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Canada

Spectrum for verticals and future assignment schemes in Canada

Omneya Issa, Director, Dynamic Spectrum Access

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Spectrum for Verticals Drivers

- Support for telecom objectives: Quality, Coverage, Innovation

- Increasing number of requests for spectrum to support private networks (private LTE/5G, verticals, industry 4.0)

- Getting to "Yes" for more stakeholders and streamlining processes

- There is unused spectrum in rural/remote areas, and providers want access to serve Canadians

Use Cases for Private 5G
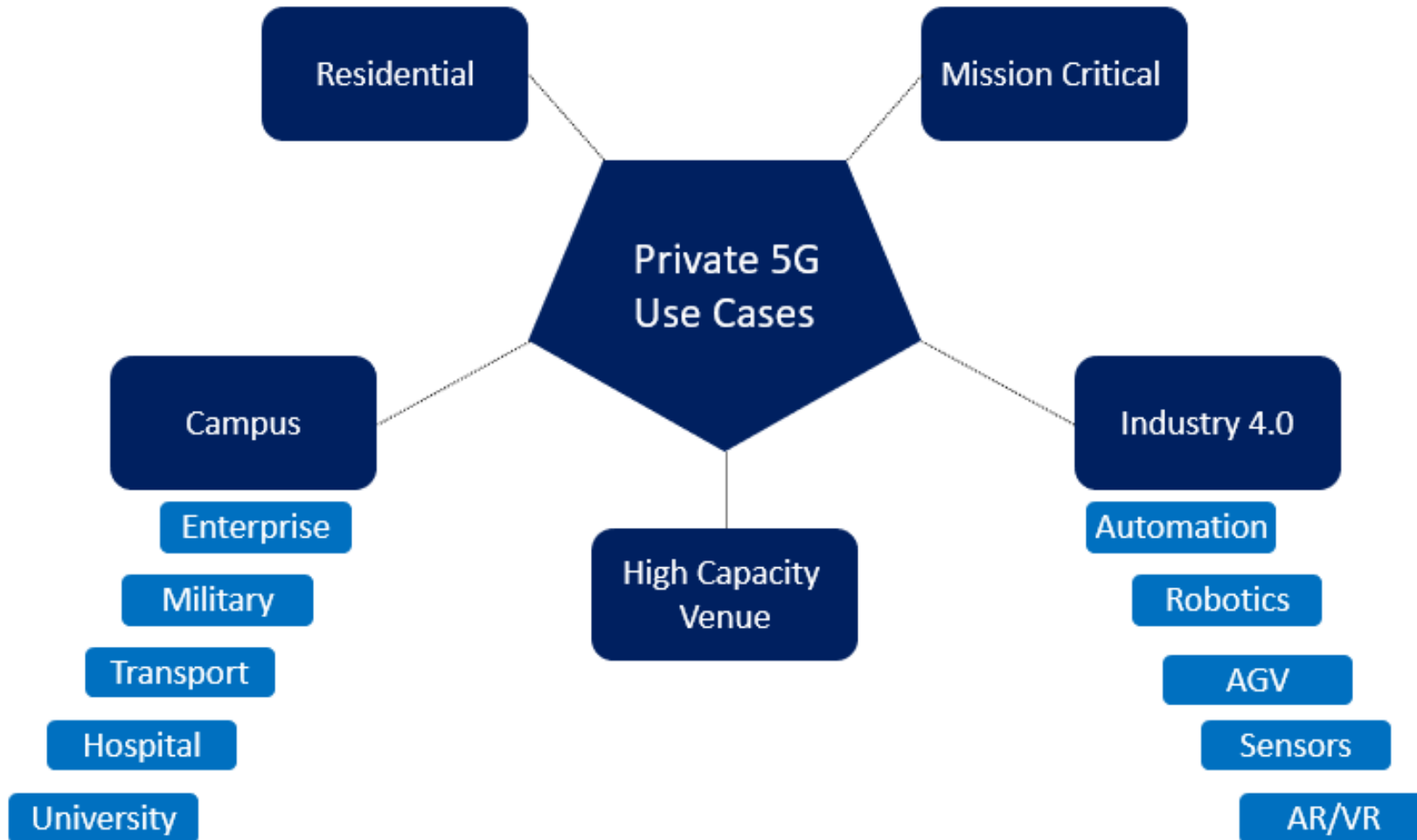
Why Private?
- Network Performance
  - e.g. Stringent latency/ Throughput requirements

- Network Control
  - e.g. setting usage restrictions, ensuring data stays on-premise

- Network Coverage
  - e.g. Ensuring adequate coverage at all time, in all areas (where coverage is challenging)

Dynamic Spectrum Access (DSA)

Dynamic spectrum access (DSA) is *a machine-based system that supports intensive use of spectrum by assigning frequencies based on immediate availability and need*. ISED is developing this DSA capacity to support more efficient use of spectrum in a 5G environment with two main streams:

(Third party) Database driven DSA

- Spectrum sharing with incumbent users using a database driven model

- Providing access to **licence-exempt** devices through a database run by a third party
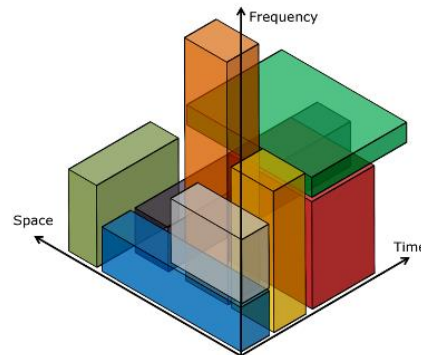
Bands

- Television White Space (TVWS)
- 6 GHz

Automated Spectrum Management (ASM) for Non-Competitive Local Licensing (NCL)

- Spectrum licences made available through an NCL process
- Automation of licensing to support large numbers of licences over small areas and for shorter periods

Potential Bands

- 3900 MHz (80MHz)
- Licences issued through the Access Licensing framework for Cellular and PCS

Access Licensing

- **A supplementary licensing process** for unused spectrum in rural and remote areas
  - Available across a selection of bands, in parallel with existing licensing
  - Can be used for wireless broadband and/or private networks
  - Some already-licensed (but unused) spectrum will be available through this process
  - Will create additional incentive for licensees to use their spectrum – and if they don't, a way for others to gain access

- **Available in three bands** chosen to target needs and minimize impacts on existing users
  - Broadband and private networks in spectrum-licensed bands
    - Up to 170 MHz made available in 800 MHz Cellular and PCS A-F blocks
  - Private networks in radio-licensed bands
    - 6 MHz available in 900 MHz
  - Designed to allow for expansion to other bands in the future
  - Public consultation launched in August 2021

Challenges/Barriers for private networks
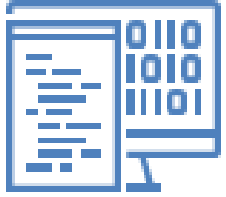
Information on spectrum use
- Needed for feasibility studies
- Concerns about confidentiality
- Could be practically onerous

Concerns about spectrum value and RoI when sharing

Coexistence/sharing may add technical complexity and cost

Burden on spectrum operations (monitoring, compliance check and enforcement)