



Industry
Canada

Industrie
Canada

May 29, 1999

Spectrum Management and Telecommunications Policy

Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands

Aussi disponible en français

Canada

Highlights of the Licensing Process for the 24 and 38 GHz Bands

- A simultaneous multiple round auction will open in early October, 1999. Applications to participate in the auction are due by August 6, 1999.
- 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 June 4 and June 23, 1999. Interested parties are invited to visit the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>) to get further information on the location and scheduling of these sessions **and to register for them.**
- There are 354 licences available: one 400 MHz licence in the 24 GHz band, one 400 MHz licence in the 38 GHz band and four 100 MHz licences in the 38 GHz band, in each of 59 Tier 3 service areas. The 24 and 38 GHz bands are fully aligned with the same spectrum in the United States.
- Licences have a term of ten years with a high expectation of renewal.
- Licences are transferable and divisible in the secondary market. No moratorium is imposed.
- In an area, any entity and its affiliates, other than an incumbent local exchange carrier whose local exchange area overlaps that area, will be eligible to hold spectrum licences covering frequency assignments aggregating up to a total of 600 MHz of spectrum. A spectrum aggregation limit of 200 MHz is applied to incumbent local exchange carriers and their affiliates in service areas that overlap their local exchange areas. An aggregation limit of 600 MHz is applied to incumbent local exchange carriers and their affiliates in service areas that do not overlap their local exchange areas.
- Licensees will have the maximum possible flexibility in determining the services they will offer and the technologies they will employ.

RADIOCOMMUNICATION ACT

NOTICE NO. DGRB-003-99 / DGTP-005-99

POLICY AND LICENSING PROCEDURES FOR THE AUCTION OF THE 24 AND 38 GHz FREQUENCY BANDS.

This Notice announces the release of the paper entitled *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands*. The purpose of this document is to facilitate the timely and orderly implementation within Canada of broadband wireless telecommunications in portions of the 24 and 38 GHz frequency range, by providing the policy and licensing procedures to participate in this competitive licensing process. This Notice and the above-noted paper initiate the licensing process for these frequency bands by first calling for notification of interest and subsequently, completed application forms and financial deposits.

On September 5, 1998, Industry Canada issued Gazette Notice DGRB-003-98, entitled *Consultation on the 24 and 38 GHz Frequency Bands: Proposed Policy and Licensing Procedures*. That Notice sought comments on the process to issue licences for exclusive access to spectrum bands in service areas across Canada. In response to the Notice, twenty submissions were received from interested parties.

Copies of the subject document are available electronically as follows:

World Wide Web (WWW) <http://strategis.ic.gc.ca/spectrum>

or in hard copy, for a fee, from:

Tyrell Press Ltd.
2714 Fenton Road
Gloucester, Ontario
K1T 3T7
Canada toll-free no.: 1-800-267-4862
U.S. toll-free no.: 1-800-574-0137
Worldwide tel. no.: (613) 822-0740
Fax number: (613) 822-1089

Canada Communication Group Inc.
45 Sacré-Coeur Blvd.
Hull, Quebec
K1A 0S9
Toll-free no.: 1-888-562-5561
Fax number: (819) 779-2833
Worldwide tel. no.: (819) 779-4335

May 15, 1999

Jan Skora
Director General
Radiocommunications and Broadcasting
Regulatory Branch

Michael Helm
Director General
Telecommunications Policy Branch

Table of Contents

1.	Introduction	1
2.	Spectrum Allocation and Policy	2
2.1	Frequency Band Structure	2
2.1.1	The 24 GHz Band	2
2.1.2	The 38 GHz Band	4
2.2	Spectrum Licence Packages	6
2.3	Eligibility and Spectrum Aggregation Limits	7
2.3.1	General Eligibility Requirements	7
2.3.2	Competition Principles	8
2.3.3	Competition Policies for the 24 and 38 GHz Bands	9
2.3.4	Spectrum Aggregation Limits for the 24 and 38 GHz Bands	9
2.3.5	Application of Aggregation Limit to the 28 GHz Band	11
2.3.6	Review of Aggregation Limits	13
3.	Definition of Licences	13
3.1	Spectrum Licences	13
3.2	Service Areas	13
3.3	Spectrum Licence Packages	14
3.4	Ministerial Authority	14
3.5	Licence Term and Renewal	14
3.6	Transfer and Division of Licences	14
3.6.1	Transferability of Licences	14
3.6.2	Divisibility of Licences	15
3.6.3	Transfer/Divisibility Moratorium	16
3.7	Flexibility of Use	17
3.8	Implementation of Spectrum Usage	17
4.	Technical Considerations	17
4.1	General	18
4.2	Coordination Process	18
4.2.1	Arrangements Between Licensees	18
4.2.2	Coordination Process in Lieu of Boundary Arrangement Between Operators	18
4.3	Interference Considerations	19
4.3.1	Co-Channel, Adjacent-Area Systems	19
4.3.2	Adjacent-Channel, Same-Area Systems	20
4.4	Technical Acceptance Certification	20
4.5	Sharing Issues at 24 GHz	21
4.6	International Coordination	21
5.	Conditions of Licence	21
5.1	Conditions of Licence for All Licensees	22
5.2	Licence Conditions for Radiocommunication Carriers	25

6.	Licensing Process	27
6.1	Application Process	27
6.1.1	Submission of Applications	27
6.1.2	Review of Applications	29
6.1.3	Withdrawal of Application Forms	30
6.1.4	Change of Information	30
6.2	Prohibition of Collusion	30
6.3	Notifications of Interest	30
6.4	Amendments and Supplements	31
6.5	Auction Design and Rules	31
6.5.1	Bidder Eligibility Points	33
6.5.2	Activity Rule	33
6.5.3	Stage Changes	34
6.5.4	Withdrawal of Bids and Related Penalties	34
6.5.5	Bid Increments	35
6.5.6	Activity Rule Waivers	36
6.5.7	Pro-Active Waivers	37
6.5.8	Withdrawal from the Auction	37
6.5.9	Closure of the Auction	38
6.6	Post-Auction Procedures	38
6.6.1	Bids and Withdrawal Penalties	38
6.6.2	Bid Forfeiture and Related Penalties	40
6.6.3	Eligibility Documentation	40
6.6.4	Enforcement of Spectrum Aggregation Limits	41
6.7	Software Requirements	42
6.8	Back-up Procedures	43
7.	Financial Aspects of the Auction	44
7.1	Reserve Prices	44
7.2	Pre-auction Deposits	44
7.3	Bid Payment	45
7.4	Bidding Credits	45
8.	Issuance of Licences	46
	Appendices	47

1. Introduction

In the Speech from the Throne on September 23, 1997, the Canadian Government reiterated its determination to place Canada at the forefront of the information revolution by making Canada the most connected nation in the world by the year 2000. To further this objective, the Minister of Industry announced on June 1, 1998 that Industry Canada was launching a spectrum licensing process for the 24 and 38 GHz microwave bands.

A public consultation paper on the licensing of the 24 and 38 GHz bands was published in August 1998. Comments and reply comments were received in December 1998 and January 1999, respectively. The department wishes to express its sincere thanks to all those who took the time to participate in the consultation process.

The department also wishes to thank the Law and Economics Consulting Group, Charles River Associates, and Market Design Incorporated for their assistance and expert advice. Furthermore, thanks are due to spectrum auction managers with other administrations, including Australia, the Netherlands, New Zealand, the United Kingdom, and the United States, who shared their insights on auctioning “best practices”.

After reviewing and analysing the input received, the department is now in a position to define the final policy framework for these bands and to lay out the rules and procedures of the licensing process for them. Through the publication of this document, Industry Canada initiates the process leading to Canada’s first spectrum auction.

Details on the policies and licensing procedure for the 24 and 38 GHz bands are laid out in the remainder of this document.

All enquiries should be addressed to:

**Earl Hoeg
Manager, Wireless Networks
Radiocommunications and Broadcasting Regulatory Branch
Industry Canada
300 Slater Street, 1522A
Ottawa, Ontario
K1A 0C8
Telephone: (613) 990-7176
Fax: (613) 991-3514
E-mail: 24ghz.38ghz@ic.gc.ca**

2. Spectrum Allocation and Policy

Fixed wireless broadband access technology in the frequency bands 24 GHz and 38 GHz continues to advance. Several manufacturers have developed broadband wireless products and a number of telecommunication service providers are considering wireless broadband solutions for the implementation of new local distribution networks and the expansion of existing networks. Point-to-point and point-to-multipoint systems operating in the bands 24 GHz and 38 GHz provide promising solutions for service providers wishing to offer competitive voice, data and multi-media services.

With the release of this document, the department is making available 400 MHz of spectrum in the 24 GHz frequency band and 800 MHz of spectrum in the 38 GHz frequency band on an exclusive basis. As described in section 6 of this document, this spectrum will be assigned via an auction.

The remaining 600 MHz of spectrum in the 38 GHz frequency band will continue to be available for licensing for shared use on a first-come, first served basis. The following sub-sections outline the department's policies on the frequency band structures, allocation, and eligibility.

A number of other frequency bands remain available for future broadband wireless access. These bands include the reserved Local Multipoint Communications Systems (LMCS) spectrum at 26 GHz (2000 MHz), a Multipoint Communications Systems (MCS) band at 23 GHz (800 MHz), and designated MCS and Very High Capacity Microwave (VHCM) bands at 18 GHz. Also, spectrum policy development for broadband wireless access spectrum will be initiated for the bands 40 GHz and 33 GHz.

More information on the department's plans for these bands will be available in the spectrum release plan to be published in the second quarter of 1999. Interested parties should monitor the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>) for updates.

2.1 Frequency Band Structure

In the consultation document the department put forth a view that the structure of the 24 and 38 GHz bands should align as closely as possible with other administrations to ensure the greatest availability of equipment, minimize costly customization requirements, and provide a larger equipment market for Canadian manufacturers. Respondents were generally supportive of these views. As outlined below, the structures of both the 24 GHz band and the 38 GHz band are harmonized with the spectrum designated in the United States.

2.1.1 The 24 GHz Band

In the consultation paper, the department proposed an amendment to the *Canadian Table of Frequency Allocations* to include a primary allocation for the fixed service in the bands

24.25-24.45 GHz and 25.05-25.25 GHz as well as a related amendment to the Canadian footnote C44.¹ The department noted that these bands partially overlap the allocations to the radionavigation service in the band 24.25-24.65 GHz, and to the fixed-satellite service in the band 24.75-25.25 GHz. In Canada there is no current use, nor are there any immediate plans for use, of these bands by the radionavigation or fixed-satellite services.

Most respondents were supportive of the allocation of the band 24 GHz for fixed service and of the proposed changes to the *Canadian Table of Frequency Allocations*. Several respondents also requested that Industry Canada seek an allocation for the fixed service as part of the *International Table of Frequency Allocations* or through an in-country footnote for Region 2. They suggested that the in-country footnote could indicate that the bands 24.25-24.45 and 25.05-25.25 GHz are allocated to the fixed service on a primary basis in Canada. Two respondents, however, indicated that using 200 MHz of the 500 MHz allocated to the fixed-satellite service may limit the use of this band for future feeder links which may be implemented after the year 2007.

Industry Canada believes that its originally proposed allocation will advance the availability of broadband digital access at affordable prices and that such an allocation will not unduly constrain other allocations in these bands. Industry Canada is herewith amending the *Canadian Table of Frequency Allocations*, as indicated in Table 1, with associated modification to footnote C44.

The policy provisions for the 24 GHz band are:

1. The allocation for fixed service on a primary basis is being added to the *Canadian Table of Frequency Allocations* (see Table 1).
2. Fixed service use in this band is intended for point-to-point and point-to-multipoint broadband wireless applications.
3. The spectrum in this band is divided into paired frequencies of 40+40 MHz for coordination purposes within Canada and with the U.S. (see Table 2).
4. The frequency pairs that will be aggregated as licences for this auction are outlined in Table 4 (see section 2.2). Licensees are permitted to use any channelling arrangement within the licensed blocks of spectrum as long as the requirements for out-of-block emissions at the licensed band edge are met. (See section 4 for more information on the technical requirements.)

¹ Canadian footnote C44 (CAN-94) currently reads as: “Feeder links to broadcasting-satellite space stations operating in the band 17.3-17.8 GHz shall be implemented in the band 24.75-25.25 GHz.”

Table 1: Amendment to *Canadian Table of Frequency Allocations*

24.25 - 24.45	<u>FIXED</u> RADIONAVIGATION
24.45 - 24.65	INTER-SATELLITE 882E RADIONAVIGATION
24.65 - 24.75	INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)
24.75 - 25. <u>05</u>	FIXED-SATELLITE (Earth-to-space) 882G <u>MOD C44</u> C47
25. <u>05</u> - 25.25	<u>FIXED</u> FIXED-SATELLITE (Earth-to-space) 882G <u>MOD C44</u> C47

MOD C44 (CAN-94) Feeder links to broadcasting-satellite space stations operating in the band 17.3-17.8 GHz shall be implemented in the band 24.75-25.25 GHz. **In areas where fixed systems have been licensed using a competitive process, future earth stations (Earth-to-space) in the band 25.05-25.25 GHz will be permitted provided that such installations will not cause interference to any fixed service to be deployed in the authorized service areas.**

Note: modifications are indicated in **bold and underline**

Table 2: 24 GHz Frequency Pairs of 40+40 MHz

Lower Frequency Block (MHz)	Upper Frequency Block (MHz)
24,250-24,290	25,050-25,090
24,290-24,330	25,090-25,130
24,330-24,370	25,130-25,170
24,370-24,410	25,170-25,210
24,410-24,450	25,210-25,250

2.1.2 The 38 GHz Band

In the consultation paper the department proposed two assignment options for the fourteen 50+50 MHz frequency pairs in the 38 GHz band. The first option was to designate seven frequency pairs (700 MHz) for licensing on an exclusive basis, for point-to-point and/or point-to-multipoint use, through the auctioning process and to designate the remaining seven frequency

pairs (700 MHz) for licensing on a shared basis, for point-to-point use only, under the existing first-come, first-served (FCFS) process. The second option was to designate nine frequency pairs (900 MHz) for licensing on an exclusive basis, for point-to-point and/or point-to-multipoint use, through the auctioning process and to designate the remaining five frequency pairs (500 MHz) for licensing on a shared basis, for point-to-point use only, under the existing first-come, first-served (FCFS) process.

A number of respondents felt that there was significant need for additional spectrum for point-to-point systems on a shared basis and favoured option one. Other respondents who favoured option two noted that withholding the additional two frequency pairs may artificially limit the spectrum available for exclusive use.

The department has concluded that there is some need for additional spectrum for shared point-to-point use on a FCFS basis and that a total of six frequency pairs (600 MHz) is appropriate to accommodate this need. Consequently, the department herewith designates eight frequency pairs (800 MHz) for exclusive licensing via auction. (See Table 3.)

The policy provisions for the 38 GHz frequency band are:

1. The fixed service is given priority over other service allocations in the *Canadian Table of Frequency Allocations*.
2. Fixed service use in this band is intended for point-to-point and point-to-multipoint broadband wireless applications.
3. The spectrum in this band is divided into frequency pairs of 50+50 MHz for coordination purposes within Canada and with the U.S.
4. The frequency pairs that will be aggregated as licences for this auction are outlined in Table 4 (see section 2.2). Licensees are permitted to use any channelling arrangement within the licensed blocks of spectrum as long as the requirements for out-of-block emissions at the licensed band edge are met. (See section 4 for more information on the technical requirements.)
5. The shared frequency pairs will continue to be available for deployment of point-to-point systems in the band 38.6-40.0 GHz, as outlined in Table 3, on a first-come, first-served basis. The spectrum policy provisions in *Spectrum Policy and Licensing Considerations, Fixed Radio Systems in the 23 GHz and 38 GHz Frequency Bands (SP 23/38 GHz)*² will be modified to reflect the changes outlined in this document.

² Available on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

Table 3: Frequency Pairs in the Band 38.6-40.0 GHz

FREQUENCY LIMITS (MHz)	USAGE	LICENSING PROCESS	EXCLUSIVITY
38600-38650 / 39300-39350	point-to-point	first-come, first-served	shared
38650-38700 / 39350-39400	point-to-point	first-come, first-served	shared
38700-38750 / 39400-39450	point-to-point point-to-multipoint	auction	exclusive
38750-38800 / 39450-39500	point-to-point point-to-multipoint	auction	exclusive
38800-38850 / 39500-39550	point-to-point point-to-multipoint	auction	exclusive
38850-38900 / 39550-39600	point-to-point point-to-multipoint	auction	exclusive
38900-38950 / 39600-39650	point-to-point point-to-multipoint	auction	exclusive
38950-39000 / 39650-39700	point-to-point point-to-multipoint	auction	exclusive
39000-39050 / 39700-39750	point-to-point point-to-multipoint	auction	exclusive
39050-39100 / 39750-39800	point-to-point point-to-multipoint	auction	exclusive
39100-39150 / 39800-39850	point-to-point	first-come, first-served	shared
39150-39200 / 39850-39900	point-to-point	first-come, first-served	shared
39200-39250 / 39900-39950	point-to-point	first-come, first-served	shared
39250-39300 / 39950-40000	point-to-point	first-come, first-served	shared

2.2 Spectrum Licence Packages

In addition to the technical aspects of how the frequency pairs should be structured, there is the important question of how this spectrum should be packaged for licensing. As with the choice of the appropriate geographic size of licences, there are trade-offs involved when choosing between a small number of licences with a large amount of bandwidth and a large number of licences with a small amount of bandwidth.

In the consultation document, the department proposed that the five 40+40 MHz paired blocks in the 24 GHz band be packaged as a single 400 MHz spectrum licence. The department also

proposed that the paired 50+50 MHz blocks in the 38 GHz band be packaged as follows: one 400 MHz licence, one 300 MHz licence and one 200 MHz³ licence.

Many respondents found the proposed block sizes too large. They argued that such large blocks would effectively exclude those who require smaller amounts of spectrum from participating in the auction. Whereas all respondents agreed that the 24 GHz spectrum should be packaged as a single licence, most suggested that the 38 GHz spectrum be packaged so as to include one or more smaller licences of 100 MHz.

Having considered these comments, the department will offer the 24 GHz spectrum as a single 400 MHz licence. The eight frequency pairs (800 MHz) in the 38 GHz band will be packaged as follows: one 400 MHz licence and four 100 MHz licences. See Table 4 below.

Table 4: Spectrum Licence Packages Offered

Spectrum Licence	Size (MHz)	Lower Frequency (MHz)	Upper Frequency (MHz)
A	400	24,250-24,450	25,050-25,250
B	400	38,700-38,900	39,400-39,600
C	100	38,900-38,950	39,600-39,650
D	100	38,950-39,000	39,650-39,700
E	100	39,000-39,050	39,700-39,750
F	100	39,050-39,100	39,750-39,800

2.3 Eligibility and Spectrum Aggregation Limits

In the consultation paper, the department presented the guiding principles that would be applied to ensure a competitive post-auction market-place. These principles, and the department’s decisions after having considered the comments received, are presented below.

2.3.1 General Eligibility Requirements

All entities operating as radiocommunication users or radiocommunication service providers other than radiocommunication carriers must comply on an ongoing basis with the eligibility requirements outlined in subsection 9(1) of the *Radiocommunication Regulations*.

All entities operating as radiocommunication carriers must comply on an ongoing basis with the Canadian ownership and control requirements outlined in subsection 10(2) of the *Radiocommunication Regulations*.

³ Assuming that 900 MHz would be made available for licensing on an exclusive basis via auction.

2.3.2 Competition Principles

One of the key advantages that has led the department to introduce auctioning as a spectrum assignment tool is the ability of an auction mechanism to award spectrum in an economically efficient manner. Within a competitive environment, a market-based spectrum assignment mechanism will be best able to select licensees who can most efficiently provide the wireless services most valued by Canadian consumers. To ensure that economic benefits are maximized, it is important that licensees will indeed be operating in a competitive market-place.

The means available to the government to promote a competitive post-auction market-place for broadband services include disallowing the participation of certain firms in the auction and imposing aggregation limits on the amount of spectrum that any bidder may acquire. With regard to these two measures, the department considers two guiding principles.

Principle 1 A company that currently provides telecommunications services should be restricted from holding certain licences in the following circumstances:

- (i) the company possesses market power in the supply of one or more telecommunications services in a region covered by the licence to be auctioned;
- (ii) a new entrant is likely to use the licence to provide services in competition with the company's existing services; and,
- (iii) the anti-competitive effects of the company's acquisition of a licence are not outweighed by the potential economies of scope arising from the integration of 24 and 38 GHz spectrum into the company's existing network.

Principle 2 When multiple licences for the use of spectrum in a given geographic area are auctioned, and these can be used to provide closely substitutable services, limits on the amount of spectrum that any single bidder is allowed to acquire may be required to ensure competitive markets. Spectrum aggregation limits may be imposed in the following circumstances:

- (i) a bidder that acquires a significant amount of spectrum would not face effective competition from providers of services that use infrastructure other than the spectrum being auctioned; and,
- (ii) the anti-competitive effects arising from the acquisition of a significant amount of spectrum by a single bidder would not be offset by lower costs or higher valued services resulting from holding this amount of spectrum.

2.3.3 Competition Policies for the 24 and 38 GHz Bands

With regard to the principles outlined above, the department proposed in the consultation document that no restrictions on bidder eligibility were required, but that a spectrum aggregation limit of 700 MHz should be imposed.

A wide variety of viewpoints were expressed in the comments received. Respondents were divided on the need for a spectrum aggregation limit. Some respondents wanted no limit whatsoever, while others felt that the limit should be lower than the proposed figure of 700 MHz. Respondents were also divided as to whether spectrum aggregation limits should be applied to all licensees, or only to local telephone companies, cable companies, and/or holders of licences for 28 GHz LMCS (Local Multipoint Communications Systems) spectrum.

After considering the comments received regarding the potential impact on competition in the broadband services market-place of various types of spectrum aggregation limits, the department has concluded that some limits are required to act as a safeguard against anti-competitive behaviour. The department continues to believe that no one entity should be permitted to acquire all the available broadband spectrum in a given area and hence a general spectrum aggregation limit will be applied. Furthermore, the department has determined that the market position of certain incumbent local exchange carriers⁴ (ILECs) in the provision of high speed data connections - particularly to businesses - necessitates that a more stringent limit be placed upon them in their local exchange areas. As the ILECs have extensive distribution infrastructures consisting of comprehensive local switching and access facilities and transmission lines to most residences and businesses, they do not require access to the same amount of spectrum within their local exchange areas as would be required by a competitive local exchange carrier (CLEC). However, given that there are potential economies of scope with their existing wired infrastructures, the department believes it is appropriate that ILECs still be permitted to bid for a limited amount of spectrum in these bands in their local exchange areas.

Given that cable companies do not hold the same market position as ILECs in the provision of high speed data connections to businesses, cable companies will not be subject to the more stringent spectrum aggregation limit that will apply to ILECs.

2.3.4 Spectrum Aggregation Limits for the 24 and 38 GHz Bands

For the purposes of the spectrum aggregation limits discussed below, the spectrum within a service area consists of spectrum licensed to any entity, and to its affiliates, in the 24.25-24.45 GHz, 25.05-25.25 GHz, 38.70-39.10 GHz and 39.40-39.80 GHz frequency bands. Note that licences for spectrum in the shared portion of the 38 GHz band **do not** count towards the spectrum aggregation limit.

⁴ For the purposes of this policy, ILECs are defined to be: BCT.TELUS Communications Inc., Bell Canada (Bell), Island Telecom Inc. (Island Tel), Manitoba Telecom Services Inc. (MTS), Maritime Telegraph & Telephone Company, Limited (MT&T), The New Brunswick Telephone Company Limited (NBTel), NewTel Communications Inc. (NewTel), Northwestel Inc., Québec-Téléphone, SaskTel, Télébec ltée, and any successors to these companies.

For the purposes of this policy, “affiliate” means a person who controls the entity, or who is controlled by the entity or by any person who controls the entity.⁵

Furthermore, for the purposes of this policy, if a person owns, directly or indirectly, at least 20% of the entity’s voting shares, where the entity is a body corporate, or where the entity is not a body corporate, at least 20% of the beneficial ownership in such entity, this will result in a rebuttable presumption that the person controls the entity. Such person may rebut the presumption by submitting an affidavit or declaration, signed by an officer or other appropriate official, which sets out the specific ownership holdings of any person with a 20% or greater holding in the entity, and which affirms that the person does not control the entity and sets out reasons as to why the person does not control the entity. Such a document should be filed as part of the application materials, and in any event, no later than five business days after the publication of the list of qualified bidders. The department reserves the right to request further information and make its own determination on this issue.

In an area, any entity and its affiliates, other than an incumbent local exchange carrier whose local exchange area overlaps that area, will be eligible to hold spectrum licences covering frequency assignments aggregating up to a total of 600 MHz of spectrum.

In those 24 and 38 GHz service areas where the incumbent local exchange carrier already has significant local infrastructure and coverage, it and its affiliates will be eligible to hold spectrum licences covering frequency assignments aggregating up to a total of 200 MHz of spectrum. As the boundaries of the 24 and 38 GHz service areas being auctioned do not always coincide exactly with the boundaries of incumbent local exchange carriers’ local exchange areas, the department must determine the degree of “overlap” between a 24 and 38 GHz service area and an incumbent local exchange carrier’s local exchange area that will result in the application of this 200 MHz spectrum aggregation limit. For the purposes of this policy, the department defines “overlap” of a 24 and 38 GHz service area as those situations where 35% or more of the population of the 24 and 38 GHz service area is covered by an incumbent local exchange carrier’s local exchange area and by the local exchange area(s) of its affiliates. In these situations, the incumbent local exchange carrier and its affiliates will be eligible to hold spectrum licences covering frequency assignments aggregating up to a total of 200 MHz of spectrum. Consistent with this limit, an incumbent local exchange carrier and its affiliates will be ineligible to bid on the 400 MHz “A” and “B” licences in service areas in which 35% or more of the population is overlapped by its local exchange area and/or by the local exchange area(s) of its affiliates.⁶

⁵ For the purposes of this policy, “control” means control in any manner that results in control in fact, whether directly through the ownership of securities or indirectly through a trust, agreement or arrangement, the ownership of a body corporate or otherwise.

⁶ Beyond this, there are no licence-specific restrictions on any bidder for this auction. Therefore, in a minor deviation from the procedure outlined in the *Framework for Spectrum Auctions in Canada* document, applicants will not need to identify the particular licences on which they wish to bid. Aside from the prohibition on incumbent local exchange carriers and their affiliates bidding on Licence A or Licence B in certain service areas, all bidders will be able to submit bids on any licences for which they have a sufficient number of eligibility points. See section 6 for more details.

In service areas in which less than 35% of the population is overlapped by its local exchange area and/or by the local exchange area(s) of its affiliates, an incumbent local exchange carrier and its affiliates will be eligible to hold spectrum licences covering frequency assignments aggregating up to a total of 600 MHz of spectrum.

The aggregation limit will also be enforced when a licence is transferred in the secondary market or when the transfer of an ownership interest in a successful applicant is effected.

Further details on the enforcement of these spectrum aggregation limits are provided in section 6.6.4.

2.3.5 Application of Aggregation Limit to the 28 GHz Band

In 1996 the department established a policy that licences for spectrum in the 27.35-28.35 GHz LMCS band (referred to hereafter as “the 28 GHz band”) could not be held by entities who were either:

- (i) a telecommunication common carrier which provides local exchange telephone service anywhere in Canada; or,
- (ii) licensed to carry on a cable distribution undertaking under the *Broadcasting Act* anywhere in Canada.

This policy is hereby rescinded, effective immediately, and licences for 28 GHz LMCS spectrum may be held by these entities, subject to the spectrum aggregation limits outlined below. Any proposed transfer or division of an LMCS licence will continue to be subject to review and approval by the Minister.⁷

In the consultation paper, the department proposed that if an LMCS licensee⁸ did not participate in the auction, or did not acquire 24 or 38 GHz exclusive spectrum in the secondary market, then the 1000 MHz of spectrum that is currently licensed to it would not be affected. The department also indicated that if an LMCS licensee wished to obtain licences for 24 or 38 GHz spectrum in an area that overlapped its licensed LMCS area, then its LMCS spectrum assignment would be included in the spectrum aggregation limit that was proposed for the 24 and 38 GHz bands. There was no opposition to this proposal in the comments received.

The department continues to believe that there are benefits to allowing current and future holders of LMCS licences to hold licences for 1000 MHz of spectrum in the 28 GHz band, provided that they do not also hold spectrum licences for 24 or 38 GHz spectrum which overlap the same

⁷ It should be noted that enhanced transferability and divisibility attributes are being attached to the 24 and 38 GHz licences being auctioned. This is discussed in more detail in section 3.6 of this document.

⁸ In June 1998 the Minister of Industry announced that applications to transfer ownership of LMCS licences to eligible purchasers would be considered, hence this was not intended to apply only to the original LMCS licensees.

service area. However, for entities wishing to hold licences for 28 GHz spectrum **and** either 24 or 38 GHz spectrum within the same area, the department has concluded that they should be subject to spectrum aggregation limits that will increase the number of competitors in the area.

Specifically, the spectrum aggregation limits for entities wishing to hold licences for LMCS spectrum, or a combination of LMCS spectrum and 24 or 38 GHz spectrum, are defined as follows.

In an area, any entity and its affiliates, other than an incumbent local exchange carrier whose local exchange area overlaps⁹ that area, may hold:

- (i) licences covering frequency assignments in the 28 GHz LMCS band aggregating up to a total of 1000 MHz of spectrum; or,
- (ii) licences covering frequency assignments in the 28 GHz LMCS band **and** the 24 or 38 GHz bands aggregating up to a total of 600 MHz of spectrum.

An incumbent local exchange carrier and its affiliates, in an area which is overlapped¹⁰ by its local exchange area, may hold:

- (i) licences covering frequency assignments in the 28 GHz LMCS band aggregating up to a total of 200 MHz of spectrum; or,
- (ii) frequency assignments in the 28 GHz band **and** the 24 or 38 GHz bands aggregating up to a total of 200 MHz.

For the purposes of these spectrum aggregation limits, the spectrum within a service area consists of spectrum licensed to any entity and its affiliates, for wireless broadband services in the 24.25-24.45 GHz, 25.05-25.25 GHz, 27.35 - 28.35 GHz, 38.70-39.10 GHz and 39.40-39.80 GHz frequency bands. Note that licences for spectrum in the shared portion of the 38 GHz band **do not** count towards the spectrum aggregation limit.

The aggregation limit will also be enforced when a licence is transferred in the secondary market or when the transfer of an ownership interest in a successful applicant is effected.

Further details on the enforcement of these spectrum aggregation limits are provided in section 6.6.4.

⁹ The definition of overlap is provided in section 2.3.4.

¹⁰ The definition of overlap is provided in section 2.3.4.

2.3.6 Review of Aggregation Limits

The limits on the aggregation of spectrum will be reviewed when a subsequent licensing process is announced for other wireless broadband spectrum or three years following the close of this auction, whichever comes first. Depending on the degree to which competition has developed in the local broadband services market-place, as evidenced by factors such as the concentration of market shares, the availability of choice in the provision of local broadband services, or the determinations of the Canadian Radio-television and Telecommunications Commission (CRTC) with regard to need for the regulation of prices for local broadband services, the department may modify or remove this spectrum aggregation limit.

3. Definition of Licences

3.1 Spectrum Licences

The authorizations that will be available for assignment will be spectrum licences which 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.”

The attributes of these spectrum licences and the conditions attached to them are described below. The elements of the “common framework” for spectrum auctions laid out in the *Framework for Spectrum Auctions in Canada*¹¹ document have been adopted for the licensing of 24 and 38 GHz spectrum.

3.2 Service Areas

In the consultation document the department proposed that Tier 3 service areas be used for the licensing of the 24 and 38 GHz bands. These areas are based on groupings of Statistics Canada’s Census Divisions and Subdivisions. Maps of the Tier 3 service areas are provided in Appendix 1. (For full details on these service areas tiers, refer to the document *Service Areas for Competitive Licensing*.)¹²

The majority of respondents concurred that the Tier 3 service areas would be appropriate for licensing of the 24 and 38 GHz bands. They noted that this option could satisfy a variety of business plans of both large and small players. Furthermore, the number of licences would not be so large as to make the auction unduly complex.

As such, the department has decided that Tier 3 service areas will be used for the licensing of the 24 and 38 GHz bands in this auction.

¹¹ Available on the department’s Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

¹² Available on the department’s Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

3.3 Spectrum Licence Packages

As discussed in section 2.2, the department will offer the 24 GHz spectrum as a single 400 MHz licence (Licence A) in each service area. The 800 MHz available in the 38 GHz band will be packaged as one 400 MHz licence (Licence B) and four 100 MHz spectrum licences (Licences C, D, E and F) in each service area.

3.4 Ministerial Authority

The spectrum licences that are issued pursuant to this auction will continue to be subject to relevant provisions in the *Radiocommunication Act* and the *Radiocommunication Regulations*. For example, the Minister continues to have the power to amend the terms and conditions of the spectrum licences (paragraph 5(1)(b) of the *Radiocommunication Act*). Such powers would be exercised on an exceptional basis and only after full consultation. As well, as noted in section 6.1 of the *Framework for Spectrum Auctions in Canada* document, section 40 of the *Radiocommunication Regulations* continues to apply. However, it is important to note that the department would reallocate spectrum assigned through auction only under extraordinary circumstances — taking into consideration that the licensee complied with the conditions of licence, has made large investments in infrastructure, and is serving an established client base. If a reallocation were contemplated, it would take place only after full consultation.

3.5 Licence Term and Renewal

The department will offer licences with a ten-year term and a high expectation of renewal at the end of the term. That is to say, the department intends to generally renew licences for subsequent ten-year terms unless a breach of licence condition occurs, a fundamental reallocation of spectrum to a new service is required (e.g., a reallocation by the International Telecommunication Union), or an overriding policy need arises (e.g., a spectrum reallocation to address a national security issue). To provide a more stable investment climate for licensees, a consultation process will commence no later than two years prior to the end of the licence term if the department foresees the possibility that it will not renew a licence or if renewal fees and/or changes to conditions of licence are contemplated.

In case of bankruptcy or insolvency of a licence holder, all applicable conditions of licence set out in this policy will continue to apply, subject to the general laws of bankruptcy and insolvency.

3.6 Transfer and Division of Licences

3.6.1 Transferability of Licences

The department proposed that auctioned licences would be transferable subject to the following stipulations. Respondents generally supported this notion of licence transferability.

- All eligibility criteria and other conditions that apply to a licence, including those related to interference management, will continue, as applicable, should the licence be transferred. (The

conditions on the licence may change if the transfer is from a radiocommunication carrier to a non-carrier, or vice versa. See sections 5.1 and 5.2.)

- Should an auction winner transfer its licence to another party, for example, four years into a ten-year licence term, the second party will only receive a licence term equal to the remaining six years, but will be eligible for the same licence renewal provisions as the original licensee.
- All proposed licence transfers must comply with any spectrum aggregation limits or other measures intended to preclude anti-competitive behaviour that may be in place. (It should be noted that any licence transfer may also be subject to the provisions of the *Competition Act*.)
- Written notification will be required of all proposed licence transfers. The department will also request attestations or other documentation to ensure that the points above (e.g., compliance with the eligibility criteria and other conditions of licence) have been satisfactorily addressed. Once a licence transfer has been registered, the department will revoke the original licence and issue a new licence(s) in its place.
- The department will maintain a publicly accessible database listing all auctioned licences and the respective licensee and will update the database upon a licence transfer.

Further details on the exact administrative procedures for transferring a spectrum licence will be provided in a forthcoming Client Procedures Circular.¹³

3.6.2 Divisibility of Licences

The department proposed that licences be divisible, that is to say, that licensees be allowed to transfer their licences not only in whole, but also in part, in both the bandwidth and geographic dimensions, with minimal restrictions.

Respondents generally supported this notion of licence divisibility and therefore the department will implement the proposals made in the consultation document. The conditions applicable to transferred licences (discussed above) apply equally to licences which are divided.

To maintain compatibility with the department's database, licences will be divisible in the geographic dimension only in terms of spectrum grid cells.¹⁴ Thus when an auctioned licence is divided, the minimum geographic size that any one of the new divisions may take is one Spectrum Grid cell. The individual spectrum grid cells are sufficiently small that even with this restriction, an

¹³ This document will be made available on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

¹⁴ Spectrum grid cells are defined in the Industry Canada (Spectrum Management) Client Procedures Circular 2-1-16 (CPC-2-1-16), *Licensing Procedure for Local Multipoint Communications Systems (LMCS)*, (February 1, 1997), available on the Strategis Web site at <http://strategis.ic.gc.ca/spectrum>. Spectrum grid cells are six-sided figures with an area of 25 km² that fit together in an interlocking pattern over the geography of Canada.

extremely high degree of flexibility will be available to the parties involved in determining the size and shape of sub-divided portions of a licence.

As for the bandwidth dimension, the department will require compliance with the spectrum assignment plan as defined in this document and the appropriate Standard Radio System Plan (SRSP) (see section 4.2.2). Therefore, the spectrum offered in the 24 GHz band can be divided into, at most, five frequency block pairs of 40+40 MHz. The spectrum being offered at 38 GHz can be divided into, at most, eight frequency block pairs of 50+50 MHz each.

It should be noted that the division of a licence may increase the number of parties with whom other neighbouring licensees (domestic and international) must communicate when attempting to minimize the potential for interference at the boundary between service areas and/or at the band edge between spectrum blocks.

3.6.3 Transfer/Divisibility Moratorium

The department solicited views on whether the transferability and divisibility of licences should be delayed for a specific time, for example, three years following this licensing process. Such a moratorium may discourage bidding for speculative purposes and will ensure that bidders participating in the auction have a genuine desire to use the spectrum in the markets they wished to acquire.

Disadvantages to this approach also exist. Some post-auction secondary market transactions may be required to “fine-tune” the distribution of the spectrum. A moratorium on transferability and divisibility would obviously not allow such transactions to occur. As well, given that the services and technologies associated with 24 and 38 GHz spectrum are new and developing, bidders may face some uncertainty in determining the exact amount of spectrum they may require in various service areas. As more information about market opportunities and technology becomes available post-auction, secondary market transactions may lead to a more efficient allocation of the resource.

There was almost unanimous opposition in the comments received to any moratorium on transferability and divisibility. Respondents argued that a moratorium would inhibit the migration of licences to users who have a more valuable new use for the spectrum and would consequently be detrimental to licensees and consumers alike.

Furthermore, respondents contended that there are other means available to deter speculation. If a competitive environment is ensured through eligibility restrictions and/or spectrum aggregation limits and if bid payment is required as soon as possible after the close of the auction, there will be little incentive for speculative bidding.

The department has reached the conclusion that the spectrum aggregation limits outlined in sections 2.3.4 and 2.3.5 and the decision to require the entire bid payment shortly after the close of the auction (see section 7.3) render moratoria on transferability and divisibility unnecessary.

Licences will be immediately transferable and divisible after assignment, subject to the conditions set out herein.

3.7 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 (discussed in section 4 of this document) will be imposed.

3.8 Implementation of Spectrum Usage

The department solicited comments as to whether there should be a condition of licence that requires licensees to implement usage of their spectrum within a specified period in order to deter possible anti-competitive spectrum “warehousing”.

Many of those respondents who addressed this issue were opposed to such roll-out requirements. However, the department continues to be of the view that the spectrum is a public resource which should be used in ways which serve the public interest. As such, licensees will be required, as a condition of licence, to demonstrate that their spectrum is being put to use within three years of the auction’s close.

The department recognizes that a variety of different business plans and technologies may be employed in these bands across markets of various sizes. In order to be technology-neutral and service-neutral, the department is reluctant to specify roll-out requirements in terms of specific technical measures. In fact, there may be a number of measures that will demonstrate an acceptable level of spectrum usage. One example of what would be considered an acceptable level of spectrum usage in a large urban area would be the establishment of eight links per one million population (rounded up to a whole number) within a service area within three years.

In the event that spectrum obtained in this auction has not been put to use within three years after the close of the auction, the department may begin a process to afford the licensee the opportunity to demonstrate why its licence should not be revoked.

4. Technical Considerations

The following sections outline the technical aspects of the licensing of the 24 and 38 GHz frequency bands.

4.1 General

The spectrum auction process assigns blocks of spectrum within prescribed geographical areas. Licensees may deploy a range of point-to-point and point-to-multipoint equipment. The department will minimize technical regulations as they pertain to operation of licensees' systems. Industry Canada will place limits on certain system parameters in order to meet international regulations and to mitigate interference to/from other systems. The customer premises equipment, and possibly hub station equipment, will require a technical acceptance certificate to ensure maximum radio frequency compatibility between equipment types.

There may be situations where co-channel assignments are made in directly adjacent areas, and/or adjacent channel assignments are made within the same service areas. Such situations may lead to interference between systems and consequently will require effective coordination between operators. To minimize the potential for interference there must be communication between the licensees prior to system implementation. The following sections outline the various aspects of the coordination process including the required communications between licensees.

4.2 Coordination Process

4.2.1 Arrangements Between Licensees

Licensees are encouraged to enter into mutually beneficial frequency usage agreements that would ensure service is available in the boundary areas. Operators will be expected to take full advantage of interference mitigation techniques such as antenna discrimination, polarization, frequency offset, shielding, site selection, or power control to facilitate co-existence with systems of other service providers, at both design and implementation stages. Boundary arrangements between licensees will serve as the primary mechanism for coordinating systems that could potentially cause interference to an operator in an adjacent service area. In addition, operators serving the same area using adjacent frequency blocks should consult each other to avoid interference problems caused by transmitters and receivers being too close together (near/far problem).

4.2.2 Coordination Process in Lieu of Boundary Arrangement Between Operators

In the event two licensees cannot arrive at a mutually acceptable boundary arrangement, or where one operator needs to deploy before an arrangement can be concluded, it will be necessary to have a default process in place.

In the consultation document the department proposed that coordination between licensees can be initiated in several ways, such as using distance or power flux density (pfd) as a criterion. If the trigger criterion is distance, this distance needs to be sufficiently large to ensure minimum interference between systems. Similarly, if the trigger criterion is pfd, this pfd level needs to be sufficiently low to ensure minimum interference between systems. Some respondents were in favour of a "keyhole" distance mechanism to trigger coordination between point-to-point systems. Although this alternative has its advantages, it may not be optimal for handling point-to-multipoint systems. The department believes that the use of pfd limits as coordination triggers may be the most practical approach, provided that reasonable levels can be adopted. In addition, it

is possible to use conservative culling distances in order to identify adjacent service areas where coordination is required.

The allowable pfd at a boundary to minimize interference to receivers within the area will depend on the susceptibility of base station and customer receivers. The calculation methods to determine the compliance with a pfd are typically based on worst case propagation conditions since the specific path profiles to all receivers are not usually known.

Pfd triggers will be set at appropriately conservative values to minimize the potential for interference to adjacent systems, since outside these values, licensees can operate without the requirement to communicate with neighboring licensees. Practical experience for services in many frequency bands has demonstrated that once communication between licensees has been triggered, actual systems can be implemented in much closer proximity than the worst case values would indicate. The department will develop suitable pfd trigger limits in consultation with industry.¹⁵

4.3 Interference Considerations

Interference between broadband wireless systems primarily occurs through the following mechanisms:

- (a) co-channel emission levels into adjacent areas (Co-Channel, Adjacent-Area); and,
- (b) adjacent channel emission levels within the same service area (Adjacent-Channel, Same-Area).

These are discussed below.

4.3.1 Co-Channel, Adjacent-Area Systems

The potential for one system to interfere with another system typically extends for distances much greater than the desired link length. It will be extremely difficult to accommodate Co-Channel, Adjacent-Area systems in close proximity without knowing the characteristics of both systems.

For most point-to-multipoint systems it is possible to cover an area with contiguous cells. A basic premise is that this should be attainable regardless of who actually owns or operates the individual cells. This applies particularly to systems which are similar in technical characteristics, deployment, intended service, and spectrum use (channelization, bandwidth, frequency pairing, etc.). The situation becomes more complex where the characteristics are different, particularly in power and spectrum use. Licensees attempting to implement systems in close proximity to each

¹⁵ See the draft Standard Radio System Plans (SRSPs) *Technical Requirements for the Fixed Radio Systems Operating in the Bands 24.25-24.45 GHz and 25.05-25.25 GHz (Provisional SRSP-324.25)* and *Technical Requirements for the Fixed Radio Systems Operating in the Band 38.6-40 GHz (Provisional SRSP-338.6)*, available on the Web site of the Radio Advisory Board of Canada (RABC) (<http://www.rabc.ottawa.on.ca/english/reports.cfm>).

other and/or to a licence area boundary will require knowledge of both systems to allow the incorporation of mitigating design and deployment considerations to allow coexistence.

4.3.2 Adjacent-Channel, Same-Area Systems

Adjacent channel operation within the same area will have the potential for interference, particularly with respect to the near/far effect at the subscriber receiver when the transmitting hubs are not located in reasonably close proximity. Hubs receiving in adjacent spectrum could also be subject to the same near/far problems as subscriber terminals, especially when the hubs are not co-located.¹⁶ An emission limit at the channel block edges will alleviate some of the potential for interference.

From an interference standpoint, co-location of hub transmitters may be desirable, but differences in power requirements, intended market, or business cases may make this unfeasible. The size of the area will also play a major role in the complexity of coordination since the larger the area, the greater the requirement for multiple hubs to provide service.

Out-of-block emission limits will be required to minimize inter-system interference. Point-to-multipoint systems are less constrained when the emission limits are applied to a block of spectrum rather than to individual channels within the block. Consideration may be given to the application of an absolute emission limit at the block edge, i.e. independent of carrier level and frequency tolerance.

4.4 Technical Acceptance Certification

Point-to-point and point-to-multipoint customer premises equipment, and possibly hub station equipment, will be required to meet certain minimum radio frequency standards such as out-of-block emission limits and frequency drift tolerance. The department will set reasonably stringent, technology-independent, out-of-block emission specifications at the licensed band edge. These standards will be developed in consultation with industry and the appropriate Radio Standard Specification (RSS) will be revised accordingly.¹⁷ Vendors will be required to certify compliance to the revised RSS specifications for equipment under Industry Canada's technical acceptance certification process.

¹⁶ The department will not mandate co-location of hub stations.

¹⁷ See the draft Radio Standards Specification (RSS) *Radio Standards Specification for Local Multipoint Communications Systems in the 28 GHz Band and Point-to-Point and Point-to-Multipoint Broadband Communication Systems in the 24 GHz and 38 GHz Bands* (Provisional RSS-191), available on the Web site of the Radio Advisory Board of Canada (RABC) (<http://www.rabc.ottawa.on.ca/english/reports.cfm>).

4.5 Sharing Issues at 24 GHz

The band 24.75-25.25 GHz is currently allocated to the Fixed Satellite Service (FSS) (Earth-to-space) and is intended for use by Broadcast Satellite Service (BSS) feeder links in support of the band 17.30-17.80 GHz. As per footnote C44 in the *Canadian Table of Frequency Allocations*, future earth stations will be permitted, provided that such installations do not cause interference to any fixed systems operating within the authorized service areas. The department will develop appropriate coordination criteria in consultation with industry.¹⁸

4.6 International Coordination

Licensees will be expected to respect ITU *Radio Regulations* pertaining to the 24 and 38 GHz bands and abide by any future agreements established with other countries.

The deployment of point-to-point and point-to-multipoint systems near the Canada/U.S. border is subject to the sharing arrangements established between the two countries. Bilateral negotiations for the 24 and 38 GHz bands between Industry Canada and the Federal Communications Commission of the United States are on-going. It is the department's intention to develop a mechanism for cross-border coordination similar to the domestic process outlined in the previously mentioned Standard Radio System Plans (SRSPs).

5. Conditions of Licence

In the consultation paper the department proposed a number of licence conditions for the spectrum licences to be auctioned.

Several respondents suggested that there should be one set of licence conditions applicable to all licensees. They argued that not doing so would disadvantage auction participants who intend to provide a radiocommunication carrier service as they would have additional conditions compared to licensees who intend to use their spectrum for private use. In particular, these respondents requested the department not impose three of the proposed conditions of licence: the requirement to provide lawful interception capabilities, the investment of 2% of adjusted gross revenues in telecommunications research and development, and the filing of annual reports.

The department notes the comments of a number of respondents to the effect that the "Solicitor General's Enforcement Standards for Lawful Interception of Telecommunications" were written to apply to circuit-switched voice telephony systems and as such the standards were not readily applicable to broadband telecommunications systems. The department is concerned that broadband carriers transporting aggregated traffic may have no ability to discern what, if any, intercept target traffic may be present in the aggregate stream. Further, the department notes that telecommunications networks are moving rapidly away from a circuit-switched environment to a

¹⁸ These criteria will be made available on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

packet-based environment using routers rather than traditional switches. Router-based networks pose a number of challenges to the provision of lawful interception capabilities in that routers may only receive a portion of a target's traffic, a target's traffic may be simultaneously routed through several routers at different points in a network, and routers permit customers to distribute traffic across several service providers. Notwithstanding the technical complexities involved, the department recognizes that electronic interception of personal communications under lawful warrant is an indispensable technique for law enforcement. However, recognizing as well that the technical and legal requirements to support lawful intercept capabilities in new network technologies and topologies are still undefined and under development, the department will not incorporate compliance with the Solicitor General's current standard into a licence condition at this time. **Applicants are nonetheless strongly advised to note that compliance with a requirement to provide lawful intercept capability may be imposed via licence condition or other legislative provision at any point in time in the future.**

With regard to the proposed licence condition requiring expenditures on research and development, the department continues to believe that important public policy objectives will be achieved through such a condition. It has never been the department's practice, however, to apply this type of licence condition to licensees who were not radiocommunication carriers. For this licensing process, the department will apply the research and development expenditure condition - and the accompanying condition requiring the provision of annual reports on these research and development activities - to licensees who are radiocommunication carriers.

The conditions of licence are outlined below. As noted in section 3.4, the spectrum licences that are issued pursuant to this auction will continue to be subject to relevant provisions in the *Radiocommunication Act* and the *Radiocommunication Regulations*.

5.1 Conditions of Licence for All Licensees

The following conditions of licence will apply to all licensees.

1. 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 reallocation of spectrum to a new service is required or an overriding policy need arises.

A public consultation process will commence no later than two years prior to the end of the licence term if the department foresees the possibility that it will not renew this licence or if renewal fees and/or changes to conditions of licence are contemplated.

2. Licence Transferability and Divisibility

The licensee 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.¹⁹ The amount of spectrum transferred in the bandwidth dimension may be no smaller than the spectrum block size (40 MHz + 40 MHz in the 24 GHz band and 50 MHz + 50 MHz in the 38 GHz band) outlined in section 2 of this policy document.

For each proposed transfer of this licence, the licensee must provide a written notification to the department. The transferee(s) must also provide an attestation (or other appropriate documentation) that it meets the eligibility criteria and all other conditions of this licence.

3. Spectrum Aggregation Limit

The licensee must comply with the spectrum aggregation limits outlined in sections 2.3.4 and 2.3.5 of this policy document. The spectrum aggregation limit within a service area consists of spectrum licensed to the licensee and to its affiliates. The licensee must notify the Minister of any change which would have a material effect on its compliance with these spectrum aggregation limits. Such notification must be made in advance for any proposed transactions within its knowledge.

4. Eligibility Criteria

If the licensee is acting as a radiocommunication user or is providing service as a radiocommunication service provider other than a radiocommunication carrier, the licensee must comply on an ongoing basis with the eligibility criteria in section 9(1) of the *Radiocommunication Regulations*. The licensee must notify the Minister of any change which would have a material effect on its eligibility. Such notification must be made in advance for any proposed transactions within its knowledge.

If the licensee is providing service as a radiocommunication carrier, the licensee must comply on an ongoing basis with the Canadian ownership and control requirements in section 10(2) of the *Radiocommunication Regulations*.²⁰ The licensee must notify the Minister of any change which would have a material effect on its Canadian ownership and control. Such notification must be made in advance for any proposed transactions within its knowledge.

¹⁹ Spectrum grid cells are defined in the Industry Canada (Spectrum Management) Client Procedures Circular 2-1-16 (CPC-2-1-16), *Licensing Procedure for Local Multipoint Communications Systems (LMCS)*, February 1, 1997 (available on the Strategis Web site at <http://strategis.ic.gc.ca/spectrum>), as amended from time to time.

²⁰ See Industry Canada (April 1, 1999), *Canadian Ownership and Control* (CPC-2-0-15) (available on the Strategis Web site at <http://strategis.ic.gc.ca/spectrum>), as amended from time to time.

5. Radio Station Installations²¹

For each radio station, the licensee must ensure that:

- radio stations are installed and operated in a manner that complies with Health Canada's limits of exposure to radiofrequency fields;
- where applicable, antenna structures are marked in accordance with the recommendations of Transport Canada; and,
- prior to installation of significant antenna structures, consultation with the appropriate land use authorities has taken place.

6. Laws, Regulations, and Other Obligations

The licensee is subject to and must comply with the *Radiocommunication Act*, the *Radiocommunication Regulations* and the International Telecommunications Union *Radio Regulations* pertaining to its licensed radio frequency bands.

The licence is issued on condition that the certifications in the *Application to Participate in the Auction of the 24 and 38 GHz Frequency Bands* are all true and complete in every respect.

7. Technical Considerations

The licensee must comply with the technical aspects of the appropriate Standard Radio System Plan (SRSP), as amended from time to time (see section 4 of this policy document).

8. 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.

9. Implementation of Spectrum Usage

Within three years of the auction's close, the licensee must demonstrate to the department that the spectrum has been put into use. The establishment of eight links per one million population (rounded up to a whole number) within a service area, or some other indicator

²¹ Industry Canada (June 24, 1995), *Environmental Process, Radiofrequency Fields and Land-Use Consultation* (CPC-2-0-03) (available on the Strategis Web site at <http://strategis.ic.gc.ca/spectrum>), as amended from time to time.

of usage which is acceptable to the department, will be required. Supporting documentation should be submitted to the:

Director, Spectrum Management Operations
Radiocommunications and Broadcasting Regulatory Branch
300 Slater Street, 15th Floor
Ottawa, Ontario
K1A 0C8

Confidential information provided will be treated in accordance with subsection 20(1) of the *Access to Information Act*.

5.2 Licence Conditions for Radiocommunication Carriers

The following additional conditions of licence will only apply to radiocommunication carriers as defined in section 2 of the *Radiocommunication Regulations*.

10. Research and Development

When a licence is issued to a radiocommunication carrier, the licensee must invest, as a minimum, two percent of its adjusted gross revenues resulting from its operations in the 24 and 38 GHz radio frequency bands, averaged over the term of the licence, in eligible research and development activities related to telecommunications. Eligible research and development activities are those which meet the definition of scientific research and experimental development adopted in the *Income Tax Act*. Adjusted gross revenues are defined as total service revenues less inter-carrier payments, bad debts, third-party commissions, and provincial and goods and services taxes collected.

If the licence is transferred to any eligible entity by a radiocommunication carrier prior to the expiration of its term, the condition of licence relating to investment in research and development will continue to apply on the initial transfer of the licence and on any subsequent transfer until the term of this licence expires. Prior to a transfer, in whole or in part, of this licence, the proposed transferee must undertake to ensure that the sum of the investment it will make in eligible research and development activities and all investments made by prior licensees in eligible research and development²² activities equals, as a minimum, two percent of the aggregated adjusted gross revenues resulting from all operations in the 24 and 38 GHz radio frequency bands, averaged over the term of the licence. An attestation signed by the proposed transferee setting out the undertaking must accompany the licence transfer notification to be submitted to the department by the licensee prior to the transfer being effected.

²² As reported in the prior licensees' audited Statements of Research and Development Expenditures which would have been submitted annually to the department.

To facilitate compliance with this condition of licence, the licensee should consult the department's *Guidelines for Compliance with the Radio Authorization Condition of Licence Relating to Research and Development*.²³ Further details on the exact administrative procedures for transferring a spectrum licence will be provided in a forthcoming Client Procedures Circular.²⁴

11. Annual Reporting

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

- an update on the implementation of wireless services - this update should include the number of hub and subscriber sites installed in each licensed area;
- audited Financial Statements as required under the licensee's jurisdiction of incorporation, including an audited Statement of Research and Development Expenditures with an accompanying Auditor's Report, prepared in accordance with the same standards of reporting - to facilitate compliance with this reporting requirement, the licensee should consult the *Guidelines for Compliance with the Radio Authorization Condition of Licence Relating to Research and Development* published by Industry Canada;²⁵ and,
- a copy of any existing corporate annual report for the licensee's fiscal year with respect to the authorization.

The reports are to be submitted, in writing, within 120 days of the licensee's fiscal year end, to the:

Director, Spectrum Management Operations
Radiocommunications and Broadcasting Regulatory Branch
300 Slater Street, 15th Floor
Ottawa, Ontario
K1A 0C8

Confidential information provided will be treated in accordance with section 20(1) of the *Access to Information Act*.

²³ This document is available on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

²⁴ This document will be made available on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

²⁵ This document is available on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

6. Licensing Process

The comments received in the consultation process indicated a general agreement with the department's proposed steps for licensing the 24 and 38 GHz bands. Therefore, as proposed in the consultation paper, a simultaneous multiple round auction will be employed. The process by which interested parties may apply to participate in the auction and the design and rules of the auction are laid out below.

The department makes no representations or warranties about the use of this spectrum for particular services. Applicants should be aware that this auction represents an opportunity to become a licensee, subject to certain conditions and regulations. An Industry Canada auction does not constitute an endorsement by the department of any particular services, technologies or products, nor does a spectrum licence constitute a guarantee of business success. Applicants should perform their individual due diligence before proceeding as they would with any new business venture.

The department expects that the actual bidding will commence in early October, 1999. A summary of key dates associated with this licensing process is located in Appendix 2. Interested parties are advised to check for updates on this schedule of events from the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

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 for information only. The policies and rules associated with this licensing process are set out in their entirety in this document, and in any written amendment or supplement that may be issued by the department. These sessions are scheduled between June 4 and June 23, 1999. Interested parties are invited to visit the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>) to get further information on the location and scheduling of these sessions **and to register for them.**

6.1 Application Process

6.1.1 Submission of Applications

Copies of the forms that must be submitted to apply to participate in the auction are contained in Appendices 3 and 4 of this document. Additional copies of the forms can be obtained electronically from Industry Canada's Strategis Web site, <http://strategis.ic.gc.ca/spectrum>, or in hard copy, for a fee, from:

Tyrell Press Ltd.
2714 Fenton Road
Gloucester, Ontario
K1T 3T7

Canada toll-free no.: 1-800-267-4862
U.S. toll-free no.: 1-800-574-0137
Worldwide tel. no.: (613) 822-0740
Fax number: (613) 822-1089

or Canada Communication Group Inc.
45 Sacré-Coeur Blvd.
Hull, Quebec
K1A 0S9
Toll-free no.: 1-888-562-5561
Worldwide tel. no.: (819) 779-4335
Fax number: (819) 779-2858

These forms, any associated documents that may be required (as per the instructions provided on the various forms), and the accompanying financial deposit - which must be an irrevocable standby letter of credit in a form acceptable to the department (see Appendix 3) - must be physically delivered to the Manager, Wireless Networks (address given in section 1) by 5:00 p.m., Eastern daylight time (EDT), August 6, 1999. Application materials (forms, documents and/or financial deposits) received after this deadline will not be accepted.

More information on the calculation of the amount of the required deposit is provided in section 7 of this document and in the *Application to Participate in the Auction of the 24 and 38 GHz Frequency Bands* form in Appendix 3.

Upon receipt of application materials, the department will send notification to the applicant that the application materials have been received and confirming the amount of the deposit that has been submitted. This notice will in no way mean that the application materials or the deposit have been approved.

If, prior to the application deadline, an applicant wishes for any reason to amend any of the forms it has submitted and/or submit a new irrevocable standby letter of credit, it may submit one or more amended forms and/or a new irrevocable standby letter of credit to the address listed above with an accompanying letter explaining that the enclosed form(s) and/or letter of credit are to replace the one(s) previously submitted. Any such amendments must be physically delivered by the application deadline noted above.

Upon receipt of an amended form(s) and or replacement irrevocable standby letter of credit, the department will send notification to the applicant that the amended form(s) and/or letter of credit have been received and stating the amount of the new letter of credit that has been submitted. The initial irrevocable standby letter of credit will also be returned to the applicant. This notice will in no way mean that the amended form(s) or the additional deposit has been approved.

6.1.2 Review of Applications

The department will begin to review the forms (and any associated documents) and the accompanying irrevocable standby letters of credit after the closing date for the submission of applications, 5:00 p.m. (EDT), August 6, 1999. The department's initial review will be completed approximately one week later.

An application to participate in the auction will be rejected if the eligibility criteria set out in section 2.3 of this document have not been met or if the required financial deposit has not been provided.

After the initial review period, the department may request further information related to affiliates.

The department will also provide applicants with an opportunity to make clerical corrections, e.g., to correct typographical errors, to add missing signatures, or to submit a missing form. Applications that are rejected for clerical problems will be returned to the applicant with a brief statement as to the discrepancy(ies) and/or omission(s) and the applicant will be invited to resubmit a corrected form.

Any additional information requested and/or corrected forms must be physically delivered to the Manager, Wireless Networks (address given in section 1) by the date specified in the statement sent by the department. Applicants who do not comply with this request will have their applications to participate in the auction rejected. If resubmitted forms are still found to be unacceptable, they will be rejected and no further opportunity for resubmission will be provided.

Applications that are rejected, including those for which an opportunity has been provided to correct clerical errors but are still found to be defective, will be returned to the applicants with a letter stating the problem(s). The applicant's irrevocable standby letter of credit will also be returned along with the letter of non-acceptance.

Applicants who have submitted acceptable forms and accompanying financial deposits will receive a Qualified Bidder Certificate and the necessary software, instructions, and codes to allow them to utilize the department's automated bidding system. This will include encryption software that will allow bids to be submitted securely over the Internet.

Qualified bidders will also receive information on mock auctions and/or bidder information sessions that will be held (in mid to late September, 1999) to allow bidders to better familiarize themselves with the auction system. The initial schedule of the actual auction will also be provided at this time. (The auction is expected to open in early October, 1999.)

A list of all qualified bidders, the licences on which they are eligible to bid, and their initial level of eligibility points²⁶ will be made public via the department's Strategis Web site in late August.

²⁶ Discussed in section 6.5.1.

Copies of the list will also be available in hard copy, for a fee, from Tyrell Press Ltd. or Canada Communication Group Inc.

6.1.3 Withdrawal of Application Forms

Applicants wishing to withdraw their application materials and have their irrevocable standby letters of credit returned may do so, without prejudice, by sending a written request to the Manager, Wireless Networks (address given in section 1). This request must be physically delivered to the Manager, Wireless Networks prior to 5:00 p.m. (EDT) on the business day preceding the opening of the auction.

6.1.4 Change of Information

Prior to the close of the auction, qualified bidders must notify the Manager, Wireless Networks (address given in section 1) of any material changes in the information submitted in their application documents. Such notification must take place within five business days of such change.

6.2 Prohibition of Collusion

Prospective bidders will note that the auction application form contains a declaration that the applicant will be required to sign certifying that the applicant has not entered into and will not enter into any agreements or arrangements of any kind with any competitor regarding the amount to be bid, bidding strategies or the particular licence(s) on which the applicant or competitors will or will not bid. For the purposes of this certification the word **competitor** means any entity, other than the Applicant or its affiliates, who could potentially be a bidder in this auction based on its qualifications, abilities or experience.

Prospective bidders should note that “affiliate” for the purposes of this policy (defined by reference to control in fact) differs from “affiliate” for the purposes of the *Competition Act*. As such, in order to avoid contravening section 47 of the *Competition Act*, a bidder who enters into such an agreement or arrangement with any one or more of its affiliates may have to make the agreement or arrangement known to the department at or before the time when any subsequent bid is made.

6.3 Notifications of Interest

The department has found in the past that the publication of a simple list of interested parties early in the licensing process has been helpful. Therefore a **voluntary** “Notification of Interest” process will be facilitated.

A copy of the form that must be submitted to participate in this process is contained in Appendix 5 of this document. Additional copies of this form can be retrieved electronically from Industry Canada’s Strategis Web site or in hard copy, for a fee, from Tyrell Press Ltd. or Canada Communication Group Inc. To participate in the “Notification of Interest” process, the form must be submitted to the Manager, Wireless Networks (address given in section 1) by

5:00 p.m. (EDT), July 9, 1999. The form may be submitted by fax or e-mail, provided it is received by the specified deadline.

Shortly after this date, a list will be prepared which will contain the name, address and phone number of those who participated in the “Notification of Interest” process. The list will be sent to all those who participated in the process and will be made available in electronic format on the department’s Strategis Web site and in hard copy, for a fee, from Tyrell Press Ltd. or Canada Communication Group Inc.

6.4 Amendments and Supplements

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 policies will be accepted. It should be noted that no confidential questions will be accepted and that all questions received and the department’s written answers to these questions will be made public. Such answers will be considered as amendments or supplements to the policies and rules set out in this document.

Written questions must be submitted to the Manager, Wireless Networks (address given in section 1) by 5:00 p.m. (EDT), July 9, 1999. These written questions may be submitted by fax or e-mail, provided that they are received by the specified deadline. The department will publish the questions and its responses on the department’s Strategis Web site as soon as possible after the deadline for receipt. Copies of the questions and answers will also be available in hard copy, for a fee, from Tyrell Press Ltd. or Canada Communication Group Inc.

6.5 Auction Design and Rules

The department notes the general support in the consultation comments for the use of a simultaneous multiple round auction and thus will use this auction design.

Respondents were divided on the question of whether multiple-increment bidding should be introduced for this first spectrum auction. While the department recognizes the potential benefits offered by the multiple-increment format, it believes greater overall benefits will be derived by proceeding quickly to licensing using its existing software system. Therefore, single-increment non-discretionary bidding will be used.

As auction theory advances and as more experience is gained worldwide with the operation of simultaneous multiple round auctions, the department continues to monitor “best practices”. **New developments that have come to the department’s attention since the August 1998 release of the consultation paper on the 24 and 38 GHz bands have led the department to make some changes to the auction rules regarding activity rule waivers (more waivers will now be provided) and bid withdrawals (additional penalties will be assessed to bidders who make**

large numbers of bid withdrawals). Prospective bidders are advised to carefully read the relevant sections below.

The auction will be run electronically 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 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, both 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.
- In each round bidders are offered an opportunity to withdraw bids made in previous rounds, subject to a penalty.
- A minimum pace of bidding in the auction is established by the “activity rule” (defined in section 6.5.2), which penalizes bidders who are inactive by reducing their “bidder eligibility points” (defined in section 6.5.1).
- The rounds continue until there is a round in the third stage (auction “stages” are defined in section 6.5.2) in which no new bids or pro-active waivers (see section 6.5.7) are submitted on any licence. The standing high bidders on each licence at the auction’s close will be deemed the provisional winners of those licences.
- When two or more bids are submitted on the same licence in the same round, the bidder whose bid was received first will be granted the status of standing high bidder in the next round.

All these details of the auction format are discussed more fully below.

6.5.1 Bidder Eligibility Points

Each licence has been assigned a number of points approximately proportionate to the bandwidth and population covered by that licence (see Appendix 6 for a listing of all licences). Each potential bidder must indicate in its application materials the total number of “points-worth” of licences that it may wish to bid on in any round. This number, which also determines the amount of the pre-auction deposit required from the applicant (i.e. the required deposit will be calculated on a dollar per point basis - see section 7.2), defines the initial level of “bidder eligibility points”. The total number of eligibility points associated with all licences available in this auction is 3852. Hence the maximum level of eligibility points that may be requested is 3852 and the maximum deposit that could be required is \$9,630,000.

In the event that an applicant’s requested level of eligibility points does not correspond with the amount of the deposit submitted, then that applicant’s level of eligibility points will be determined by the value of the deposit submitted.

6.5.2 Activity Rule

A bidder is defined to be active on a particular licence in a given round if either it has the standing high bid from the previous round or if it submits a bid in that round. There will be three stages, each containing an unspecified number of bidding rounds. In the first stage bidders must be active on licences whose corresponding points add up to some percentage of the bidder’s level of eligibility points. The department expects this figure to be in the range of 60% to 80% in stage one. In the second stage the percentage will be increased (to, say, 80% or 90%), and in the final stage bidders must be active on 100% of their eligibility point levels. The precise figure for the initial required activity level will be communicated to all qualified bidders well before the auction begins.

If a bidder falls short of the required activity level, the bidder’s eligibility point level shrinks proportionately: the number of eligibility points for the next round is equal to the bidder’s actual activity level in the current round multiplied by the reciprocal of the required activity level (e.g. $1/60\%$ in stage one). It is important to note that where the activity level percentage results in a required activity level that is not a whole number, the bidder should round this number **up** to determine the minimum activity level that will result in the level of eligibility points remaining the same in the next round. Similarly, when determining the level of eligibility points for the next round, if the product of the actual activity level and the reciprocal of the activity level factor is not a whole number, then this number is rounded **down**.

Examples

- Bidder X has 180 eligibility points. The auction is in stage one and the required activity level is, say, 60% - which means 108 points for Bidder X. Bidder X is active on 110 points worth of licences. Since the actual activity (110) level exceeds the required activity level (108), Bidder X will maintain its full 180 eligibility points for the next round.*

2. *Bidder Y has 39 eligibility points. The auction is in stage two and the required activity level is, say, 80%. Multiplying 39 by 80% gives 31.2. To maintain its eligibility level of 39 points, Bidder Y must be active on 32 points worth of licences (rounded up from 31.2) in the current round. If Bidder Y is active on only 17 points worth of licences, then its eligibility in the next round will be 21 points: $(17 * (1/80\%)) = 21.25$, which is rounded down to 21.*
 3. *Bidder Z has 12 eligibility points. The auction is in stage three, so the required activity level is 100%. Bidder Z is active on 8 points worth of licences. In the next round, Bidder Z will have only 8 eligibility points: $(8 * (1/100\%)) = 8$.*
-

It is also important to note that a bidder will not add to its activity level by topping its own standing high bid on a licence. The bidder will be considered active on that licence by virtue of being the standing high bidder on it. The bidder will not be credited for additional activity by topping its own standing high bid.

6.5.3 Stage Changes

The auction will begin and continue in stage one until bidding activity declines to a low level (for example, three consecutive rounds in which new bids are placed on licences representing ten percent or less of the total eligibility points associated with all licences up for bidding). At this point, the auction will move to stage two - and similarly to stage three later in the auction.

The department will retain the discretion throughout the auction as to when a stage change will occur, but bidders will always be notified in advance, through the message function of the automated auction system, before a stage change is implemented.

Bidders are advised to be especially careful about checking their required activity levels after a stage change has occurred.

6.5.4 Withdrawal of Bids and Related Penalties

Bidders will be given the opportunity to withdraw their standing high bids. To encourage meaningful bids and to ensure that no loss of revenue occurs as a result of such withdrawals, however, a bid withdrawal penalty will be imposed. This penalty will correspond to the potential loss in revenue caused by the withdrawn bid. If the licence for which the bid has been withdrawn ends up selling - either in that auction or in a subsequent re-auction - for more than the withdrawn bid, then generally no penalty will be charged to the bidder. If the licence ultimately sells for less than the withdrawn bid, then the penalty will be the difference between the withdrawn bid and the eventual final selling price. As a measure to reduce the overall time of the auction, while not compromising the auction's efficiency, the department will allow bidders to place new bids and/or withdraw previously submitted bids at the same time during a round, as opposed to having two distinct phases - one for bid submission and one for bid withdrawal - during each round.

When a standing high bid is withdrawn on a licence, and assuming that no new bids are submitted on that licence in that round, the status of standing high bidder on that licence will revert to Industry Canada in the next round and the acceptable bid for the next round will be equal to the value of the withdrawn bid. The department reserves the right to lower the amount of the acceptable bid in later rounds if there is no bidding activity on that licence.

If no new bids are submitted on the licence, then the licence will be offered in a re-auction that will begin between six and twelve months after the close of the initial auction.²⁷

In order to deter the potential misuse of withdrawals as a signalling mechanism or as a means of unduly delaying the auction's close, the department will impose additional penalties on a bidder **once that bidder has withdrawn standing high bids in more than five rounds of the auction**. This penalty will be equal to the greater of (a) 2% of the value of the withdrawn standing high bid and (b) \$10,000 for each withdrawn standing high bid, and will be **in addition to the withdrawal penalties described above**. This penalty will be assessed regardless of whether the ultimate selling price of the licence is above or below the withdrawn bid.

These additional penalties will serve to cover the administrative expenses the department will incur if the auction's close is delayed due to a series of repeated withdrawals by a bidder.

Examples:

Bidder X has made no withdrawals in the first seven rounds of the auction. In round 8, Bidder X withdraws a bid of \$10,000 on Licence I. Licence I eventually is sold for \$8000. Since the ultimate selling price of the licence is below the withdrawn bid, Bidder X owes a "standard" withdrawal penalty of \$2000.

Bidder Y withdraws one or more standing high bids in each of five different rounds, say, rounds 4, 7, 12, 19 and 24. The penalties for these withdrawals will be calculated as the difference between the withdrawn bids and the eventual final selling prices of these licences, assuming the former is greater than the latter. Any withdrawals made by Bidder Y in round 25 and beyond will now be subject to the "standard" withdrawal penalty that applied to the withdrawals made in the previous rounds, and also the additional 2%/\$10,000 penalty.

6.5.5 Bid Increments

Bid increments, like activity rules, are necessary to help hasten the auction's progress. The offered bid price on a licence will be equal to the current standing high bid plus the bid increment.

Bid increments will be calculated in both percentage and absolute terms and will vary with the auction stages, as outlined below. When a licence receives a new bid, the larger of the two

²⁷ Other assignment processes may be considered for 24 and 38 GHz spectrum in certain areas, e.g. remote and rural areas of Canada, if it can be determined that there are no mutually exclusive demands for spectrum that was left unassigned at the close of the auction.

increments will be applied to determine the offered bid price for the next round. The new offered bid price for that licence will be rounded up to three significant digits.

In stage one of the auction, the percentage increment will be set at 15% of the standing high bid and the absolute increment will be set at \$1000/eligibility point. As the auction progresses, these increments will be changed to allow bidders greater precision in their bids and to keep the auction moving forward at an acceptable pace. Contemplated changes to the bid increment levels will be announced to bidders well ahead of their implementation.

6.5.6 Activity Rule Waivers

Activity rule waivers are designed to prevent a bidder from losing eligibility points when it does not satisfy the activity requirements in a given bidding stage. The purpose of waivers is to protect bidders against possible mistakes they might make during the course of the auction, to allow them to maintain eligibility point levels in the case of technical or communication problems, or to provide them with a “time-out” during which senior management can be consulted on bidding strategy issues.

When a bidder attempts to submit bids such that its actual activity level is below the required activity level, a warning message will appear advising the bidder that it may either submit these bids along with one of its waivers and thus maintain its full level of eligibility points for the next round, or the bidder may choose not to use a waiver and accept a reduction in its total level of eligibility points for the next round.

The use of the waiver is the default setting in the automated auction system, thus if technical problems prevent a bidder from accessing the auction system, a waiver will automatically be submitted on the bidder’s behalf and the bidder’s level of eligibility points will remain unaffected for the next round. If a bidder uses all its waivers, then the “use a waiver” option will not appear, nor will an automatic waiver be submitted on the bidder’s behalf.

To provide bidders with the possibility to take a reasonable “time-out”, bidders will be given more waivers as the number of rounds per day increases. The department expects that for the first day or two of the auction, only one or two rounds per day will be held. As the auction progresses, up to ten or fifteen rounds may be held per day. Each bidder will be given five waivers at the beginning of the auction. Waivers will be added as indicated below.

When number of rounds per day becomes:	Each bidder will be given this many waivers in addition to the number it has remaining:
6 to 8	3
9 to 10	2
11 to 15	5

Example:

At the opening of the auction all bidders begin with five waivers. During the first week of the auction, only two rounds of bidding are held per day.

Bidder X uses one waiver during the first week and thus begins week two with four waivers. Bidder Y uses no waivers during the first week and thus begins week two with five waivers.

During week two there are five rounds of bidding per day. Neither Bidder X nor Bidder Y use any waivers during week two. It is announced that during week three there will be seven rounds of bidding per day. Thus all bidders are given an additional three waivers. Bidder X will begin week three with seven waivers and Bidder Y will begin week three with eight waivers.

Bidders are advised to use their activity rule waivers judiciously.

6.5.7 Pro-Active Waivers

Bidders will also be able to submit “proactive” waivers to prevent the auction from closing. Once in stage three, the auction will tentatively close when a round goes by without any bids having been submitted on any licences. (See section 6.5.9.) After the end of such a round, bidders will be advised via the automated auction system that the auction will close unless a proactive waiver is submitted to keep the auction open for another round. Bidders who have waivers remaining may submit such a proactive waiver by calling a specified telephone number within a specified time period.

All bidders who call within the specified time period to submit a proactive waiver will have one of their waivers deducted and the auction will continue. If no proactive waivers are submitted within the specified time period, then the auction will close.

6.5.8 Withdrawal from the Auction

A bidder may have its irrevocable standby letter of credit returned to it upon presentation of a written request to the Manager, Wireless Networks (address given in section 1) if:

- the eligibility points of the bidder are reduced to zero during the auction;
- the bidder is not potentially liable for any withdrawal penalties; and,
- the bidder is not the standing high bidder on any licence.

Upon receipt of such a request, the department will confirm that the conditions outlined above have been met and will then return the irrevocable standby letter of credit to the bidder.

6.5.9 Closure of the Auction

The auction will not close until stage three has been reached. **Once stage three has been reached, the auction will close when a round concludes without (a) any bids having been submitted on any licences and (b) without any proactive waivers having been submitted.** Entering a bid and then removing that same bid within a single round will not prevent the auction from closing.

In **exceptional** circumstances, and after all participants have been notified in advance, any round can be declared as the final round. Similarly, exceptional circumstances such as a natural disaster, for example, may result in the auction being delayed, suspended or cancelled.

The standing high bidders on each licence at the auction's close will be declared the provisional winners of those licences.

Licences which go unsold will be offered in a re-auction that will begin between six and twelve months after the close of the initial auction.²⁸

6.6 Post-Auction Procedures

6.6.1 Bids and Withdrawal Penalties

After the auction's close, the sum of the standing high bids and the sum of any withdrawal penalties incurred will be calculated for all bidders. If the value of any withdrawal penalties cannot be calculated at that time because one or more licences remain unsold at the auction's close, the full value of the withdrawn bid will be used as an interim proxy for the value of the withdrawal penalty.²⁹ For each bidder, one of the scenarios laid out below will apply.

- If the sum of a bidder's standing high bids equals zero and the sum of its withdrawal penalties equals zero, then that bidder's irrevocable standby letter of credit will be returned to it.
- If the sum of a bidder's standing high bids equals zero and the sum of its withdrawal penalties is greater than zero, then that bidder will be required to submit a certified cheque for the full amount of the withdrawal penalties within ten business days of the auction's close. If a certified cheque for the full amount of the withdrawal penalties is not received by the department within ten business days of the auction's close, then the bidder's irrevocable

²⁸ Other assignment processes may be considered for 24 and 38 GHz spectrum in certain areas, e.g. remote and rural areas of Canada, if it can be determined that there are no mutually exclusive demands for spectrum that was left unassigned at the close of the auction.

²⁹ Suppose that a bid of \$100,000 was withdrawn on licence X during the auction and that no new bids were placed on that licence thereafter. The ultimate selling price of licence X will not be known until a subsequent re-auction and hence the value of the withdrawal penalty cannot be calculated until that time. The full value of the withdrawn bid, \$100,000, would be used as the interim proxy withdrawal penalty until the re-auction.

standby letter of credit will be drawn upon for the full amount of the withdrawal penalties. If the full amount of the irrevocable standby letter of credit is less than the full amount of the withdrawal penalties, then the difference will be owing and payable to the Receiver General for Canada.³⁰

- If the sum of a bidder's standing high bids is greater than zero and the sum of its withdrawal penalties is equal to zero, then that bidder will be required to: (1) submit a certified cheque with a value equal to twenty percent of the sum of the standing high bids within ten business days of the auction's close; and (2) submit a second certified cheque with a value equal to eighty percent of the sum of the standing high bids within thirty³¹ business days of the auction's close. If either of the required certified cheques is not received by the department within the specified time-frames, then the bidder's irrevocable standby letter of credit will be drawn upon for the amount in question. If the value of the irrevocable standby letter of credit is less than the required amount, then the bidder will forfeit its right to have the licence issued to it and will be subject to the forfeiture penalties discussed in section 6.6.2.
- If the sum of a bidder's standing high bids is greater than zero and the sum of its withdrawal penalties is greater than zero, then that bidder will be required to: (1) submit a certified cheque with a value equal to twenty percent of the sum of the standing high bids plus one-hundred percent of the sum of the withdrawal penalties within ten business days of the auction's close; and (2) submit a second certified cheque with a value equal to eighty percent of the sum of the standing high bids within thirty³² business days of the auction's close. If either of the required certified cheques is not received by the department within the specified time-frames, then the bidder's irrevocable standby letter of credit will be drawn upon for the amount in question. If the value of the irrevocable standby letter of credit is less than the required amount, then the bidder will forfeit its right to have the licence issued to it and will be subject to the forfeiture penalties discussed in section 6.6.2.

Example:

Bidder X withdrew a bid of \$15,000 on Licence I which was eventually won by Bidder Y for \$13,000. Bidder X withdrew a bid of \$12,000 on Licence II which remained unsold at the auction's close. At the auction's close, Bidder X was the standing high bidder on Licence III for \$25,000 and Licence IV for \$30,000. In a re-auction six to twelve months after the close of the initial auction, Licence II sold for \$9000.

At the auction's close, the sum of Bidder X's standing high bids is \$55,000 and the sum of Bidder X's withdrawal penalties is \$14,000 (withdrawn bid of \$15,000 less final selling price of

³⁰ If a re-auction results in the calculated values of final withdrawal penalties being different from the interim proxy values, then the difference will be refunded to the bidders in question.

³¹ Note that this has been reduced from the forty-five business days suggested in the consultation paper.

³² Note that this has been reduced from the forty-five business days suggested in the consultation paper.

\$13,000 equals withdrawal penalty of \$2000 for Licence I and withdrawn bid of \$12,000 equals interim proxy withdrawal penalty of \$12,000 for Licence II).

Within ten business days of the auction's close, Bidder X must submit a certified cheque for \$25,000: 20% of the value of the standing high bids equals \$11,000 and 100% of the value of the withdrawal penalties equals \$14,000, which totals \$25,000. Within thirty business days of the auction's close, a certified cheque for an additional \$44,000 will be required.

When the re-auction for Licence II is held, the correct withdrawal penalty for Bidder X can be calculated as \$3000. Bidder X will then be refunded \$9000.

6.6.2 Bid Forfeiture and Related Penalties

After the conclusion of the auction, any bidder who has submitted the high bid on a licence but fails to comply with the specified payment schedule will forfeit its right to have the licence issued to it. Furthermore, the bidder will be required to pay a penalty in the amount of the difference between the forfeited bid and the eventual selling price of the licence (in a subsequent re-auction), if the re-auction price is lower than the forfeited bid.³³ If the licence is not sold in the re-auction, then the re-auction price will be deemed to be zero and the penalty will be calculated accordingly. An additional amount of 3% of the original forfeited bid will be charged, regardless of the re-auction price, to account for the administrative expenses associated with the re-auction.

In the event of licence forfeiture, the bidder's irrevocable standby letter of credit will be drawn upon for the full amount of the interim proxy forfeiture penalty. If the interim proxy forfeiture penalty is greater than the full amount of the bidder's irrevocable standby letter of credit, then the difference will be owing and payable to the Receiver General for Canada.³⁴

Any bidder who forfeits on a licence will be ineligible to bid on it in the re-auction of that licence.

6.6.3 Eligibility Documentation

Bidders who are provisional licence winners will be required to submit documentation related to their compliance with Condition of Licence 4, "Eligibility Criteria", discussed in section 5.1 of this policy document. The following documents must be submitted within ten business days of the auction's close.

³³ Suppose that a bid of \$100,000 was forfeited on licence X after the auction. The ultimate selling price of licence X will not be known until a re-auction and hence the value of the forfeiture penalty cannot be calculated until that time. The full value of the forfeited bid plus 3% (\$103,000 in this example) would be used as the interim proxy forfeiture penalty until the re-auction.

³⁴ If a re-auction results in the calculated values of final forfeiture penalties being different from the interim proxy values, then the difference will be refunded to the bidders in question.

- A declaration as to whether the provisional licence winner **will** or **will not** be acting as a **radiocommunication carrier**.
- Eligibility documents, e.g., certificate of incorporation, if the provisional licence winner indicates it will not be acting as a radiocommunication carrier.
- The *Declaration of Ownership and Control* (see Appendix 7), as well as all documents listed therein, if the provisional licence winner indicates that it will be acting as a radiocommunication carrier.³⁵

The department will review these documents on an expeditious basis. The department will then notify each provisional winner whether it complies with the Canadian ownership and control requirements. In the event that a provisional licence winner does not, in the opinion of the department, comply with the Canadian ownership and control requirements, the department will require that the provisional licence winner make changes in order to become compliant.

6.6.4 Enforcement of Spectrum Aggregation Limits

The spectrum aggregation limits discussed in sections 2.3.4 and 2.3.5 of this document will be enforced as described below.

- During the course of the auction, bidders may place bids on licences whose total bandwidth exceeds the spectrum aggregation limit. **However, any bidder who at the auction's close is the standing high bidder on licences such that it and its affiliates will exceed the aggregation limit in any service area must forfeit bids on sufficient licences to bring itself into alignment with the aggregation limit before any licences will be issued to it.** The forfeiture penalties discussed in section 6.6.2 will apply.
- At the auction's close, if any entity who holds 28 GHz LMCS licences is the standing high bidder on 24 and/or 38 GHz licences such that this spectrum, in addition to its LMCS holdings, puts it and its affiliates in violation of the spectrum aggregation limit for an area, then it must forfeit, subject to the forfeiture penalties discussed in section 6.6.2, bids on the 24 and/or 38 GHz spectrum for that area, and/or divest sufficient LMCS spectrum for that area to ensure that its total 24 GHz, 28 GHz and 38 GHz holdings do not exceed the aggregation limit. The licensee may return LMCS spectrum to the department, or it may apply to the department for permission to transfer some or all of its LMCS spectrum to an eligible third party. Transfer of spectrum will be considered in 100 MHz blocks for one or more of the original areas for which the department granted a licence, with emphasis on the retention of the capability to use all the LMCS spectrum efficiently.

³⁵ See Industry Canada (April 1, 1999), *Canadian Ownership and Control* (CPC-2-0-15) (available on the Strategis Web site at <http://strategis.ic.gc.ca/spectrum>), as amended from time to time.

In the case of a request to transfer any of the LMCS spectrum, all the required paperwork from both parties (the LMCS licensee and the eligible third party), must be submitted to the department within thirty business days of the auction's close, along with the required payment for the bid amounts on the 24 and 38 GHz licences as outlined in section 6.6.1. Failure to submit all the paperwork required for the department to render a decision on the transfer within this thirty-day time limit will result in the LMCS licensee being deemed to have **forfeited on all of its high bids for licences covering the service area(s) in question**. The forfeiture penalties discussed in section 6.6.2 will apply.

6.7 Software Requirements

The department's automated auction system features a user-friendly web browser interface. The auction will be run over the Internet and bids will be encrypted and digitally signed to ensure security. Each entity that is qualified to participate in the auction will designate up to three individuals to submit bids on its behalf.

The results of each round will be accessible to bidders through the auction system. These results will also be posted on the department's Strategis Web site so that anyone who is interested may monitor the auction's progress. Bid tracking software that can be used to analyse round results will be made available to the public.³⁶ It is important to note, however, that the department will not be providing any form of user support for this bid tracking software.

To access and run the department's auction software with maximum performance, the following are recommended:

- a Pentium 133 (or better) CPU;
- at least 32 MB of RAM;
- a CD-ROM drive;
- Windows 95, or Windows NT;
- a 56 kbps (or faster) modem; and,
- a reliable Internet Service Provider (ISP).

The required Web browser and encryption software will be provided to all bidders.

³⁶ On the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>).

6.8 Back-up Procedures

Bidders are strongly advised to prepare contingency plans and back-up facilities and locations, including multiple means of accessing the Internet, in the event of technical difficulties at their primary bidding locations. As discussed above, all bidders will also receive a number of activity rule waivers which will protect their eligibility point level for several rounds in case they are unable to access the auction system.

In the *Application to Participate in the Auction of the 24 and 38 GHz Frequency Bands* form (see Appendix 3), applicants are requested to designate at least three individuals who will have authority to place bids on behalf of the applicant. Each designated bidder will receive separate software packages and codes to participate in the auction. Having more than one individual designated as “bidders” will strengthen back-up contingency plans for applicants in case there are unforeseen problems.

As a last resort, the department will also provide a limited back-up facility for bidders who experience technical difficulties which prevent them from accessing the auction system. Bidders will call a “bidder help line” in order to have departmental staff submit bids on their behalf. Only the individuals listed on the bidder’s Qualified Bidder Certificate will be able to submit back-up bids using this procedure.

Departmental resources available for this task will be limited and hence it is possible that bidders may have to wait to have their bids submitted. **Bidders must call early enough in the round to ensure that there is sufficient time for their bids to be submitted. Rounds will not be extended to provide extra time for the submission of back-up bids. While the department will use its best efforts to submit bids on behalf of bidders, the department assumes no responsibility if such bids are not submitted.**

The departmental representative taking such calls will use a prepared script and bidders must adhere to this script in giving the required information to the departmental representative. All telephone transactions will be recorded.

The department will prepare lists of one-time transaction code keys which will be used to authenticate the back-up bids transmitted by telephone. Each bidder will be issued a list of transaction code keys, each of which will be made up of eight randomly generated numbers. No two lists will be the same. Bidders will be bound by any bid made with their transaction code keys as agreed to in the *Deed of Acknowledgment* (contained in Appendix 4 of this document).

7. Financial Aspects of the Auction

7.1 Reserve Prices

Industry Canada has always operated on the principle that all spectrum users should contribute to covering the cost of spectrum management in Canada. This can be accomplished in an auction context by establishing reserve prices which are conceptually linked to the cost of managing the spectrum in question for the whole term of the licence.

Most respondents to the consultation document agreed with the principle that the department should at least recover its spectrum management costs. There were different opinions on how these costs should be calculated and a number of respondents stated that the department's cost estimates were too high.

The department agrees with many respondents that a better cost estimate can be obtained if, among other things, items such as land mobile spectrum costs are removed from the equation. After making such revisions, the \$4700/point figure discussed in the consultation paper drops to a figure of \$2500/point. This new figure forms the basis for calculation of the reserve price for each licence and the required pre-auction deposit for each bidder.

Reserve prices are proportional to the bidder eligibility points³⁷ associated with each licence. Bidder eligibility points are related to the population and bandwidth covered by a licence. As discussed in section 3.2, the department will use Tier 3 service areas. For each spectrum block of 100 MHz, a population of approximately 100,000 corresponds to 1 point. Reserve prices have been established at \$2500 per point. The full list of licences and reserve prices is presented in Appendix 6.

The opening bid for each licence will be equal to its reserve price.

7.2 Pre-auction Deposits

The department feels that the integrity of an auction is enhanced by requiring all bidders to submit a pre-auction deposit. Most respondents to the consultation document agreed with this view. The department's suggestion to use the reserve price per point in order to define the amount of the required pre-auction deposit also received general support.

In order to participate in the auction - and as discussed in section 6 - bidders are required to select an initial level of eligibility by indicating the number of points for which they wish to be eligible to bid and by submitting the corresponding amount as a pre-auction deposit. The amount of the pre-auction deposits will be determined as the product of the total number of points requested and the reserve price per point. For example, if a prospective bidder indicated that it wished to have an initial eligibility level of 100 bidder eligibility points, it would be required to submit a deposit of \$250,000 ($\2500×100). This pre-auction deposit must be submitted as an irrevocable standby

³⁷ See discussion of bidder eligibility points in section 6.5.1 of this document.

letter of credit in a form acceptable to the department. Further details on this deposit are contained in the *Application to Participate in the Auction of the 24 and 38 GHz Frequency Bands* form in Appendix 3.

7.3 Bid Payment

As discussed in section 6.6.1, within ten business days of the auction's close, each provisional licence winner will be required to submit a certified cheque with a value equal to twenty percent of the sum of its standing high bids plus one-hundred percent of the sum of any withdrawal penalties that it has incurred. This payment will be non-refundable. If the provisional licence winner fails to make this initial payment within the specified period, then the provisional licence winner's irrevocable standby letter of credit will be drawn upon. If the value of the provisional licence winner's irrevocable standby letter of credit is less than the required amount, then the provisional licence winner will forfeit its right to have the licence(s) issued to it and the provisional licence winner will be subject to the applicable forfeiture penalties. A certified cheque for the remaining eighty percent of the total of the high bids will be due within thirty business days of the auction's close. If the provisional licence winner fails to make this final payment within the specified period, then the provisional licence winner's irrevocable standby letter of credit will be drawn upon. If the value of the provisional licence winner's irrevocable standby letter of credit is less than the required amount, then the provisional licence winner will forfeit its right to have the licence(s) issued to it and again the provisional licence winner will be subject to the applicable forfeiture penalties.

A provisional licence winner may not selectively forfeit on a subset of the licences on which it placed the high bid. If all required payments are not received, then the provisional licence winner will forfeit its right to have any 24 or 38 GHz licence issued to it.

All payments must be made by certified cheque, payable to the Receiver General for Canada, drawn on a financial institution which is a member of the Canadian Payments Association.

It is important to note that these bid payments for the initial ten-year term are in lieu of any fees fixed under the *Radiocommunication Act*.³⁸

7.4 Bidding Credits

During the consultation process the department received a request to provide bidding credits for small business participants in the auction. Given the large number of small business assistance programs already available, potential means (such as the use of non-equity financing) for large players to use smaller players as "fronts", and the potential for inefficient distortions in the allocation of the spectrum resource, the department has determined that bidding credits should not be adopted for the licensing process for 24 and 38 GHz spectrum.

³⁸ As per subsection 5(1)(1.3) of the *Radiocommunication Act*.

8. Issuance of Licences

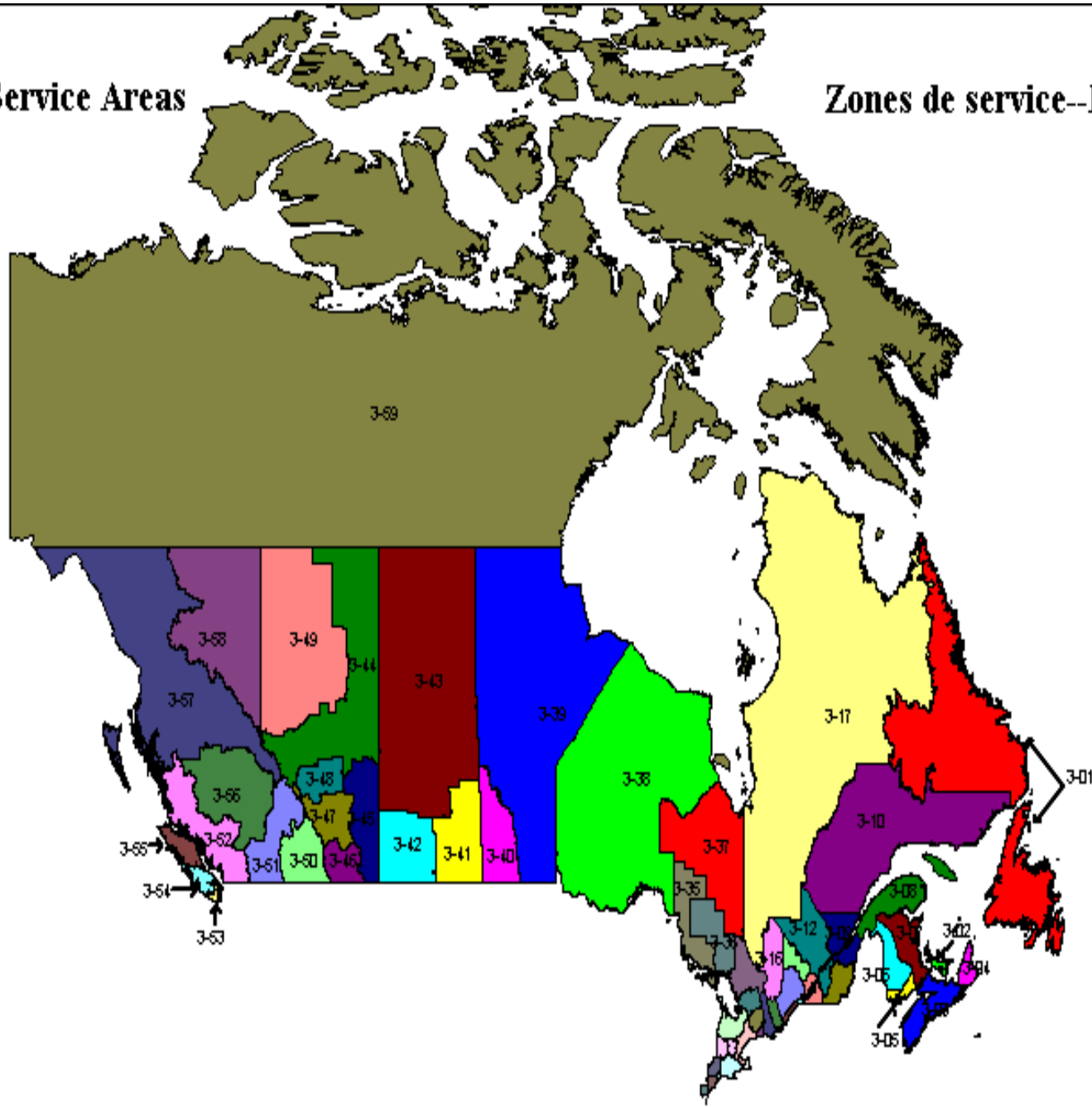
A provisional winner of spectrum licences will have those licences issued to it on completion of the following: (1) payment of the sum of its standing high bids and the sum of its withdrawal penalties, if any; and (2), if the provisional winner will be acting as a radiocommunication carrier, a determination by the department that the Canadian ownership and control requirements have been met. The department expects that licences will be issued within forty-five business days of the auction's close.

Appendices

1. Map of Tier 3 Service Areas
2. Key Dates
3. Application to Participate in the Auction of the 24 and 38 GHz Frequency Bands
 - Annex A - Tier 3 Areas Overlap
 - Annex B - Desired Initial Level of Eligibility Points and Required Auction Deposit
 - Annex C - Elements of the Irrevocable Standby Letter of Credit
 - Annex D - Designated Bidders
4. Deed of Acknowledgement
5. Notification of Interest for the Auction of the 24 and 38 GHz Frequency Bands
6. Detailed List of Licences to be Auctioned
7. Declaration of Ownership and Control for Provisional Winners of 24/38 GHz Licences Who Wish to Act as Radiocommunication Carriers

Tier 3 Service Areas

Zones de service--Niveau 3



KEY DATES

Please consult the department's Web site (<http://strategis.ic.gc.ca/spectrum>) for updates to this schedule.

Event	Date
Publication of Canada Gazette Notice DGRB-003-99/DGTP-005-99 announcing the commencement of the licensing process for the 24 and 38 GHz bands	May 29, 1999
Pre-auction information sessions	June 4, 1999 - Vancouver June 11, 1999 - Ottawa June 15, 1999 - Montreal June 17, 1999 - Halifax June 21, 1999 - Calgary June 23, 1999 - Toronto
Deadline for receipt of Notifications of Interest	July 9, 1999
Deadline for receipt of written questions	July 9, 1999
Date on which list of those who participated in Notification of Interest process will be published	Mid July, 1999
Date on which answers to written questions will be posted	Mid to Late July, 1999
Deadline for receipt of applications to participate in the auction	August 6, 1999
Date on which list of qualified bidders will be published	Late August, 1999
Mock auction for qualified bidders	Mid to Late September, 1999
Opening day of bidding	Early October, 1999



Bidder Identification Number			

Application to Participate in the Auction of the 24 and 38 GHz Frequency Bands

1. Applicant

2. Address (Street, P.O. Box, etc.)

3. City, Town

4. Province

5. Postal Code

6. Applicant Classification

- Corporation Individual Partnership Joint Venture Other _____

Please attach details of the beneficial ownership for every entity that owns more than 10% of the Applicant's voting shares, non-voting shares, partnership interests, or any other beneficial interests, as the case may be.

7. Relationship With Incumbent Local Exchange Carrier (ILEC)

I certify that the above-named Applicant (check one)

- is **not** an incumbent local exchange carrier (ILEC) (or a successor thereto) or an affiliate, as defined in the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* document, of an incumbent local exchange carrier (or a successor thereto).
- is an incumbent local exchange carrier (ILEC) (or a successor thereto) and/or an affiliate, as defined in the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* document, of the following incumbent local exchange carrier(s) (or successor(s) thereto)

(check all that apply)

- | | | |
|--|--|--|
| <input type="checkbox"/> BCT.TELUS Communications Inc. | <input type="checkbox"/> Bell Canada | <input type="checkbox"/> Island Telecom Inc. |
| <input type="checkbox"/> Manitoba Telecom Services Inc. | <input type="checkbox"/> Maritime Telegraph & Telephone Company, Limited | |
| <input type="checkbox"/> New Brunswick Telephone Company Limited | <input type="checkbox"/> NewTel Communications Inc. | <input type="checkbox"/> Northwestel Inc. |
| <input type="checkbox"/> Québec-Téléphone | <input type="checkbox"/> Sasktel | <input type="checkbox"/> Télébec Itée |

and that the local exchange area(s) of the applicant and/or its affiliates overlap more than 35% of the population of the Tier 3 service areas indicated in Annex A to this Application Form:

(See and complete Annex A to this Application Form.)

8. Canadian Ownership and Control

I certify that I have read and I understand the contents of the Canadian carrier eligibility criteria as set out in section 10 of the *Radiocommunication Regulations* and I comply, or will comply, with the Canadian carrier ownership and control requirements, as applicable.

9. Desired Initial Level of Eligibility Points and Required Pre-Auction Deposit

Enter the initial total number of points-worth of licences on which you wish to be able to bid in any round in box (a) below. This will be your initial level of eligibility points. (See Annex B.)

(a) points

Multiply the value in box (a) by \$2500 and enter this value in box (b) below. This will be the value of your required pre-auction deposit, in the form of an irrevocable standby letter of credit which meets, and is subject to, the terms and conditions contained in Annex C.

(b) \$

10. Prohibition of Collusion

I certify that the Applicant has not entered into and will not enter into any agreements or arrangements of any kind with any competitor regarding the amount to be bid, bidding strategies or the particular licence(s) on which the Applicant or competitors will or will not bid. For the purposes of this certification the word **competitor** means any entity, other than the Applicant or its affiliates, who could potentially be a bidder in this auction based on its qualifications, abilities or experience. I understand that if this certification is found not to be true and complete in every respect, then:

- (a) the Applicant will be disqualified from bidding or continuing to bid;
- (b) the Applicant's standing high bids will be deemed to have been withdrawn, and the appropriate penalties will apply; and
- (c) any licence that may already have been issued to the Applicant as a result of this auction process may be revoked.

(Note section 6.2 of the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands*)

11. Designated Bidders

The persons listed in Annex D to this Application are nominated by the Applicant as its designated bidders. (See and complete Annex D to this Application form.)

12. Consent

The Applicant consents to the publication by Industry Canada of all the information contained in this Application and attachments, except for the *Deed of Acknowledgement* and the irrevocable standby letter of credit.

13. Authority

I certify that I am an authorized representative of the above-named Applicant, that I have read the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* document and understand the policies and rules specified therein, and that the foregoing certifications and all matters and things stated in this Application and attachments are true and correct.

SIGNED this _____ day of _____, 1999

**Signature of Applicant or
Individual Authorized to Sign for the Applicant**

Typed/Printed Name of Person	Title of Person	Telephone No. ()
E-mail Address		Fax No. ()
Mailing Address		

Checklist for Attachments:

DID YOU REMEMBER TO COMPLETE AND ENCLOSE EACH OF THE FOLLOWING DOCUMENTS?



- Information on ownership as requested in section 6 of this form
- Annex A - Tier 3 Areas Overlap (if an ILEC and/or an affiliate)
- Annex D - Designated Bidders
- Deed of Acknowledgment*
- Pre-auction deposit in the form of an irrevocable standby letter of credit

Important Note:

It is in the interest of Applicants to seek independent legal, financial and engineering advice before deciding to participate in this auction. Furthermore, Applicants are urged to familiarize themselves with the provisions contained in the following documents:

- the *Radiocommunication Act*;
- the *Radiocommunication Regulations*;
- the *Framework for Spectrum Auctions in Canada*;
- *Canadian Ownership and Control (CPC-2-0-15)*;
- the *Telecommunications Act*;
- the *Canadian Telecommunications Common Carrier Ownership and Control Regulations*; and
- the *Competition Act* (see, in particular, sections 45 (Conspiracy) and 47 (Bid-rigging)).

The department reserves the right to request additional information on the present application.

This form, the *Deed of Acknowledgement*, any other associated documents that may be required (as per the instructions provided on the various forms), and the accompanying financial deposit - which must be an irrevocable standby letter of credit in a form acceptable to the department (see section 9 of this form) - must be physically delivered to the:

Manager, Wireless Networks
Radiocommunications and Broadcasting Regulatory Branch
Industry Canada
Room 1522A, 300 Slater Street
Ottawa, Ontario
K1A 0C8

by 5:00 p.m., Eastern daylight time (EDT), August 6, 1999. Application materials (forms, documents and/or financial deposits) received after this deadline will not be accepted.

ANNEX A - Tier 3 Areas Overlap

Where the local exchange area(s) of the applicant and/or its affiliates overlap more than 35% of the population

Check all that apply

Service Area		✓
3-01	Nfld./T.-N./Labrador	<input type="checkbox"/>
3-02	P.E.I./Î.-P.-É.	<input type="checkbox"/>
3-03	Main N.S./N.-É. cont	<input type="checkbox"/>
3-04	C. Breton/Cap Breton	<input type="checkbox"/>
3-05	S. N.B./N.-B.-Sud	<input type="checkbox"/>
3-06	W. N.B./N.-B.-Ouest	<input type="checkbox"/>
3-07	E. N.B./N.-B.-Est	<input type="checkbox"/>
3-08	Bas du fleuve/Gaspé	<input type="checkbox"/>
3-09	Québec	<input type="checkbox"/>
3-10	Chicoutimi-Jonquière	<input type="checkbox"/>
3-11	Cantons de l'Est	<input type="checkbox"/>
3-12	Trois-Rivières	<input type="checkbox"/>
3-13	Montréal	<input type="checkbox"/>
3-14	Outaouais	<input type="checkbox"/>
3-15	Ottawa	<input type="checkbox"/>
3-16	Pembroke	<input type="checkbox"/>
3-17	Abitibi	<input type="checkbox"/>
3-18	Cornwall	<input type="checkbox"/>
3-19	Brockville	<input type="checkbox"/>
3-20	Kingston	<input type="checkbox"/>
3-21	Belleville	<input type="checkbox"/>
3-22	Cobourg	<input type="checkbox"/>
3-23	Peterborough	<input type="checkbox"/>
3-24	Huntsville	<input type="checkbox"/>
3-25	Toronto	<input type="checkbox"/>
3-26	Barrie	<input type="checkbox"/>
3-27	Guelph/Kitchener	<input type="checkbox"/>
3-28	Goderich/Stratford	<input type="checkbox"/>
3-29	Niagara	<input type="checkbox"/>
3-30	London/St. Thomas	<input type="checkbox"/>

Service Area		✓
3-31	Chatham	<input type="checkbox"/>
3-32	Windsor/Leamington	<input type="checkbox"/>
3-33	Strathroy	<input type="checkbox"/>
3-34	North Bay	<input type="checkbox"/>
3-35	Sault Ste. Marie	<input type="checkbox"/>
3-36	Sudbury	<input type="checkbox"/>
3-37	Kirkland Lake	<input type="checkbox"/>
3-38	Thunder Bay	<input type="checkbox"/>
3-39	Winnipeg	<input type="checkbox"/>
3-40	Brandon	<input type="checkbox"/>
3-41	Regina	<input type="checkbox"/>
3-42	Moose Jaw	<input type="checkbox"/>
3-43	Saskatoon	<input type="checkbox"/>
3-44	Edmonton	<input type="checkbox"/>
3-45	Medicine Hat/Brooks	<input type="checkbox"/>
3-46	Lethbridge	<input type="checkbox"/>
3-47	Calgary	<input type="checkbox"/>
3-48	Red Deer	<input type="checkbox"/>
3-49	Grande Prairie	<input type="checkbox"/>
3-50	Kootenays	<input type="checkbox"/>
3-51	Okanagan/Columbia	<input type="checkbox"/>
3-52	Vancouver	<input type="checkbox"/>
3-53	Victoria	<input type="checkbox"/>
3-54	Nanaimo	<input type="checkbox"/>
3-55	Courtenay	<input type="checkbox"/>
3-56	Thompson/Cariboo	<input type="checkbox"/>
3-57	Prince George	<input type="checkbox"/>
3-58	Dawson Creek	<input type="checkbox"/>
3-59	Yukon, N.W.T./T.N.-O.	<input type="checkbox"/>

ANNEX B

Desired Initial Level of Eligibility Points and Required Pre-auction Deposit

By virtue of the spectrum aggregation limit outlined in the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* document, an incumbent local exchange carrier and/or its affiliates will not be permitted to bid on Licence A or Licence B in service areas in which more than 35% of the population is overlapped by the local exchange area(s) of the incumbent local exchange carrier and/or its affiliates. Beyond this, there are no licence-specific restrictions on any bidder for this auction. Therefore, Applicants do not need to identify particular licences on which they wish to bid. Aside from the prohibition on incumbent local exchange carriers and their affiliates bidding on Licence A or Licence B in certain service areas, as discussed above, all bidders will be able to submit bids on any licences for which they have a sufficient number of eligibility points.

Appendix 6 of the document *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* lists all the licences available in this auction and the number of eligibility points associated with each licence. The total number of points for all 354 licences is 3852.

If you wish, for example, to be able to initially place bids simultaneously on all 354 licences, then you should enter 3852 in box (a) of section 9 of the Application Form and you should enter \$9,630,000 ($3852 * \2500) in box (b) of section 9 of the Application Form.

If you wish, for example, to be able to initially place bids on licence 3-01A only, then you should enter 24 in box (a) and you should enter \$60,000 ($24 * \2500) in box (b).

If you wish, for example, to be able to initially place bids simultaneously on all six Ottawa licences (licences 3-15A, 3-15B, 3-15C, 3-15D, 3-15E and 3-15F), then you should enter 144 ($48+48+12+12+12+12$) in box (a) and you should enter \$360,000 ($144 * \2500) in box (b).

If you wish, for example, to be able to initially place bids simultaneously on one of the two 400 MHz licences (licence A or licence B) in each of Regina, Moose Jaw and Saskatoon (service areas 3-41, 3-42 and 3-43), then you should enter 48 ($16+8+24$) in box (a) and you should enter \$120,000 ($48 * \2500) in box (b).

ANNEX C

Elements of the Irrevocable Standby Letter of Credit

The irrevocable standby letter of credit shall be issued by a financial institution ("Issuer") which is a member of the Canadian Payments Association and shall:

- (1) provide for a face amount in accordance with the deposit amount required in the rules and policies laid out in the document *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* ("24/38 GHz Auction");
- (2) provide for sight payment to the Receiver General for Canada ("Beneficiary") by way of Issuer's draft against presentation of a written demand for payment, signed by the Assistant Deputy Minister, Spectrum, Information Technologies and Telecommunications, Industry Canada or the Director General, Radiocommunications and Broadcasting Regulations, certifying that the Applicant
 - (a) owes monies as a result of being standing high bidder on a licence or licences at the close of the 24/38 GHz Auction,
or
 - (b) owes penalties at the close of the 24/38 GHz Auction,
or
 - (c) owes monies as a result of being standing high bidder on a licence or licences at the close of the 24/38 GHz Auction and owes penalties at the close of the 24/38 GHz Auction;
- (3) provide that the Issuer shall honour the Beneficiary's demand for payment on sight without inquiring whether the Beneficiary has a right as between itself and the Applicant to such payment;
- (4) provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 1993 Revision, Publication No. 500;
- (5) provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the Letter of Credit; and
- (6) provide that the Letter of Credit shall expire on June 30, 2000, if not drawn upon on or before that date.

ANNEX D

Designated Bidders

The department recommends that each applicant ensure that it has back-up capabilities by designating three separate individuals to place bids on its behalf. The three individuals will be issued separate software and codes to participate in the auction. Information on the three designated bidders should be entered below. It is strongly recommended that each applicant thoroughly review the back-up recommendations provided in section 6.8 of the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* document.

(a) Designated Bidder No. 1

Typed/Printed Name of Person	Title of Person		Date
Signature of Person	Telephone No. ()	Fax No. ()	E-mail Address
Mailing Address			

(b) Designated Bidder No. 2

Typed/Printed Name of Person	Title of Person		Date
Signature of Person	Telephone No. ()	Fax No. ()	E-mail Address
Mailing Address			

(c) Designated Bidder No. 3

Typed/Printed Name of Person	Title of Person		Date
Signature of Person	Telephone No. ()	Fax No. ()	E-mail Address
Mailing Address			

Bidder Identification Number			

Deed of Acknowledgment

From: _____
Name of Applicant (“Applicant”)

To: Her Majesty the Queen in right of Canada

WITNESSETH that in consideration of the Minister of Industry (“Minister”) holding an auction in accordance with the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* dated May 29, 1999, the Minister’s approval of the Applicant’s participation in the auction, and other good and valid consideration, the receipt and sufficiency of which are hereby acknowledged by the Applicant and the Minister, the Applicant covenants and agrees:

1. to accept and to be bound by all of the terms and conditions of the auction as set out in the *Policy and Licensing Procedures for the Auction of the 24 and 38 GHz Frequency Bands* dated May 29, 1999; and,
2. to pay any debt or obligation to Her Majesty the Queen in right of Canada which the Applicant may incur as a result of the Applicant’s participation in the auction, and without limiting the generality of the foregoing, to honour all of the Applicant’s bids and all amounts owing in relation to withdrawal and forfeiture penalties.

This *Deed of Acknowledgement* shall become effective on the date that the Minister issues the Qualified Bidder Certificate to the Applicant.

Dated on the ___ day of _____, 19__ at the ____ of _____ in the Province of _____
[city, town]

Signature

Corporate Seal

Name: _____

Position: _____



Bidder Identification Number			

Notification of Interest for the Auction of the 24 and 38 GHz Frequency Bands

Notifications of Interest are hereby requested from those wishing to publicly announce their interest to participate in the auction of the 24 and 38 GHz frequency bands. To participate in the Notification of Interest process, this form must be submitted to the department by July 9, 1999. The form may be submitted by fax or e-mail, provided it is received by the specified deadline. A list of all those who expressed interest will be published on the department's Strategis Web site (<http://strategis.ic.gc.ca/spectrum>) shortly thereafter.

1. Name of Interested Party

2. Address (Street, P.O. Box, etc.)

3. City, Town

4. Province

5. Postal Code

6. Telephone No. () _____ 7. Fax No. () _____

8. E-mail Address _____

Address all notifications of interest and any requests for further information concerning this process to:

Earl Hoeg
Manager, Wireless Networks
Radiocommunications and Broadcasting Regulatory Branch
Industry Canada
Room 1522A, 300 Slater Street
Ottawa, Ontario
K1A 0C8
Telephone: (613) 990-7176
Fax: (613) 991-3514
E-mail: 24ghz.38ghz@ic.gc.ca

Detailed list of licences to be auctioned

The following table lists the fifty-nine Tier 3 service areas for which Industry Canada will issue 24 and 38 GHz licences. A total of 354 licences will be offered in this auction, six in each service area. The licences in each service area are as follows:

Licence A	400 MHz in the 24 GHz band
Licence B	400 MHz in the 38 GHz band
Licence C	100 MHz in the 38 GHz band
Licence D	100 MHz in the 38 GHz band
Licence E	100 MHz in the 38 GHz band
Licence F	100 MHz in the 38 GHz band

For each licence, the table lists the licence number and block, the service area name, the eligibility associated with the licence, the reserve price for the licence, and the population of the service area.

The reserve price is calculated at \$2,500 per eligibility point.

All population figures are based on Statistics Canada's 1996 Census Divisions and Subdivisions.

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-01A	Nfld./T.-N./Labrador	24	\$60,000	551,792
3-01B	Nfld./T.-N./Labrador	24	\$60,000	551,792
3-01C	Nfld./T.-N./Labrador	6	\$15,000	551,792
3-01D	Nfld./T.-N./Labrador	6	\$15,000	551,792
3-01E	Nfld./T.-N./Labrador	6	\$15,000	551,792
3-01F	Nfld./T.-N./Labrador	6	\$15,000	551,792
3-02A	P.E.I./Î.-P.-É.	8	\$20,000	134,557
3-02B	P.E.I./Î.-P.-É.	8	\$20,000	134,557
3-02C	P.E.I./Î.-P.-É.	2	\$5,000	134,557
3-02D	P.E.I./Î.-P.-É.	2	\$5,000	134,557
3-02E	P.E.I./Î.-P.-É.	2	\$5,000	134,557
3-02F	P.E.I./Î.-P.-É.	2	\$5,000	134,557
3-03A	Main N.S./N.-É. cont	32	\$80,000	751,011
3-03B	Main N.S./N.-É. cont	32	\$80,000	751,011
3-03C	Main N.S./N.-É. cont	8	\$20,000	751,011
3-03D	Main N.S./N.-É. cont	8	\$20,000	751,011
3-03E	Main N.S./N.-É. cont	8	\$20,000	751,011
3-03F	Main N.S./N.-É. cont	8	\$20,000	751,011
3-04A	C. Breton/Cap Breton	8	\$20,000	158,271
3-04B	C. Breton/Cap Breton	8	\$20,000	158,271
3-04C	C. Breton/Cap Breton	2	\$5,000	158,271
3-04D	C. Breton/Cap Breton	2	\$5,000	158,271
3-04E	C. Breton/Cap Breton	2	\$5,000	158,271
3-04F	C. Breton/Cap Breton	2	\$5,000	158,271
3-05A	S. N.B./N.-B.-Sud	8	\$20,000	171,361
3-05B	S. N.B./N.-B.-Sud	8	\$20,000	171,361
3-05C	S. N.B./N.-B.-Sud	2	\$5,000	171,361

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-05D	S. N.B./N.-B.-Sud	2	\$5,000	171,361
3-05E	S. N.B./N.-B.-Sud	2	\$5,000	171,361
3-05F	S. N.B./N.-B.-Sud	2	\$5,000	171,361
3-06A	W. N.B./N.-B.-Ouest	12	\$30,000	209,200
3-06B	W. N.B./N.-B.-Ouest	12	\$30,000	209,200
3-06C	W. N.B./N.-B.-Ouest	3	\$7,500	209,200
3-06D	W. N.B./N.-B.-Ouest	3	\$7,500	209,200
3-06E	W. N.B./N.-B.-Ouest	3	\$7,500	209,200
3-06F	W. N.B./N.-B.-Ouest	3	\$7,500	209,200
3-07A	E. N.B./N.-B.-Est	16	\$40,000	357,572
3-07B	E. N.B./N.-B.-Est	16	\$40,000	357,572
3-07C	E. N.B./N.-B.-Est	4	\$10,000	357,572
3-07D	E. N.B./N.-B.-Est	4	\$10,000	357,572
3-07E	E. N.B./N.-B.-Est	4	\$10,000	357,572
3-07F	E. N.B./N.-B.-Est	4	\$10,000	357,572
3-08A	Bas du fleuve/Gaspé	16	\$40,000	311,501
3-08B	Bas du fleuve/Gaspé	16	\$40,000	311,501
3-08C	Bas du fleuve/Gaspé	4	\$10,000	311,501
3-08D	Bas du fleuve/Gaspé	4	\$10,000	311,501
3-08E	Bas du fleuve/Gaspé	4	\$10,000	311,501
3-08F	Bas du fleuve/Gaspé	4	\$10,000	311,501
3-09A	Québec	48	\$120,000	909,256
3-09B	Québec	48	\$120,000	909,256
3-09C	Québec	12	\$30,000	909,256
3-09D	Québec	12	\$30,000	909,256
3-09E	Québec	12	\$30,000	909,256
3-09F	Québec	12	\$30,000	909,256
3-10A	Chicoutimi-Jonquière	16	\$40,000	388,933
3-10B	Chicoutimi-Jonquière	16	\$40,000	388,933
3-10C	Chicoutimi-Jonquière	4	\$10,000	388,933
3-10D	Chicoutimi-Jonquière	4	\$10,000	388,933
3-10E	Chicoutimi-Jonquière	4	\$10,000	388,933
3-10F	Chicoutimi-Jonquière	4	\$10,000	388,933
3-11A	Cantons de l'Est	24	\$60,000	503,748
3-11B	Cantons de l'Est	24	\$60,000	503,748
3-11C	Cantons de l'Est	6	\$15,000	503,748
3-11D	Cantons de l'Est	6	\$15,000	503,748
3-11E	Cantons de l'Est	6	\$15,000	503,748
3-11F	Cantons de l'Est	6	\$15,000	503,748
3-12A	Trois-Rivières	32	\$80,000	743,176

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-12B	Trois-Rivières	32	\$80,000	743,176
3-12C	Trois-Rivières	8	\$20,000	743,176
3-12D	Trois-Rivières	8	\$20,000	743,176
3-12E	Trois-Rivières	8	\$20,000	743,176
3-12F	Trois-Rivières	8	\$20,000	743,176
3-13A	Montréal	144	\$360,000	3,682,384
3-13B	Montréal	144	\$360,000	3,682,384
3-13C	Montréal	36	\$90,000	3,682,384
3-13D	Montréal	36	\$90,000	3,682,384
3-13E	Montréal	36	\$90,000	3,682,384
3-13F	Montréal	36	\$90,000	3,682,384
3-14A	Outaouais	8	\$20,000	106,519
3-14B	Outaouais	8	\$20,000	106,519
3-14C	Outaouais	2	\$5,000	106,519
3-14D	Outaouais	2	\$5,000	106,519
3-14E	Outaouais	2	\$5,000	106,519
3-14F	Outaouais	2	\$5,000	106,519
3-15A	Ottawa	48	\$120,000	1,193,489
3-15B	Ottawa	48	\$120,000	1,193,489
3-15C	Ottawa	12	\$30,000	1,193,489
3-15D	Ottawa	12	\$30,000	1,193,489
3-15E	Ottawa	12	\$30,000	1,193,489
3-15F	Ottawa	12	\$30,000	1,193,489
3-16A	Pembroke	8	\$20,000	112,948
3-16B	Pembroke	8	\$20,000	112,948
3-16C	Pembroke	2	\$5,000	112,948
3-16D	Pembroke	2	\$5,000	112,948
3-16E	Pembroke	2	\$5,000	112,948
3-16F	Pembroke	2	\$5,000	112,948
3-17A	Abitibi	8	\$20,000	194,810
3-17B	Abitibi	8	\$20,000	194,810
3-17C	Abitibi	2	\$5,000	194,810
3-17D	Abitibi	2	\$5,000	194,810
3-17E	Abitibi	2	\$5,000	194,810
3-17F	Abitibi	2	\$5,000	194,810
3-18A	Cornwall	4	\$10,000	66,849
3-18B	Cornwall	4	\$10,000	66,849
3-18C	Cornwall	1	\$2,500	66,849
3-18D	Cornwall	1	\$2,500	66,849
3-18E	Cornwall	1	\$2,500	66,849

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-18F	Cornwall	1	\$2,500	66,849
3-19A	Brockville	4	\$10,000	83,985
3-19B	Brockville	4	\$10,000	83,985
3-19C	Brockville	1	\$2,500	83,985
3-19D	Brockville	1	\$2,500	83,985
3-19E	Brockville	1	\$2,500	83,985
3-19F	Brockville	1	\$2,500	83,985
3-20A	Kingston	8	\$20,000	160,574
3-20B	Kingston	8	\$20,000	160,574
3-20C	Kingston	2	\$5,000	160,574
3-20D	Kingston	2	\$5,000	160,574
3-20E	Kingston	2	\$5,000	160,574
3-20F	Kingston	2	\$5,000	160,574
3-21A	Belleville	8	\$20,000	183,250
3-21B	Belleville	8	\$20,000	183,250
3-21C	Belleville	2	\$5,000	183,250
3-21D	Belleville	2	\$5,000	183,250
3-21E	Belleville	2	\$5,000	183,250
3-21F	Belleville	2	\$5,000	183,250
3-22A	Cobourg	4	\$10,000	57,326
3-22B	Cobourg	4	\$10,000	57,326
3-22C	Cobourg	1	\$2,500	57,326
3-22D	Cobourg	1	\$2,500	57,326
3-22E	Cobourg	1	\$2,500	57,326
3-22F	Cobourg	1	\$2,500	57,326
3-23A	Peterborough	8	\$20,000	188,931
3-23B	Peterborough	8	\$20,000	188,931
3-23C	Peterborough	2	\$5,000	188,931
3-23D	Peterborough	2	\$5,000	188,931
3-23E	Peterborough	2	\$5,000	188,931
3-23F	Peterborough	2	\$5,000	188,931
3-24A	Huntsville	4	\$10,000	69,701
3-24B	Huntsville	4	\$10,000	69,701
3-24C	Huntsville	1	\$2,500	69,701
3-24D	Huntsville	1	\$2,500	69,701
3-24E	Huntsville	1	\$2,500	69,701
3-24F	Huntsville	1	\$2,500	69,701
3-25A	Toronto	192	\$480,000	5,146,581
3-25B	Toronto	192	\$480,000	5,146,581
3-25C	Toronto	48	\$120,000	5,146,581

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-25D	Toronto	48	\$120,000	5,146,581
3-25E	Toronto	48	\$120,000	5,146,581
3-25F	Toronto	48	\$120,000	5,146,581
3-26A	Barrie	24	\$60,000	550,912
3-26B	Barrie	24	\$60,000	550,912
3-26C	Barrie	6	\$15,000	550,912
3-26D	Barrie	6	\$15,000	550,912
3-26E	Barrie	6	\$15,000	550,912
3-26F	Barrie	6	\$15,000	550,912
3-27A	Guelph/Kitchener	24	\$60,000	560,682
3-27B	Guelph/Kitchener	24	\$60,000	560,682
3-27C	Guelph/Kitchener	6	\$15,000	560,682
3-27D	Guelph/Kitchener	6	\$15,000	560,682
3-27E	Guelph/Kitchener	6	\$15,000	560,682
3-27F	Guelph/Kitchener	6	\$15,000	560,682
3-28A	Goderich/Stratford	8	\$20,000	127,423
3-28B	Goderich/Stratford	8	\$20,000	127,423
3-28C	Goderich/Stratford	2	\$5,000	127,423
3-28D	Goderich/Stratford	2	\$5,000	127,423
3-28E	Goderich/Stratford	2	\$5,000	127,423
3-28F	Goderich/Stratford	2	\$5,000	127,423
3-29A	Niagara	16	\$40,000	353,605
3-29B	Niagara	16	\$40,000	353,605
3-29C	Niagara	4	\$10,000	353,605
3-29D	Niagara	4	\$10,000	353,605
3-29E	Niagara	4	\$10,000	353,605
3-29F	Niagara	4	\$10,000	353,605
3-30A	London/St. Thomas	32	\$80,000	742,833
3-30B	London/St. Thomas	32	\$80,000	742,833
3-30C	London/St. Thomas	8	\$20,000	742,833
3-30D	London/St. Thomas	8	\$20,000	742,833
3-30E	London/St. Thomas	8	\$20,000	742,833
3-30F	London/St. Thomas	8	\$20,000	742,833
3-31A	Chatham	8	\$20,000	109,518
3-31B	Chatham	8	\$20,000	109,518
3-31C	Chatham	2	\$5,000	109,518
3-31D	Chatham	2	\$5,000	109,518
3-31E	Chatham	2	\$5,000	109,518
3-31F	Chatham	2	\$5,000	109,518
3-32A	Windsor/Leamington	16	\$40,000	351,986

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-32B	Windsor/Leamington	16	\$40,000	351,986
3-32C	Windsor/Leamington	4	\$10,000	351,986
3-32D	Windsor/Leamington	4	\$10,000	351,986
3-32E	Windsor/Leamington	4	\$10,000	351,986
3-32F	Windsor/Leamington	4	\$10,000	351,986
3-33A	Strathroy	8	\$20,000	166,646
3-33B	Strathroy	8	\$20,000	166,646
3-33C	Strathroy	2	\$5,000	166,646
3-33D	Strathroy	2	\$5,000	166,646
3-33E	Strathroy	2	\$5,000	166,646
3-33F	Strathroy	2	\$5,000	166,646
3-34A	North Bay	8	\$20,000	124,950
3-34B	North Bay	8	\$20,000	124,950
3-34C	North Bay	2	\$5,000	124,950
3-34D	North Bay	2	\$5,000	124,950
3-34E	North Bay	2	\$5,000	124,950
3-34F	North Bay	2	\$5,000	140,395
3-35A	Sault Ste. Marie	8	\$20,000	140,395
3-35B	Sault Ste. Marie	8	\$20,000	140,395
3-35C	Sault Ste. Marie	2	\$5,000	140,395
3-35D	Sault Ste. Marie	2	\$5,000	140,395
3-35E	Sault Ste. Marie	2	\$5,000	140,395
3-35F	Sault Ste. Marie	2	\$5,000	140,395
3-36A	Sudbury	8	\$20,000	184,488
3-36B	Sudbury	8	\$20,000	184,488
3-36C	Sudbury	2	\$5,000	184,488
3-36D	Sudbury	2	\$5,000	184,488
3-36E	Sudbury	2	\$5,000	184,488
3-36F	Sudbury	2	\$5,000	184,488
3-37A	Kirkland Lake	8	\$20,000	130,650
3-37B	Kirkland Lake	8	\$20,000	130,650
3-37C	Kirkland Lake	2	\$5,000	130,650
3-37D	Kirkland Lake	2	\$5,000	130,650
3-37E	Kirkland Lake	2	\$5,000	130,650
3-37F	Kirkland Lake	2	\$5,000	130,650
3-38A	Thunder Bay	12	\$30,000	244,319
3-38B	Thunder Bay	12	\$30,000	244,319
3-38C	Thunder Bay	3	\$7,500	244,319
3-38D	Thunder Bay	3	\$7,500	244,319
3-38E	Thunder Bay	3	\$7,500	244,319

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-38F	Thunder Bay	3	\$7,500	244,319
3-39A	Winnipeg	48	\$120,000	938,812
3-39B	Winnipeg	48	\$120,000	938,812
3-39C	Winnipeg	12	\$30,000	938,812
3-39D	Winnipeg	12	\$30,000	938,812
3-39E	Winnipeg	12	\$30,000	938,812
3-39F	Winnipeg	12	\$30,000	938,812
3-40A	Brandon	8	\$20,000	177,088
3-40B	Brandon	8	\$20,000	177,088
3-40C	Brandon	2	\$5,000	177,088
3-40D	Brandon	2	\$5,000	177,088
3-40E	Brandon	2	\$5,000	177,088
3-40F	Brandon	2	\$5,000	177,088
3-41A	Regina	16	\$40,000	359,584
3-41B	Regina	16	\$40,000	359,584
3-41C	Regina	4	\$10,000	359,584
3-41D	Regina	4	\$10,000	359,584
3-41E	Regina	4	\$10,000	359,584
3-41F	Regina	4	\$10,000	359,584
3-42A	Moose Jaw	8	\$20,000	109,722
3-42B	Moose Jaw	8	\$20,000	109,722
3-42C	Moose Jaw	2	\$5,000	109,722
3-42D	Moose Jaw	2	\$5,000	109,722
3-42E	Moose Jaw	2	\$5,000	109,722
3-42F	Moose Jaw	2	\$5,000	109,722
3-43A	Saskatoon	24	\$60,000	511,464
3-43B	Saskatoon	24	\$60,000	511,464
3-43C	Saskatoon	6	\$15,000	511,464
3-43D	Saskatoon	6	\$15,000	511,464
3-43E	Saskatoon	6	\$15,000	511,464
3-43F	Saskatoon	6	\$15,000	511,464
3-44A	Edmonton	48	\$120,000	1,149,185
3-44B	Edmonton	48	\$120,000	1,149,185
3-44C	Edmonton	12	\$30,000	1,149,185
3-44D	Edmonton	12	\$30,000	1,149,185
3-44E	Edmonton	12	\$30,000	1,149,185
3-44F	Edmonton	12	\$30,000	1,149,185
3-45A	Medicine Hat/Brooks	8	\$20,000	134,724
3-45B	Medicine Hat/Brooks	8	\$20,000	134,724
3-45C	Medicine Hat/Brooks	2	\$5,000	134,724

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-45D	Medicine Hat/Brooks	2	\$5,000	134,724
3-45E	Medicine Hat/Brooks	2	\$5,000	134,724
3-45F	Medicine Hat/Brooks	2	\$5,000	134,724
3-46A	Lethbridge	8	\$20,000	150,228
3-46B	Lethbridge	8	\$20,000	150,228
3-46C	Lethbridge	2	\$5,000	150,228
3-46D	Lethbridge	2	\$5,000	150,228
3-46E	Lethbridge	2	\$5,000	150,228
3-46F	Lethbridge	2	\$5,000	150,228
3-47A	Calgary	48	\$120,000	944,382
3-47B	Calgary	48	\$120,000	944,382
3-47C	Calgary	12	\$30,000	944,382
3-47D	Calgary	12	\$30,000	944,382
3-47E	Calgary	12	\$30,000	944,382
3-47F	Calgary	12	\$30,000	944,382
3-48A	Red Deer	8	\$20,000	176,376
3-48B	Red Deer	8	\$20,000	176,376
3-48C	Red Deer	2	\$5,000	176,376
3-48D	Red Deer	2	\$5,000	176,376
3-48E	Red Deer	2	\$5,000	176,376
3-48F	Red Deer	2	\$5,000	176,376
3-49A	Grande Prairie	8	\$20,000	149,396
3-49B	Grande Prairie	8	\$20,000	149,396
3-49C	Grande Prairie	2	\$5,000	149,396
3-49D	Grande Prairie	2	\$5,000	149,396
3-49E	Grande Prairie	2	\$5,000	149,396
3-49F	Grande Prairie	2	\$5,000	149,396
3-50A	Kootenays	8	\$20,000	134,973
3-50B	Kootenays	8	\$20,000	134,973
3-50C	Kootenays	2	\$5,000	134,973
3-50D	Kootenays	2	\$5,000	134,973
3-50E	Kootenays	2	\$5,000	134,973
3-50F	Kootenays	2	\$5,000	134,973
3-51A	Okanagan/Columbia	16	\$40,000	355,904
3-51B	Okanagan/Columbia	16	\$40,000	355,904
3-51C	Okanagan/Columbia	4	\$10,000	355,904
3-51D	Okanagan/Columbia	4	\$10,000	355,904
3-51E	Okanagan/Columbia	4	\$10,000	355,904
3-51F	Okanagan/Columbia	4	\$10,000	355,904
3-52A	Vancouver	96	\$240,000	2,138,533

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-52B	Vancouver	96	\$240,000	2,138,533
3-52C	Vancouver	24	\$60,000	2,138,533
3-52D	Vancouver	24	\$60,000	2,138,533
3-52E	Vancouver	24	\$60,000	2,138,533
3-52F	Vancouver	24	\$60,000	2,138,533
3-53A	Victoria	16	\$40,000	382,745
3-53B	Victoria	16	\$40,000	382,745
3-53C	Victoria	4	\$10,000	382,745
3-53D	Victoria	4	\$10,000	382,745
3-53E	Victoria	4	\$10,000	382,745
3-53F	Victoria	4	\$10,000	382,745
3-54A	Nanaimo	8	\$20,000	159,657
3-54B	Nanaimo	8	\$20,000	159,657
3-54C	Nanaimo	2	\$5,000	159,657
3-54D	Nanaimo	2	\$5,000	159,657
3-54E	Nanaimo	2	\$5,000	159,657
3-54F	Nanaimo	2	\$5,000	159,657
3-55A	Courtenay	8	\$20,000	105,968
3-55B	Courtenay	8	\$20,000	105,968
3-55C	Courtenay	2	\$5,000	105,968
3-55D	Courtenay	2	\$5,000	105,968
3-55E	Courtenay	2	\$5,000	105,968
3-55F	Courtenay	2	\$5,000	105,968
3-56A	Thompson/Cariboo	8	\$20,000	173,967
3-56B	Thompson/Cariboo	8	\$20,000	173,967
3-56C	Thompson/Cariboo	2	\$5,000	173,967
3-56D	Thompson/Cariboo	2	\$5,000	173,967
3-56E	Thompson/Cariboo	2	\$5,000	173,967
3-56F	Thompson/Cariboo	2	\$5,000	173,967
3-57A	Prince George	12	\$30,000	210,420
3-57B	Prince George	12	\$30,000	210,420
3-57C	Prince George	3	\$7,500	210,420
3-57D	Prince George	3	\$7,500	210,420
3-57E	Prince George	3	\$7,500	210,420
3-57F	Prince George	3	\$7,500	210,420
3-58A	Dawson Creek	4	\$10,000	62,333
3-58B	Dawson Creek	4	\$10,000	62,333
3-58C	Dawson Creek	1	\$2,500	62,333
3-58D	Dawson Creek	1	\$2,500	62,333
3-58E	Dawson Creek	1	\$2,500	62,333
3-58F	Dawson Creek	1	\$2,500	62,333

Licence	Service Area/Zone de service	Points	Reserve Price/Prix de réserve	Population
3-59A	Yukon, N.W.T./T.N.-O.	4	\$10,000	95,168
3-59B	Yukon, N.W.T./T.N.-O.	4	\$10,000	95,168
3-59C	Yukon, N.W.T./T.N.-O.	1	\$2,500	95,168
3-59D	Yukon, N.W.T./T.N.-O.	1	\$2,500	95,168
3-59E	Yukon, N.W.T./T.N.-O.	1	\$2,500	95,168
3-59F	Yukon, N.W.T./T.N.-O.	1	\$2,500	95,168



Bidder Identification Number			

**Declaration of Ownership and Control for Provisional Winners of
24/38 GHz Licences Who Wish to Act as Radiocommunication Carriers**

Note: If the provisional licence winner is not a corporation, then documents dealing with the same subject matters must be submitted.

I, the undersigned, do hereby make the following statements that I certify to be true and complete in every respect.

I certify, on behalf of _____ that:
(Name of Provisional Licence Winner)

I have read and I understand the contents of the Canadian carrier eligibility criteria as set out in section 10 of the *Radiocommunication Regulations* and _____ complies with the said Canadian carrier ownership and control requirements. (Name of Provisional Licence Winner)

The following required supporting documents are attached:

I. Incorporation Documents

- 1.1 The incorporating documents, including any by-laws relating to control matters, for the company and any related holding company.
- 1.2 A narrative explaining the company's Canadian ownership and control structure.

II. Shareholdings

- 2.1 The details of the authorized and issued shares for each class of shares for the company and any related holding company.
- 2.2 The details of the rights, privileges, restrictions and conditions of each class of shares for the company and any related holding company.
- 2.3 The details of the beneficial ownership by Canadians (as defined in the *Canadian Telecommunications Common Carrier Ownership and Control Regulations*), and by non-Canadians, of each class of shares for the company and any related holding company.
- 2.4 The copies of all shareholder agreements for the company and any related holding company.

III. Directors

- 3.1 The name and citizenship of each member of the board of directors of the company and any related holding company.
- 3.2 The details of any agreements or arrangements related to the election of directors of the company and any related holding company.

IV. Officers

- 4.1 The name and citizenship of each officer, and office held, of each officer of the company and any related holding company.
- 4.2 The details of any agreements or arrangements related to the appointment of officers of the company and any related holding company.

V. Financing

- 5.1 The complete details of the financial structure of the company and any related holding company, including the source of debt and equity financing. Please provide details as to the share structure, source of financing (banks, shareholders, passive investors, etc.), and domestic or foreign funding through both voting and non-voting investments.

VI. Agreements

- 6.1 Copies of any agreements between the company and any foreign partner or affiliate.
- 6.2 The details of any other agreement or arrangement which could affect whether the company or any related holding company are or are not controlled in fact by Canadians.

Important Notice:

Industry Canada reserves the right to review all ownership and control information submitted with this form and to request further information.

(Printed Name and Signature)

(Position Title)

(Date)