ITU-T Telecommunication Standardization Sector

1956-2026

Workshop

The Evolution of Optical Networks for AI

Glenn Parsons, Ericsson Canada

Chair, ITU-T SG15

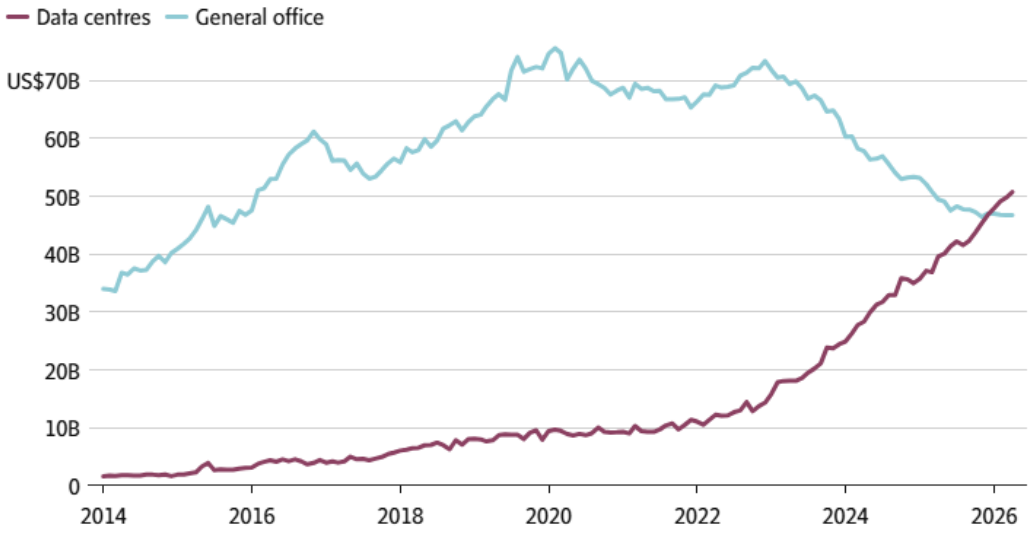
June 29, 2026

Workshop Agenda

- Introduction - Glenn Parsons – ITU-T SG15 chair, Ericsson
- Optical AI
  - Jean-Michel Sellier, Ericsson
    - Leveraging Quantum Principles for Efficient Machine Learning
  - Sebastien Gareau, Ciena
    - Optics In and Around the Data Center
  - Hiroshi Yamamato, NTT
    - Watt-Bit Collaboration in the AI Era: Optical Standards for Distributed Data Centers
  - Xiang Liu, Huawei
    - International Optical Networks towards 2030 and Beyond (ION-2030) for Ubiquitous Intelligence
- AI Events
  - Matthew Posner, Axonal
    - Photonics for AI Infrastructure
  - Jessy Rouyer, Nokia
    - Emerging Standards in the AI/ML World
  - Bilel Jamoussi, ITU
    - AI for Good

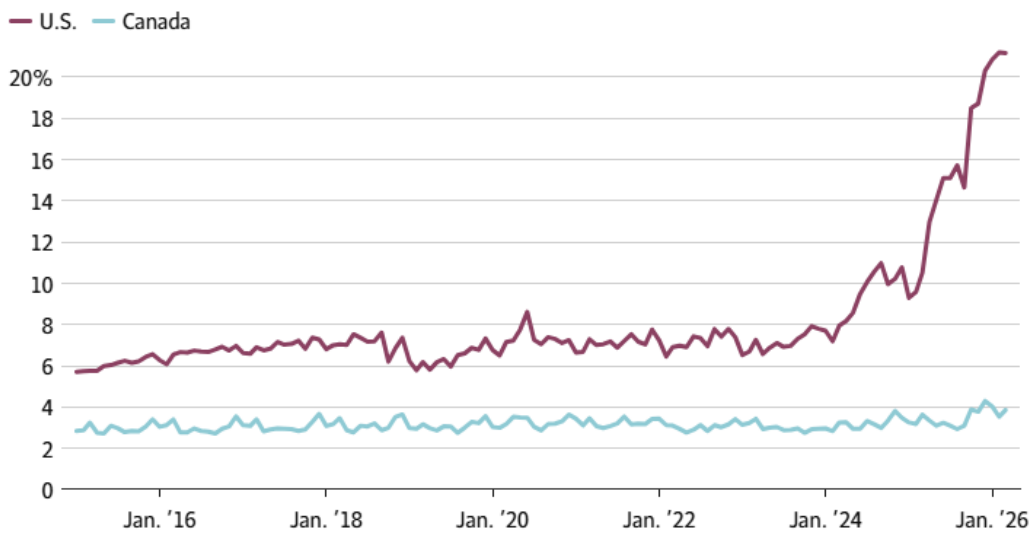
Why AI is relevant…

U.S. construction spending on data centres vs. office buildings
Monthly seasonally adjusted annual rate



THE GLOBE AND MAIL, SOURCE: U.S. CENSUS BUREAU

Imports of AI-related products to the U.S. and Canada
As a share of total imports



Represents the top 20 AI-related import categories identified by Michael Waugh of the Federal Reserve Bank of Minneapolis, including computer hardware (processors, storage, ADP units), networking (switching and routing apparatus, fibre optic cables), power infrastructure (copper cathodes, switchgear, insulated conductors) and energy storage (lithium-ion batteries for backup power systems). Data downloaded at the HS6-level of imports for cross-country comparison.

THE GLOBE AND MAIL, SOURCE: STATISTICS CANADA, U.S. CENSUS BUREAU, MICHAEL WAUGH

Source: The Globe and Mail, June 13, 2026

Responsibility of Study Group 15

The development of **standards** on:

Areas

- optical transport network
- optical access network
- home network
- power utility network

Topics

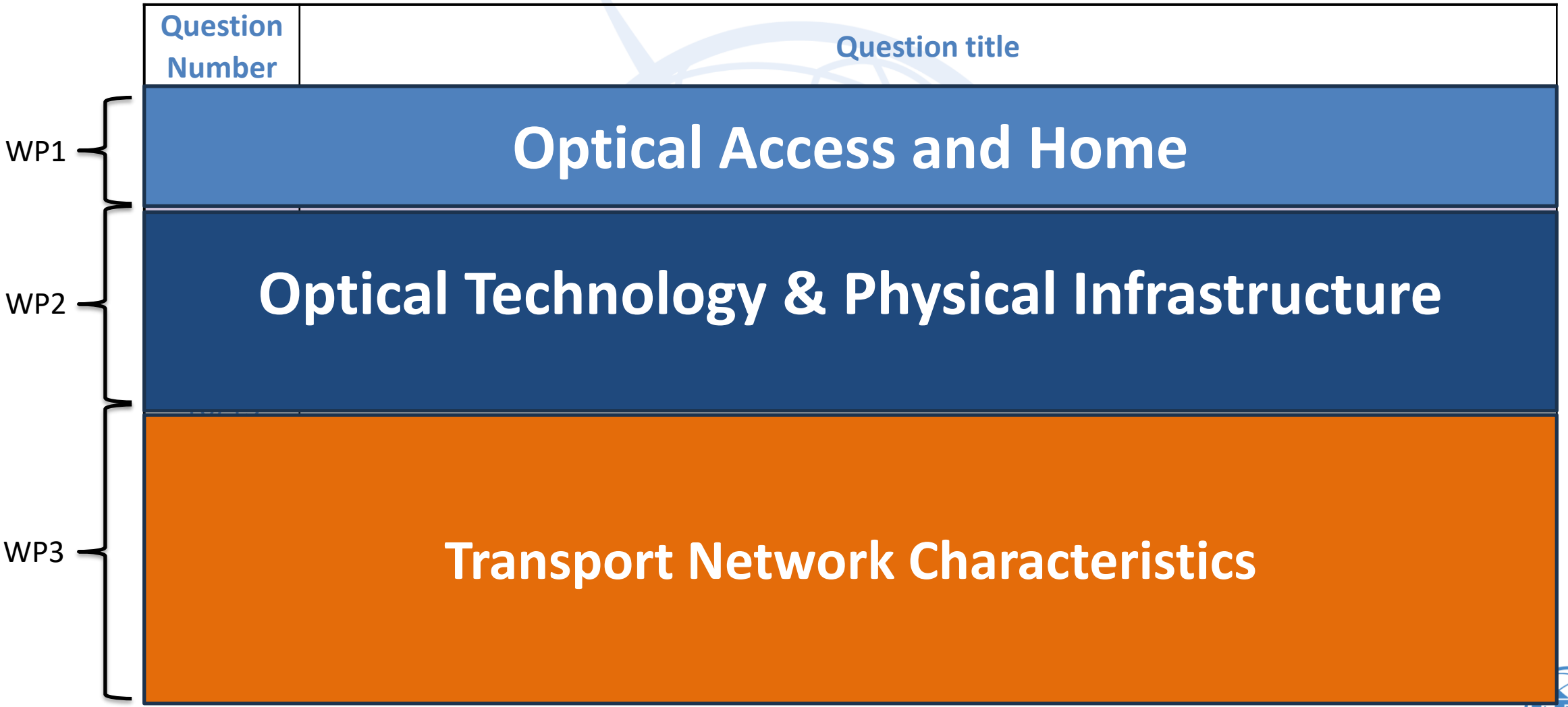
- infrastructures
- systems
- equipment
- optical fibers and cables

Technologies

- installation and maintenance
- test
- management
- instrumentation and measurement
- Control plane

to enable the evolution toward intelligent optical networks …

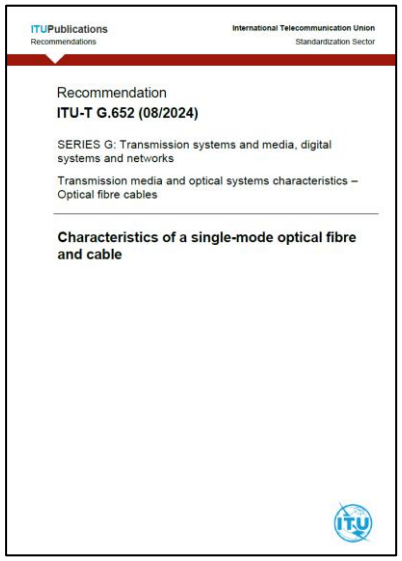
Questions and Working Parties of SG15

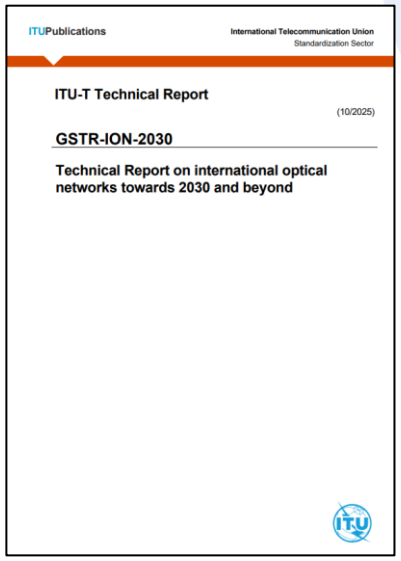


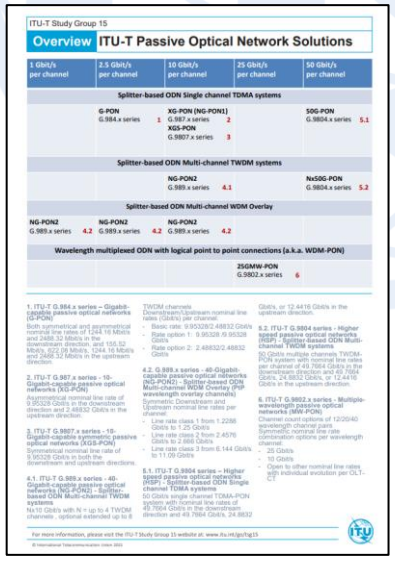
WP: Working Party

ITU-T SG 15 deliverables

- Work products:
  - Recommendations
  - Supplements
  - Technical papers and reports
  - Flyers







- Recommendation series
  - G.600-G.699: Transmission media and optical systems characteristics
  - G.700-G.799: Digital terminal equipments
  - G.800-G.899: Digital networks
  - G.900-G.999: Digital sections and digital line system
  - G.7000-G.7999: Data over Transport – Generic aspects
  - G.8000-G.8999: Packet over Transport aspects
  - G.9000-G.9999: Access networks
  - G supplements: Supplements to ITU-T G-series Recommendations
  - L.100-L.199: Optical fibre cables
  - L.200-L.299: Optical infrastructures
  - L.300-L.399: Maintenance and operation
  - L.400-L.429: Passive optical devices
  - L.430-L.449: Marinized terrestrial cables
  - L supplements: Supplements to ITU-T L-series Recommendations

Workshop objective

- Reimagining Optical Networks for the Age of AI: Optical networks are undergoing a profound transformation, evolving from high capacity transport systems into intelligent, programmable platforms that enable the AI era. Grounded in the ION 2030 framework, this session presents a forward-looking vision of optical infrastructure as a living system that can sense, adapt, and optimize itself at terabit scale.

- This workshop will explore how breakthroughs in photonic technologies, coherent transmission, embedded intelligence, and AI driven control are converging to deliver ultra low latency, extreme scalability, and sustainable operation. It will highlight the strategic role of global standardization, notably in ITU-T SG15, in ensuring that next generation optical technologies form a unified, interoperable foundation for 6G RAN, distributed AI, data center interconnect, and future digital services, positioning optical networks as the bedrock of intelligent connectivity toward 2030 and beyond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