



Industry
Canada

Industrie
Canada

Issue 3
March 2011

Spectrum Management and Telecommunications

Framework for Spectrum Auctions in Canada

Aussi disponible en français

Canada 

Contents

1.	Introduction.....	1
2.	Application of Auctions.....	1
2.1	Broadcast Licences	1
2.2	Priority Users	2
2.3	Satellite Services.....	2
3.	Licence Attributes.....	2
3.1	Definition of Spectrum Licences	2
3.2	Ministerial Authority	2
3.3	Flexibility of Spectrum Use	3
3.4	Service Areas	3
3.5	Licence Term	3
3.6	Licence Fees Upon Renewal.....	4
3.7	Licence Transferability and Divisibility	4
4.	Competition Principles: Promoting a Competitive Post-Auction Marketplace.....	4
5.	Auction Process Overview.....	5
6.	Auction Design and Rules.....	7
7.	Conclusion.....	7

1. Introduction

Radio frequency spectrum is a finite public resource. Both private users and wireless communications service providers require spectrum for a diverse range of uses. Industry Canada, through the *Department of Industry Act*, the *Radiocommunication Act* and the *Radiocommunication Regulations*, with due regard to the objectives of the *Telecommunications Act*, is responsible for spectrum management in Canada. The Spectrum Management Program operates under the guidance of the *Spectrum Policy Framework for Canada*, revised in 2007, which provides a single policy objective and a set of guidelines to guide Industry Canada's management of this resource.

Where the demand for spectrum is not expected to exceed the supply, Industry Canada generally uses a first-come, first-served licensing process to award spectrum licences. In instances where the demand for spectrum is expected to exceed supply, a competitive licensing process, such as an auction, is generally used.

This *Framework for Spectrum Auctions in Canada* (the Auction Framework) describes the general approaches that Industry Canada will use to auction spectrum licences.

2. Application of Auctions

As indicated in the 2007 *Spectrum Policy Framework for Canada*, Industry Canada has adopted a policy objective to maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource. One of the enabling guidelines under this objective recognizes that market forces should be relied upon to the maximum extent feasible. With due regard to this policy and guideline, Industry Canada will generally consider the following broad conditions in determining whether an auction process will be used as the spectrum assignment mechanism:

- whether the demand for spectrum is expected to exceed the available supply;¹ and
- whether government policy objectives can be fully met through the use of an auction.

The use of auctions as a spectrum assignment mechanism may not be appropriate for certain radio services as described below.

2.1 Broadcast Licences

The issuance of broadcasting licences is the responsibility of the Canadian Radio-television and Telecommunications Commission (CRTC) as outlined in the *Broadcasting Act*. The Minister of Industry's role in broadcasting extends to spectrum management and the technical aspects of broadcasting. In order to operate a broadcasting undertaking, both a licence from the CRTC and a certificate from Industry Canada are required. Although broadcasting licences will not be the subject of an Industry Canada spectrum auction, spectrum used by broadcasting services may be the subject of an auction under certain circumstances, such as where alternative uses are also permitted. Such a process would be subject to a public consultation on spectrum utilization prior to a proposed auction.

¹ It is often difficult to estimate whether the demand for particular spectrum authorizations will indeed exceed the available supply. Thus, the process outlined in this document moves seamlessly to an auction where demand is anticipated to exceed supply and acts effectively as a first-come, first-served process should supply exceed demand.

2.2 Priority Users

An auction will generally not be used to license spectrum in bands designated for priority services (such as those whose radiocommunications systems are vital to national sovereignty and defence, law enforcement, public safety and emergency services).

2.3 Satellite Services

Where satellite systems are global in nature, it would not be practical for an individual country to use an auction as the assignment mechanism. However, for domestic or regional satellite systems that cover Canada, the Minister may, under certain circumstances, determine that an auction is appropriate, for example, when the spectrum is pre-assigned to Canada as part of an International Telecommunication Union (ITU) Plan or when Canada has priority access to the spectrum internationally.

3. Licence Attributes

In order to develop business plans, secure financing and develop a bidding strategy, it is important that bidders understand exactly what is being auctioned. The Auction Framework outlines the general attributes of auctioned spectrum licences. The precise attributes related to specific spectrum licences will be included as part of the public consultation preceding a specific auction, as well as in the corresponding policy and licensing framework documents.

Applicants should be aware that auctions represent an opportunity to become a licensee, subject to certain conditions and regulations. Industry Canada makes no representations or warranties about the use of auctioned spectrum for particular services. A spectrum auction does not constitute an endorsement by Industry Canada of any particular service, technology or product, nor does a spectrum licence constitute a guarantee of business success. Applicants should perform their due diligence before proceeding, as they would with any new business venture.

The following sections outline the general attributes of the spectrum licences in an auction.

3.1 Definition of Spectrum Licences

The authorizations available for assignment in an auction will be spectrum licences. These are defined in subparagraph 5(1)(a)(i.1) of the *Radiocommunication Act* as authorizations “...in respect of the utilization of specified radio frequencies within a defined geographic area.”

3.2 Ministerial Authority

Spectrum licences issued pursuant to an auction are subject to relevant provisions in the *Radiocommunication Act*, the *Telecommunications Act* and the *Radiocommunication Regulations*. Specifically, the Minister has the power to amend the terms and conditions of spectrum licences at any time during the licence term (paragraph 5(1)(b) of the *Radiocommunication Act*). Upon expiry of a licence, the Minister may set new terms and conditions, which would normally be the subject of consultations that would take place approximately two years prior to the end of the term of the licence in question.

As well, section 40 of the *Radiocommunication Regulations* continues to apply, which allows among other things, the Minister to reallocate spectrum or to permit others to use the same spectrum on a non-interfering basis, for example, through the use of cognitive technology. Industry Canada recognizes the significant investments made by licensees to establish their networks and the impact that a reallocation may have on a client base. It is therefore important to note that pursuant to these regulations, Industry Canada would reallocate, or provide alternative access to spectrum licences assigned through auction, only under extraordinary circumstances (for example, where a change in international allocation or an overriding policy need arises), taking into consideration whether the licensee has complied with the conditions of licence, the level of investment made and the size of its established client base, and in the case of alternative access, the degree to which the existing use would continue unimpeded. If a reallocation or shared access were contemplated, it would take place only after consultation.

3.3 Flexibility of Spectrum Use

Auctions allow market forces to determine who will gain access to spectrum and, indirectly, how it will be used. To allow licensees to continue to quickly and efficiently adapt their services to changing consumer demands, Industry Canada will generally provide licensees with the maximum possible flexibility in determining the services that they will offer and the technologies that they will employ. Beyond the need to conform to the applicable Canadian spectrum allocation, only those limitations required for interference management purposes will generally be imposed. These limitations will include the terms of international agreements entered into by Canada and the provisions of the ITU's *Radio Regulations*.

3.4 Service Areas

Industry Canada publishes a document entitled *Service Areas for Competitive Licensing*, which outlines the general service areas that will be proposed for an auction. The defined geographic areas have been categorized under "service area tiers" that are based on Statistics Canada's census divisions and subdivisions. The definition of the service areas within these tiers and accompanying maps and data tables are available on Industry Canada's website. Industry Canada will continue its practice of seeking and considering comments from stakeholders, prior to the auction, on the proposed tier level and on whether alternative approaches are warranted for the specific spectrum being offered.

Given the geography of Canada, the borders of some of the service areas will inevitably have incidental coverage of water bodies and/or coastal areas. The provision of a service within these incidental areas will generally be permitted, subject to the domestic and international sharing arrangements that are in effect.

3.5 Licence Term

Licences issued via auction will have terms of up to 20 years, based on the specific spectrum being offered. Where spectrum use is not anticipated to change, longer terms (e.g. 20 years) would be offered. As a condition of licence, licences will have a high expectation of renewal, unless a breach of licence condition has occurred, a fundamental reallocation of spectrum to a new service is required or an overriding policy need arises.

As stated in paragraph 5(1)(b) of the *Radiocommunication Act*, the Minister retains the power to amend the terms and conditions of spectrum licences, during the term of the licence and at the end of the term, as part of the licence renewal process.²

3.6 Licence Fees Upon Renewal

For licences issued through a renewal process, licence fees that reflect some measure of market value will apply. Generally, when a majority of licences in a specific band are nearing the end of their licence term, a public consultation regarding the renewal process will be launched. This consultation will usually commence approximately two years prior to the end of the licence term. Comments would be sought on the appropriate conditions of licence to be applied to the new licences, including the level of fees. In the case where Industry Canada foresees the possibility that it will not issue new licences (e.g. due to a fundamental reallocation of spectrum to a new service or an overriding policy need), a consultation would also be conducted on relevant issues.

3.7 Licence Transferability and Divisibility

Licences acquired through an auction are transferable in whole or in part (divisibility) to a qualified recipient, in both the bandwidth and geographic dimensions, subject to the policy and licensing frameworks applicable to these specific licences. Generally, the area transferred may be no smaller than a single spectrum grid cell (a hexagonal figure with an area of 25 square kilometres). The grid cells fit together in an interlocking pattern over the geography of Canada. In general, no minimum limit will be imposed on the amount of spectrum that can be transferred in the bandwidth dimension. However, limits may occasionally be required on the amount of spectrum that can be transferred in order to respect band channelling plans or other policy needs. Such limits would have been discussed as part of the auction consultation for the band in question and will be defined in the final policy and licensing document.

4. Competition Principles: Promoting a Competitive Post-Auction Marketplace

In an effort to ensure that social and economic benefits are maximized from the use of the radio frequency spectrum, it will be important that licensees operate in a competitive marketplace post-auction. Measures available to the government to promote a competitive post-auction marketplace include restricting the participation of certain entities in an auction and/or placing limits on the amount of spectrum that any one entity may hold by using spectrum set-asides or spectrum aggregation limits. Industry Canada will consider the two guiding principles outlined below in choosing when and how to impose pro-competitive measures.

Principle 1: Restricting Participation in the Wireless Market

Industry Canada may decide that an entity that currently provides telecommunications services should be restricted from holding certain licences if:

- (a) the entity possesses market power in the supply of one or more telecommunications services in a region covered by the licence to be auctioned;

² The licence renewal process, including the timing and need for renewal consultations, may vary for satellite licences.

- (b) a new entrant is likely to use the licence to provide services in competition with the entity's existing services; and
- (c) the anti-competitive effects of the entity acquiring a licence are not outweighed by the potential economies of scope arising from the integration of the spectrum in question into the entity's existing network.

Principle 2: Spectrum Aggregation Limits

It is the view of Industry Canada that, when multiple licences for the use of spectrum in a given geographic area are auctioned, and when these can be used to provide closely substitutable service, aggregation limits may be required on the amount of spectrum that any single bidder is allowed to acquire so as to ensure competitive markets. Spectrum aggregation limits may be imposed in the following circumstances:

- (a) a bidder that acquires an amount of spectrum beyond a certain level would not face effective competition from providers of closely substitutable services; and
- (b) the anti-competitive effects arising from the acquisition of an amount of spectrum beyond a certain level by a single bidder would not be offset by lower prices or higher valued services resulting from a single entity holding this amount of spectrum.

In the analysis of the above-noted competition principles, it is appropriate to consider the current Canadian market, activities of other regulators who deal with the wireless industry and the experience of other countries.

5. Auction Process Overview

This section outlines the general steps in the auction licensing process. A more detailed discussion of specific auction design and rule elements will be provided as part of the consultation process conducted prior to a specific auction, as well as in the corresponding policy and licensing framework documents. The time required to complete the auction process, from the release of the original consultation paper to the assignment of licences, will vary somewhat depending on factors such as: the complexity of the issues related to any specific auction; the specific auction design; the volume of consultation comments received; the number of licences being offered; the number of parties applying to participate in the auction; the number of qualified bidders; and the time required by bidders to prepare their bidding strategies and financing. However, the elapsed time between the release of the final policy and licensing framework documents, and the opening of the bidding is generally six to 10 months, with the auction itself taking anywhere from one day for a sealed bid auction to several weeks to complete for a more complex auction. One of the goals in the process is to clearly articulate the policy and licensing considerations and decisions so that potential bidders have the fullest possible knowledge of the spectrum at issue, as well as the auction procedures and rules, prior to the auction.

Industry Canada also makes available background documents related to the specific auction. The documents typically include a backgrounder, frequently asked questions, the dates relating to the auction and an auction fact sheet. These documents are for information purposes only and do not form part of the official policy.

In general, a spectrum auction will take place according to the following steps:

- 5.1 **Public Consultation:** A notice will be published in the *Canada Gazette* announcing the availability of a consultation paper that addresses issues related to the spectrum auction in question. The objective is to provide interested parties with the opportunity to comment on all aspects of the policy related to a specific auction, the auction design, and the licensing procedures and rules prior to the auction.
- 5.2 **Comment Period:** An initial comment period (generally 45-90 days) will be provided. For common framework issues, comments will be sought as to whether there is any reason to deviate from the approaches laid out in the Auction Framework document. For other issues that will require a different approach from auction to auction (for example, the geographic and bandwidth definition of licences), specific proposals or options will be put forward for comment.

After the closing date for receipt of comments, copies of all the comments received will be posted on Industry Canada's website.
- 5.3 **Reply Comment Period:** A second, shorter comment period may then be opened during which respondents will be invited to comment on the initial comments of others. After the closing date of this reply comment period, these comments will also be made available on Industry Canada's website.
- 5.4 **Development of Final Policy:** After reviewing all the input received, the Minister of Industry will issue the final policy decisions. A second notice will be published in the *Canada Gazette* announcing the availability of the paper that provides the final policy decisions and describes the licences to be auctioned, the terms and conditions that will be attached to the licences, the opening bid for each licence, as well as any changes to the rules of the auction, the eligibility criteria and the application procedures to participate in the auction. A summary of key dates associated with the licensing process will generally be included in this document and updates will be provided on Industry Canada's website.
- 5.5 **Amendments, Supplements and Clarification Questions:** Industry Canada may provide an opportunity for the public to submit written questions asking for clarification of rules or policies related to the auction. Questions received by the established deadline and Industry Canada's written answers to these questions will be published on Industry Canada's website. The answers will be considered as amendments or supplements to the policies and rules set out in the final policy and licensing procedures document. Industry Canada may also issue other amendments and supplements to the final policy as appropriate and will publish these on Industry Canada's website.
- 5.6 **Submission of Applications:** To participate in an auction, all applicants must submit a completed application form, including details of their beneficial ownership, and a financial deposit. Specific requirements will be included in the consultation preceding a specific auction, as well as in the related policy and licensing documents.
- 5.7 **Publication of List of Applicants:** A list of all applicants may be made public via Industry Canada's website soon after the closing date for receipt of applications. The publication of this list in no way qualifies the applicants to participate in the auction.

- 5.8 **Publication of List of Qualified Bidders:** A list of all qualified bidders, the licences for which they are eligible to bid, and their initial level of eligibility points may be made public via Industry Canada's website.
- 5.9 **Auction Opens:** Specific details on the start date and/or schedule of an auction will be included in the consultation preceding a specific auction, as well as in the related policy and licensing documents.
- 5.10 **Auction Closes:** The conclusion of an auction will be dependent on the auction design and format used. Specific details on the closure of an auction will be included in the consultation preceding a specific auction, as well as in the related policy and licensing documents.
- 5.11 **Issuance of Licences:** After the close of the auction, each provisional licence winner must submit eligibility documentation where required, as well as payment for the full amount of its standing high bids and any penalties that it has incurred, as set out in the framework document for that auction process.

Upon completion of payment of the sum of its standing high bids and the sum of its penalties, if any, and a determination by Industry Canada that the eligibility requirements have been met, a provisional winner will be issued the appropriate licences.

- 5.12 **Unsold Licences:** Should a licence not receive a bid during the auction, Industry Canada may make this licence available at a later date. Available licences, including any licences that were forfeited after the close of the auction, may be offered in a subsequent re-auction or through an alternative process (such as a first-come, first-served process).

6. Auction Design and Rules

Auctions are an efficient market-based means of assigning spectrum licences, through a fair and transparent process, to those who value them most. Industry Canada's objective is to select an auction design that is optimal for the spectrum being offered and the circumstances that exist at the time. As both the theoretical and practical aspects of auction design continue to advance, Industry Canada will continue to examine new auction design developments and adopt them as appropriate.

Special details with regard to auction design, rules and attributes will be included as part of the public consultation preceding all specific spectrum auctions, as well as in the corresponding auction policy and licensing framework documents.

7. Conclusion

As outlined above, this document provides the framework and concepts that will generally be applicable for spectrum auctions in Canada. The specific rules and the implementation of these concepts will be provided in the policy and licensing documents that will precede each auction.

Theory and practice related to spectrum auctions will continue to evolve. New developments in auction design will continue to be examined and adopted when appropriate. This Auction Framework will be updated from time to time to ensure that it is aligned and consistent with associated Industry Canada policy objectives and guidelines.