



Innovation, Science and  
Economic Development Canada

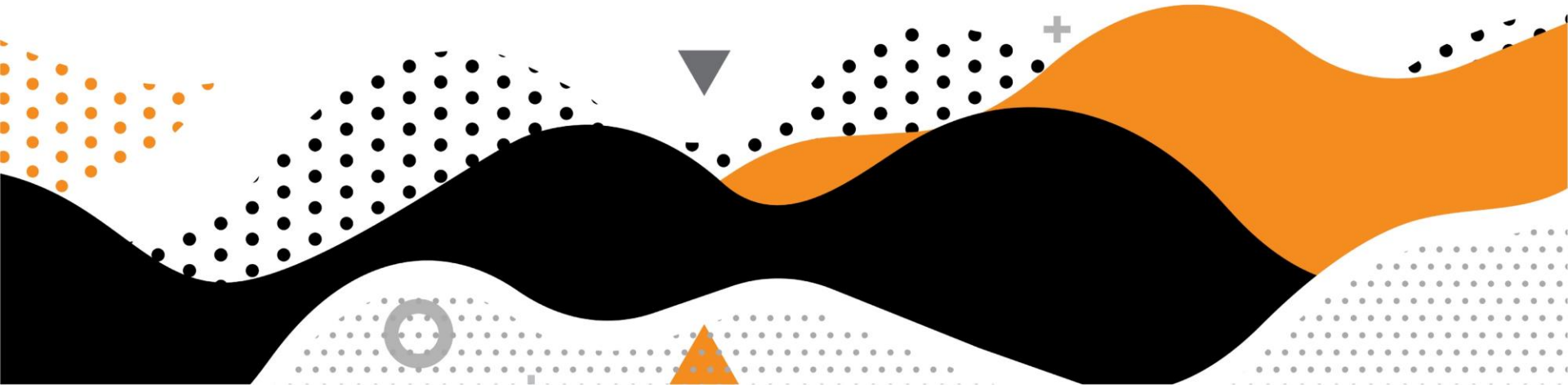
Innovation, Sciences et  
Développement économique Canada

Canada

# Innovation, Science and Economic Development Canada

## Update

Presentation to RABC Quarterly Meeting  
October 14, 2021



# General Introduction

Joseette Gallant



# General Introduction

Presentations by:

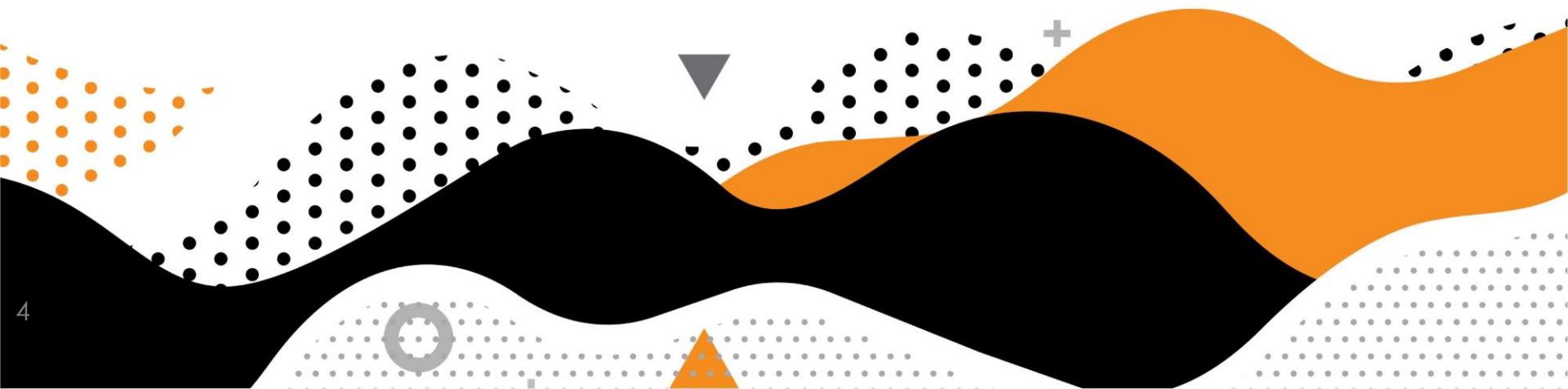
- Spectrum, Licensing Policy Branch
- Spectrum Operations Branch
- Engineering, Planning and Standards Branch

Will touch on recent and upcoming policy and technical files, including HR updates



# Spectrum Licensing Policy Updates

Soyun Kim



# 3500 MHz Auction

- The 3500 MHz band auction began on June 15 and concluded on July 23
  - 1495 out of 1504 available licences awarded to 15 participants
  - 757 licences to small and regional providers
- Opening bid for all available spectrum set at approx. \$590M
- Competitive bidding resulted in final auction revenues of \$8.91B
- Issuance of licences delayed and final payment deadline has been extended given the consultation on SRSP-520

# Residual Spectrum Licences

- On August 4, 2021, ISED published its [Decision on a Streamlined Framework for Auctioning Residual Spectrum Licences](#)
- Key decisions include:
  - Adopting a notice-based approach that minimizes the elements requiring consultation
    - ISED will generally not consult when there are no changes being made to the characteristics or conditions of the licences
    - May issue short, targeted consultations on specific, potential changes being considered
  - Establishing a predictable and consistent format for future auctions of residual licences

# 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](#)
- 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
- Initial comment period ends on **October 26th**
- Reply comment period ends on **December 7th**

# 3800 MHz Band Decision

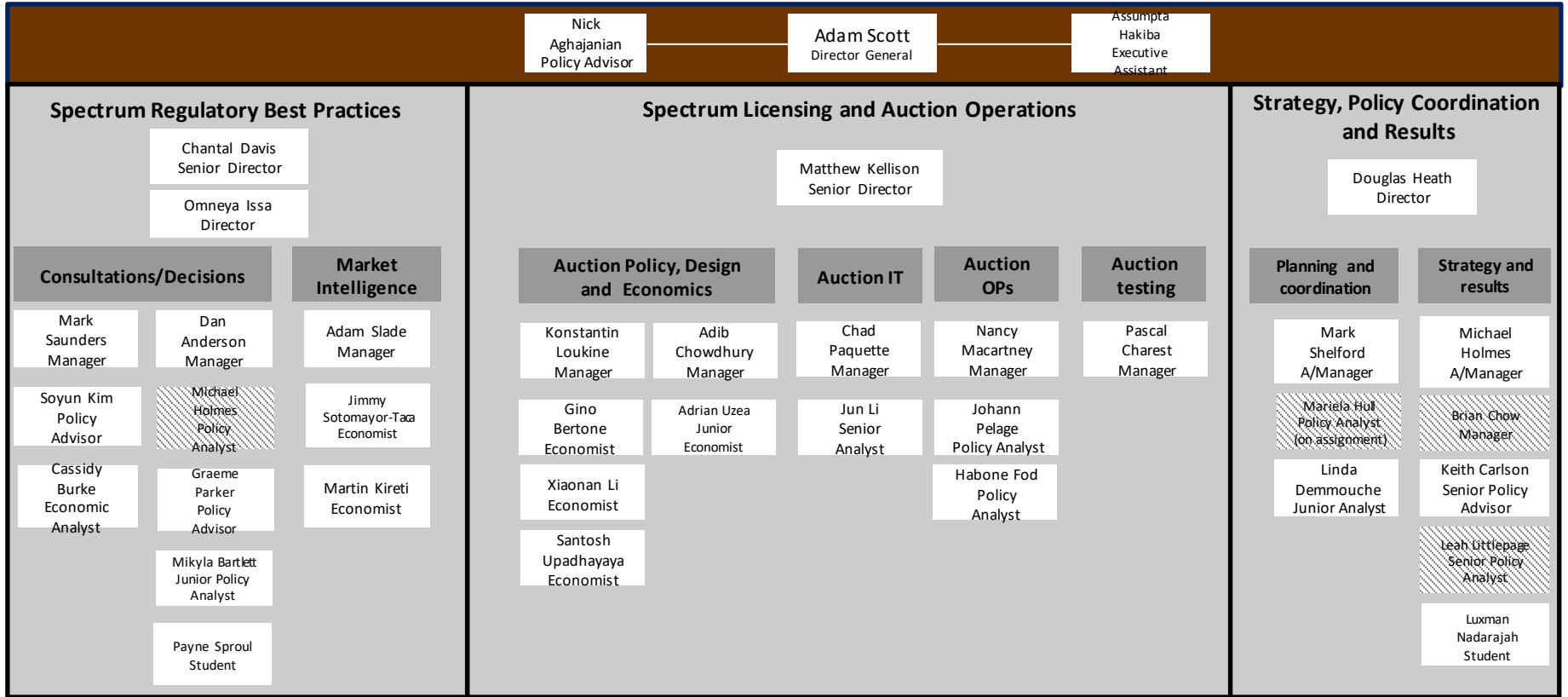
- On May 21, 2021, ISED released the [Decision on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band](#)
- Key decisions include:
  - Not adopting proposals submitted by Telesat (neither the original nor revised version)
  - Repurposing total of 330 MHz from 3650-4000 MHz for flexible use (which includes a 20 MHz guard band from 3980-4000 MHz)
  - Transitioning FSS to the 4000-4200 MHz by March 31, 2025, except in satellite-dependent areas where they would be able to continue operations in full 3700-4200 MHz
  - Issuing interim authorizations upon application for eligible licence-exempt FSS earth stations
  - Displacing WBS licensees by March 31, 2025 in urban areas and 2027 in all other areas
  - Designate 80 MHz in the upper portion of the band (3900-3980 MHz) for shared use



# mmWave

- In June 2019, ISED issued its *Decision on Releasing Millimetre Wave Spectrum to Support 5G*
- Key decisions include:
  - 4.85 GHz of spectrum in the 26 GHz, 28 GHz and 37-40 GHz bands available for fixed and mobile services
  - Band plans aligned with international 5G standards
  - Measures to ensure coexistence between fixed and mobile services and various satellite services in the 26 GHz, 28 GHz and 37-40 GHz bands
  - 7 GHz of spectrum in the 64-71 GHz band available for licence-exempt use
- ISED will consult further on the licensing and auction framework for the 26 GHz, 28 GHz and 37.6-40 GHz bands

# Spectrum Licensing Policy Branch – Organizational Chart



Nick Aghajanian  
Policy Advisor

Adam Scott  
Director General

Assumpta Hakiba  
Executive Assistant

## Spectrum Regulatory Best Practices

Chantal Davis  
Senior Director

Omneya Issa  
Director

### Consultations/Decisions

### Market Intelligence

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Manager

Dan Anderson  
Manager

Adam Slade  
Manager

Soyun Kim  
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Jimmy Sotomayor-Taa  
Economist

Cassidy Burke  
Economic Analyst

Graeme Parker  
Policy Advisor

Martin Kireti  
Economist

Mikyla Bartlett  
Junior Policy Analyst

Payne Sproul  
Student

## Spectrum Licensing and Auction Operations

Matthew Kellison  
Senior Director

### Auction Policy, Design and Economics

### Auction IT

### Auction OPs

### Auction testing

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Manager

Adib Chowdhury  
Manager

Chad Paquette  
Manager

Nancy Macartney  
Manager

Pascal Charest  
Manager

Gino Bertone  
Economist

Adrian Uzea  
Junior Economist

Jun Li  
Senior Analyst

Johann Pelage  
Policy Analyst

Xiaonan Li  
Economist

Habone Fod  
Policy Analyst

Santosh Upadhayaya  
Economist

## Strategy, Policy Coordination and Results

Douglas Heath  
Director

### Planning and coordination

### Strategy and results

Mark Shelford  
A/Manager

Michael Holmes  
A/Manager

Mariela Hull  
Policy Analyst (on assignment)

Brian Chew  
Manager

Linda Demmouche  
Junior Analyst

Keith Carlson  
Senior Policy Advisor

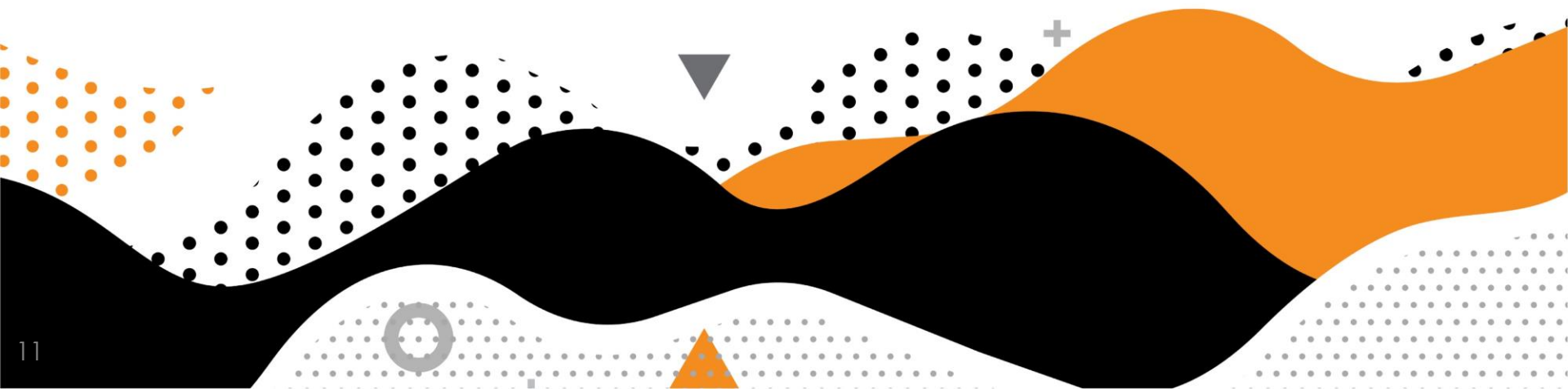
Leah Littlepage  
Senior Policy Analyst

Luxman Nadarajah  
Student



# Operational Updates

Matthew Messer, Tara Rajan, Herrick Liu, Mylène Quesnel



# 3500 MHz Licensing and Transition Process


- On July 29<sup>th</sup>, 2021, ISED launched the accelerated transition process for Large Population Centres following the auction of 3500 MHz spectrum
- The close of the accelerated process and launch of the first regular round will correspond to the initial licence issuance date
  - The initial licence issuance date is planned to occur once the decision on SRSP-520 is published
- Questions can be directed to [3500mhzspectrumoperations-operationsduspectrede3500mhz@ised-isde.gc.ca](mailto:3500mhzspectrumoperations-operationsduspectrede3500mhz@ised-isde.gc.ca)



# Current & Upcoming Consultations

- Currently active consultation to support Rural Access
  - *Consultation on Amending Cellular and Personal Communications Services (PCS) Licence Conditions*
    - Reply Comments Due November 8
- Upcoming consultation with RABC members
  - Seeking preliminary feedback (prior to full consultation) from RABC on proposal to amend site data requirements to be uploaded in ISED's Tower Site Database
    - Current requirements are set out in Annex B of CPC 2-1-23

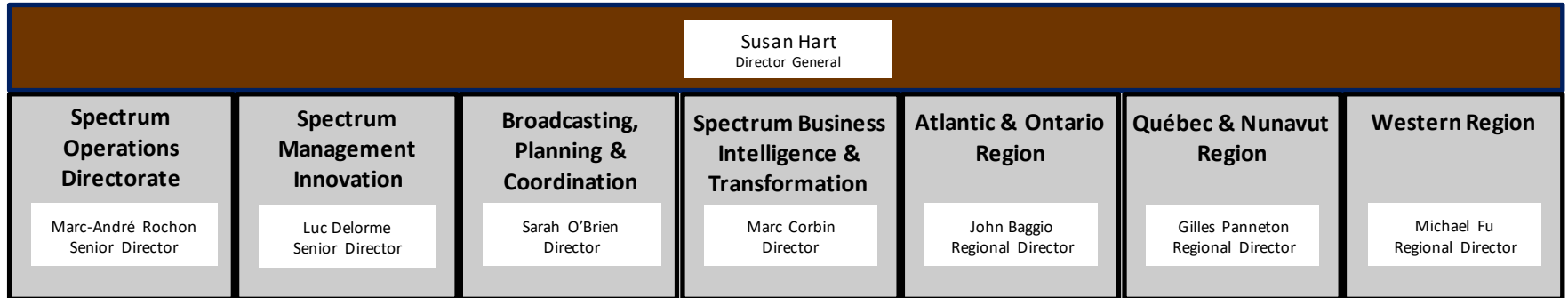
# SC6 - Bazooka Balun

- Test results reviewed indicate the baluns are effective in reducing the induced and contact current levels when installed at the proper location.
  - Since the device and this approach is newly implemented, we are not able to assess the long-term effectiveness and reliability of the baluns.
  - ISED's current position is:
    - Access restrictions remains the preferred option to mitigate RF exposure to induced and contact currents.
    - Should operators elect to implement different mitigation, compliance shall be determined by demonstrating the RF levels, including the induced and contact currents meet the SC6 limits at all times.
- 

# Broadcasting

- 600 MHz Transition:
  - Phase 13 was concluded on August 27, 2021.
  - The last phase, phase 14, is scheduled to be completed on January 14, 2022.

# Spectrum Operations Branch (DGSO)

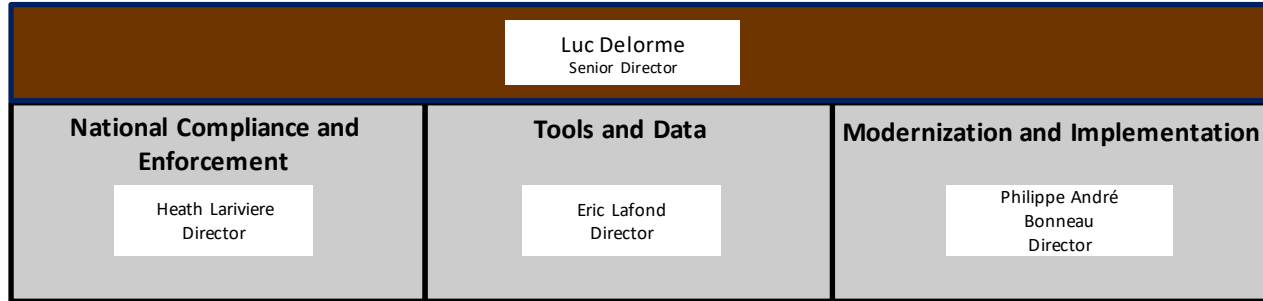




# Spectrum Operations (DOS)



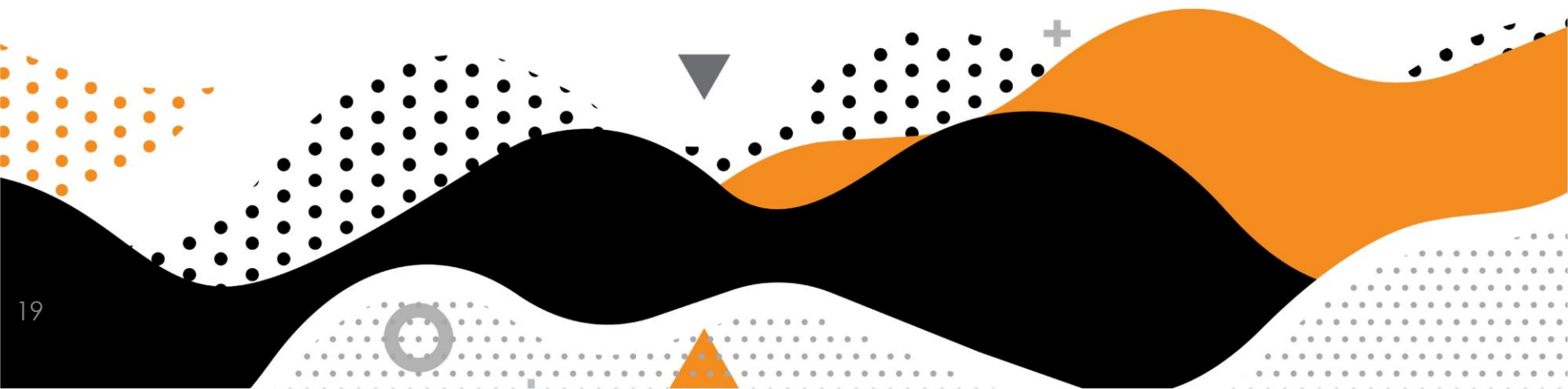
# Spectrum Management Innovation



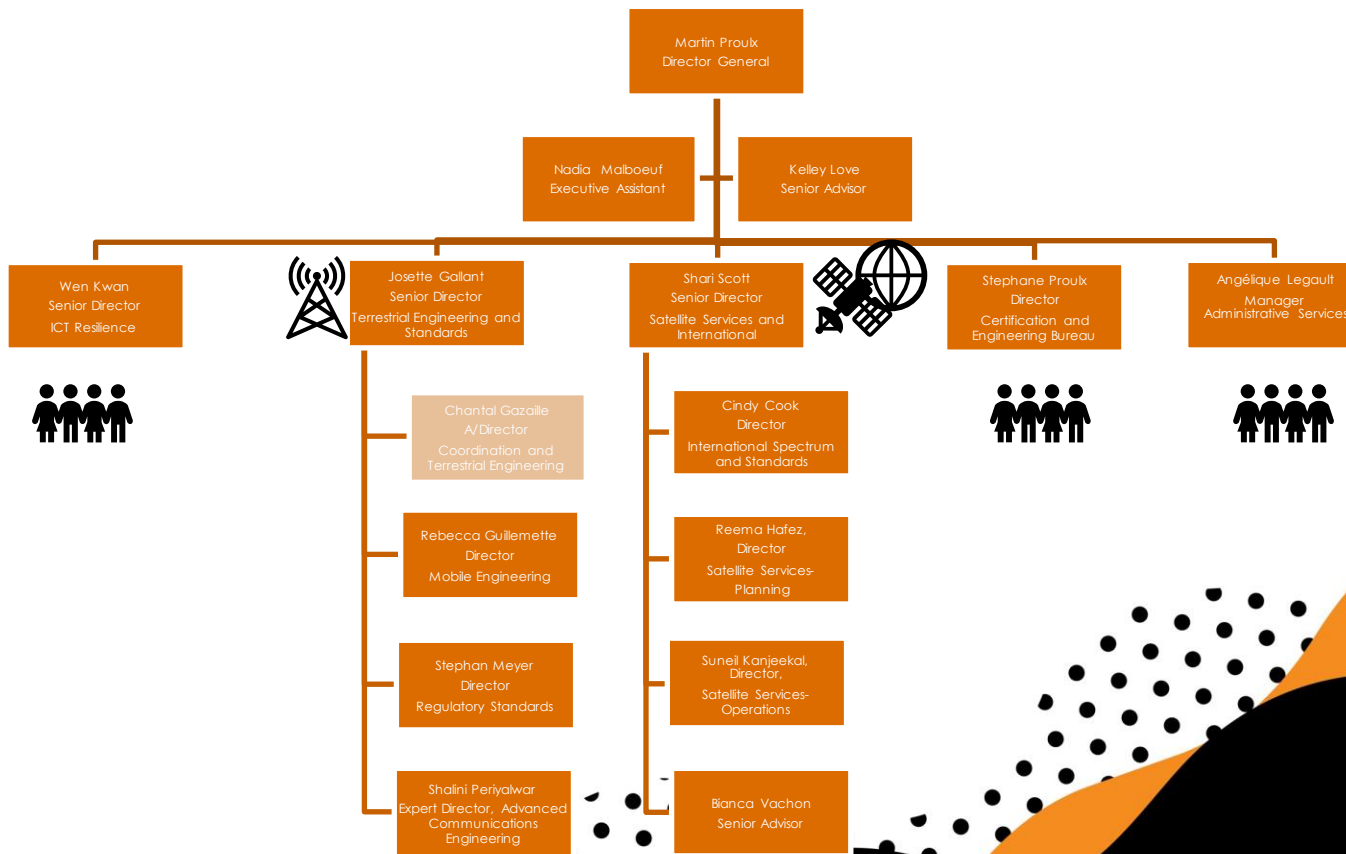


# DGEPS Org Update

Josette Gallant



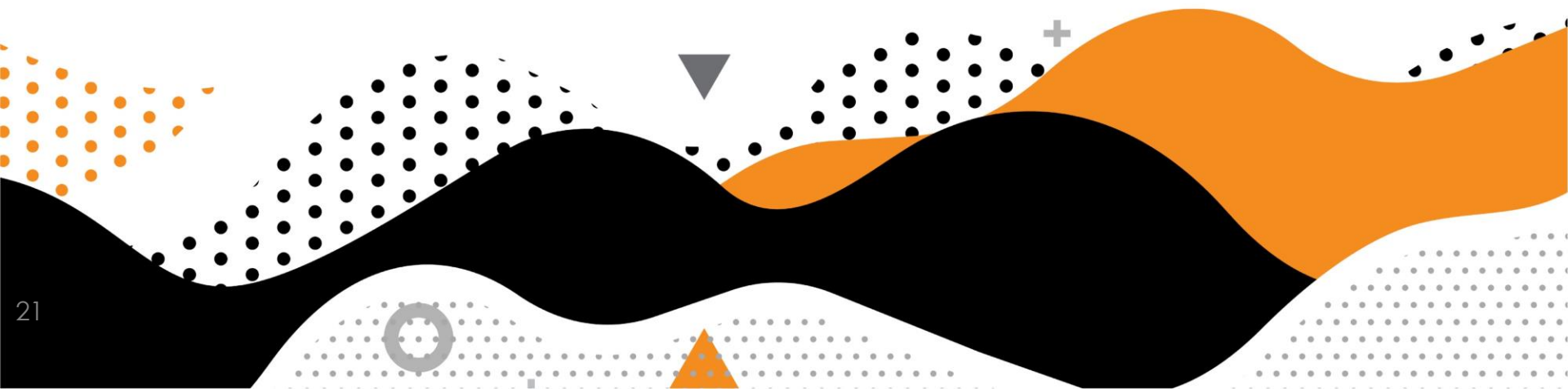
# Engineering, Planning and Standards Branch – New Changes





# Commercial Mobile Services

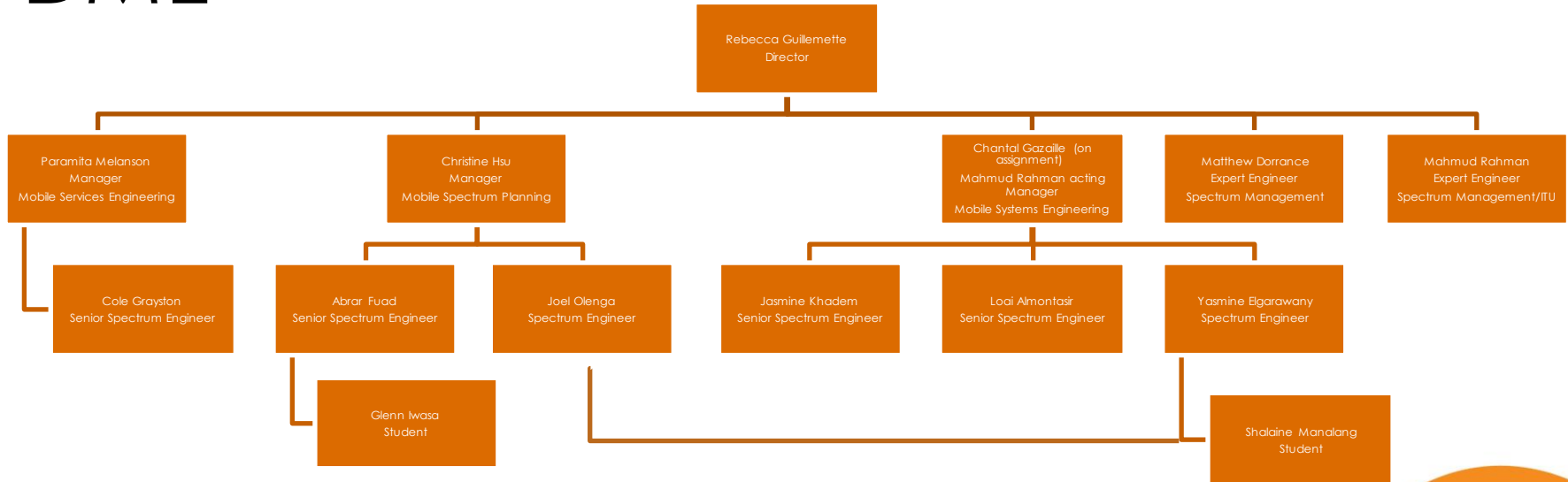
Rebecca Guillemette



# Standards – commercial mobile services

- Work continues for changes to sub-6 GHz commercial mobile band SRSPs to include provision for AAS MIMO
  - Internal consultation on proposed technical provisions is ongoing
- Continue work to support the development of technical rules for the 3800 MHz
- Work on evaluating the compatibility of 3500 MHz / 3800 MHz flexible use systems on 4200-4400 MHz radio altimeters continues
- Work continues on developing standards and rules related to mmWave satellite earth stations (ES) and commercial mobile systems

# DME



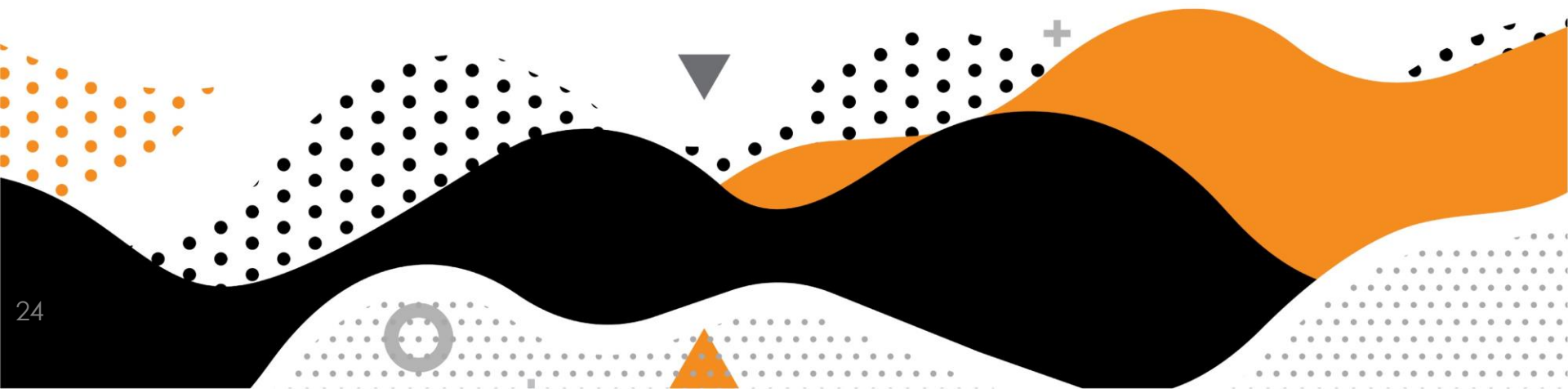
Update:

- Chantal Gazaille on assignment with DCTE as Acting Director
- Mahmud Rahman acting manager



# Fixed, land mobile and broadcasting services

Chantal Gazaille (Acting until January 28, 2022)





# White Space

- White space is now fully operational with some deployments in place
- TV Broadcasters and other licensed users in the band are able to access the database to review the information and register any applicable operations covered by ISED's white space rules
- Service providers wishing to offer services or deploy systems using white space devices are now able to do so on a licence-exempt basis; no ISED approvals are required
- White Space Database Administrators (WSDBA) & White Space Devices (WSD) update

WSDBA	WSD
RED Technologies (2021/02/24)	6Harmonics (certified 2021/04/22)
PHNX Technologies Inc. (2021/08/25)	Redline Communications Inc. (certified 2021/07/30)

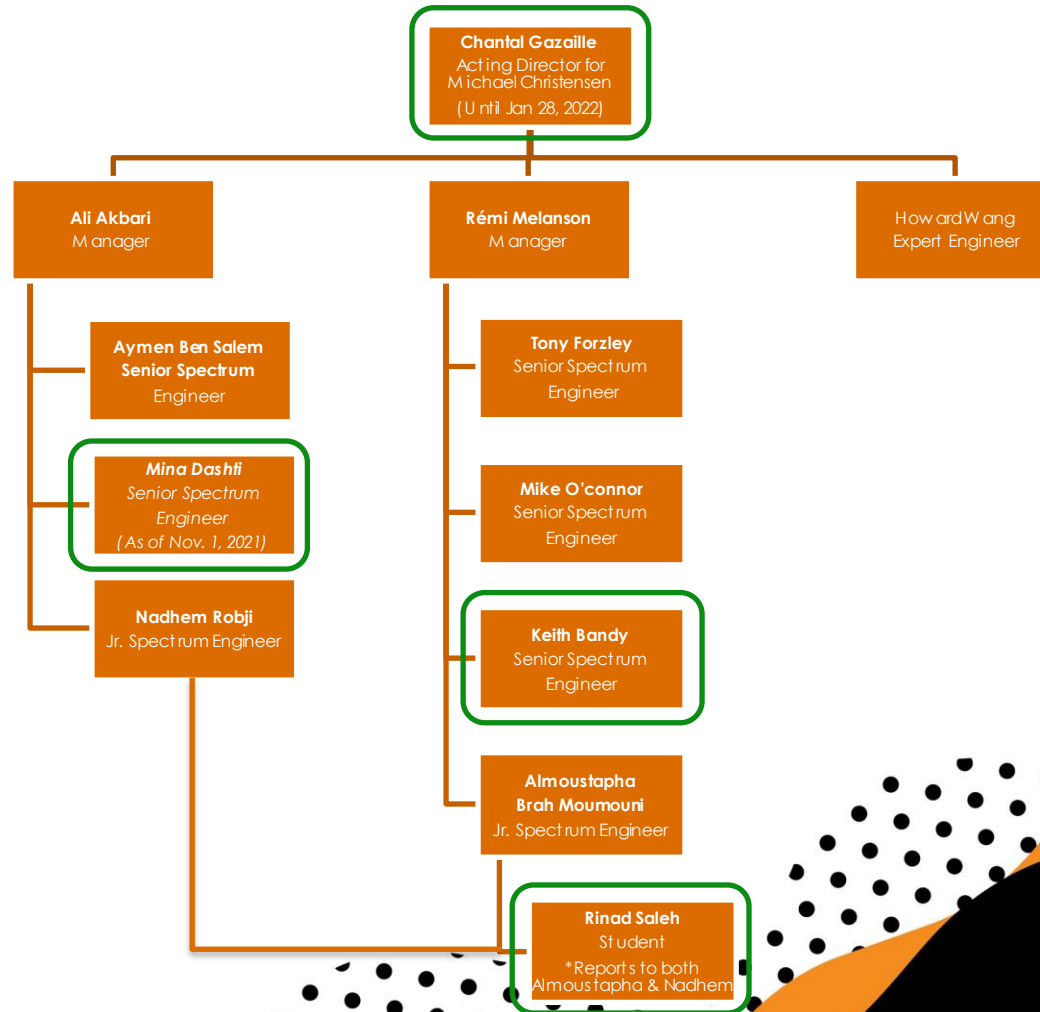
# Standards & Consultations

- Publication
  - DBS-01 Issue 3 (WSDB Specifications) – 2021/10/04
  - SRSP-305.9 (5925-6425 MHz) – Currently with the publication group
  - SRSP-301.7 (1700-1710 MHz / 1780-1850 MHz) – Currently with the publication group
- Internally, work is being prioritized as follows:
  - Development of an SRSP-Gen for backhaul systems to incorporate current informal documentation
- Continued work on developing standards for backhaul and LMR specifications as resources become available from other priority initiatives

# Broadcasting

- ATSC 3.0
  - Draft BC-22 document submitted to RABC for comments
    - Deadline for comments was 13 August 2021
  - Next steps: schedule final meeting to provide info on questions received
    - Opportunity for RABC to provide final comments
- Other broadcast standards updates planned for RABC consultation
  - Work on draft BPR-3 is continuing to regularize experimental IBOC rules currently in BC-21
    - RABC consultation (estimate Fall 2021)

# DCTE



# Space Services

Reema Hafez



# Consultations/Decisions

- In August, published Consultation on Updates to the Licensing and Fee Framework for Earth Stations and Space Stations in Canada
  - Comment-period closed October 4<sup>th</sup> – reply comment deadline November 8<sup>th</sup>.
- In August, we released a Consultation of Amendments to SRSP-520 to limit the potential for interference to Radio Altimeters.
  - On Sept 22, an addendum to Consultation was published to provide additional information on studies and factors considered by ISED in developing the Consultation.
  - Comments due October 15<sup>th</sup>;
- We continue work to support the development of technical rules for 3800 MHz
- We continue to assess ES applications for mmWave bands under GL-10/SAB.

Reema Hafez  
Director, Space  
Services Planning

Justine Sider  
Manager, FSS/BSS

Muya Wachira  
Manager, MSS  
and Space  
Sciences

Angela Chuang  
Expert Engineer

Martin Daigle  
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Spectrum Mgt

Nicolas Laflamme  
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Fu Chan  
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Maxime Viennot  
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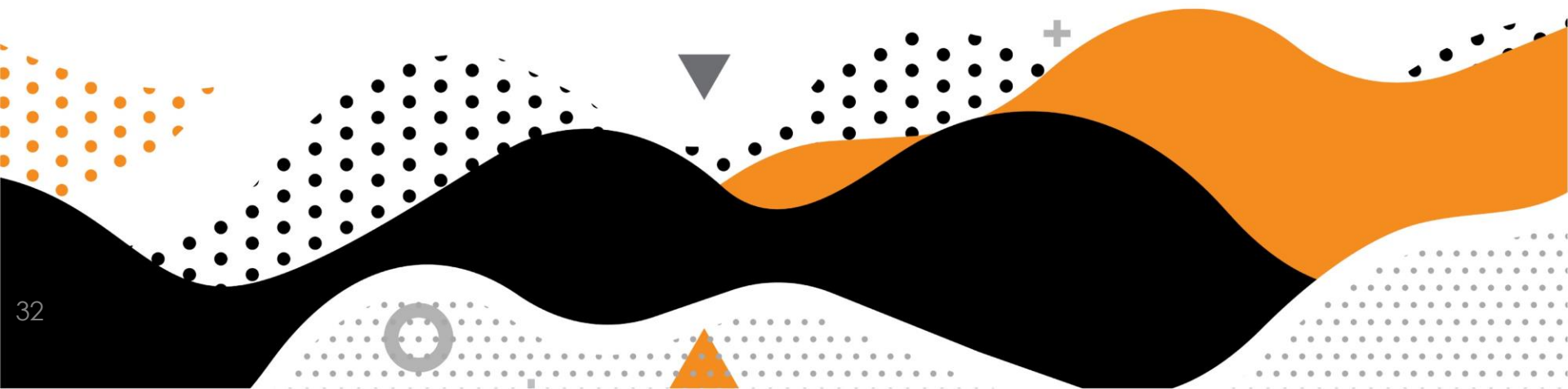
Stephanie El Anbali  
Satellite  
Coordination  
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Michel Olivier Ndi  
Sr. Expert Engineer  
International  
Regulation



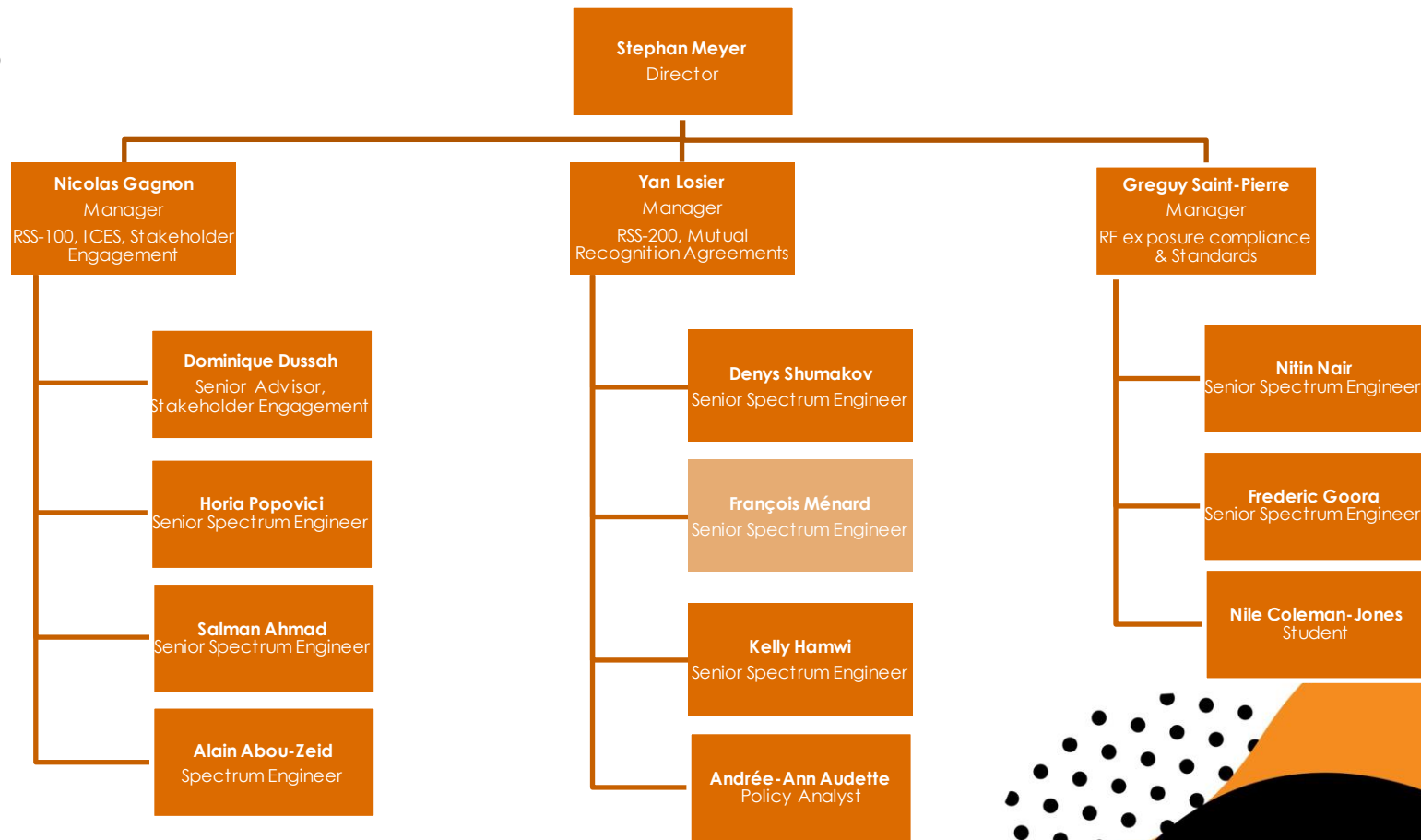
# Equipment Standards

Stephan Meyer





DRS



# Publications

Document	Notes
<b>SPR-004 (Time-averaging SAR)</b>	<b>June 18<sup>th</sup>, 2021</b> Procedures to validate products using ISED approved time-averaging SAR algorithms
<b>DC-01 (Registration Procedure)</b>	<b>August 12<sup>th</sup>, 2021</b> - Procedure for Declaration of Conformity of Terminal Equipment
<b>CS-03 Part V (Telephone handset)</b>	<b>August 12<sup>th</sup>, 2021</b> - Requirements and test methods for Hearing Aid Compatibility
<b>RSS-222 Issue 3</b>	<b>October 4<sup>th</sup>, 2021</b> Certification requirements for TV White Space Devices (WSDs)

# Pending Publications

Document	Notes
REC-LAB / DES-LAB (Test Labs)	<b>Finalizing Publication Internally</b> Procedures to recognize/designate Conformity Assessment Bodies (testing laboratories and certification bodies)
REC-CB (Certification Bodies)	
GL-01	<b>Consultation concluded on August 13<sup>th</sup>, 2021</b> Procedures to assess antenna installations, including massive MIMO sites
RSS-248 Issue 1	<b>Consultation concluded on August 16<sup>th</sup>, 2021</b> - New technical standard for RLAN Devices in the 6 GHz band.

# Documents Currently in Consultation

Document	Notes
<b>RSS-HAC Issue 2</b>	ISED is seeking comments on the consultation of RSS-HAC, issue 2, "Hearing Aid Compatibility and Volume Control".  Comments are due no later than October 29 <sup>th</sup> , 2021.

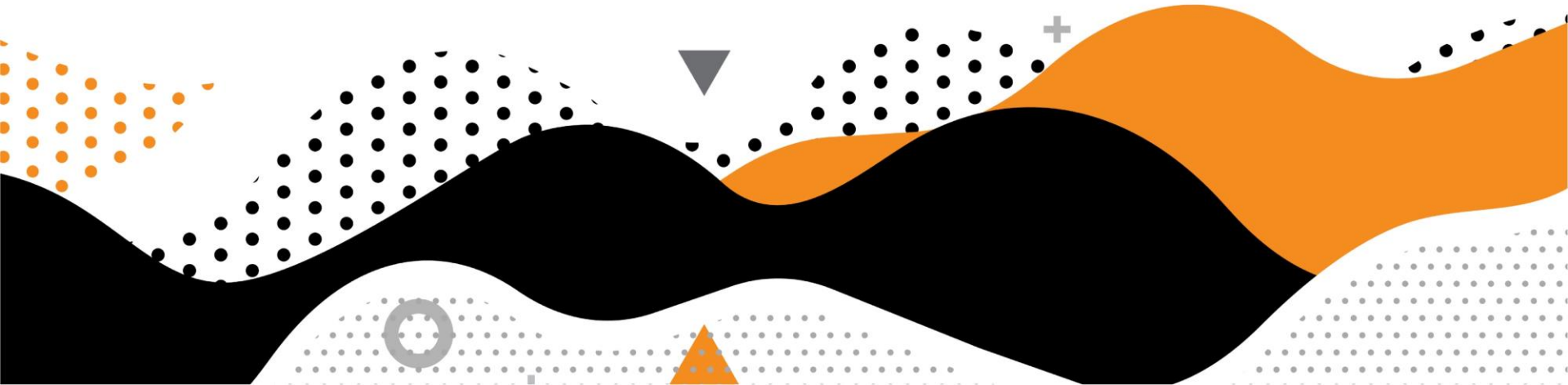
# Upcoming Consultations

Document	Timeline	Notes (All timelines TENTATIVE)
<b>SPR-002 Issue 2</b>	Winter 2022	Modernize procedures to assess compliance (nerve stimulation), including computational guidance
<b>RSS-139</b>	Fall 2021	Addition of frequencies related to AWS-4, changes to technical rules
<b>RSS-170</b>	Fall 2021	Incorporation of technical rules established in Globalstar decision, movement of some frequencies related to AWS-4



# International Updates

Lisa Amirault



# ITU-R Meetings

- ITU-R virtual meetings held since last RABC meeting (WRC-23 related in bold):
  - SG1 block, SG3 block, **WP5D, TG6/1, WP4A**, WP4B, **WP4C**, **SG7** block
  - Currently being held: **WP5D** October 4-15
- Upcoming ITU-R virtual meetings:
  - WP6A (Oct. 18-26), **WPs 4A, 4B, 4C** (Oct. 20 – Nov. 4), **WP 5A, 5B & 5C** (Nov)
- Work progressing slow given the limited time for discussions during virtual meetings
- Sharing and compatibility studies for WRC-23 agenda items will begin in earnest at fall meetings and with urgency as there will be just over a year to complete the draft CPM text by the deadline

# CITEL Meetings

- Next CITEL PCC.II virtual meeting will be held Nov. 8-12
  - CPC WRC-23 focus at this meeting will be on providing Canadian preliminary views for remaining priority agenda items and updating existing views where there were questions
  - For this meeting and beyond, efforts will be focused on developing Canadian preliminary proposals for all agenda items, based on studies beginning in the ITU-R