Canada’s Optical Satcom Consortium

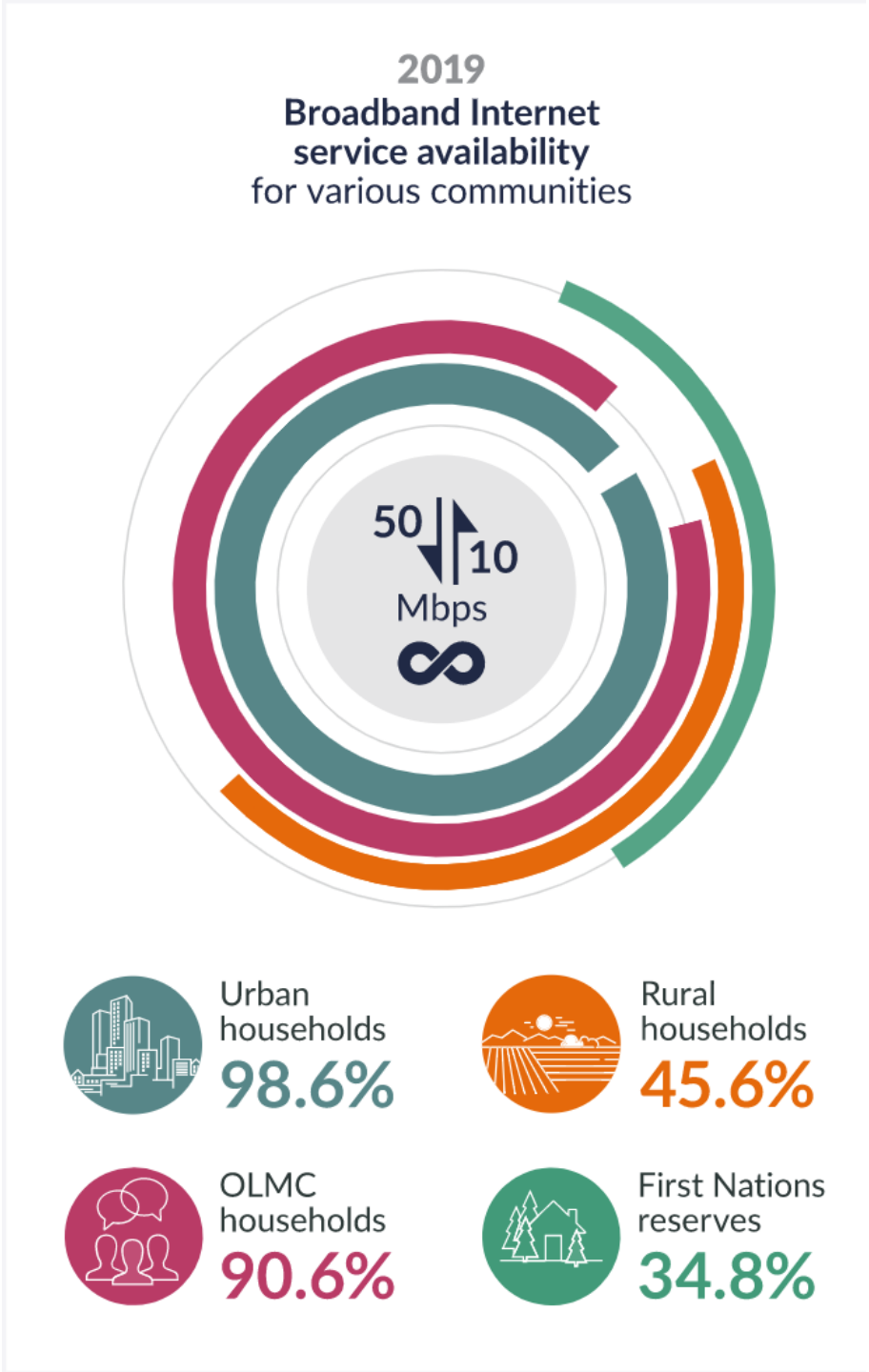
High Throughput and Secure Networks

28 January 2021

OSC
Optical SatCom Consortium

Broadband Trends

Province/Territory	5 Mbps +	25 Mbps +	50 Mbps +	50/10/ unlimited	100 Mbps +	Gigabit
British Columbia	98.3	96.4	94.1	93.5	93.5	57.7
Alberta	99.7	98.6	94.7	87.8	83.6	33.5
Saskatchewan	97.3	90.3	83.3	71.1	57.6	0.0
Manitoba	98.2	95.6	94.2	73.0	72.8	12.1
Ontario	98.6	95.8	91.8	87.7	86.8	83.1
Quebec	98.4	95.8	94.1	91.8	90.5	54.2
New Brunswick	94.8	92.1	90.8	81.2	81.1	81.1
Nova Scotia	93.9	79.2	79.2	78.4	78.4	75.9
Prince Edward Island	95.1	90.0	86.2	61.3	61.3	59.3
Newfoundland and Labrador	91.1	82.6	82.4	73.9	73.6	68.8
Yukon	93.2	60.8	60.8	0.0	60.8	0.0
Northwest Territories	97.4	61.8	61.8	0.0	53.7	0.0
Nunavut	99.6	0.0	0.0	0.0	0.0	0.0
Canada	98.2	95.0	92.1	87.4	86.0	61.1

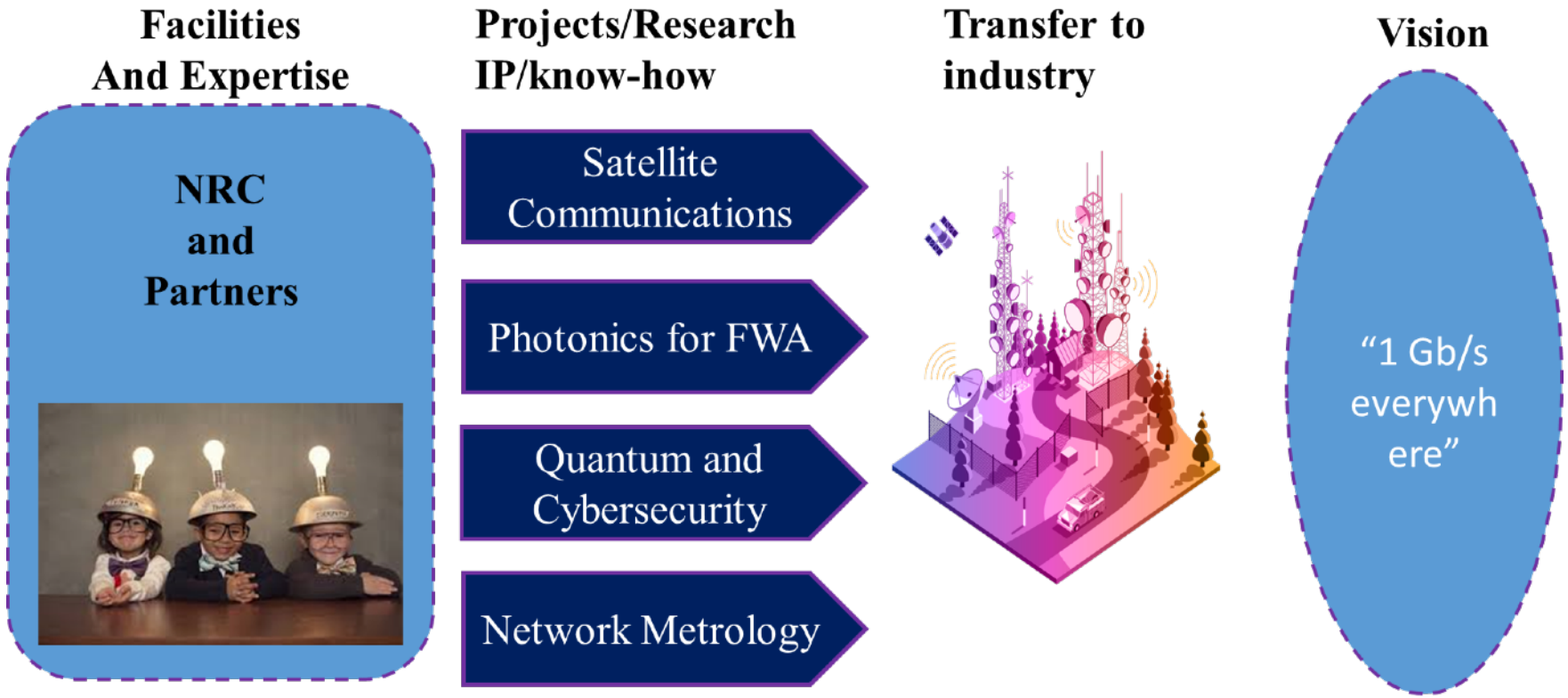


Broadband Trends

HTSN

- National Research Council R&D program
- Develop suite of new technologies enabling delivery of affordable, higher performance broadband services
- 7 years in duration (until 2026)
- Portfolio of low to higher TRL projects (TRL 1-7)
- ~$100M in total R&D budget
  - ~$80M intra-muros at NRC (in-kind labour and facilities)
  - ~$20M at partners supported through grants and contributions
  - in-kind from partners (>$10M)
- Additional G&Cs for select international projects

HTSN



HTSN performs basic research with aim to transfer resulting innovations to industry that will enable service providers to offer secure and affordable extreme high speed broadband connections to users anywhere in Canada, including rural and remote regions.

https://nrc.canada.ca/en/research-development/research-collaboration/programs/high-throughput-secure-networks-challenge-program

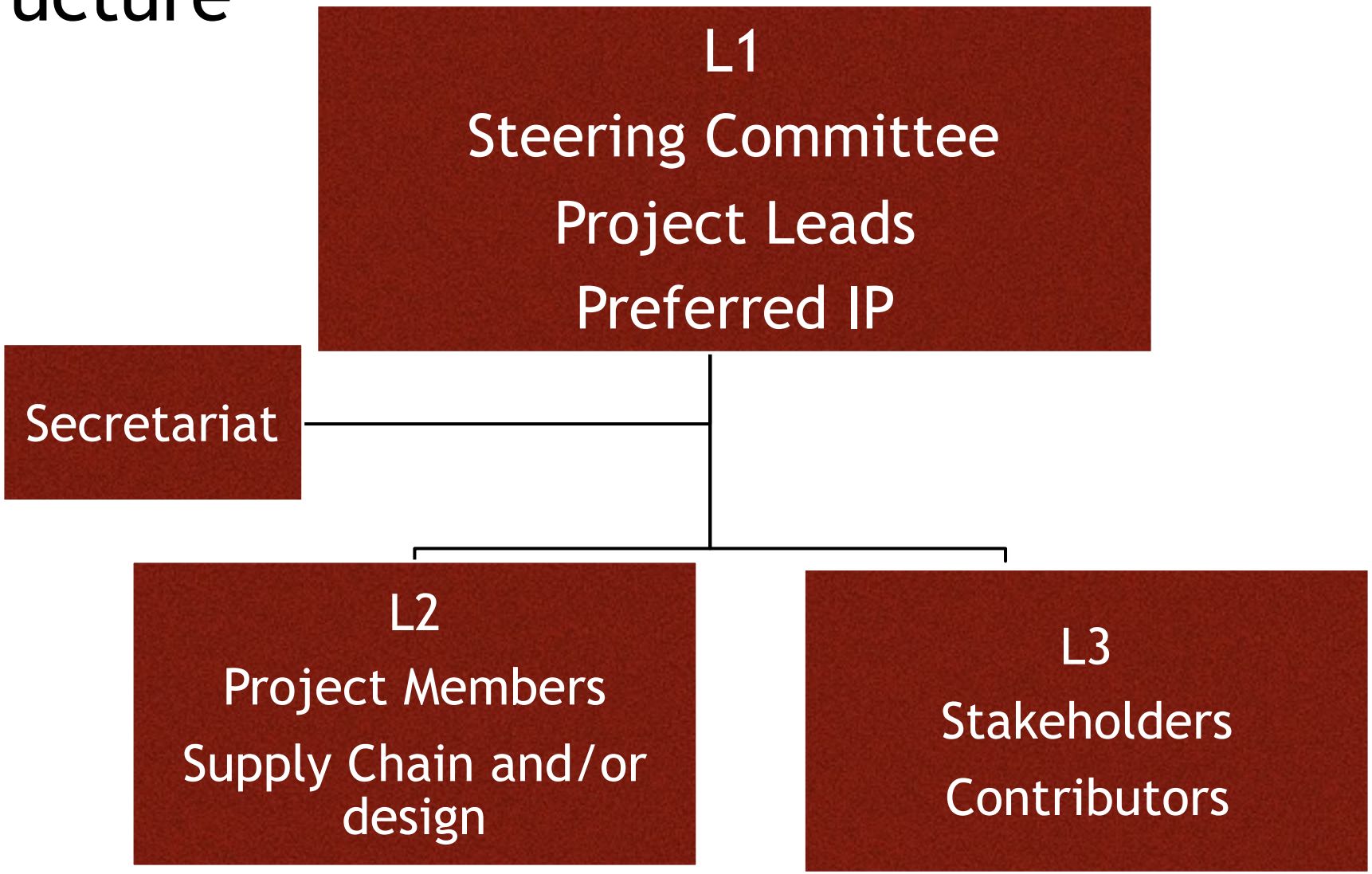
Optical Satcom Consortium

- OSC is a member-based group that brings together technology innovators, technology suppliers, product manufacturers, and end users.
- Goal: Identify and research technologies that will enable secure 1 Gbps to everyone, everywhere.
- Strategy: Collaborate among OSC members on technical projects and high-level roadmap and architecture analysis.

OSC
Optical SatCom Consortium

- Signed Agreement as of 1 September 2019 by 15 initial signatories.
- Currently 17 Members + Satellite Canada:
  - 2 Government
  - 2 Not for Profit
  - 3 Academic
  - 10 Industry
- NRC providing substantial in-kind and financial resources
- Members provide fees, direct financial support, and in-kind

OSC Structure



OSC Projects

- Road-mapping
- System Architecture
- Transceivers
- Receivers
- Atmospheric Effects Mitigation
- Optical Beam Forming for RF Arrays
- Optical Phased Arrays
- AI Enabled Networking
- (Quantum Technologies)

https://www.opticalsatcom.com/