Form 256 - Geographic residential broadband capability Checklist

Checklist requirements for all providers

- ☐ If any of the boundaries of your residential broadband operating territory changed either (A) since your previous CRTC form 256 submission or (B) in the last calendar year, please submit maps.
- ☐ Current coverage maps may be provided **in addition to your year-end (December 2025) maps**.
    - ☐ Filenames clearly indicate different maps (ex: Cvg_Dec_2025.zip and Cvg_May_2026.zip)
- ☐ If there were changes in your residential broadband download speeds, residential broadband upload speeds or monthly upload/download limits please indicate them.
- ☐ **Boundaries** or **serviced points** of your residential broadband operating territory are provided.
    - ☐ Serviced points denote every serviceable location and are not just the location of the community or area.
    - ☐ Points contain latitude and longitude fields in floating point if in ArcGIS or MapInfo format. They are consistent with WGS84, and latitudes are positive, and longitudes are negative.
- ☐ **Area identifier** is provided.
    - ☐ In ArcGIS or MapInfo, the field name is AreaID and the datatype is string.
    - ☐ If there is a tower location file, the area ID matches the identifier used for each corresponding tower and 50/10/Unlimited areas are separate for each tower.
- ☐ Maximum residential broadband **download speeds** are provided.
    - ☐ In ArcGIS or MapInfo, the field name is DLmax and the datatype is numeric.

Maximum residential broadband **upload speeds** are provided.

- ☐ In ArcGIS or MapInfo, the field name is ULmax and the datatype is numeric.

- ☐ Maximum residential broadband **monthly upload/download limits** are provided (with “1” denoting “unlimited”).

- In ArcGIS or MapInfo, the field name is DataMax and the datatype is numeric.

- Maps separately identify **all technologies** used (with speeds of 1.5 Mbps or higher) such as fibre, DSL, cable, fixed wireless and satellite.
  - In ArcGIS or MapInfo, the field name is Technology and the datatype is string.

- An indication of the **backbone technology that provides network capacity** is provided for each coverage area, as appropriate.
  - In ArcGIS or MapInfo, the field name is Backhaul and the datatype is string.

- An indication of **satellite backhaul** is provided for each coverage area, as appropriate.
  - In ArcGIS or MapInfo, the field name is SatBackhaul and the datatype is string or boolean. If a string, the contents are “Yes” or “No”.

- The notes field describes changes if only numeric information such as uploads, downloads, or monthly usage limit have changed or were not reported, but the previously provided mapping boundaries have not changed.

- The services described are **commercially available** to households and **are advertised publicly**.

- The services described are also **readily available** to households.

- Only **coverage within Canada** is provided.

- Maps avoid self-intersections within polygons.
  - You may use your software’s “clean objects” or “repair self-intersection” feature to do this. Self-intersection is when the lines that make up the boundary of a polygon cross over themselves.

- Polygons, lines and points are each provided in their own respective layers with indications of what they all represent.

- Maps are submitted in the preferred formats of **MapInfo** (6.5 or above), **ArcGIS**, or Google Earth **KMZ** produced by the **ISED Universal Broadband Fund Eligibility Mapping Tool**. **QGIS** can produce maps in MapInfo or ArcGIS formats.

  If providing a QGIS workspace, include the associated files (shp, tab).

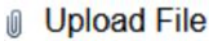
- Prior to submitting, current data is compared to previously submitted data.

- The comments field describes any known dropped coverage areas in relation to previous submissions (if any).

- Company **brand or operating name** and consumer-focused **website address** are provided.

- A **copy of your submission** has been **saved in your records for future reference**. DCS does not provide access to previous submissions after the collection period has closed.

- You have attached any files to the form using the "Upload Files" function on the top of the form.



- Files should be listed on the top of the form after they are uploaded.

Additional requirements by provider type

- Fixed wireless service providers offering services with 50 Mbps downloads and 10 Mbps uploads or faster filed tower infrastructure as per the additional instructions.

    - All additional instructions fields are provided in the specified order.

- This form seeks to collect **serviceable areas** in the geographic maps, not distribution lines or towers.

- For cable and fibre networks, **distribution lines can be "buffered" to depict a reasonable distance where customers can still be provided service** from the distribution network. If it is not possible to do this "buffering," please provide a distance (in meters) in the form notes for how far away a dwelling can be from a distribution line and receive service without significant installation charges.

- Maps generated via RF simulations can be provided. If it is not possible to submit RF simulation maps, maps with polygons to depict serviceable areas may be provided.

Form 256 - Geographic residential broadband capability: Illustrative example of a map attribute table in ArcGIS or MapInfo

AreaID	DLmax	ULmax	DataMax	Technology	Backhaul	SatBackhaul
John Doe Village	20	5	500	DSL	Fibre	No
Big City	200	10	-1	Fibre	Fibre	No
RuralArea1	10	2	200	Fixed Wireless	Fibre	Yes

Illustrative example: Form 256 - Geographic residential broadband capability and Form 256t - Geographic residential broadband capability towers

A sample RF simulation 50/10 Mbps and above fixed wireless coverage map separated into boundaries for each tower (Form 256) and an excerpt of the tower information (Form 256t) is provided for illustrative purposes.

Consistent identifiers for corresponding coverage areas (Form 256) and the towers (Form 256t) are required as per the form instructions.

Download coverage map attachment in zip format (Form 256) (777 KB)

An excerpt of the tower information (Form 256t)

Identifier	Tower ID	Sector ID
SiteA - 120E	SiteA	120E
SiteA - 120S	SiteA	120S
SiteA - 120N	SiteA	120N
SiteB - 120E	SiteB	120E
SiteB - 120S	SiteB	120S
SiteB - 120N	SiteB	120N

Form 256t - Geographic residential broadband capability towers - Additional instructions for fixed wireless service providers

This information should correlate with the last mile geographic coverage maps provided with form 256.

To further characterize the unique properties of last mile services delivered using wireless technologies, additional technical information is requested in areas where 50 Mbps download and 10 Mbps upload or faster services are provided.

I. Fixed Wireless Subscriber Details

Number of subscribers currently served at a minimum speed of 50/10 Mbps on this network
Provide the total number of subscribers (households) currently served at a minimum speed of 50/10 Mbps on this network.

Subscriber Antenna Location (outdoor / indoor)
Select “outdoor” or “indoor” to indicate whether the subscriber antennas will be typically deployed outdoors or indoors.

Subscriber Antenna Height (m)
The heights of subscriber antennas may vary from installation to installation. Please specify a typical height (in metres) of the subscriber antennas above the ground, as per your network.

Subscriber Antenna Configuration (mTnR)
The configuration should follow the “mTnR” format, where **m** denotes the number of **T**ransmit antennas and **n** the **R**eceive antennas in the subscriber antenna, such as 2T2R. The subscriber antenna configuration may vary depending on the equipment used in the field. The entry should be a representative antennas configuration, as per your network.

Subscriber Antenna Gain (dBi)
The subscriber antenna gains may vary depending on the equipment. The entry should be a typical gain (in dBi) for the subscriber antennas, as per your network.

II. Fixed Technology and Tower Information

Please provide the following for each of the tower locations from which last mile services with 50 Mbps downloads and 10 Mbps uploads or faster are offered.

This information can be specified by attaching a separate file (in either CSV, Excel, MapInfo or ArcGIS format) which contains the fields as specified below. You may shorten the field names, but must maintain the field order.

1. Identifier
   Indicate an identifier that correlates to the geographic coverage map (provided separately) associated with this tower.

2. Tower ID
   Indicate a unique identifier that is assigned to your tower.

3. Unique Sector ID
   Identifier of sector, unique at each tower.

Tower information

4. Tower Height Above Ground (m)
   Tower's height (in metres) above ground.

5. Latitude (decimal degrees)
   Must be in decimal degrees. Must also be within the limits of Canada (between 41.681389 to 83.111389).

6. Longitude (decimal degrees)
   Must be in decimal degrees. Must also be within the limits of Canada (between -52.619444 to -141.001944).
7. Percentage of Resource Used for Fixed Wireless (%)

Percentage of the resources that are allocated to fixed wireless services, e.g., 100%, 90%.

This field is intended to represent the % of the maximum throughput capacity that can be used by fixed wireless services. As a highly simplified example, if the calculations determine that the sector can provide 100 Mbps, and the % resources field is set at 40%, the sector will be deemed as being able to provide 40 Mbps for fixed wireless services.

Wireless Technology Standard

8. Standard (LTE, Wi-Fi, WiMAX, 5G, Other)
9. If “Other”, please specify, otherwise blank
10. Release/Version
    Indicate the release/version of the wireless technology, if applicable.
11. If you chose 'LTE' for Standard, specify FDD or the TDD UL/DL configuration (FDD, TDD-0 to TDD-6).

Spectrum

12. Operational Centre Frequency (MHz)

For technologies with licensed spectrum, such as LTE/5G NR, the Operational Center Frequency entry is the value (in MHz) corresponding to the center of the single or multiple carrier(s) in the same frequency band. For example, there are two contiguous carriers of 10MHz channel bandwidth centered at 622 MHz and 632 MHz, respectively. Then the Operational Centre Frequency is 627 MHz. If these two carriers are non-contiguous, ex. centered at 622 MHz and 642 MHz, respectively, the Operational Centre Frequency is 632 MHz.

For license-exempt technologies, such as WiFi-based technology, the Operational Center Frequency entry should be either the value (in MHz) of its operating frequency band (ex., 2400 MHz) for the technology with dynamic frequency selection feature, or the actual channel carrier frequency.

13. Operating Bandwidth (MHz)

For technologies with licensed spectrum, the Operating Bandwidth entry (in MHz) is either the operating downlink bandwidth in a single carrier case, or the sum of all operating downlink

bandwidths in multiple carrier case. Taking the example in “Operational Centre Frequency (MHz)”, the Operating Bandwidth is 10+10=20 MHz for both contiguous and non-contiguous cases.

For license-exempt technologies, the Operating Bandwidth is the actual operating channel bandwidth (in MHz).

This field is intended to provide the channel bandwidth (ie. 10/20/30/40...Selectable MHz).

14. Carrier Aggregation Index

Identifier of a grouped inter-band carriers for carrier aggregation when several operating frequency bands are used at a tower. For example, a tower has frequency bands of 700MHz, 800MHz, 2500MHz, and 3500MHz, where the 2500MHz and 3500MHz are aggregated together. Then “Carrier Aggregation Index” could be 1 for 700MHz, 2 for 800MHz, and 3 for both 2500MHz and 3500MHz.

Values in “Carrier Aggregation Index” can be repeated for different towers.

15. Spectrum License Status (Acquired, Pending, Not Initiated, No Applicable)

Radio Equipment

16. Manufacturer
    Manufacturer of radio equipment.

17. Model
    Model of radio equipment.

Base Station Parameters

18. Base Station Antenna Height Above Ground (m)
    Height (in metres) above ground of the deployed base station antenna.

19. Antenna Manufacturer
    Manufacturer of the base station antenna.

20. Antenna Model
    Model of the base station antenna.

21. Base Station Antenna Configuration (mTnR)
    Base station antenna configuration based on “mTnR” format, where m denotes the number of Transmit antennas and n the Receive antennas, such as 16T16R.

22. Massive MIMO gain factor (if known)
    The massive MIMO gain factor, which specifies the capacity increase achieved by the massive MIMO technology, is defined as ratio of the DL capacity with the massive MIMO technology to that with the SISO technology.

If this information is not known, just leave this entry empty. A typical gain factor, derived from the configuration entries on the base station and subscriber antennas, will be used as its default value.

23. Base Station Antenna Gain (dBi)
    The antenna gain relative to the gain of an isotropic antenna (in dBi).

24. Azimuth (Degrees)
    Antenna's maximum radiation direction measured clockwise from the true north (in degrees).
    Antenna pointing North will have an Azimuth of 0 degrees, an Antenna pointing NE will have an Azimuth of 45 degrees, etc.

25. Beamwidth (Degrees)
    Half-power beamwidth (in degrees) of antenna azimuth pattern.

26. Transmit Power (dBm)
    Total transmit power (in dBm) of all carriers at the antenna connector.

Please use one of the templates below to create your submission.

Link to Excel template (94 KB)

Link to CSV template (2 KB)