Innovation, Science and Economic Development Canada
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Canada

ISED Indigenous Spectrum Access

Presentation to Canada's Rural & Remote Broadband Community

Kelowna, BC-November 3rd, 2023

Purpose

- Provide an overview of **spectrum management** in the Canadian context.
- Highlight **initiatives ISED is taking** to further spectrum access and how these initiatives can support Indigenous connectivity and spectrum access.
- Start a dialogue on how ISED can build on its efforts to **support Indigenous Connectivity and Spectrum access**.

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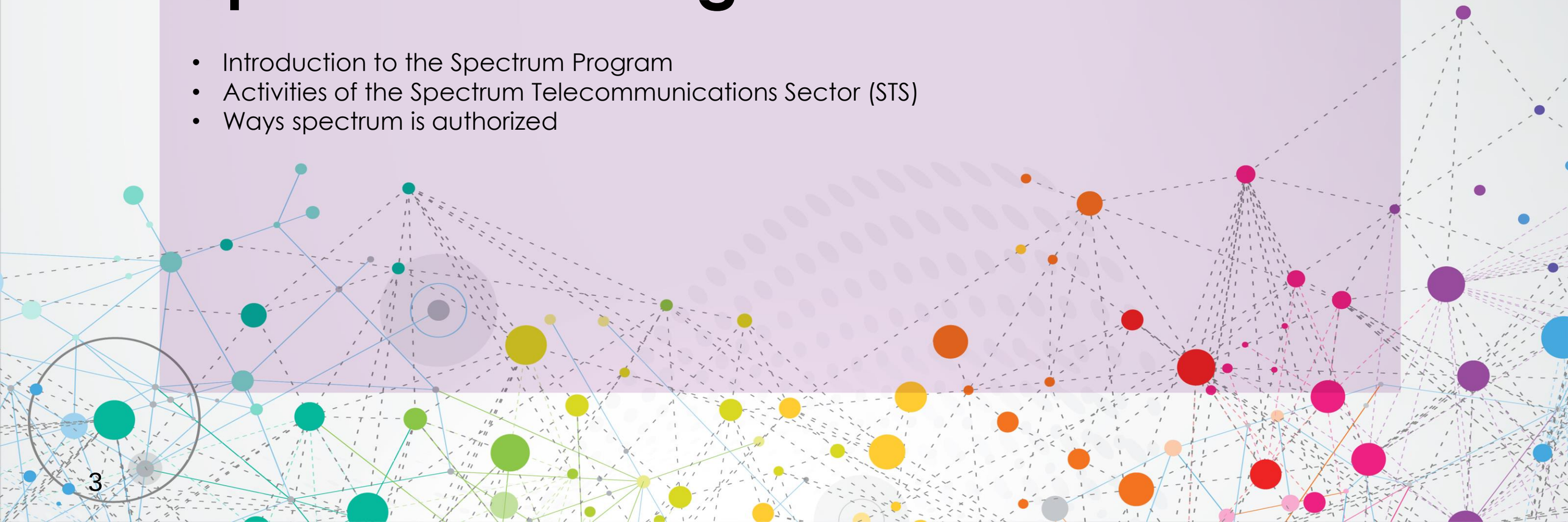
Spectrum Management

- Introduction to the Spectrum Program
- Activities of the Spectrum Telecommunications Sector (STS)
- Ways spectrum is authorized



What is Spectrum?

Smartphones

Public Safety and utility communications

Connecting to the Internet

Watching TV and listening to radio

Mobile payments

Spectrum is short for ‘radio frequency spectrum’ and it is the backbone of the digital economy

All wireless communication travels over ‘spectrum’

It is used every minute of every day virtually everywhere in the world

Health care monitoring

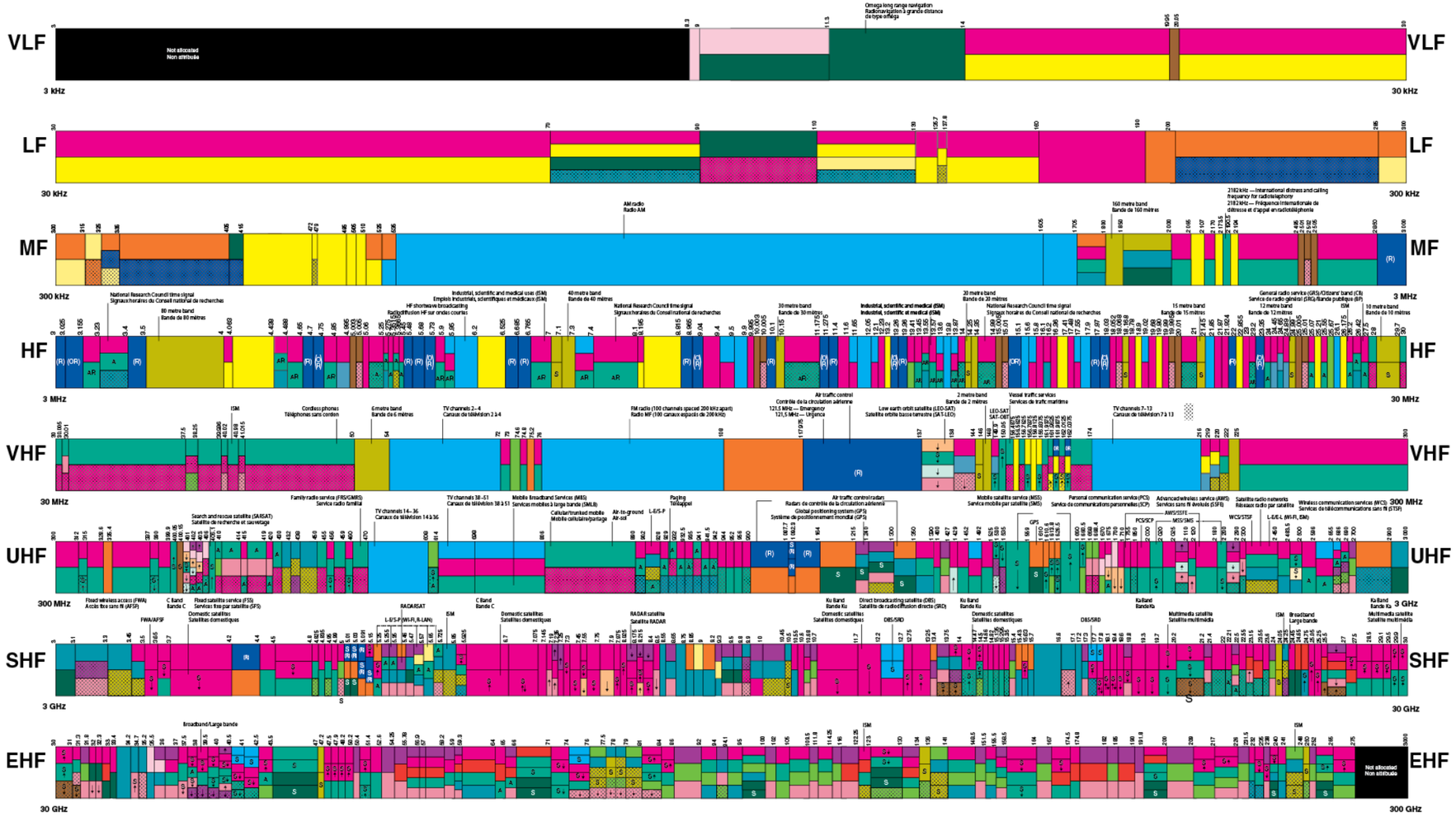
Geographic tracking

Forecasting and tracking weather

Baby monitors and garage door openers

Air traffic control

The spectrum allocation chart



- Grouped into frequency bands
- Completely allocated for a variety of uses
- Without management, users interfere with one another, and services cannot work reliably
- Harmonizing internationally means Canadians benefit from the latest equipment and services work at the border

The Spectrum Program Exercises Specific Powers

Under the *Radiocommunication Act*, the Minister of ISI has powers to:

- **Authorize the use of spectrum through various means**
- Fix and amend the terms and conditions of licences
- Establish technical requirements and standards in relation to the use of spectrum

With the overall objective of **maximizing economic and social benefits** of the spectrum

Spectrum and Telecommunications Sector (STS) – Our Activities

Applied Research

Federal lead for applied communications research, and centre of excellence in advanced telecommunications

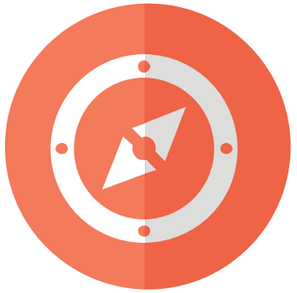
International Negotiations

International spectrum negotiations

Standards Development

Assignment of Band Plans

Mutual Recognition Agreements



Policy

Research and development of best practices for Spectrum Auction, Licensing and Management Policy

Certification and Regulation

Certification of Equipment

Development of regulations

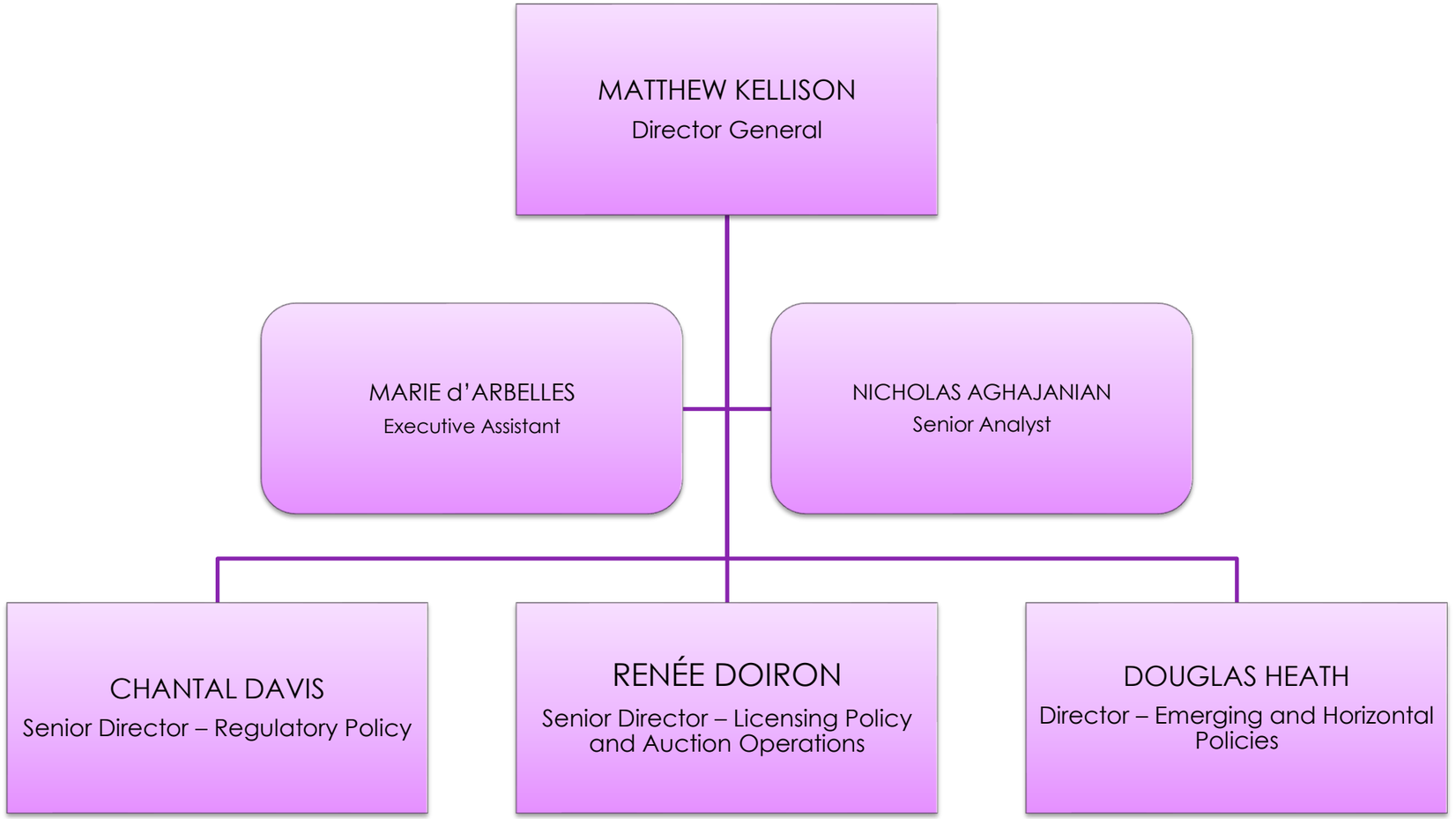
Assignment of spectrum via auctions or licensing

Resolving harmful interference with compliance and enforcement activities

Programs

Broadband availability, Digital Skills and Literacy, Affordability Technology Accessibility and Availability, Cyber Security and Certification, Prime Minister's Teaching Awards.

Spectrum Policy Branch – Organization



There are Many Ways to Authorize Spectrum Use

First-come, first-served

Licence-exempt spectrum

Competitive processes
(e.g. auctions)

Secondary market
(i.e. transfers, divisions,
and subordinate licensing)

All come, all served /
light licensing

Dynamic Spectrum Access

Indigenous Spectrum Access

- Context
- Indigenous Spectrum Policy Team
- Recent Spectrum Access Initiatives
- Increasing rural, remote, and Indigenous access

Context

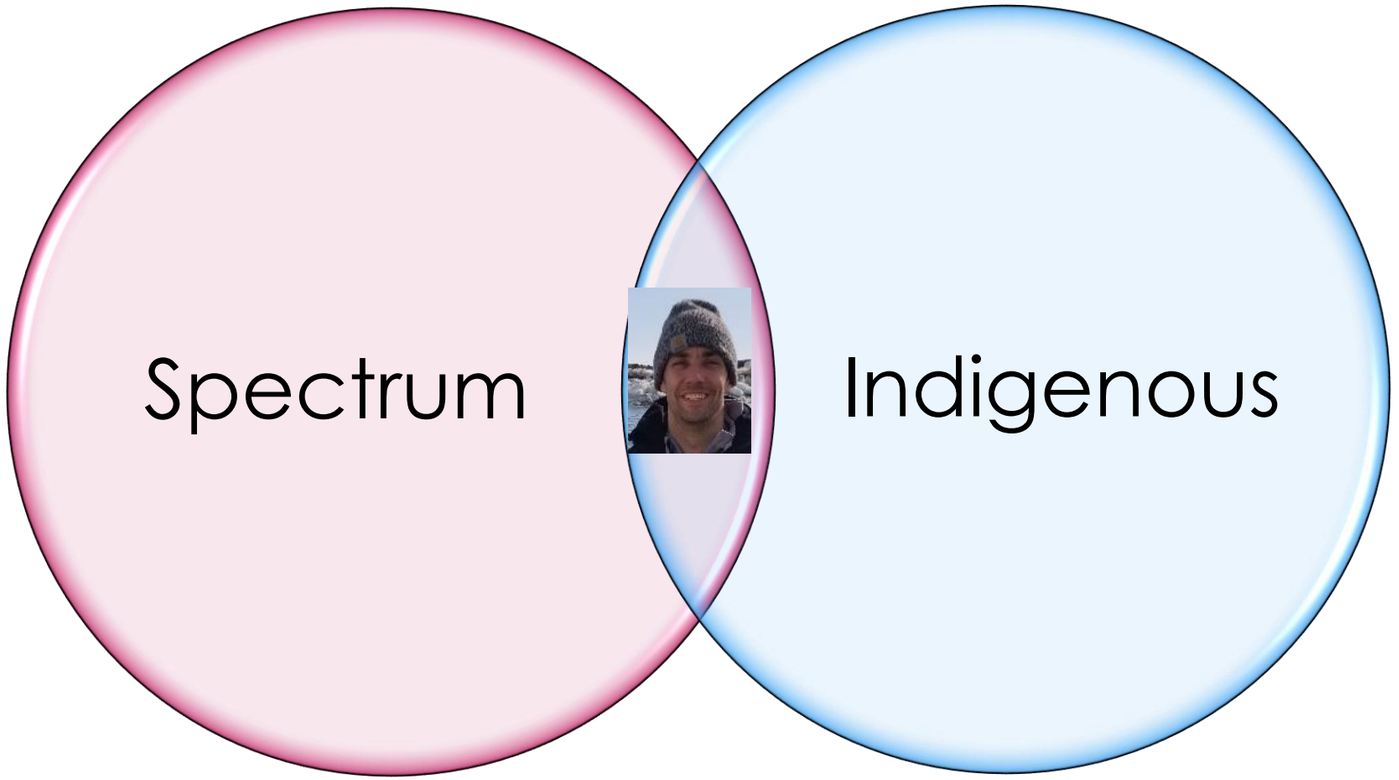
- Connectivity Gaps are limiting Indigenous People’s access to essential services
- Reconciliation with Indigenous Peoples is a government wide priority
- Indigenous Peoples have been calling on ISED to develop Spectrum Policy Inclusive of Indigenous Priorities

Indigenous Spectrum Policy Team

- I am leading a new team within the spectrum policy branch, which will aim to **support high speed internet access in Indigenous communities** by**:**
    - **Improving spectrum access** and supporting Indigenous connectivity proposals.
    - **Leading engagement and relationship building** with Indigenous communities and partners to develop spectrum policies inclusive of Indigenous priorities.
    - **Acting as a centre of expertise** on Indigenous issues for the spectrum program.

Indigenous Spectrum Policy Team: Assembling the Team

- Began by leveraging existing resources with experience in spectrum policy and Indigenous engagement



Indigenous Spectrum Policy Team: Assembling the Team

… but we've grown!

Recent Spectrum Activities

- Auctions
  - Completed 3500 MHz (2021) and 600 MHz (2019) auctions
  - Completed auction of residual 600 MHz, 2500 MHz, and 3500 MHz licences (2023)
  - 3800 MHz auction currently underway (bidding began Oct 24)
  - mmWave auction planned for 2024/2025
- Licence-exempt spectrum
  - 6 GHz band / Whitespace / mmWave band
- Increasing rural, remote, and Indigenous access
  - Spectrum Outlook 2023 to 2027
  - Non-competitive local licensing framework
  - Access consultations to re-license unused spectrum
  - Upcoming engagement on Indigenous access to spectrum

Increasing rural, remote, and Indigenous access

- **Spectrum Outlook 2023-2027** (Published Aug 2023)
  - 5-year spectrum management planning document
  - Indigenous Connectivity highlighted as one of five key priorities

- **Non-competitive Local (NCL) Licensing Framework** (Published May 2023)
  - simplicity and flexibility in licensing; enabling localized access to shared 5G spectrum to smaller users including wireless internet service providers, innovative industries, and Indigenous communities
  - 3900MHz and mmWave bands first, but could be applied to other bands in future

- **New Access Licensing Framework Consultation** (Published Aug 2021)
  - New supplementary licensing process (Access Licensing framework) for unused spectrum
    - Focussing on unused spectrum in 3 bands first – Cellular, PCS, and 900 MHz
    - Mainly available in rural, remote, Indigenous areas

Path Forward: Continuing the dialogue

- We are planning to launch a separate, Indigenous focused engagement, where we will seek to collaborate with Indigenous partners on options to support access to spectrum.

- We are also interested in an ongoing discussion on spectrum matters, to examine how we can remove barriers to the deployment wireless services in Indigenous communities.

    - How can we improve Indigenous awareness and involvement in our policy development processes?

    - How can we improve access to spectrum for indigenous service providers, businesses and communities?

    - What are some specific spectrum use cases that Indigenous service providers, businesses and communities have implemented or are planning/interested in?

Thank you, Miigwech,

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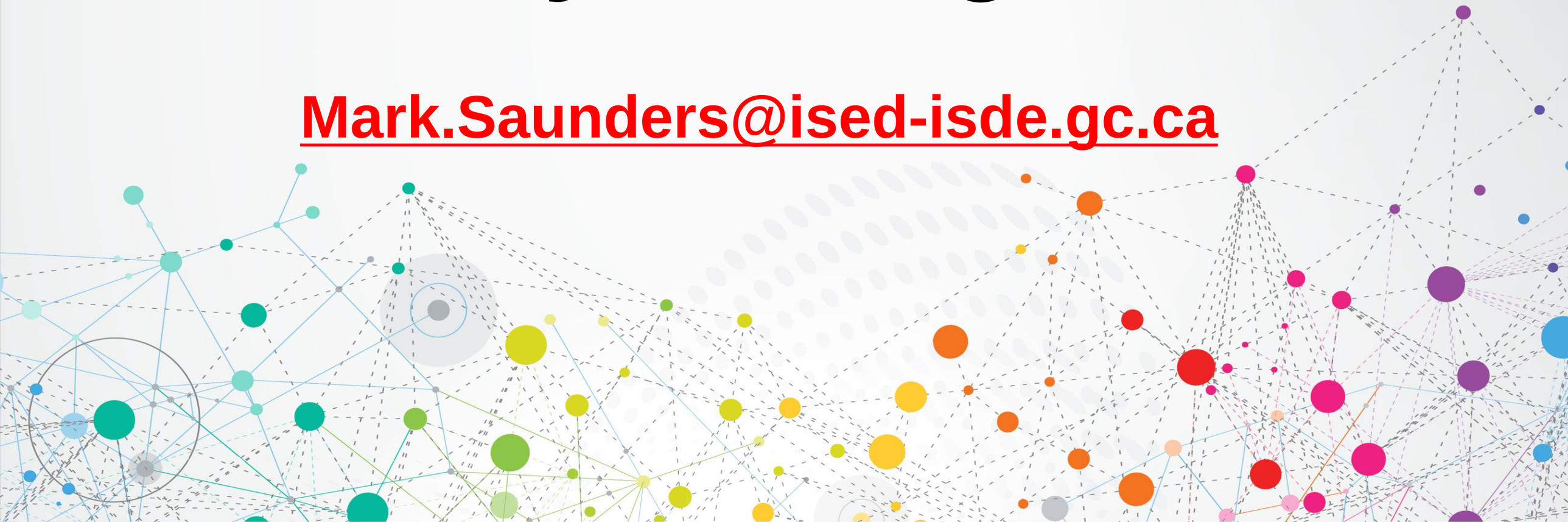

Annex

Spectrum Outlook

On August 11, 2023, ISED published the ***Spectrum Outlook 2023 to 2027***

Key aspects include:

- Priorities for spectrum releases
  - Lays out ISED's proposed spectrum band release priorities over the short-to-medium term
  - New and upgraded bands include 2500 MHz, AWS-3 Unpaired/AWS-4, 3.1-3.45 GHz, 5 GHz for unmanned aircraft, and 24 GHz
- Priority policy themes, where spectrum policy intersects with larger Government priorities, including:
  - Indigenous connectivity
  - Rural and remote connectivity
  - 5G and climate change
  - Affordability, Competition and Innovation
  - Spectrum as an economic driver and enabler of Industry 4.0
- Policy objectives and guiding principles for spectrum licence fees

Non-Competitive Local (NCL) Licensing Decision

On May 3rd 2023, ISED released the ***Non-Competitive Local Licensing Framework, Including Spectrum in the 3900-3980 MHz Band and Portions of the 26, 28 and 38 GHz Bands***

Targets multiple concurrent objectives, including:

- simplicity and flexibility in licensing; enabling localized access to shared 5G spectrum to smaller users including wireless internet service providers, innovative industries, and Indigenous communities

Key decisions include:

- First-come first-served (FCFS) approach, can be applied to multiple bands
- Custom vector-based covering small and large local areas
- Licence terms of 1 year with a high expectation of renewal + option for shorter periods
- Measures to support local access and deployment requirements
- Access managed through an automated licensing process
- A phased implementation: NCL licensing in 3900-3980 MHz band first, then, mmWave
- Early access window for existing WBS
  - WBS licensees have 60-days following publication of the decision to upload site data on ISED's website
- An addendum will cover NCL licensing in mmWave

New Access Licensing Consultation

On August 4, 2021, ISED launched the ***Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment***

- Comment period closed on **December 7th, 2021**

Key proposals include:

- A new supplementary licensing process (Access Licensing framework) for unused spectrum
- Clarifications to ISED's framework to streamline subordinate licensing approvals, and encourage greater use of these licences to increase use of spectrum
- Improvements to white space rules
- Changes to the rural remote broadband system (RRBS) policy framework

3800 MHz Band

- **Auction began October 24, 2023**, deadline to apply was July 25, 2023
  - 22 bidders qualified to participate in the auction (list published August 16, 2023)
- Comprehensive information session for qualified bidders was held on September 14, 2023, followed by a number of mock auction sessions
- ISED will not be providing public updates on the status of the auction, but will make all bidding data publicly available following the announcement of results by the Minister and the issuance of licences
  - Reminder that bidders are also prohibited from signalling, publicly or privately, their bidding intentions or post auction plans related to the spectrum being auctioned, including comments or any communication with or via the media

mmWave

On June 6th,2022, ISED published the ***Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz Bands***

- Comment period closed on **October 7th, 2022**

Key proposals include:

- Auction 1.6 GHz in the 26/28 GHz bands and 1.6 in the 38 GHz band
  - Additional 200 MHz in 26 GHz band, 50 MHz in the 28 GHz band and 800 MHz in 38 GHz band for future non-competitive licencing process
- Use of Tier 5 service areas for auction process
  - Also seeking comments on whether some areas should be excluded (e.g. rural or remote)
- Deployment requirements based on number of stations, as opposed to population
- Two options for competitive measures, with request for additional proposals:
  - 1)800 MHz set-aside across 26/28 GHz and 38 GHz bands
  - 2)800 MHz cross-band cap across 26/28 GHz and 38 GHz bands
- 10 year licence term
- Refinements on the sharing between satellite and flexible use operations