

Highlights and Framework for the Auction of Additional PCS Spectrum

June 28, 2000

Note: This document is for informational purposes only. The policies and rules associated with the licensing process are set out in their entirety in the document, *Policy and Licensing Procedures for the Auction of Additional PCS Spectrum in the 2GHz Frequency Range*, (to be published shortly) and any written amendment or supplement that may be issued by the Department.

Highlights and Key Dates of the Licensing Process for the Additional PCS Spectrum in the 2 GHz Frequency Range

- A simultaneous multiple-round auction will open in early November 2000.
- There are 56 licences available: four 10 MHz licences in each of 14 service areas which together provide contiguous coverage of all of Canada.
- All entities are eligible to apply to participate in the auction.
- In an area, an entity and its affiliates will be subject to the spectrum aggregation limit of 55 MHz of PCS, cellular radiotelephony and similar high mobility spectrum.
- Licences have a term of ten years, with a high expectation of renewal.
- Licences are transferable and divisible in the secondary market.
- Licensees will have the maximum possible flexibility in determining the services they will offer and the technologies they will employ.
- Applications to participate in the auction are due August 28, 2000.
- Public information sessions to provide a general overview of this licensing process will be held in the weeks following the publication of this document. These sessions are tentatively scheduled between July 17 and August 2, 2000. Interested parties are invited to visit Industry Canada's Strategis Web site at <http://strategis.ic.gc.ca/spectrum> to obtain further information on the location and scheduling of these sessions, and to register for them.
- Successful bidders in the auction will need to comply with the Canadian Ownership and Control requirements.

Key Dates	
Event	Time frames*
Expected release of <i>Policy and Licensing Procedures for the Auction of Additional Spectrum in the 2 GHz Frequency Range</i>	June 28, 2000
Publication of <i>Canada Gazette</i> Notice DGRB-005-00/DGTP 007-00	July 8, 2000
Regional pre-auction information sessions (Halifax, Toronto, Ottawa, Vancouver, Calgary, Montreal)	Mid-July to early August 2000*
Deadline for receipt of written questions	August 11, 2000
Date on which answers to written questions will be posted	Late August 2000
Deadline for receipt of applications to participate in the auction	August 28, 2000
Date on which list of applicants will be published	August 29, 2000
Date on which list of qualified bidders will be published	Mid-September 2000
Mock auction for qualified bidders	Mid-to-late October 2000
Opening day of bidding	Early November 2000
Auction close	Unknown
Submission of ownership and control documentation	10 business days after the close of the auction
Initial payment (20% of high bids / 100% of penalties)	10 business days after the close of the auction
Final payment (80% of high bids)	30 business days after the close of the auction

* Please consult the Department's Web site at <http://strategis.ic.gc.ca/spectrum> for updates to this schedule.

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Highlights and Framework for the Auction of Additional PCS Spectrum

1. Consultation

On November 5, 1999, the Minister of Industry announced that the spectrum aggregation limit applying to Personal Communications Services (PCS) would be raised from 40 MHz to 55 MHz, and that 40 MHz of additional spectrum for PCS would be licensed by auction. The 40 MHz of additional spectrum consists of PCS spectrum blocks C/C' and E/E', which had been held in reserve in 1995. These actions were taken to ensure the availability of adequate spectrum resources to meet the needs of the expanding PCS market, and also to enable the implementation of new offerings such as third-generation (3G) PCS.

A public consultation paper on the policy and licensing procedures for the auction of the additional PCS spectrum was published on December 17, 1999. Comments and reply comments were received in March 2000. The Department values the submissions received on the various aspects of the policy and licensing process.

After reviewing and analysing the input received, the Department is now in a position to define the final policy framework for this additional PCS spectrum and to set out the rules and procedures of the licensing process for the spectrum.

2. Comments on Eligibility

Through the consultation paper, the Department sought comments on whether and how the public interest would be served by limiting the eligibility of any potential applicants to participate in the auction for the additional PCS spectrum.

A range of viewpoints was expressed as the respondents were divided on eligibility to participate in the auction. Their positions may be summarized as:

- limit eligibility to the existing PCS and cellular carriers within their existing operating areas to maintain four carriers per area;
- limit eligibility to the existing PCS carriers, but permit the former regional Mobility Canada members to bid outside their existing areas, and in so doing allow them the possibility to expand nationally; and
- open eligibility to all entities, but have spectrum blocks set aside for new entrants.

Decision on Eligibility

The Department considered all the arguments raised by those wanting to limit participation in the auction. The main arguments that were raised pertained to the availability of capital, the potential impact on the current industry structure, the potential delays in the offering of innovative and advanced services, and the potential delays to the extension of PCS services outside the major cities. The Department notes that open entry conditions prevail in virtually all aspects of telecommunications service provision in Canada will continue to strongly encourage such openness in the PCS environment. Accordingly, the Department found no compelling arguments indicating how the public interest would be better served by limiting the eligibility of any potential applicants to participate in the auction.

The Department thus concludes that the public interest is best served by allowing all entities to be eligible to apply to participate in this auction.

Decision on Set Aside

The Department considered all comments on whether a certain amount of spectrum should be identified for which only new entrants would be eligible to bid (a set-aside). Respondents were again divided on this issue. Proponents for a set-aside of spectrum for new entrants indicated that it would accelerate the introduction of packet-based networks, high-speed wireless Internet, and other data services. The proponents felt that incumbents would slowly evolve their legacy systems with the spectrum and not offer new, innovative services in as timely a manner as new entrants. Other respondents stated that the current incumbents are actively participating in research and development activities to develop international standards and to introduce new services and technologies. The Department found no compelling arguments that demonstrated that a set-aside of spectrum for new entrants would significantly advance new service offerings and expansion of digital service not attainable in an open-entry scenario. **Thus, the Department will not set aside spectrum for which only new entrants can apply.** However, new entrants are eligible to apply to bid for all spectrum blocks available through this licensing process.

Eligibility Documentation

Bidders who are provisional licence winners will be required to submit documentation related to their compliance with Canadian ownership and control within ten business days of the auction's close.

3. Licence Definitions

Licence Term

The term of this licence will be ten years from the date of licence issuance. At the end of this term and any subsequent terms, the licensee will have a high expectation of renewal for a further ten-year term unless a breach of licence condition has occurred, a fundamental re-allocation of spectrum to a new service is required, or an overriding policy need arises.

Licence Transferability and Divisibility

The licensees in this auction may transfer its licence(s) in whole or in part (divisibility), in both the bandwidth and geographic dimensions. The area transferred in the geographic dimension may be no smaller than a single spectrum grid cell. A spectrum grid cell is a six-sided figure with an area of 25 square kilometres. The grid cells fit together in an interlocking pattern over the geography of Canada. No minimum limit will be imposed on the amount of spectrum transferred in the bandwidth dimension.

It should be noted that the licences of incumbent cellular operators and PCS operators (in PCS spectrum blocks A/A', B/B', D/D', F/F') are not subject to this more liberalized transferability regime at this time. One respondent asked that the Department provide the same licence term and spectrum rights of transferability and divisibility to the existing PCS licences. The Department is currently considering this proposal, and may subsequently hold a public consultation on this matter. Until such time, the transfer of an existing radio licence to another party continues to be subject to a full review of the application by the Department and the approval of the Minister.

Spectrum Structure

In general, respondents agreed that the minimum frequency sub-block size that would support practical implementation of existing 2G and initial deployment of 3G PCS services is 10 MHz. Therefore, the Department will make available for licensing four PCS spectrum blocks of 10 MHz (consisting of 5 + 5 MHz symmetrically-paired blocks). PCS spectrum block C/C' will be subdivided into three equal blocks of 10 MHz and spectrum block E/E' will remain unchanged.

Geography

The Department asked whether national licences, regional licences, or a combination of both would be appropriate. In the comments received, support was expressed for all three spectrum licence geographies.

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The Department proposed that if regional licences were to be issued, the Department's Tier 2 service areas would be the most appropriate. The Tier 2 service areas are based on Statistics Canada census divisions, and result in 14 areas covering all of Canada.

The Department will make available for licensing the PCS spectrum blocks on a regional basis using the Department's Tier 2 geographic service areas.

Flexibility of Use

To ensure that licensees can continue to quickly and efficiently adapt their service offerings to changing consumer demands, the Department will provide licensees with the maximum possible flexibility in determining the services they will offer and the technologies they will employ. Beyond the need to conform to the applicable Canadian spectrum allocation, only those limitations required for interference management purposes will be imposed.

Spectrum Aggregation Limit

Licensees must comply with the spectrum aggregation limits outlined in Radio Systems Policy 021 (RP-021), *Revision to the PCS Spectrum Cap and Timing for Licensing Additional PCS Spectrum*, published November 5, 1999. The spectrum aggregation limit within a service area consists of spectrum licensed to the licensee and to its affiliates.

4. Licensing Process

- To participate in the auction, all applicants must submit a completed application form as well as their financial deposit.
- In order to enhance the integrity of the auction, the Department requires that all bidders submit a pre-auction financial deposit with their application to participate in the auction. The financial deposit is to be in the form of an irrevocable standby letter of credit. The value of the pre-auction financial deposit will be based on the licences on which the applicant wishes to be eligible to bid.
- The application form, the associated documents that may be required (as per the instructions provided on the various forms), and the financial deposit are to be physically delivered by 5:00 p.m., Eastern Daylight Time (EDT), **August 28, 2000**, to the Manager, Wireless Networks.
- The Department may amend or supplement the policies and rules contained in this document. Any such amendment or supplement will be published on the Department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>) and will be sent to all qualified bidders. Written questions asking for clarification of rules or

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policies will be accepted. Written questions are to be submitted by 5:00 p.m. EDT on **August 11, 2000** to the Manager, Wireless Networks.

5. Auction Design and Rules

The Department proposed a simultaneous multiple-round auction similar to the auction of the 24 and 38 GHz bands. Many respondents acknowledged that this auction operated efficiently, and that such an auction would be appropriate for assigning the PCS spectrum licences. Therefore, with the exception of a few minor changes, the Department will use the same single-increment, non-discretionary bidding software system as was used in the 24 and 38 GHz auction.

Overview of the Simultaneous Multiple-Round Auction

The auction will be run electronically over the Internet, and bidders will be able to participate remotely from their premises using a secure Internet connection. The key features of the simultaneous multiple-round auction that will be used are listed below.

- The rules for the simultaneous multiple-round auction call for a related set of licences to be offered at the same time. Bidding is organized into a series of rounds. The identities of all bidders, the licences on which they are qualified to bid, and their initial levels of eligibility points will be made public prior to the commencement of bidding. As well, full information on the bids placed by all bidders will be made available after each round.
- New bids for a licence are non-discretionary. The Department will state the exact level of an acceptable new bid. The new bid will typically be determined by raising the standing high bid by some pre-established bid increment. Bidders will have no discretion to choose a higher bid; rather, they will simply choose whether or not to submit the new bid. This non-discretionary format allows rounds to be more brief and more frequent, because the mechanics of entering and checking bids are simpler, and because the prices never “jump” by unexpected amounts, making them more predictable. This also reduces the need for frequent executive oversight during the bidding, saving costs for the bidders.
- When two or more bids are submitted on the same licence in the same round, a tie bid occurs and the standing high bidder in the next round will be determined by a random selection process designed into the auction software. This is a slight deviation from the software used for the 24 and 38 GHz auction where the standing high bidders were determined by a “time-stamp rule”.
- In each round, bidders are offered an opportunity to withdraw bids made in previous rounds, subject to a penalty.

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- A minimum pace of bidding in the auction is established by the “activity rule”, which penalizes bidders who are inactive by reducing their “bidder eligibility points”.
- The rounds continue until there is a round in stage three in which no new bids, withdrawals, or pro active waivers are submitted. The standing high bidders on each licence at the auction's close will be deemed the provisional winners of those licences.

Opening Bids

The Department believes that the spectrum being offered in this auction has a significant value, and is confident that the revenues generated in the auction will cover the relevant spectrum management costs and provide fair compensation to the Canadian public for the use of their spectrum resource. Therefore, the establishment of irreducible reserve prices is likely unnecessary. In order to “kick-start” the auction and avoid unnecessary delays in ultimately assigning licences, the Department has proposed the establishment of minimum opening bids. These opening bids were conceptually linked to the licence fee revenue generated by licences for similar spectrum in the 800 MHz cellular and 2 GHz PCS bands. The Department has calculated an estimate of the total amount of licence fees that the ‘C’ and ‘E’ blocks would provide over the licence term if they were licensed by traditional means.

Most respondents to the consultation document agreed with the absolute level of the opening bids proposed by the Department. However, to reduce the barriers to entry in the less populated areas, the Department will adopt a three-level schedule (similar to that suggested by one of the respondents), linking the absolute number of people in a service area to the amount of the opening bid per point as follows:

- the opening bid is \$20,000 per point for service areas with a population less than 300,000;
- the opening bid is \$60,000 per point for service areas with a population greater than 300,000 but less than 2,000,000; and
- the opening bid is \$120,000 per point for service areas with a population greater than 2,000,000.

One eligibility point corresponds approximately to a 10 MHz of spectrum and a population of 100,000.

Bid Payment

Within **ten business** days of the auction’s close, each provisional licence winner will be required to submit a payment with a value equal to twenty percent of the sum of its

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standing high bids plus one-hundred percent of the sum of any penalties that it has incurred.

A payment for the remaining eighty percent of the total of the high bids will be due within **thirty business days** of the auction's close.

6. Licence Conditions

The following conditions will apply to the spectrum licences awarded through the auction of the additional PCS spectrum in the 2 GHz frequency range. Please note, that the spectrum licences that are issued pursuant to this auction will also continue to be subject to the relevant provisions of the *Radiocommunication Act* and the *Radiocommunication Regulations*.

Displacement of Microwave Incumbents

The licensee must comply with the revised transition policy outlined in Appendix 2 and relocation procedure for the relocation of incumbent microwave stations outlined in Client Procedures Circular 2-1-09 (CPC-2-1-09), *Displacement of Fixed Service Stations Operating in the 2 GHz Frequency Range to Accommodate Licensed Personal Communications Services (PCS)*.

Provision of Technical Information

When the Department requests technical information on a particular station or on a network, the information must be provided by the licensee to the Department according to the definitions and criteria specified by the Department. Refer to Client Procedures Circular 2-1-10 (CPC-2-1-10), *Licensing of Personal Communications Services (PCS) in the 2 GHz Band*.

Laws, Regulations, and Other Obligations

The licensee is subject to, and must comply with, the *Radiocommunication Act*, the *Radiocommunication Regulations* and the International Telecommunication Union (ITU) *Radio Regulations* and Canadian Table of Frequency Allocations pertaining to its licensed radio frequency bands.

Technical Considerations

The licensee must comply with the technical requirements set forth in Standard Radio System Plan 510 (SRSP-510), *Technical Requirements for Personal Communications Services in the Bands 1850-1910 MHz and 1930-1990 MHz*, and must deploy equipment certified under Radio Standards Specification 133 (RSS-133), *2 GHz Personal Communications Services*. SRSP-510 provides information on

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channelling plans, out-of-block emission limits, permissible EIRPs (effective isotropic radiated power) and antenna heights. RSS-133 sets out standards for transmitters and receivers for PCS in the 2 GHz band.

International Coordination

The licensee must comply with the requirements of cross-border sharing and coordination arrangements established between Canada and the United States, as amended from time to time. While frequency assignments are not subject to site by site licensing, licensees may be required to furnish all necessary technical data to Industry Canada for each relevant site in order for international coordination to be effected with the United States as per the terms of any existing or future sharing arrangement. Should international coordination be required, Industry Canada will identify the appropriate data elements, format and means of submission.

Lawful Interception

Licensees using the spectrum for circuit-switched voice telephony systems must, from the inception of service, provide for and maintain lawful interception capabilities as authorized by law.

Research and Development

The licensee must invest, as a minimum, two percent of its adjusted gross revenues resulting from its operations in this spectrum, over the term of the licence, in eligible research and development activities related to telecommunications.

PCS Resale

The licensee must offer PCS resale throughout their service area to PCS licensees on a non-discriminatory basis.

Implementation of Spectrum Usage

Within five years of the auction's close, the licensee must demonstrate to the Department that the spectrum has been put into use. The establishment of coverage to 50% of the population within the licensed service area, or some other indicator of usage that is acceptable to the Department, will be required.

Annual Reporting

The licensee must submit an annual report for each year of the term of the licence indicating continued compliance with all the licence conditions.

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7. Licence compliance

In the consultation paper, the Department requested comments on how the Department should view the potential eligibility of any party that is licensed for the provision of PCS under the *Radiocommunication Act* but is not in compliance with its existing licence conditions. Specifically, the Department requested views as to whether such parties and their affiliates should be required to be compliant with existing PCS licence conditions before being eligible to acquire additional PCS spectrum under this auction.

The Department will not use licence compliance as an eligibility criterion for this PCS auction. The Department will hold a public consultation process on this matter beginning in July 2000 and plans to establish the final procedures in time to implement the compliance regime by January 1, 2001.