

June 15, 2009

Director, Spectrum Management Operations,
Radiocommunications and Broadcasting Regulatory Branch,
Industry Canada
300 Slater Street
Ottawa Ontario K1A 0C8

Re: Notice No. DGRB-001-09
Consultation on Revisions to the Framework for Spectrum Auctions in Canada

Introduction

The Canadian Satellite and Space Industries Forum (CSSIF) is an association of Canadian satellite operators, satellite service providers, and producers of satellite systems and components. The CSSIF was established in 2005 with a mandate to participate in the development of spectrum policy in areas of interest to the satellite community, and to generally defend the interests of the Canadian satellite community. The CSSIF welcomes the opportunity to provide the following comments to Industry Canada's Consultation on Revisions to the Framework for Spectrum Auctions in Canada. (DGRB-001-09) (the "Consultation")

The CSSIF notes that the Consultation addresses three main issues:
The use of auction types other than simultaneous multiple-round ascending;
The use of auctions as a means of awarding satellite licences; and
The renewal of long-term spectrum licences.

The CSSIF comments herein primarily address only the second of these issues. Concerning the first issue, as explained below, the CSSIF opposes auctions as a means of awarding satellite licences, and therefore offers no comment on the methodology to be used in auctions of terrestrial spectrum. Concerning the third issue, the CSSIF believes that the current radio licence methodology and fee levels applicable to Fixed Satellite Service (FSS) satellite licensing are outdated and inappropriate. It is our understanding that the Department is in the process of developing a separate consultation on the licensing and fee regime for FSS satellites, and hence we will reserve further comment on satellite licensing for that proceeding.

The Department is also seeking comment on two other issues:
The research and development condition of licence; and
Tier areas for spectrum licensing.

Research and development conditions typically apply to satellite licences and therefore are of interest to some members of the CSSIF. While R&D conditions of licence will not be addressed further in these comments, some members of the CSSIF will provide comments in their respective submissions on this issue.



Tier areas have not been applied to satellite licensing, nor would they be appropriate given the inherent ubiquity of satellite coverage (e.g. view of up to one third of the globe from geostationary orbit). Therefore the CSSIF will not provide comments on tier areas for spectrum licensing.

Reform is Needed with Respect to Satellite Authorizations

The CSSIF believes that the comparative process used to award satellite spectrum over the past decade is cumbersome and slow-moving; labour-intensive for both the applicants and the Department; and unclear in terms of the actual criteria and weighting by which selections are made. Reform is clearly required in the mechanism by which satellite spectrum is awarded.

The CSSIF generally supports the Department's objective of placing greater reliance on market forces, with the aim of providing greater flexibility for service providers. That said, market-based mechanisms must be employed consistent with the goal of sound spectrum management. Furthermore, a "one size fits all" approach to achieving spectrum flexibility should not be employed, as differing attributes of each communications service need to be considered. While spectrum auctions may be appropriate in some circumstances for certain segments of terrestrial spectrum, it is the view of the CSSIF that satellite spectrum auctions should not be instituted. An alternative approach to reforming the current allocation process is described below in this submission.

The Use of Auctions as a Means of Awarding Satellite Licences is Inappropriate

The CSSIF recognizes that the Department's objective in this Consultation is to seek public input in order to determine whether the auctioning of satellite spectrum would result in greater public benefits than exist under the current process, given the Department's experience gained through the introduction of auctions in the allocation of some terrestrial frequency bands. There are, however, significant differences between satellite and terrestrial service characteristics that cause the satellite industry to be concerned about the adoption of auctions by Industry Canada.

The CSSIF submits that the use of auctions as a means of awarding satellite licences is inappropriate for the following reasons:

- The provisioning of services by satellite is inherently international;
- Auctioning of spectrum by a major space faring nation could set a precedent with serious unintended consequences;
- Auctioning of satellite spectrum by Industry Canada could disadvantage Canadian operators; and
- Satellite spectrum auctions would not promote spectrum efficiency.

International Nature of Satellite Communications

There is a significant difference between terrestrial communications and satellite communications. Typically satellites cover large geographic areas; in the case of geostationary satellites up to one-third of the earth's surface and in the case of constellations the entire planet. Coverage can extend over many national jurisdictions, both intentionally to provide international communications links and unintentionally, since the laws of physics dictate that some spill-over from national coverage will occur into neighbouring countries.

The ITU legal instruments contain detailed space-related procedures with the aim of promoting efficient and rational use of the resource. These are in large measure based on a first-come, first served (FCFS) approach. Priority of satellite filings is based on the date of receipt by the ITU secretariat and satellite filings have a finite life, in that they expire if not brought in to use within a defined time period.

Canadian filings, like those of any ITU member, have a variety of priority and expiry dates. Some filings are well-positioned and others will expire before a satellite can be built and launched, or before the expiry of adjacent or collocated higher-priority filings. These "uncertainties arising from the ITU regulatory process" are recognized in the Consultation.

A review of ITU geostationary satellite network filings submitted by Industry Canada for which no authorization has been granted to date shows that they fall into three categories:

1. Filings with unfavourable priority relative to those of other administrations
2. Filings for bands that are not yet of commercial interest (e.g. V-band)
3. Filings located outside a 'neighbourhood of interest'¹.

The difference between satellite and terrestrial communications has long been recognized in international frequency management. "In a large part of the terrestrial radiocommunications domain...administrations were (almost) master of their national frequency management...National authorities were thus effectively able to assign frequencies to users...This largely national management regime changed with the advent of satellite communications...[N]obody owns any orbital position, but everybody can use this common resource if international regulations and procedures are applied...States are obliged to establish appropriate control and supervision mechanisms, normally in the form of licences...[The regulations in the ITU legal

¹ In addition to the satellite itself, satellite networks comprise transmit and receive earth stations. Particularly in the broadcast market, certain orbital locations, or groups of orbital locations, have a large installed base of associated earth stations receiving complementary signals. Such orbital locations are termed neighbourhoods.

instruments] are based on the main principles of efficient use of, and equitable access to, the spectrum and orbital resources.”²

In other words, administrations provide access to rights to use the spectrum; they do not “own” it. Many administrations have auctioned blocks of terrestrial spectrum for use entirely within their own borders. In a typical terrestrial spectrum auction Industry Canada expects each bidder to assess the risks and opportunities of bidding. While all risks and opportunities are never fully known, in terrestrial spectrum auctions at least access to the spectrum itself is not at risk. In a satellite spectrum auction, however, the presumption that bidders will appropriately factor in the risks of not being able to develop the spectrum is quite illusory. Because of the extraterritorial nature of satellite coverage and the first-come, first-served international regulatory system under the auspices of the ITU, it is never entirely certain that a successful bidder will be able to actually exploit the spectrum that they thought they had won. In many cases there is simply too much uncertainty about being able to access the spectrum; often for reasons beyond the control of the bidder as well as the licensing administration concerned. An appropriate licensing method (as outlined below) and annual licence fees would mitigate these risks.

Auctioning Could Set a Precedent with Serious Unintended Consequences

With respect to policies relating to satellite communications, the international implications of any domestic policy change need to be carefully considered.

It is true that national administrations can impose satellite spectrum auctions and still meet their international obligations, and indeed some countries (such as Brazil) have employed satellite spectrum auctions. It should be noted, however, that the serious problems with auctioning satellite spectrum have been recognized within Canada’s largest trading partner. In 2000 the United States Congress passed the ORBIT Act, which states: “...[the Federal Communications] Commission shall not have the authority to assign by competitive bidding orbital locations or spectrum used for the provision of international or global satellite services”³ More recently, the United States Senate Committee on Commerce, Science and Transportation has stated: “because of the inherent international nature of satellite services, the auctioning of domestic satellite spectrum may lead to retribution by other nations.”⁴ The United States position is particularly significant in view of that country’s use of terrestrial spectrum auctions.

Most of the developed countries and all the major space faring nations have avoided satellite spectrum auctions in view of the international precedent that would be set. Imposition of satellite auctions in a major space faring nation would incite other nations to follow that lead, likely extending auctions to national landing rights in order to avoid

² John Lewis, Space procedures, a closer look at the international framework for satellite networks, *ITU News* 2/2009 March 2009, p. 26

³ Pub. L. 87-624, Title VI, sec. 647, as added Pub. L. 106- 180, sec. 3, Mar. 17, 2000, 114 Stat. 57.

⁴ Letter from United States Senate Committee on Commerce, Science, and Transportation to United States Senate Budget Committee, March 13, 2009.

disadvantaging domestically–licensed operators (see below). The resulting round of sequential auctions with non-coincident validity periods by administrations within the coverage area of one satellite or constellation would increase costs and lead to regulatory deadlock. Uncertainty would exist as to the regulatory status of a proposed satellite network in each country within the service area. At a minimum, increased costs would be incurred and passed through to the end-user. More seriously, the regulatory uncertainty would effectively stifle investment in new and innovative satellite networks. These results would be particularly damaging in a country such as Canada, where satellites are crucial to link sparsely-populated, geographically-disparate areas.

The financial uncertainty and regulatory chaos arising from sequential auctions would impede the ability of satellite operators to construct, launch, and operate their networks. Innovation and the achievement of national and international communications goals would be impeded. This is particularly important in Canada, where satellite communications have been an essential instrument of public policy, promoting full communications and broadcast services across the country, and in particular to remote and otherwise un-served areas.

An auction regime for satellite spectrum would also undermine the certainty with which satellite operators could plan replacement or backup satellites in the same or different orbital slots in order to ensure continuity of service for existing users.

Auctions Could Disadvantage Canadian Operators

As a result of the liberalization of trade in services, and most notably the WTO-GATS agreement, most satellite services in WTO member countries are now fully open to international competition. For example, the Industry Canada website currently lists 77 foreign-licensed satellite networks approved for service in Canada. The vast majority of these satellites are licensed by administrations that do not employ auctions for satellite spectrum.

The CSSIF supports open and competitive markets in satellite communications, but only with a level playing field. Were Industry Canada to employ auctions for Canadian-licensed satellite spectrum, and not auction, or set appropriately high fees for satellite landing rights relative to the auction proceeds, a market imbalance would be created. Foreign-licensed operators would have a competitive advantage over Canadian-licensed operators, which would have to recover the additional cost of auction fees. In the longer term, the likelihood is that satellite operators would simply avoid licensing spectrum from Canada altogether, and migrate to substitutable spectrum licensed by other administrations in a more economically favourable manner.

The implications are obvious: Canada's indigenous satellite operators would be weakened, and revenues to the Crown would decline. In the longer term, there would be little reason to establish or maintain Canadian-based satellite companies, with their highly skilled workforce and spinoff benefits to the Canadian aerospace industry. Most

importantly from a public policy perspective, capacity with coverage of all regions of Canada would not likely be provided by foreign operators, particularly coverage of Canada's remote and underserved regions.

Auctions would not Promote Spectrum Efficiency

The geostationary orbit and associated spectrum is a finite resource with high demand from many nations and organizations, necessitating a high degree of spectral efficiency. The same applies to spectrum suitable for use by non-geostationary satellite networks. This has long been recognized internationally where the ITU Constitution states that such "limited natural resources...must be used rationally, efficiently and economically...so that countries or groups may have equitable access to these orbits and frequencies..."⁵

Most satellite-licensing administrations, including Canada, have taken their obligations seriously, and have discouraged spectrum warehousing by means of licence conditions, such as the imposition of milestone deadlines. Furthermore, satellites cost hundreds of millions of dollars to procure, launch and insure. These costs in themselves provide strong market-based incentives to use spectrum efficiently in order to maximize returns on this huge investment.

Spectral efficiency, which is of particular importance in light of international obligations concerning this finite resource, would be more difficult to achieve in an auction environment. An operator, having paid a substantial sum for satellite spectrum at auction, might, with some justification, take a more proprietary view. For example, such an operator might wish to keep the spectrum fallow for some period, in the hope that rising demand would result in added value so that the spectral rights could be re-sold at a profit. This was the experience in the United States many years ago (prior to the ORBIT Act) when BSS spectrum was auctioned. The winning bidder, MCI, never implemented its satellite and the spectrum rights were ultimately re-sold.

The dynamics involved in awarding satellite spectrum lie in sharp contrast to those relating to terrestrial spectrum. With over 150 geographical service areas, each comprising numerous blocks of frequencies, terrestrial award processes may well be more efficiently conducted using an auction process instead of other selection models. With satellite spectrum, however, the number of available spectrum licences is far smaller. Therefore, the savings in the Department's "administrative burden" (referenced at page 2 of the Notice) which may exist in a terrestrial spectrum context are not comparable in the satellite arena.

Were the Department to divide spectrum at an orbital position and award licences to multiple recipients, the likelihood is that no recipient could build an economically viable network. In satellite communications, spectrum aggregation at an orbital position and

⁵ ITU Constitution, Article 44

the resulting economies of scale are important drivers of a successful business case. Furthermore, some satellites, such as those providing mobile satellite service (MSS), use different frequency bands for their (FSS) feeder links and (MSS) service links. The uncertainty of being able to secure both bands at acceptable costs and within the same timeframe would cause havoc to developers of such satellite initiatives.

Therefore, the introduction of an auction regime would impair, rather than promote, spectral efficiency as well an efficient process for developing and retaining spectrum resources.

Recommendation for Award of Satellite Spectrum

As outlined above, the CSSIF believes that award of satellite spectrum by either comparative process or by auction is not appropriate.

The United States has wrestled with this issue and concluded that a modified FCFS mechanism is the optimal method.⁶ The CSSIF proposes that a similar process may be appropriate for Canada, such that satellite authorizations would be granted to the first applicant. Suitable administrative measures would be required to be implemented to ensure award only to serious applicants with the resources and clear intention to bring the spectrum in to use, and not to mere speculators.

Such a process would in no way diminish the Department's ability to ensure that proponents would continue to make commitments to the achievement of the objectives of the Telecommunications Act and the Department's satellite licensing policies. The CSSIF submits that it would be more difficult for the Department to evaluate these commitments were the primary criterion for selection to be a monetary bid in an auction environment.

Conclusion

The CSSIF believes that auctions are an inappropriate method to select those to whom satellite authorizations are to be granted. In our view, this is inconsistent with the inherent international nature of satellite spectrum, could unfairly discriminate against Canadian-licensed operators with negative implications to the country as a whole, and would not encourage spectral efficiency.

The Department needs to take into account the fully open and competitive Canadian satellite service market and the total financial burden it imposes on Canadian-licensed operators to ensure that its requirements do not put Canadian-licensed networks at a disadvantage.

⁶ *In the Matter of Amendment of the Commission's Space Station Licensing Rules and Policies and Mitigation of Orbital Debris*, First Report and Order and Further Notice of Proposed Rulemaking in IB Docket No. 02-34, and First Report and Order in IB Docket No. 02-54, 18FCC Rcd 10760, May 19, 2003



Canadian Satellite and Space Industry Forum
Forum de l'industrie spatiale et satellitaire canadienne

The CSSIF believes that the current comparative selection process is flawed and cumbersome and therefore advocates that the Department adopt a first-come, first served process for the award of satellite authorizations.

Yours truly,

A handwritten signature in black ink, appearing to read "David Lewis". The signature is written in a cursive, flowing style.

David Lewis,
Chairman, CSSIF