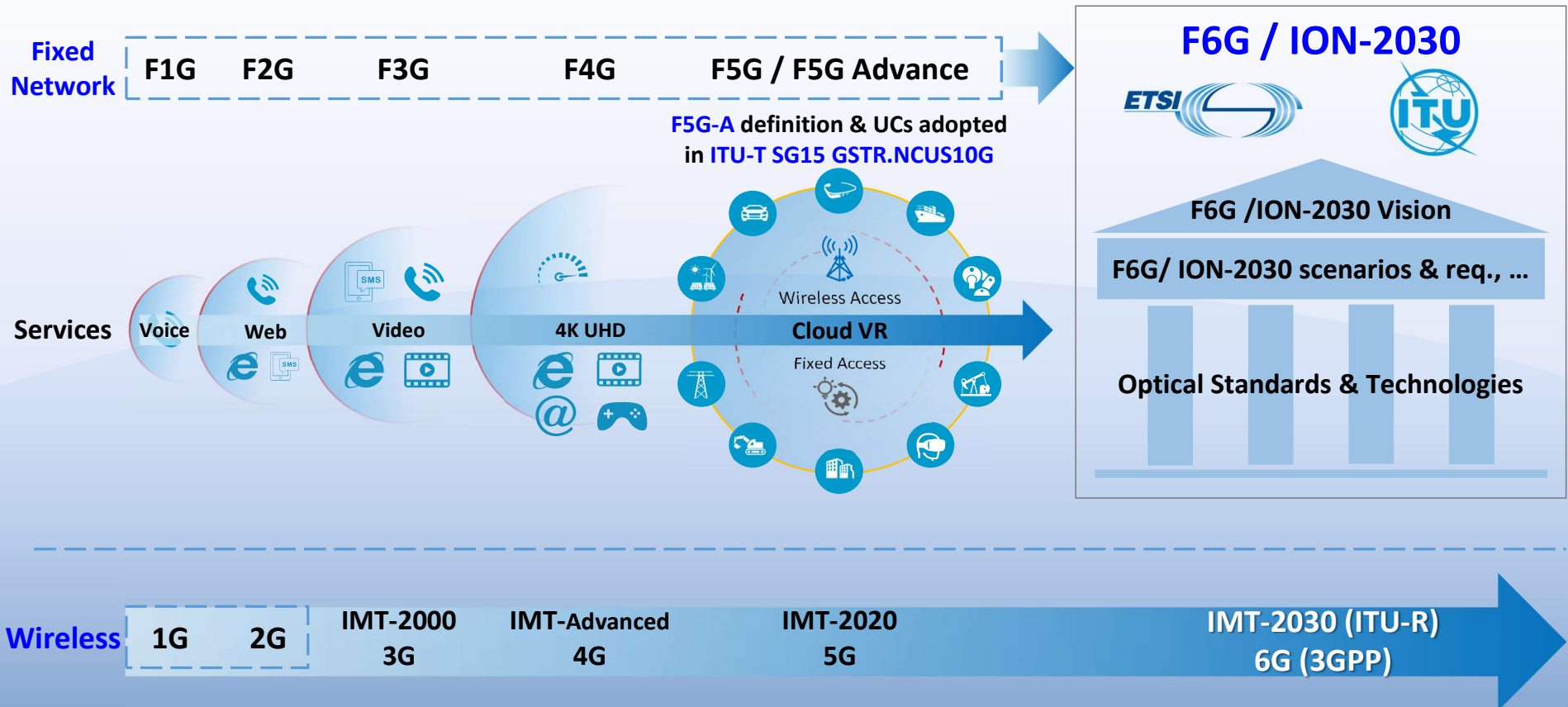


Review AI related work in ETSI ISG F5G/TC ATTW WG F5G

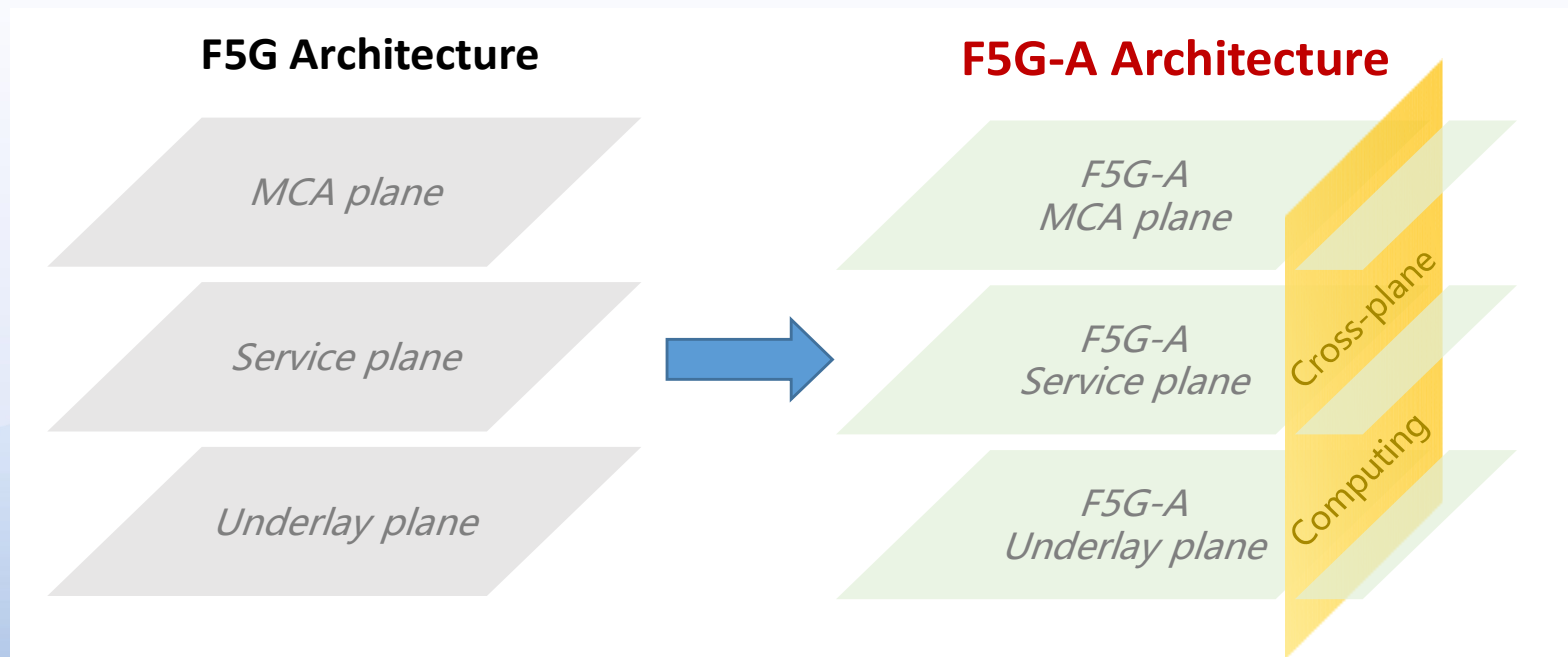
Marcus Brunner, Vice-Chair ETSI ISG F5G

ITU-T SG15 Q2 / FSAN Workshop on "Optical access evolution with AI
towards ION-2030", Sept 16, 2026

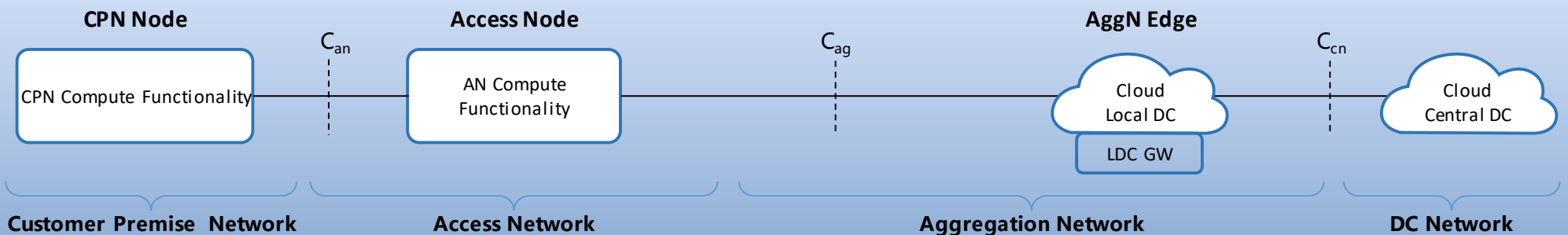
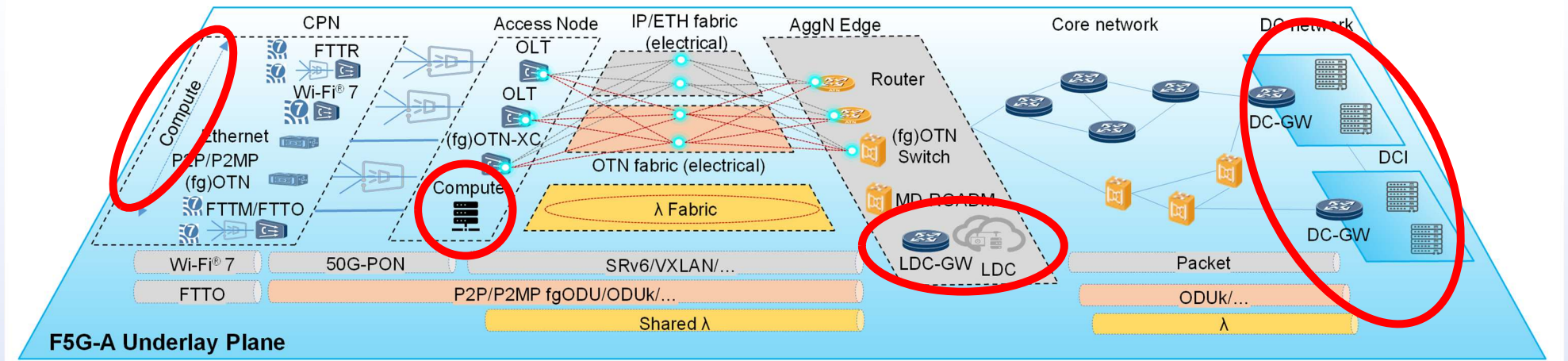
Evolution of Optical Networks towards F6G (ION-2030)



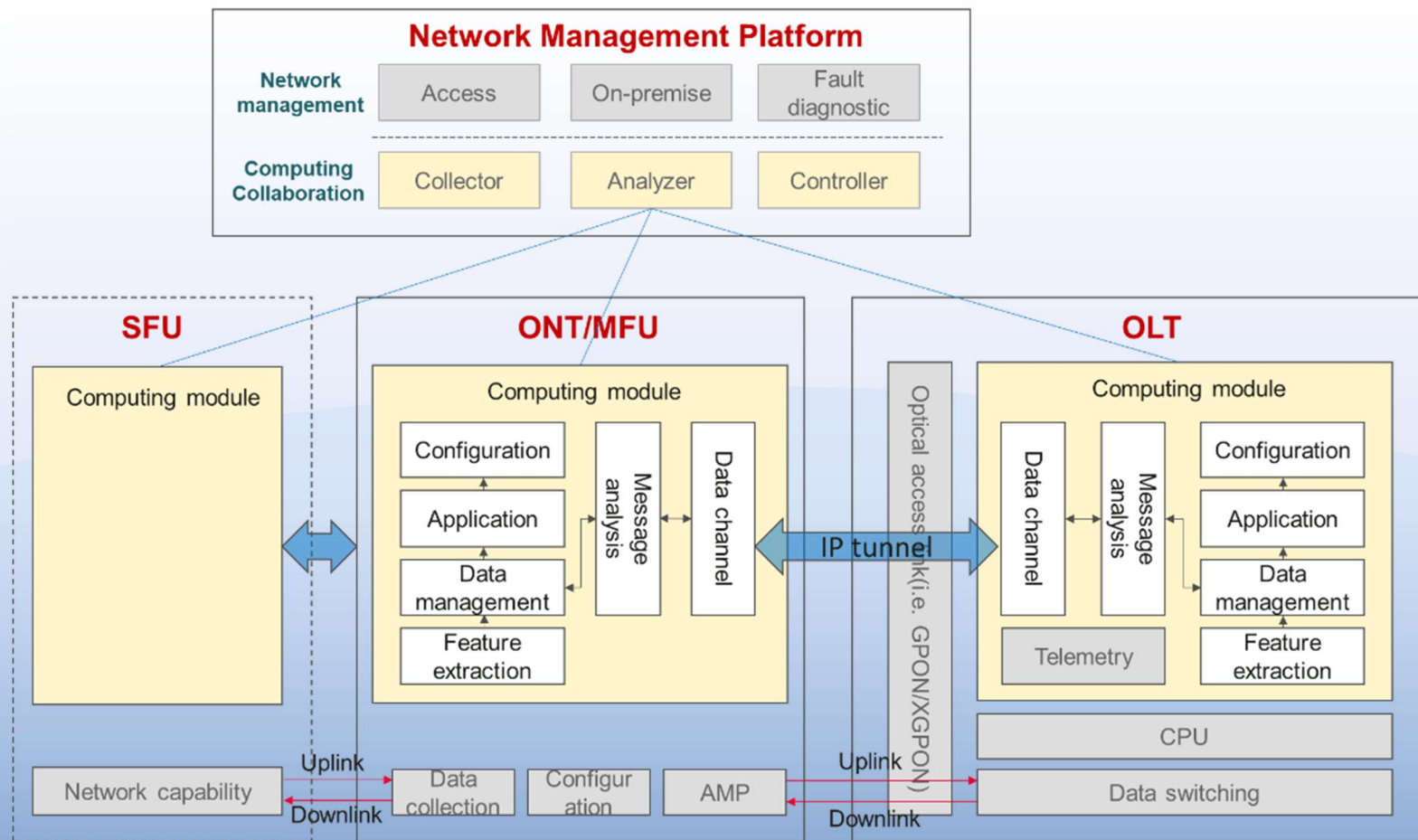
F5G Advanced Architecture: Cross-Plane Computing



F5G Advanced Architecture with regards to computing

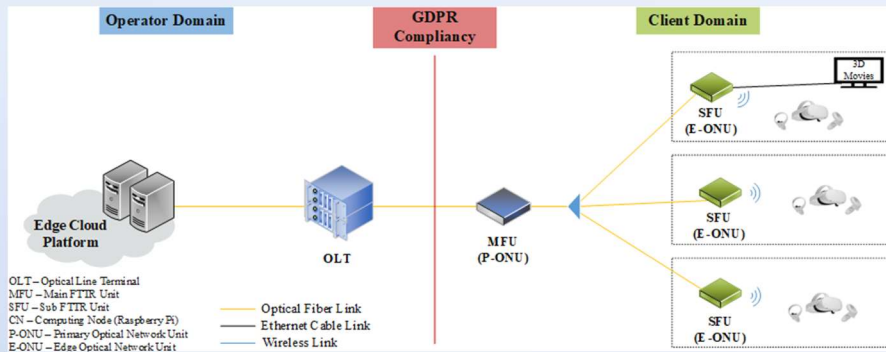


Architecture of computing collaboration in PON network



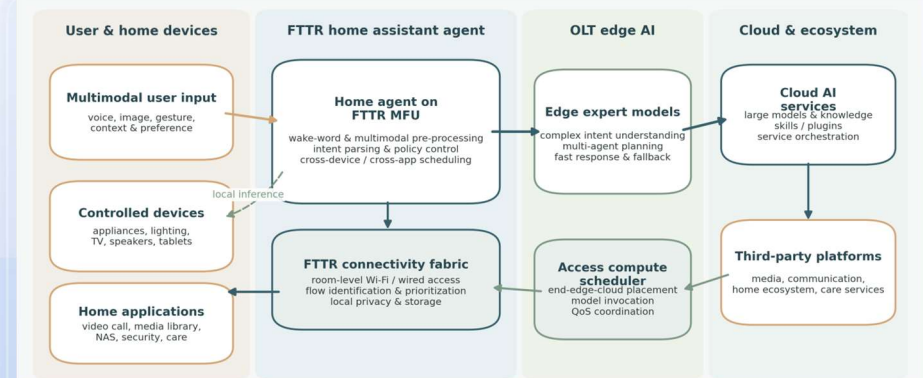
F5G-A Rel 4&5 UC: Smart Home

Privacy Preserving Distributed AI for FTTR-OLT



- SFU, MFU and OLT allow for real-time traffic monitoring
- Power Consumption Monitoring and Dynamic Adjustment of ONU/SFU/MFU Power mode in Real Time (Wi-Fi)
- AI agent to AI agent interaction is GDPR compliant

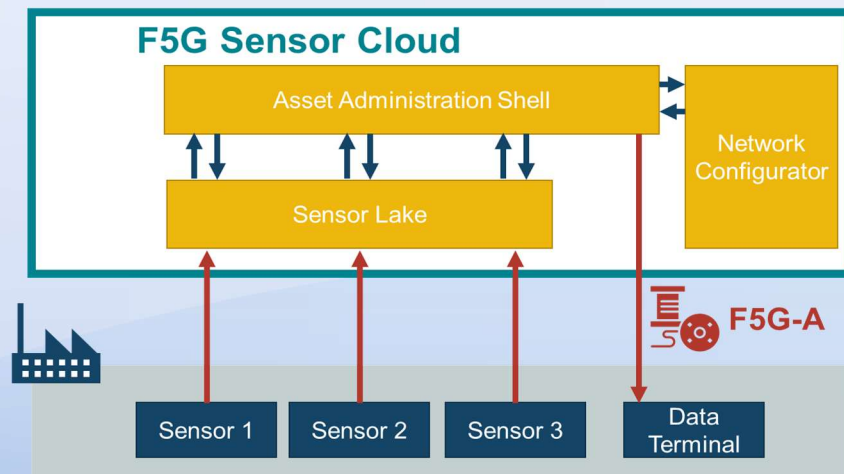
AI-enabled Home Assistant (FTTR-OLT)



- single natural-language and multimodal entry point for home devices, applications and content services
- Support complex, personalized and multi-step services through edge expert models and cloud large models when local capability is insufficient

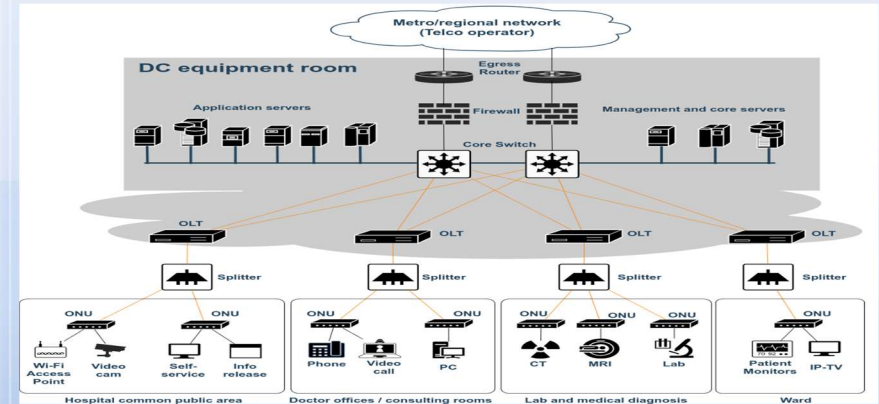
F5G-A Rel 4&5 UC: Enterprise/Industrial Applications

Smart Sensor Cloud for AI in Industrial Manufacturing



- Low latency PON
- High reliability for emergency machine stops (e.g. due to intrusion)
- High bandwidth
- High security
- AI being run near production equipment/robots

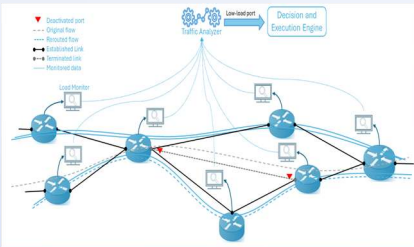
Smart Hospitals/Offices (e.g., POL)



- High bandwidth, reading films/MRIs/etc. do not freeze
- High performance, don't drop the line
- Might have antibacterial and disinfection requirements of equipment

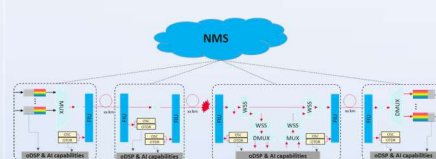
F5G-A Rel 4&5 UC: Optical Network Operation

Energy-efficiency



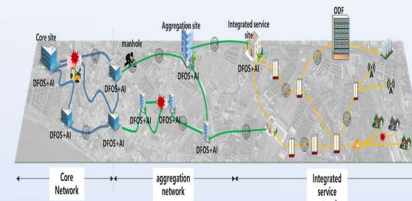
- Intelligent Port On/Off based on telemetry information
- Energy-aware Re-routing (Agg&Core)

Flash Disconnection Localization



- AI-Powered Intelligent Flash Disconnection Fault Localization in Optical Network

Optical cable Co-route detection

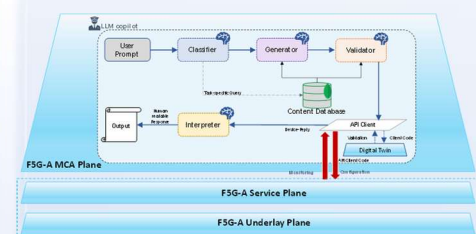


Optical cable 1 #
Optical cable 2 #



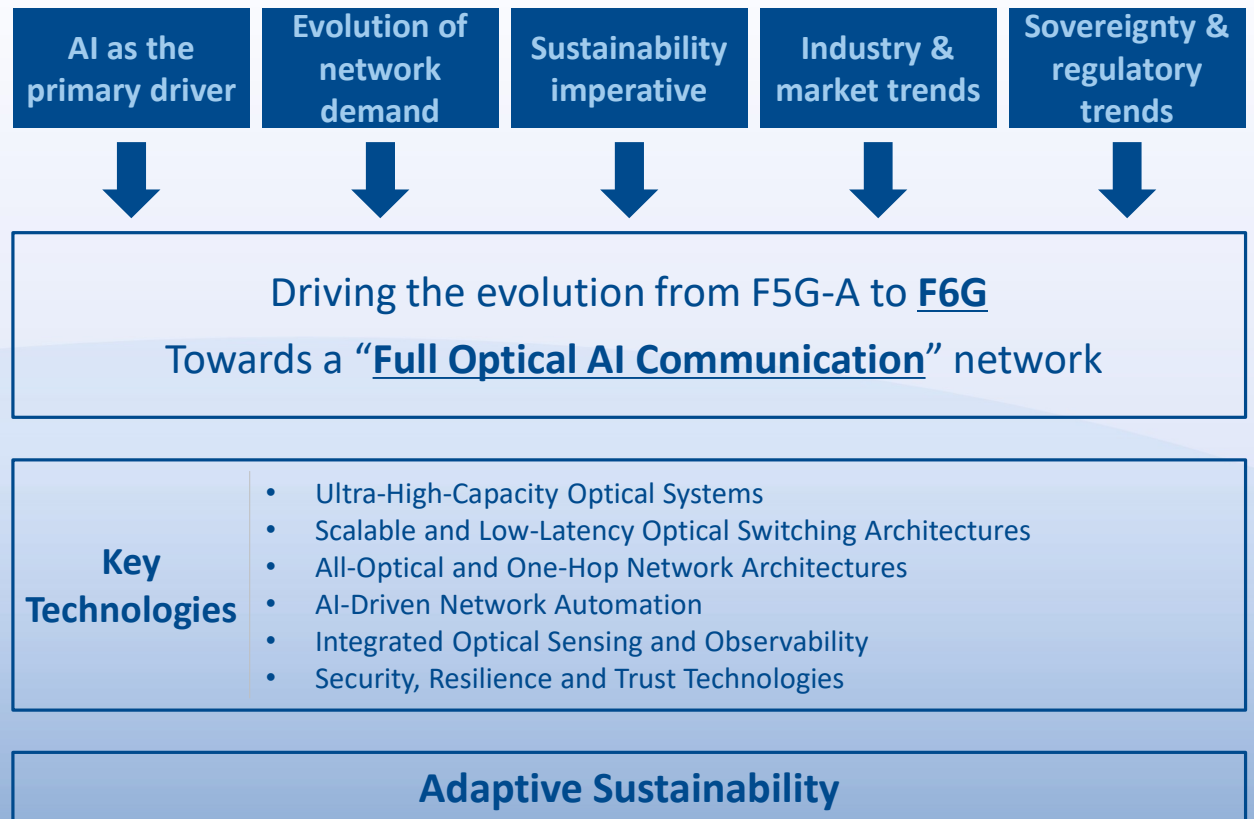
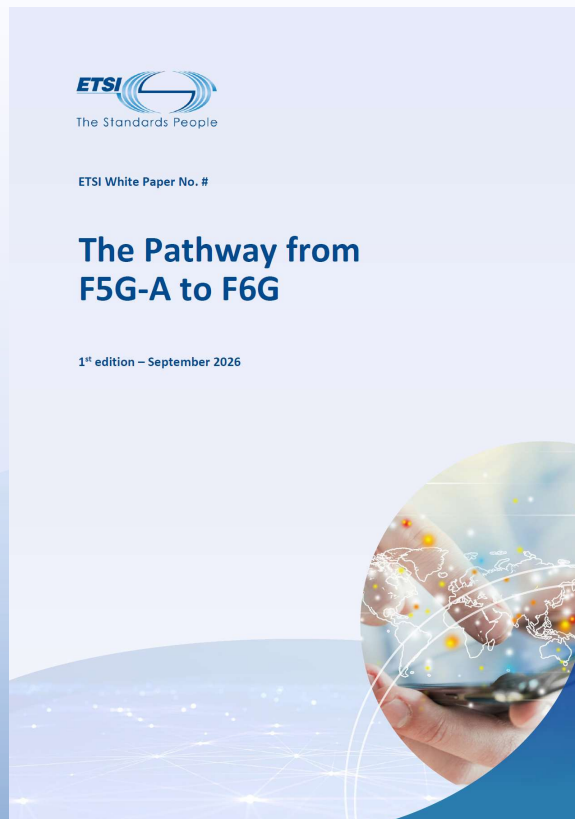
- Fibre Sensing
- Co-route detection through Environmental signals
- Co-cable and Co-trench

Generative AI for F5G-A Network Management



- Intent Classifier
- Digital Twin Sandbox
- Code Generator

F6G Whitepaper: Evolution from F5G-A to F6G



ETSI ISG F5G Reference Documents

- ETSI GR F5G 032 V1.1.1 (2026-02): “Fifth Generation Fixed Network (F5G); F5G Advanced Use Cases; Release 4” (summaries contributed to **GSTR.NCUS10G**)
- ETSI GS F5G 036 V1.1.1 (2026-04): “Fifth Generation Fixed Network (F5G); F5G Advanced Network Architecture Release 4”
- ETSI GS F5G 025 V1.1.1 (2026-09): “Fifth Generation Fixed Network (F5G); F5G-A Architecture of computing collaboration in PON network”
- Early Draft of ETSI WI DGR/F5G-0039 (“Fifth Generation Fixed Network (F5G); F5G-Advanced Use Cases Release 5” (work in progress)
- ETSI Whitepaper: “The pathway from F5G-A to F6G” (endorsed by ISG F5G, in publication)

Thank you! Any questions?