systems will be retained indefinitely, while some growth is expected in some regions. Therefore, in view of the continued use of a large number of Lower 4 GHz and Lower 6 GHz radio systems, the Department is urged not to make any change in the allocation status for the fixed service in C bands at this time. However, this should not preclude the Department from periodically reviewing the use of the C bands by both FS and FSS users.

- (ii) *whether to consider segregation between fixed and fixed-satellite services in either mutually exclusive geographic areas, or for mutually exclusive portions of the frequency bands (discussed in section 3.1);*

The Department's policy of protecting the Lower 4 GHz and Lower 6 GHz radio bands for use by long-haul heavy-route microwave systems has served the country well in the development of the backbone telecommunications networks. This policy has required that Telesat's 6/4 GHz earth stations be located away from long-haul microwave routes and urban areas. However, with the revision of licensing procedure for earth stations (RSP-114) involving the use of frequency coordination with terrestrial microwave stations on a partial-band and partial-arc basis, it has now become feasible to establish 6/4 GHz earth stations (Teleports) in metropolitan areas.

As outlined above, TELUS does not support a change in the designation nor the current policy for this band. If the Department requires additional flexibility, however, some form of segregation into mutually exclusive portions of the frequency bands would be much preferable to a geographic approach.

- (iii) *whether to designate additional low capacity and medium capacity spectrum for fixed service in either or both bands and to remove the traffic growth requirements in all or part of each band in order to facilitate new fixed service applications (discussed in section 3.2);*

TELUS believes that the following factors should be taken into consideration for the designation of additional LC and MC spectrum for fixed service in the 4 GHz and 6 GHz bands:

- Sufficient MC spectrum will be needed to accommodate the possible displacement of some 340 FS frequency assignments in the bands 1990-2025/2160-2200 MHz by the introduction of 2 GHz MSS systems. Spectrum is also required to accommodate the possible displacement of some 216 FS frequency assignments in the bands 2305-2320/2345-2360 MHz by the introduction of 2.3 GHz WCS systems.
- The upper 6 GHz band, which is being heavily used in the provision of MC and HC facilities for PCS back-haul, may not have adequate capacity left to meet the growth requirements of PCS back-haul as well as the requirements for the upcoming 3G back-hauls. Furthermore, given the FCC decision to permit the use of the upper 6GHz band for feeder links for the 2 GHz MSS systems, if the Department permits similar use in Canada, then the use of the upper 6 GHz band by the FS will be further constrained.
- The Department's proposal to add mobile allocation to the band 5850-5925 MHz and to designate this 75 MHz of spectrum to accommodate ITS applications will require the designation of additional LC/MC spectrum to compensate for the loss of LC/MC spectrum currently designated in this band.
- Both 6/4 GHz C-band and 14/12 GHz Ku-band are used in Canada and the U.S. for television distribution systems. A very large number of TVRO terminals are used to receive these signals in both countries. Since the terrestrial 4 GHz band in the US is also used for television STL applications, the FCC policy restricting the 4 GHz band's use to a 20 MHz channelling plan (equivalent to the Department's HC designation) has remained unchanged.
- Telesat's stated requirement to connect rural and remote communities with medium to high capacity transport links for Internet service where such access cannot be provided by terrestrial means, as discussed in Section 3.1 of the consultation paper

Therefore, taking into account the above mentioned factors, the Department is requested to designate additional LC and MC spectrum as follows:

**(i) 6 GHz Band (5925-6425 MHz)**

- Designate MC spectrum throughout the 6 GHz band;
  - for the accommodation of FS systems displaced by 2 GHz MSS and 2.3 GHz WCS systems;
  - for compensation of the loss of MC spectrum currently designated in the 5850-5915 MHz band; and
  - for other MC applications, such as back-hauls for PCS and 3 G systems.

- Designate LC spectrum in a 40+40 MHz portion of the 6 GHz band to compensate for the loss of LC spectrum currently designated in the 5850-5915 MHz band.

**(ii) 4 GHz Band (3700-4200 MHz)**

- No change in the current designation of HC spectrum in line with similar FCC policy.
- However, should the use of the 6/4 GHz FSS systems for television distribution systems reduce significantly, then provide additional designations of LC and MC spectrum similar to the 6 GHz band case, as described above.

It must be borne in mind that the designation of high capacity use by the fixed service in the Lower 4 GHz and Lower 6 GHz bands, together with the associated traffic growth requirements found in the respective SRSPs for these bands was to support the heavy-route traffic requirements for both the Lower 4 GHz and Lower 6 GHz long-haul and medium-haul radio systems. In view of the continued use of the Lower 4 GHz and Lower 6 GHz radio systems, but with a greatly diminished requirements for heavy route long-haul radio facilities, the justification for retaining the traffic growth requirements is no longer present. Therefore, the Department is urged to remove the traffic growth requirements of both the Lower 4 GHz and the Lower 6 GHz radio systems in SRSP-303.7 and SRSP-305.9.

**(iv) whether to consider coordination requirements similar to the FCC proposal for partial-band licensing of earth stations in the fixed-satellite service in bands shared on a primary basis with the terrestrial-fixed service (discussed in section 2.3.2).**

As discussed in Section 2.3.2 of this submission, the FCC has recently withdrawn its proposal for partial-band licensing of earth stations. Furthermore, the partial-band co-ordination procedure, which is already included in RSP-114, is a non-issue in Canada.

**3.2.2 Allotment C bands 4500-4800 MHz and 6725-7075 MHz**

The Department seeks comments on the following issues, potential directions and the public interest:

- (I) *to provide full flexibility for the deployment of fixed-satellite service earth stations in the allotment C bands in Canada on a coordinated first-come, first-served basis with the fixed service in order to stimulate the development of the available Canadian orbital positions and advance competition in satellite offerings, or to retain the application of domestic footnote C16A for FSS in the bands;***

The allotment C bands are currently used by a variety of fixed service radio systems. The 4500-4800 MHz band portion is used by the upper 4 GHz (4575-4705 MHz/4735-4895 MHz) heavy route HC radio systems. MC and HC radio systems, STL and TV Pick-ups use the 6725-7075 MHz band portion.

While the use of the 4500-4800 MHz band portion of the upper 4 GHz band is diminishing, the 6725-6930 MHz band portion of the upper 6 GHz FS band (6425-6930 MHz) is being heavily used by medium and high capacity fixed systems. Therefore, allowing full flexibility in the

deployment of FSS earth stations in the allotment C bands will adversely impact the growth of the FS bands, particularly the upper 6 GHz band which is currently being heavily used in the deployment of PCS backhubs. Consequently, TELUS suggests that the sharing of the allotment C bands with FS should continue to be based on the Department's "soft partitioning" approach as outlined in domestic footnote C16A.

In this context it should be noted that the FCC has designated the allotment C band 4500-4800 MHz/6725-7025 MHz as an internationally planned band which is currently lightly used in the US. Further, as discussed in Section 2.3 of this submission, the FCC has recently allocated the band 6700-7025 MHz for space-to-Earth transmissions (downlinks) and for use by NGSO FSS feeder link earth stations (gateways), which are expected to be few and likely to be located in remote areas. Therefore, it would appear that the FCC is also using a "soft partitioning" approach in permitting the sharing of their heavily used upper 6 GHz FS band (6525-6875 MHz) with a limited number of FSS gateway earth stations.

Consequently, in view of the heavy FS use in the upper 6 GHz band, TELUS does not support the Department's proposal "to provide full flexibility for the deployment of FSS earth stations in the allotment C bands in Canada on a coordinated first-come, first-served basis with the fixed service". Therefore, it is recommended that the application of domestic footnote C16A for FSS use in the allotment C bands be retained.

**(ii) *whether to designate additional low capacity spectrum for fixed service in all or part of the band 6425-6930 MHz;***

The Upper 6 GHz band is currently heavily used by the FS community in the provision of medium capacity and high capacity radio systems, particularly in the deployment of backhaul facilities for PCS. The proposal for designating additional low capacity spectrum for the fixed service in all or part of the Upper 6 GHz band would adversely affect the growth of both the medium and high capacity systems in this band. Therefore, TELUS does not support the proposal for additional designation of low capacity spectrum in the Upper 6 GHz band (6425-6930 MHz). TELUS recommends that the Department therefore not designate LC spectrum I this band.

**(iii) *whether to designate additional low capacity and medium capacity spectrum for fixed service and to remove the traffic growth requirements in the band 4500-4800 MHz in order to facilitate new fixed-service applications;***

**OR**

***whether to add a mobile service allocation to the band 4500-4800 MHz, with fixed and mobile services restricted to use by the Government of Canada (see section 3.2.3 below);***

Although a large number of 4545-4705 MHz/4735-4895 MHz high capacity radio systems have already been retired, a significant number of these high capacity radio systems are planned to be retained indefinitely. While a majority of these systems have no growth plans, some of these systems could also be reused in other routes. In view of the diminishing use of this band for

heavy route traffic, the current traffic growth requirement as specified in SRSP-304.5 should be removed. Also, in view of the current light usage of this band and in order to facilitate new fixed service applications, it is recommended that additional low capacity and medium capacity spectrum should be designated for fixed service use in this band.

Regarding the proposal for adding a mobile service allocation in the 4500-4800 MHz band for Government of Canada use, TELUS has no objections to such an allocation as long as its use would not cause any interference to fixed service systems operating in this band.

*(iv) based on the response to item (iii), whether to consider coordination requirements similar to the approach described in the FCC proposal for partial-band licensing of earth stations in the fixed-satellite service in bands shared on a primary basis with the terrestrial-fixed service discussed in section 2.3.2.*

As explained in Section 2.3.2 of this submission, comment is no longer required on the issue of partial-band licensing of earth stations in the fixed-satellite service in bands shared on a primary basis with the terrestrial fixed service.

### **3.2.3 Additional Proposal 4400-4990 MHz**

*The Department proposes to realign the designation of the spectrum restricted to use by the Government of Canada to the bands 4400-4500 MHz and 4800-4990 MHz. Based on the response to this proposal and those described in the previous section, the Department will consider the realignment of the service use in the band 4500-4800 MHz. No specific change is proposed at this time for the addition of wireless communications services to the band 4940-4990 MHz.*

Regarding the Department's proposal to realign the designation of spectrum restricted to use by the Government of Canada to the bands 4400-4500 MHz and 4800-3990 MHz, comments are provided as follows:

- TELUS has no objection to the Department's proposal. However, TELUS would request that due consideration be given for grandfathering the continued use of existing fixed systems operating in the sub-band 4800-4895 MHz.
- The FCC has recently adopted an Order allocating 50 MHz of spectrum in the 4940-4990 MHz band for fixed and mobile services, and designating the band for use in support of public safety (FCC 02-47 released on February 27, 2002). This allocation and designation will provide public safety users with additional spectrum to support new broadband applications, such as high-speed digital technologies and wireless local area networks for incident scene management. The spectrum can also support dispatch operations and vehicular or personal communications. Given that the FCC's action is related to the new priorities focusing on homeland security, the potential for harmonization of this band with the US should be taken into consideration in the Department's proposal.

### 4.3 10.7-11.7 GHz

The Department seeks comments on the following issues, potential directions and the public interest:

- (i) *whether to provide full flexibility for the deployment of fixed-satellite service earth stations in the band 10.7-11.7 GHz on a coordinated first-come-first-served basis with the fixed service in order to stimulate the development of the available Canadian orbital positions and advance competition in satellite offerings or to retain the domestic footnote C16A for FSS in the band and extend its application to the entire band 10.7-11.7 GHz;*

In the U.S. the FCC has addressed the sharing issues between FS systems and GSO FSS and NGSO FSS earth stations operating in the band 10.7-11.7 GHz in their First Report and Order and Further Notice of Proposed Rule Making released on December 8, 2000 (FCC 00-418). Their decision is that the expanded use of this band should not be permitted. The FCC believes that the FS growth could be significantly inhibited if the Commission were to authorize domestic and international GSO FSS use of the entire band because of the large number of GSO earth stations that would likely be deployed. Accordingly, the FCC decided to continue to limit the operation of GSO FSS earth stations to the 10.95-11.2 GHz and 11.45-11.7 GHz portions of the band for international systems only. Further, the FCC also decided to limit domestic and international FSS use of the entire 10.7-11.7 GHz band to NGSO FSS gateways.

In view of the above FCC decision on the sharing issues between FS systems and GSO FSS earth stations, and for the reasons given in that decision, TELUS believes that it would be premature for the Department to provide full flexibility for the deployment of FSS earth stations in the band 10.7-11.7 GHz on a co-ordinated first-come, first-served basis with the fixed service. Instead TELUS recommends that the current provisions in footnote C16A be retained.

- (ii) *whether to consider coordination requirements similar to the approach described in the FCC proposal for partial-band licensing of earth stations in the fixed-satellite service in bands shared on a primary basis with the terrestrial-fixed service discussed in section 2.3.2; and*

As discussed in Section 2.3.2 of this submission, no comment is required.

- (iii) *whether there is any action that could or should be taken regarding MSS use of FSS transmissions for two-way messaging and position tracking satellite systems.*

TELUS has no comment on this FSS operation.

#### 4.4 12.7-13.25 GHz

*The Department seeks comments on the following issues, potential directions and the public interest:*

- (i) *whether to provide full flexibility for the deployment of fixed-satellite service earth stations in the band 12.7-13.25 GHz in Canada on a coordinated first-come, first-served basis with the fixed service (point-to-multipoint) in order to stimulate the development of the available Canadian orbital positions and advance competition in satellite offerings or to retain the application of domestic footnote C16A for FSS in the band; and*

TELUS has no comment on this proposal.

- (ii) *whether to consider coordination requirements similar to the approach described in the FCC proposal for partial-band licensing of earth stations in the fixed-satellite service in bands shared on a primary basis with the terrestrial-fixed service discussed in section 2.3.2.*

As discussed in Section 2.3.2 of this submission, no comment is required.

*The Department also solicits comments on:*

- (i) *the types of point-to-multipoint fixed system deployments which will continue to use the spectrum in the band 12.7-13.25 GHz; and*

TELUS has no comment.

- (ii) *the kind of new point-to-multipoint applications which are envisaged for this band, for example, could this spectrum provide broadband wireless access or wireless cable distribution to the home.*

TELUS has no specific comment regarding applications but recommends that the Department remain as flexible as possible regarding applications in this band.

#### 5.4 Proposal 17.7-19.7 GHz

*In the context of the following proposals, for each of the sub-bands and services, the Department is seeking comments on the following:*

- (a) *the level of exclusivity which may be required for each portion of the bands for particular services as proposed above, as well as on the continued access by other services, i.e., partitioning of portions of the spectrum required?;*
- (b) *the requirement, if any, for a moratorium on the licensing of new terrestrial fixed services in portions of the band, taking into account the time frames for implementation of satellite service in the bands;*

- (c) *in addition to international regulations, is it necessary to develop domestic rules for the implementation of FSS systems and eventually FSS NGSO systems in these bands or portions of these bands?;*
- (d) *is there a need to distinguish between FSS service links (consumer access) for NGSO and GSO systems in the context of access to portions of the bands?*
- (e) *is there a need to distinguish between FSS feeder links for NGSO and GSO systems in the context of access to portions of the bands?*

*There are a number of domestic footnotes related to the bands discussed above which may require modification to reflect policy decisions made with respect to the proposals described above. These footnotes are included in Annex A. Comments on these footnotes are requested in light of the responses submitted to this section.*

### **17.7-17.8 GHz**

*No change is proposed to the status of services in this band by the Department.*

TELUS has no comment

### **17.8-18.58 GHz & 19.3-19.7 GHz**

*The Department proposes that emphasis be placed on a designation for FS in these bands.*

TELUS fully supports the Department's proposal for emphasizing a designation of FS in the band 17.8-18.58 GHz, along with a similar proposal for emphasizing a designation of FS in the companion band 19.3-19.7 GHz. These two FS designations are important, as there are currently a large number of LC/MC/HC radio systems operating in the paired bands 17.7-18.14 GHz and 19.26-19.7 GHz and licensed in accordance with SRSP-317.7. In view of the possible loss of spectrum in the sub-bands 17.7-17.8 GHz and 19.26-19.3 GHz to other services, the paired bands 17.8-18.14 GHz and 19.3-19.7 GHz may need to be re-channelized. It should be noted that the channelization plan in SRSP 317.7 is currently harmonized with the channelization plan in the US. The FCC has chosen not to revise their corresponding channelization plan in their 18 GHz Order (FCC 00-212) because their band pairs 17.7-18.58 GHz and 19.3-19.7 GHz (with 19.26-19.3 GHz grandfathered as FS co-prime) are practically unaffected. It is therefore suggested that the RABC be asked to develop an appropriate revised channelling plan during the revision of SRSP-317.7, while ensuring minimum adverse impact from any revision to the current channelling plan.

It is noted that the band 18.14-18.58 GHz, which is designated for MCS/VHCM/STL/TV Pick-up, appears to be unaffected by the Department's proposed 17.7-19.7 GHz band plans. It is also understood that this band, as listed in Annex 2 of the recently issued "Guidelines for Licensing Process and Spectrum Release Plan (RP-20)", is one of the spectrum resources due for competitive licensing process (auction or comparative).

### **18.58-18.8 GHz & 18.8-19.3 GHz**

***The Department proposes that emphasis be placed on a designation for FSS systems in these bands.***

TELUS notes that the Department is proposing to place emphasis on the designation for FSS systems in both these bands. Based on the Department's "soft partitioning" approach, it is understood then that this band pair would be heavily used by GSO FSS and NGSO FSS services, but lightly used by FS services.

TELUS notes that the FCC is using a "hard partitioning" approach in their identical 18 GHz band plan, as described in their Report and Order (FCC 00-212) adopted on June 8, 2000. The FCC has designated the 18.58-18.8 GHz band for exclusive use by GSO FSS service downlinks and the 18.8-18.3 GHz band for exclusive use by NGSO FSS service downlinks. The FCC also adopted a blanket licensing procedure that would allow GSO/FSS and NGSO/FSS small antenna earth stations to be deployed ubiquitously. However, the existing FS radio systems will be allowed to operate on a co-primary basis for a period of ten years from the adoption date of June 8, 2000. During this ten-year period any forced relocations of FS radio systems will be borne by FSS licensees. Furthermore, the FCC issued a moratorium for the licensing of new FS systems in these two bands effective June 8, 2000.

TELUS currently has a large number of radio systems operating in the 18.58-18.82 and 18.92-19.16 GHz bands in accordance with SRSP 318.5. If the Department were to permit the deployment of FSS earth stations on a ubiquitous and uncoordinated basis, the Department is urged to ensure through their soft partitioning approach that the existing FS systems operating in these bands will continue to be protected. This protection should be on a co-primary basis either permanently or at a minimum for a period of 10 years, the same as the FCC's protection period for their FS systems. It should be noted that the displacement of the FS systems operating in these two bands would likely be caused by the US-licensed NGSO FSS and GSO FSS satellite systems in introducing their services in Canada.

TELUS recognizes that the Department will need to issue a moratorium for the licensing of new FS systems in these bands similar to the FCC's moratorium for the licensing of new FS systems in that country.

### **19.7-20.2 GHz**

***The Department proposes that FSS remains unaffected by this proposal.***

The Department's proposal for retaining the current designation of FSS in this band to support the development of multimedia fixed-satellite services to consumers is supported.

## 5.7 Proposal 27.5-30 GHz

*In the context of the following proposals, for each of the sub-bands and services, the Department is seeking comments on the following:*

- (a) the level of exclusivity which may be required for each portion of the bands for particular services as proposed above, as well as, on the continued access by other services, i.e., partitioning of portions of the spectrum required;*
- (b) the requirement, if any, for a moratorium on the licensing of new terrestrial fixed services in portions of the band, taking into account the time frames for implementation of satellite service in the bands;*
- (c) in addition to the international regulations, is it necessary to develop domestic rules for the implementation FSS systems and eventually NGSO FSS systems in these bands or portions of these bands?;*
- (d) is there a need to distinguish between FSS service links (consumer access) for NGSO and GSO systems in the context of access to portions of the bands? and*
- (e) is there a need to distinguish between FSS feeder links for NGSO and GSO systems in the context of access to portions of the bands?*

*There are a number of domestic footnotes related to the bands discussed above which may require modification to reflect policy decisions made with respect to the proposals described above. These footnotes are included in Annex A. Comments on these footnotes are requested in light of the responses submitted to this section.*

### 27.5-28.35 GHz

*According to the Department: No changes are proposed to the spectrum utilization policy decisions which have already been made for this band.*

The Department's proposal for retaining the current spectrum utilization policy, which designated this band for LMCS use, is supported.

### 28.35-28.6 GHz

*The Department proposes that emphasis be placed on a designation for FSS systems in this band.*

TELUS has no comment.

### 28.6-29.1 GHz

*The Department proposes that emphasis be placed on a designation for FSS systems in this band.*

TELUS has no comment.

### **29.1-29.25 GHz**

*The Department proposes that emphasis be placed on a designation for FS in this band.*

TELUS supports the Department's proposal for placing emphasis on a designation for FS, particularly LMCS type of services, in this band.

### **29.25-29.5 GHz**

*The Department proposes that emphasis be placed on a designation for FSS in this band, including feeder links for MSS systems.*

TELUS has no comment.

### **29.5-30 GHz**

*The Department proposes that FSS remains unaffected by this proposal.*

TELUS has no comment.

## **6.0 Intelligent Transportation Systems in the Band 5850-5925 MHz**

*Comments are requested on the following:*

- (a) *Whether there is a requirement to add a mobile allocation to the band 5850-5925 MHz to accommodate ITS applications;*

TELUS notes that the FCC in their Report and Order released on October 22, 1999 (FCC 99-305) has allocated 75 MHz of spectrum at 5850-5925 MHz to mobile service for use by Dedicated Short Range Communications (DSRC) systems operating in the Intelligent Transportation System (ITS). It is understood that the DSRC systems are intended to provide a short range, wireless link to transfer information between vehicles and roadside systems. It is further understood that these links will be essential to many ITS services that are expected to improve traveller safety, decrease traffic congestion, and facilitate the reduction of air pollution and conservation of fossil fuels.

In view of the strong interest and participation by Transport Canada and provincial transportation authorities in the development of North American 5.9 GHz DSRC standards, and also recognizing the importance of safety and efficiency to Canada's transportation infrastructure, TELUS fully supports the Department's proposal to harmonize the allocation and designation of spectrum for ITS systems with the FCC in the band 5850-5925 MHz.

- (b) *options available to minimize the impact on existing microwave users in the band*

TELUS supports the Department's proposal to locate the ITS systems within the 5850-5925 MHz band with the objective of minimizing any adverse impact on the incumbent

microwave systems in Canada. Also, as discussed in Section 3.2.1 (iii) of this submission, it is recommended that a designation of 40+40 MHz spectrum for medium capacity use in the 6 GHz band (5925-6425 MHz) be added. As a last resort this spectrum could be used for the relocation of incumbent microwave systems operating in the band 5850-5915 MHz.

- (c) *the requirement, if any, for a moratorium on the licensing of new fixed systems in portions of the band, taking into account the time frames for implementation of ITS service in the bands.*

It is suggested that the decision on moratorium on the licensing of new fixed systems in the 5850-5925 MHz band portion could be deferred until the development of DSRC standards has been completed. In the interim a transition policy for this band could be developed. Development of a transition policy for this band should include a review of options available for locating the licensing of ITS systems in a manner that would minimize the relocation of incumbent microwave systems. Development of such a policy would also assist in determining the band portions where moratorium on the licensing of fixed systems would be required.

## **7.0 Services in the 8 GHz Frequency Range**

### **(a) 7725-8275 MHz Digital Radio Band**

*The Department is proposing to add a low capacity designation to this band. Comments are solicited on whether the designation for low capacity should be made throughout the band or be limited to a portion of the band, e.g., 80+80 MHz.*

With the increasing implementations of inter-city fibre optic transmission systems, the need for long haul and medium-haul high capacity microwave systems operating in the band 7725-8275 MHz has greatly diminished. This situation has greatly improved the potential use of this band for low capacity applications. Therefore, TELUS supports the Department's proposal to add a low capacity designation to this band. In view of the limited availability of spectrum in bands below 10 GHz for LC systems, TELUS recommends that this designation for low capacity should be made throughout the band 7725-8275 MHz.

*Comments are also requested on the types of systems and their deployments which will continue to use the spectrum and new applications which are expected to require access to spectrum in this range.*

Possible new applications could include backhaul for 3G wireless mobile systems.

**(b) 8275-8500 MHz Video Band**

*Comments are requested on the types of systems and their deployments which will continue to use the spectrum, as well as, potential new applications which could be accommodated in this band.*

TELUS has no comment.

**8.0 Licence-Exempt Applications**

*The Department seeks comments on the following issues, potential directions and the public interest:*

*a) whether more spectrum should be made available for LE applications recognizing that high power LE applications may constrain other services;*

TELUS recommends that in so far as possible spectrum for licence-exempt applications should always be fully harmonized with the FCC designations. LE applications are primarily consumer products and a harmonized North American market is desirable in any event.

*(b) whether there is spectrum where LE applications could be designated;*

*(c) the amount of spectrum which would be required; and*

*(d) the types of applications which could be accommodated*

In responding to the last three questions, TELUS notes that on February 14, 2002 the FCC issued a News Release advising of the adoption of a First Report and Order (FCC 02-08) regarding the revision of Part 15 rules that permits the marketing and operation of certain types of new products incorporating ultra-wideband (UWB) technology. UWB technology is expected to provide a vast array of new applications that have the potential to provide, among other projected uses, new public safety applications and broadband Internet access. The Order also includes standards designed to ensure that existing and planned radio services, particularly safety services, are adequately protected. TELUS requests that the Department assess the potential of harmonization with the FCC's Part 15 rules on UWB technology.

Further, the FCC issued a Report and Order (FCC 01-357) on December 14, 2001 amending Part 15 rules to allow the certification of equipment in the 24.05-24.25 GHz band at field strengths of up to 2500 mV/m. This rule will allow the operation of unlicensed point-to-point devices offering a variety of new, innovative products and services in the band, such as managing network traffic on a high speed wireless Internet service or connecting a multiple building intra-office network. The potential for harmonizing and including such unlicensed devices under RSS-210 should be taken into consideration.

**8.1 License-Exempt Applications at 57 GHz**

TELUS supports the Department's proposals regarding spectrum designation as well as technical standards for license-exempt applications at 57 GHz band that will be harmonized with those of the FCC.

## 8.2 License-Exempt Applications at 90 GHz

TELUS has no comment.

## 8.3 TV Pickups and Airborne TV Pickups

TELUS has no comment.

## 9. 24.05-24.25 GHz

*With a view toward designating the band 24.05-24.25 GHz to Safety Warning Systems on a secondary basis, the Department requests comments on the level of interest in the provision of these systems in Canada, as well as any other potential uses that would increase the flexibility of this band.*

With respect to the subject on the provision of Safety Warning Systems in Canada, it is understood that the related subject matter, which has been raised with the FCC in a waiver request (Public Notice DA 01-1705). The FCC process has not been concluded as yet. TELUS therefore suggests that consultation on this subject be deferred until the FCC has reached a decision and an assessment done as to whether it is advantageous for Canada to harmonize.

## 10. 31.0-31.3 GHz

*The Department proposes to designate the band 31.0-31.3 GHz for LMCS. It is further proposed to structure the band to pair the centre 150 MHz with the spectrum at 29.1-29.25 GHz and pair the two 75 MHz blocks at either end. The Department is seeking views on this proposal.*

From service development consideration it is desirable that the LMCS spectrum should be fully harmonized with the FCC's LMDS spectrum, which is comprised of the following two blocks:  
Block A: 27,500-28,350 MHz; 29,100-29,250 MHz; and 31,075-31,225 MHz Bands  
Block B: 31,000-31,075 MHz and 31,225-31,300 MHz Bands  
TELUS supports harmonization in this band in line with the FCC's block structure.

## 11.0 31.8-33.4 GHz

*With the premise that the domestic allocation is made, the Department is proposing that the spectrum 31.8-33.4 GHz be designated for fixed services, for a future licensing process. Comment is requested on this proposal.*

TELUS supports the Department's proposal for allocating and designating this band for fixed services. However, the designation of this spectrum for any specific fixed service use and the accompanying licensing process should be delayed until such time a clearer picture develops of its desired use for this spectrum.



## 12.0 Conclusion

TELUS respectfully submits the above recommendations and comments for the Department's consideration.

Sincerely,

*Electronic filing*

Ed Prior