



Spectrum, Information Technologies and Telecommunications

Broadcasting Procedures and Rules

Part 11: Broadcasting Television Application Procedures During the 600 MHz Transition

Preface

This provisional issue of BPR-11 is hereby released.

This document describes the application processes for television broadcasting certificates during the 600 MHz repacking transition. During the transition period, the information in this document supersedes relevant details in sections of the Broadcasting Procedures and Rules BPR-1, *General Rules*, BPR-4, *Application Procedures and Rules for Television Broadcasting Undertakings*, BPR-10, *Application Procedures and Rules for Digital Television (DTV) Undertakings* and in sections of the Broadcasting Circular BC-15, *On-Air Testing Procedures for AM, FM and TV Broadcasting Undertakings*. Issued under the authority of the Minister of Innovation, Science, and Economic Development.

Peter Hill
Director General
Spectrum Management Operations
Branch

Martin Proulx
Director General
Engineering, Planning and Standards
Branch

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1 – Intent

This document describes the Canadian domestic application processes for television broadcasting certificates during the 600 MHz repacking transition. During the transition period, the information in this document supersedes relevant details in sections of the Broadcasting Procedures and Rules BPR-1, [General Rules](#), BPR-4, [Application Procedures and Rules for Television Broadcasting Undertakings](#), BPR-10, [Application Procedures and Rules for Digital Television \(DTV\) Undertakings](#) and in sections of the Broadcasting Circular BC-15, [On-Air Testing Procedures for AM, FM and TV Broadcasting Undertakings](#).

1.1 Coordination with the United States

A Statement of Intent (SOI) between the Department of Innovation, Science and Economic Development (ISED) of Canada and the Federal Communications Commission (FCC) of the United States of America relating to arrangements and procedures to be applied during the 600 MHz transition is under development and will be finalized within 30 days of publication of the new DTV allotment plan. This will apply to analogue TV stations within 400 km and DTV stations within 360 km of the common border.

2 – General information

2.1 Definitions

Associated Allotment: An associated allotment is an allotment in the [Digital Television \(DTV\) Allotment Plan](#) that is associated with an operational DTV or a National Television Systems Committee (NTSC) station.

Baseline Interference-free Service Population: Represents the population within the noise-limited bounding contour predicted to receive service and excludes the population of cells where the desired signal is blocked by terrain and excludes cells with existing interference from other allotments.

Baseline Parameters: Represents allotment technical parameters as specified at the release of the Plan or at the addition of a new allotment.

Department: Innovation, Science and Economic Development Canada (ISED)

Effective Height Above Average Terrain (EHAAT): An antenna's EHAAT is the average of the antenna's Height Above Average Terrain (HAAT) for eight standard radials spaced every 45 degrees of azimuth starting with true north. The HAAT is the height of the centre of radiation of the antenna above the average elevation of the terrain, based on Canadian Digital Elevation Data (CDED) 1 one arc-second data for Canada and the United States Geological Survey National Elevation Dataset (USGS NED) 1 one arc-second data for the United States, as measured from 3 to 16 km from the antenna for an individual radial. Determination of HAAT does not stop at the border or over bodies of water. HAAT incorporates the full 3 to 16 km radial segment, and will not employ truncated radials for calculations of radial average elevations above mean sea level (AMSL). For low power operations, HAATs will be measured from 0 to 5 km and the EHAAT is the average of the HAATs of four standard radials spaced every 90 degrees of

azimuth starting with true north. In the event of a discrepancy, the analysis by the Department shall prevail.

On-Air Testing Window: Each transition phase in the Transition Schedule will be assigned a period within which on-air testing should be conducted. This is referred to as the On-Air Testing Window. On-air testing of an application cannot begin prior to the on-air testing window of its transition phase.

Primary Assignment: A primary assignment is a digital television station authorized for operation on a regular or low power allotment. A primary assignment receives protection from other allotments, as well as other primary and secondary assignments. In this document, all references to assignments refer to primary assignments unless otherwise noted.

Protected Area (DTV): The protected area of a DTV allotment or DTV assignment is the geographic area inside the noise-limited bounding contour where the (50, 90) field strength, as predicted using the appropriate effective radiated power (ERP) and a terrain-sensitive propagation model, equals or exceeds the noise-limited field strength values specified in Table 1 of section 2 of BPR-10. The protected area is determined using the methodology outlined in Annex D of BPR-10.¹

Protected Area (NTSC): The protected area of an NTSC assignment is the geographic area inside the protected service contour where the (50, 50) field strength, as predicted using the appropriate effective radiated power (ERP) and a terrain-sensitive propagation model, equals or exceeds the NTSC field strength values as specified in Table 2 G2 of BPR-10. Protection is provided within a distance of 89 km for a low VHF regular (R) station, 82 km for a high VHF regular (R) station, 70 km for a class C UHF station, 45 km for a Class B UHF station, 25 km for a Class A UHF station and 12 km for a low-power (LP) station.

Secondary Assignment: A secondary assignment is a television station that does not operate in accordance with an allotment² and operates on the basis of not causing interference to, nor receiving protection from, allotments or primary assignments.³

The Plan: The [Digital Television \(DTV\) Allotment Plan](#) has been coordinated with the United States. It provides regular power and low power DTV allotments and associated reference parameters to which stations can be authorized to operate and may be amended from time to time, as needed. An up-to-date list of Canadian channels can be found on the [Department](#)'s website.

The Transition Schedule: The [Digital Television \(DTV\) Transition Schedule](#) has been developed jointly with the United States. It provides the timeframes in which TV stations are scheduled to transition to their allotment in the Plan.

Transition Period: The start of the transition period will be the date of the release of the Plan. The end of the transition period will be the end date of the final transition phase.

¹ Unlike the definition in BPR-10, the Protected Area is not limited to a distance of 100 km for primary assignments or 20 km for secondary assignments.

² In the case of a television station included in the Transition Schedule, this only applies to that station when it does not operate in accordance with its associated allotment past its scheduled transition date.

³ A secondary assignment is not dependent on whether the station is regular or low power but, rather, if the station conforms or not to the Plan and, if applicable, the Transition Schedule.

2.2 Television/terrestrial mobile protection criteria

Criteria to evaluate inter-service interference between over-the-air television broadcasting stations and mobile services during the transition period is under development.

2.3 Communication to broadcasters following the publication of the plan and transition schedule

At the start of the transition, the Department informed each certificate holder, by letter sent via email or mail, of specific details applying to their television undertakings according to the Plan and the Transition Schedule. Furthermore, in some cases, these letters included formal notice from the Department for displacement of certain TV station assignments depending on how they are impacted by the 600 MHz repacking. TV station transmitters are listed in these letters according to the following categories:

Transmitters not requiring any changes:

These DTV stations are assigned the same channel and technical parameters in the Plan as they are currently authorized. They are not included in the Transition Schedule. Consequently, there is no action required with respect to these stations for the 600 MHz repacking.

Transmitters requiring changes according to the Transition Schedule:

These analog TV or DTV stations have either been assigned a new digital channel and revised technical parameters or are required to convert to digital on the same channel with amended technical parameters. Each of these stations is listed in the Transition Schedule.

These stations will not be allowed to continue operation after their transition phase based on their existing parameters as operation of these stations past their scheduled transition phase completion date would either:

- cause unacceptable interference to TV stations, which have transitioned, or
- impair mobile deployment in the U.S.

Consequently, the Department has given formal notice for the displacement of these stations in its letter.

Transmitters requiring changes on an as needed basis:

These analog TV or DTV stations are currently authorized to operate in the 600 MHz spectrum repurposed for mobile deployment. Each of these stations is listed in the Transition Schedule.

While these stations may continue to operate until the Department issues a notice for their displacement due to the spectrum being required for mobile deployment, the broadcasting certificate holder may wish to transition these stations according to the Transition Schedule. By transitioning as per the Transition Schedule, stations can take advantage of the simplified application requirements and streamlined process as well as to minimize the impact of the transition on viewers by transitioning at the same time as other stations within their viewing range.

The Department will provide formal notice for the displacement of these stations, as described in section 7.4, when required.

Transmitters identified as conversions to digital only:

These analog TV stations are currently authorized to operate in the repacked TV band. These stations have been assigned the same channel but are required to convert to digital with amended technical parameters. Each of these stations is listed in the Transition Schedule.

These stations may be able to continue to operate on a secondary basis past their scheduled transition phase completion date in accordance with the conditions specified in section 7.2; however, broadcasting certificate holders will need to ensure, on an ongoing basis, that any changes to allotments in the Plan do not impact their ability to continue operating on a secondary basis. In the case of a station in this category, which is permitted to continue operating analog on a secondary basis, it is important to recognize that protection is only afforded to the digital allotment associated to this station on the same channel.

Alternately, broadcasting certificate holders may wish to transition these stations according to the Transition Schedule to ensure their continued protection of these stations during and after the transition. Furthermore, by transitioning according to the schedule, broadcasting certificate holders are able to take advantage of the simplified application requirements and streamlined process as well as minimize the impact of the transition on viewers by transitioning at the same time as other stations within their viewing range.

Noting that the continued operations on a secondary basis are subject to possible modifications or displacement, the Department has given formal notice for the displacement of these stations in its letter.

Transmitters identified as reassignments:

These analog TV stations are currently authorized to operate in the repacked TV band. These stations have been assigned a new digital channel and revised technical parameters. Each of these stations is listed in the Transition Schedule.

These stations may be able to continue to operate on a secondary basis past their scheduled transition phase completion date in accordance with the conditions specified in section 7.2; however, each certificate holder will need to ensure, on an ongoing basis, that any changes to allotments in the Plan do not impact their ability to continue operating on a secondary basis. In the case of a station in this category, which is permitted to continue operating analog on a secondary basis, it is important to recognize that its assigned new digital allotment will only remain associated to that station during the transition, as outlined in section 7.3.

Alternately, broadcasting certificate holders may wish to transition these stations according to the Transition Schedule to ensure their continued protection of these stations during and after the transition. Furthermore, by transitioning according to the schedule, broadcasting certificate holders are able to take advantage of the simplified application requirements and streamlined process as well as minimize the impact of the transition on viewers by transitioning at the same time as other stations within their viewing range.

Noting that the continued operations on a secondary basis are subject to possible modifications or displacement, the Department has given formal notice for the displacement of these stations in its letter.

2.4 Application requirements and procedures

The simplified application requirements and the streamlined process described in this document shall only apply for DTV applications received during the transition period.

During the transition period, clients are encouraged to submit [applications](#) online. These applications will be given higher priority since submitting applications online will facilitate bringing them into the system for evaluation and minimize delays in processing. Furthermore, the online system simplifies application submission for clients since it allows for the retrieval of existing station data from the ISED database for review and modification. The online validation also minimizes delays as it reduces the possibility for errors or omissions.

It is expected that no station will require changes prior to its transition date; however, should unforeseen circumstances arise, the Department will work together with the broadcaster to minimize any possible impacts.

3 – Application requirements

The following outlines the requirements for an application for a modified analog television or new or modified digital television broadcasting certificate during the 600 MHz repacking transition.

3.1 Simplified requirements for certain DTV applications during the 600 MHz repacking

Simplified requirements apply to DTV applications using associated allotments in the Plan that meet the following criteria:

- Channel and transition phase as listed in the Plan; and
- Noise-limited bounding contour not exceeding the contour as calculated using the reference parameters listed in the Plan.

These applications will still require:

- Completion of the [online application](#) or submission of the applicable form
 - ISED-ISDE3050, [Application for a Broadcasting Certificate for a Regular Power Undertaking](#), or
 - ISED-ISDE3051, [Application for a Broadcasting Certificate for a Low-Power or Very Low-Power Undertaking](#);
- Form IC-2430, [Radiocommunication and Broadcasting Antenna Systems Attestation](#) and, as applicable, a copy of the Letter of Intent to the land-use authority as described in [BPR-1](#), section 2, or the applicable sections in the online application;
- A text file containing horizontal and vertical antenna pattern data, in accordance with [BPR-1](#), Annex E.
- Accompanying engineering or technical brief.

While an engineering brief, as per section 3.2 of [BPR-10](#) will be required, the following information typically included in the engineering brief will not be required:

- Bounding contour table (section 3.2.4.7 or 4.3.6 of BPR-10);
- Interference analyses relative to other TV undertakings (section 3.6 or 4.3.3 of BPR-10);
- Short-spacing notifications to other TV undertakings (sections 3.6.5 and 3.6.6 of BPR-10);
- and

- Maps showing the noise-limited bounding contour, the digital urban contour, protected areas, interference, or comparative contours.⁴

These applications to the Department will not require electronic contour maps to be attached to the application.

The Department will calculate an assignment's HAAT values, noise-limited bounding contour and digital urban contour using terrain information from Canadian Digital Elevation Data (CDED) 1 arc-second data.

All other information required in the engineering brief as per [BPR-1](#), [BPR-4](#) and [BPR-10](#) is still required. This includes a demonstration of Radio Frequency (RF) exposure compliance with Health Canada's Safety Code 6 (SC6) guidelines, as described in section 3.1.1.

3.1.1 Radio Frequency (RF) exposure compliance

Applications must contain a demonstration of RF exposure compliance with SC6 in accordance with section 8 of [BPR-1](#). The assessment of RF exposure compliance needs to consider the combined effects of nearby installations within the local radio environment. This also includes changes to other nearby stations as a result of the transition that occur in on-air testing windows of phases prior to and during the proposed station's scheduled transition phase as well as any simulcasting during on-air testing within the same phase. If detailed calculations are used to demonstrate compliance, the instructions in [GL-08—Guidelines for the Preparation of Radio Frequency \(RF\) Exposure Compliance Reports for Radiocommunication and Broadcasting Antenna Systems](#), must be followed. Applicants are encouraged to exchange information pertaining to their installations and may work together to perform a common assessment for a site.

Any updates required to the assessment of RF exposure compliance with SC6 submitted in support of an application are to be provided at least three months prior to the proposed station's scheduled transition date.

3.2 Standard requirements for DTV and analog TV applications during the 600 MHz repacking

Applications not meeting all of the simplified application criteria in section 3.1 require all details and analyses, where applicable, as per [BPR-1](#), [BPR-4](#) and [BPR-10](#). Short-spacing notifications will be required to certificate holders of all short-spaced analog TV and DTV stations currently operating or proposed as well as those associated with short-spaced associated allotments in the Plan.

Applications not qualifying for the streamlined process as defined in section 5.1 should be submitted within six months of the publishing of the Plan and need to be accompanied by contingency plans if the application following the standard process cannot be made operational before the scheduled phase completion date. See section 5.6 for additional details.

⁴ The Department may require additional information if the protected area of an application is significantly reduced from that of its allotment in the Plan.

4 – Canadian Radio-television and Telecommunications commission (CRTC) application

If a corresponding application to the CRTC will not be filed, the applicant needs to provide confirmation that their proposed changes have already been approved by the CRTC or do not require additional CRTC approval.

5 – Application process

5.1 Streamlined process criteria

DTV applications related to the 600 MHz repacking transition will qualify for the complete streamlined process if they satisfy all of the following criteria:

- The channel and transition phase are as listed in the Plan;
- The noise-limited bounding contour (NLBC) does not exceed the contour as calculated using the reference parameters listed in the Plan by more than 1.0% along any radial;⁵
- The proposal does not cause greater than 0.5% population service loss to other assignments or allotments in comparison with the population service loss caused by the baseline parameters; and
- The proposed antenna structure satisfies criteria for exclusion in section 6 of Client Procedure Circular CPC-2-0-03, [*Radiocommunication and Broadcasting Antenna Systems*](#).

To assist the Department with organizing and prioritizing applications and ensure each type of application is processed efficiently, it is important to indicate whether the application follows the streamlined process and how it satisfies the above criteria.

5.2 Letter of Approval to modify facilities

The Department will issue a Letter of Approval (LOA) to modify facilities once it approves of the technical parameters of the application. The expiry date of the LOA will be associated with the assignment's transition phase in the Plan.

This Letter of Approval will include details of required inter-user coordination during on-air testing, if applicable.

5.3 Keeping the Department informed on transition progress

Applicants are expected to submit applications at least one year in advance of the end of their scheduled transition phase if they qualify for the streamlined process. The Department will contact certificate holders if they have not submitted applications at least one year in advance.

The Department may also contact those who have been issued a Letter of Approval to construct or modify facilities to obtain updates on their transition progress.

⁵ For the streamlined process, the noise-limited bounding contour will generally only be allowed to exceed the contour as calculated using the baseline parameters for channel changes or analog to digital conversions that require a new antenna that cannot match the pattern specified in the Plan.

Applicants should request authority for on-air tests as early as possible following construction of their new facilities and no later than one week prior to transmission tests. The Department will contact applicants who are approaching the on-air testing window for their transition phase and who have not yet submitted an on-air testing request.

Applicants should communicate with the Department as early as possible when potential problems or delays are foreseen and with sufficient time to examine proposed solutions. The Department will work with applicants to resolve issues with solutions that respect scheduled transition phase deadlines.

5.4 On-air testing procedure

Departmental authorization is required for on-air testing. A request for on-air testing shall be made to the local ISED District Office at least one week prior to transmission tests (unless otherwise specified in the LOA or communicated by the Department at least three months prior to the beginning of the on-air testing window). The on-air testing period will be effective no earlier than the scheduled beginning of the on-air testing window for the transition phase of the assignment.

During on-air testing, hourly identification of the broadcasting undertaking will be made in accordance with [*Broadcasting Equipment and Technical Standards \(BETS-11\)–Technical Requirements Respecting the Identification of Broadcasting Stations*](#). Unless otherwise specified in the on-air testing authority, neither on-air testing messages nor a Departmental on-air inspection will be required.

The Department shall require a minimum of three weeks of continuous operation at authorized parameters to successfully complete on-air testing. If required,⁶ on-air testing can extend beyond the end of a transition phase's on-air testing window provided that the existing pre-transition channel is shut down by the end of the phase.

Applicants must maintain a record of operating parameters as well as all complaints received during their on-air testing period and submit this record to the Department at the end of the testing period. The record should clearly identify the three week period of continuous testing at full authorized parameters and any period during which transmission occurred for portions of the day or at lesser operating parameters.

Within one month of the successful completion of on-air testing:

- If the final installation is as described in the original technical submission, the applicant shall submit to the Department an attestation to this effect (including an emission mask compliance statement) certified by a qualified professional engineer.
- If as-built changes are required, but the final parameters continue to meet the criteria for the streamlined process, the applicant shall submit to the Department a certification by a qualified professional engineer that clearly describes all changes from the original submission and shall include, if applicable, revised pages for the technical brief (or an addendum describing the changes), and revised contour maps, if applicable.

⁶ Applicants may coordinate testing schedules and/or parameters, as needed, to minimize interference during the testing window. Additional time may be required to complete the Department's three week continuous testing requirement, following the on-air testing window.

For low-power undertakings, it is recognized in certain situations that the certification may also be provided by qualified technical staff.

The on-air testing authority for the post-transition channel will extend beyond the station's scheduled transition phase and include sufficient time for receipt and assessment of the "as-built" certification. This authority, however, does not apply to the pre-transition channel. Operations on the existing pre-transition channel are to be shut down by the end of the station's scheduled phase.

5.5 Inter-user coordination during on-air testing

Television undertakings in a daisy chain must communicate with each other in order to coordinate on-air testing without causing excess interference. Coordination may involve undertakings agreeing to operate at lower power or accept increased interference for short periods of time while the undertakings involved are performing equipment tests. Daisy chains may involve numerous and/or distant television undertakings. To facilitate communication between undertakings (Canadian and U.S.), applicants may request contact information from the Department for other undertakings with whom they are required to perform inter-user coordination during on-air testing after they have received their Letter of Approval to modify facilities.

The Department will request contact information from applicants who will be required to perform inter-user coordination during on-air testing, and provide this information to Canadian and U.S. broadcasters, on an as-needed basis upon request, to facilitate communication between undertakings. Applicants are requested to contact ISED by [email](#) or by phone 343-291-1568 to request broadcaster contact information for on-air testing coordination.

5.6 Standard process

Any TV applications that do not meet the criteria of the streamlined process will follow the standard process. A standard application for an undertaking required to transition or proposing modifications to the Plan should be submitted within six months of the publication of the Plan. It should also be accompanied by contingency plans and/or a contingency application⁷ if the application following the standard process cannot be made operational before the scheduled end of the transition phase. All standard applications need to include an explanation as to why it is not proposed to build within the Plan parameters and permitted tolerances. If facilities using the Plan parameters are not possible, the application should clearly indicate this and provide a detailed rationale. This factor may be considered when prioritizing the application for Departmental assessment.

The requirements for keeping the Department informed on transition progress (section 5.3) the on-air testing procedure (section 5.4), and inter-user coordination during on-air testing (section 5.5) may be applicable to certain standard applications. Other types of standard applications will follow the on-air testing procedure in [BPR-1](#). The Letter of Approval for a standard application will specify which on-air testing procedure to follow.

⁷ An application qualifying for the streamlined process or an application to continue operating on a secondary basis should be submitted at least one year in advance of the scheduled phase completion date.

6 – Priority of applications during the transition

The general principles for assessing TV and DTV applications received by the Department are outlined below, however, should unforeseen circumstances arise, processing may deviate from these principles.

Applications will be processed based on priority, not necessarily in the order in which they are received.

During the first six months after the Plan is published, equal treatment will be provided to applications qualifying for the streamlined process for stations scheduled in early transition phases and to applications for stations proposing modifications to Plan parameters. Applications for new stations will be assessed on a case-by-case basis, with generally lower priority.

Applications received more than six months after the publication of the Plan will be prioritized based on their scheduled transition phase. Applications that qualify for the streamlined process will be given highest priority. The Department will continue to accept applications not qualifying for the streamlined process on a case-by-case basis, with those scheduled to transition assigned a higher priority than applications for new stations or those identified as requiring no changes and therefore not assigned a transition phase.

7 – Applications to extend operation of a station past its transition phase

Television undertakings in the repacked TV band may continue to operate in nonconformity to the Plan on a secondary basis, and television undertakings in the repurposed 600 MHz band may continue to operate until the spectrum is needed for the deployment of mobile broadband services. Operations on a secondary basis are only permitted where possible and bear significant requirements and risks from broadcasters.

7.1 Status of television undertakings

After the 600 MHz transition is complete, primary assignments will be those authorized for operation on an allotment in the Plan. Secondary assignments, which are not operating in conformity with the Plan, will operate on the basis of not causing interference to, nor receiving protection from, primary assignments. Primary assignments may be regular or low power and will all have the same status.

An order of protection will be preserved within stations operating on a secondary status. Analog television will have a lower status than digital television within the same class (i.e. regular or low power). Similarly, low power operations will have a lower status than regular power operations within the same category (i.e. digital or analog). In summary the hierarchy in television undertakings, from highest to lowest, within the secondary status is as follows:

1. Digital regular power
2. Analog regular power
3. Digital low power
4. Analog low power

7.2 Requests to operate on a secondary basis past the end of transition phase

Prior to operating on a secondary basis past the end of their transition phase, undertakings (regular and low power) will need to:

- ensure their continued operation will not cause more than 0.5% unique interference to primary assignments or allotments; and
- where applicable, submit an application with reduced parameters including analysis demonstrating that they would not cause more than 0.5% unique interference to primary TV undertakings or allotments.

Regular power undertakings will also need to:

- sign an attestation that they understand and accept the conditions of opting to operate on a secondary basis.

Low power undertakings will also need to:

- sign an attestation that they understand they are relinquishing their opportunity to achieve primary status if they do not transition by the end of their scheduled transition phase.

Sample attestation text can be found in Annex B.

There may be television undertakings that cannot continue to operate on a secondary basis, even with reduced parameters. There may also be television undertakings that would need to operate at such reduced parameters that their continued operation would not be feasible.

If an application to operate on a secondary basis past the end of a station's transition phase is approved, conditions will be added to an undertaking's broadcasting certificate related to its secondary status.

7.3 Unused Allotments

The new Plan did not incorporate the vacant allotments from the [DTV Post-Transition Allotment Plan](#) published in December 2008. Allotments in the new Plan would only be associated to existing stations at the time the new Plan was developed.

Thirty days after the end of the transition, allotments will no longer be associated to stations that have not transitioned for those in the following categories:

- not operating on the channel assigned in Plan;
- not operating in the repurposed 600 MHz band; and
- where a complete application has not been submitted for the station's associated allotment prior to the above-noted deadline.⁸

An allotment will no longer be associated to a TV undertaking that shuts down.

⁸ In the case of a station, which is reassigned a new channel in the Plan but is permitted to operate on a secondary basis on its existing channel within the repacked TV band, a complete application to transition that station to its new associated allotment can be submitted up to 30 days after the end of the transition. If this application is not received by that time, the new allotment will no longer be associated to that station.

7.4 Displacement notifications for undertakings in the repurposed 600 MHz band

Television undertakings in the repurposed 600 MHz band will be permitted to continue using their current channels and modes of operation until the spectrum is needed for the deployment of mobile broadband services.

The Department will issue displacement notifications to certificate holders in the 600 MHz band with a minimum of a one-year notification period for undertakings located in urban areas and a minimum of a two-year notification period for undertakings located in all other areas as specified in Annex A of the [Decision on Repurposing the 600 MHz Band](#).

The one or two year notification will not displace television undertakings prior to their scheduled phase completion date.

Displacement notifications will be sent according to the certificate holder contact information that the Department has on file.

8 – Technical rules during the transition

The Department will assess TV and DTV applications received during the transition using the planning parameters and technical assumptions as specified in Annex A.

8.1 Protection rules

During the transition period, all existing stations having an associated allotment as given in the Plan are protected on their existing channels and modes of operation until their scheduled phase completion date.

The existing stations that are predicted to cause more than 0.5% unique interference to TV stations identified within the Plan should:

- cease operation on their existing channels and commence operation on their new channels by their phase completion dates; or
- apply to modify their existing operation to reduce unique interference to less than 0.5%.

TV stations that do not cause more than 0.5% unique interference to the Plan or impair mobile spectrum may request to continue to operate on their existing channels and modes of operation on a secondary basis.

8.2 Interference ceilings

Applications with simplified requirements already meet interference ceiling conditions. All standard applications must demonstrate how the following interference ceiling conditions are met:

Steady-state⁹ interference ceilings:

⁹ After a station transitions to its post transition channel.

- A proposal for a new assignment shall not cause greater than 0.5% unique population service loss to a previously planned or approved assignment or allotment in the Plan.
- A proposal for a modified assignment or allotment is allowed to cause up to 0.5% unique population service loss to an existing primary assignment or to an allotment in the Plan than the proposal's corresponding baseline parameters.

Temporary interference ceilings:

- A proposal for a new assignment shall not cause greater than 2.0% unique population service loss to an assignment, which is scheduled for a later on-air testing window than the proposal.
- A proposal for a modified assignment or allotment is allowed to cause up to 2.0% unique population service loss to an existing assignment, which is scheduled for a later on-air testing window.
- A proposal for a new or modified assignment or a modified allotment shall not cause another assignment or allotment to receive more than 5.0% aggregate temporary population service loss unless that assignment or allotment would receive more than 5.0% aggregate temporary population service loss using allotment reference facilities in the Plan. If the 5.0% limit is already exceeded by the allotment reference facilities in the Plan, additional temporary population service loss would not normally be allowed.
- If two undertakings are already in a dependency relationship, temporary interference ceilings between them are not applicable if they are scheduled to transition in different phases.
- If two undertakings are already in a dependency relationship and transitioning in the same phase, inter-user coordination would be required.

8.3 Population service loss

The population service loss caused by a new proposal is calculated as:

$$\% \text{ Population service loss} = \frac{A}{B} \times 100\%$$

Where:

A = additional unique interference caused by the proposal within the baseline interference-free service population

B = the undertaking's baseline interference-free service population

Aggregate temporary population service loss is calculated as follows:

$$\% \text{ Population service loss} = \frac{A}{B} \times 100\%$$

Where:

A = total amount of interference received by an undertaking within the baseline interference-free service population (not including interference received during on-air testing)

B = the undertaking's baseline interference-free service population

8.4 Determination of protected area

The Department will use the planning parameters and technical assumptions as specified in Annex A for determination of protected area. This includes that the HAATs will be calculated every 5 degrees starting from true north and the use of the Longley-Rice model. For additional details not specified in Annex A, refer to Annex D of [BPR-10](#).

8.5 Interference analysis

The Department will use the planning parameters and technical assumptions as specified in Annex A for interference analysis. The interference analysis should be based on the Longley-Rice model. The census blocks should be based on the 2011 Statistics Canada census data. For additional information on interference analysis not specified in Annex A, refer to Annexes E and G of [BPR-10](#).

Annex A: Parameters and Technical Assumptions during the transition

Parameter	Value
Spherical earth distance	111.15 km/° latitude
Earth ground and atmospheric constants	$r=15$, $\Theta=5$ mS/m
Climatic zone	Continental temperate (5)
Terrain database	CDED 1 degree (Canada) USGS NED 1 degree (United States)
Calculation of depression angles from transmitter	Spherical earth geometry using elevations AMSL
Radio signal propagation model	Longley-Rice
Longley-Rice service mode	Broadcast
Population database	Statistics Canada, 2011
Rounding of population centroids	None
Terrain extraction interval	0.1 km for average terrain 1.0 km for path loss
DTV NLBC threshold (LVHF, HVHF, UHF)	Regular power: <ul style="list-style-type: none"> 28, 36, 41-20log(615/channel mid-frequency in MHz) dBμV/m
	Low power: <ul style="list-style-type: none"> 43,48, 51-20log(615/channel mid-frequency in MHz) dBμV/m
Analog TV service threshold (Low VHF, High VHF, UHF) not to exceed distance in (km)	Regular power: <ul style="list-style-type: none"> 47(89 km), 56 (82 km), 64 (70km) dBμV/m
	Low power: <ul style="list-style-type: none"> 47, 56, 64 dBμV/m (12 km)
Maximum additional population interference to an existing TV station from another TV station	0.5%
Treatment of TV stations with zero population	maximum additional interference by area of 2.0%
DTV NLBC statistic (location/situation, time)	50%, 90%
Analog Coverage Statistic (location/situation, time)	50%, 50%
DTV-into-DTV interference threshold, co-channel	$15 + 10 \log [1/(1-10^{-(x/10)})]$ dB, where $x=S/N-15.19$
DTV interference statistic (location/situation, time)	50%, 10%
DTV-into-DTV interference D/U ratio threshold, first adjacent channels	Regular power: <ul style="list-style-type: none"> -28 dB (lower adj.), -26 dB (upper adjacent)
	Low power:

Parameter	Value
	-7 dB (lower and upper adj) for Simple Mask, -12 dB (lower and upper adj) for Stringent Mask -28 dB (lower adj.), -26 dB (upper adj) for Full Mask
Cell size for Longley-Rice calculations	Square, 2 km/side
Treatment of kwx=3 warnings	Accept, assume coverage
TX antenna elevation pattern shape	Standard OET 69, non-symmetrical
Electrical beam tilt	As specified, or 0.75° if not specified for Canadian stations and allotments
Mechanical beam tilt	0 (ignored)
# radials used for height above the average terrain (HAAT) calculation	72
# radials used for contour projection	360
Minimum HAAT for any radial	30.5 m
Receive antenna height above ground level (AGL)	10 m
Receive antenna gain (low VHF, high VHF, UHF)	4, 6, 10 dBd
Downlead loss (LVHF, HVHF, UHF)	1, 2, 4 dB
Receive antenna front-to-back ratio (LVHF, HVHF, UHF) and azimuth pattern shape	10, 12, 14 dB, $\cos^4(\Theta)$, but not less than F/B ratio specified
Polarization	Horizontal

Annex B: Sample attestation text

I, [name], on behalf of [company name], am applying to continue operation of my television station with the call sign [call sign] serving [city, province] on channel [channel] on a secondary basis after the scheduled transition date assigned to my station.

I acknowledge my responsibility to take remedial measures if my operation causes unacceptable interference to primary television assignments, whether established before or after my station, even to the extent of closing down my operation if necessary.

I acknowledge that my station will not be entitled to protection from interference from primary television assignments and will be protected from other secondary television assignments according to the order of protection as specified in BPR-11.

I certify that the continued operation of my television station will not exceed the interference ceilings as specified in BPR-11. I understand that if I do not receive approval to continue operation of my television station prior to the expiry date of my broadcasting certificate [certificate number], I must shut down my station as of that expiry date.

(Additionally, for low power:)

I understand that my opportunity to obtain primary status as part of the 600 MHz transition may be relinquished if I continue to operate on a secondary basis after the scheduled transition date assigned to my station.