Terms of Reference (ToR) for

ETSI TC ATTM Working Group Fifth Generation Fixed Optical Network (F5G)

Accepted at ATTM#39 (April 2026)

Scope

The WG F5G studies and develops the generations of the fixed networks pursuing a “fibre and optics to everywhere and everything” ecosystem to enable intelligent new and enhanced services. Better performance, intelligent E2E management, network security, enhanced energy efficiency and the integration of compute are the pillars on which WG F5G builds that evolution.

The WG F5G approach to the development of fibre network standardization is to identify use cases and requirements and to produce new standards or enhancements of the existing ones, interacting and cooperating in the most efficient way with all relevant SDOs and industry stakeholders.

WG F5G is focusing on the expected evolution of the fixed network, by means of the extension of the use of optical networks in a wide variety of scenarios for home, office, campus, industry applications and for a more effective support to wireless networks. With F5G Advanced (F5G-A), the current generation, the work is going to address the intelligent capability of networks to provide assured communication for data transmission and autonomous management & operation. The F6G and beyond vision and standards will also be studied for the next evolution of optical networks.

The following aspects are included in WG F5G work plan:

- the specifications for the F5G-A and F6G fixed optical network generation,
- exploring possible additional F5G-A functionality,
- developing use cases for F5G-A/F6G network evolution including AI-based fixed network services and AI-based operation of fixed networks,
- developing an E2E reference architecture for F5G-A and providing the basis for F6G networks including fibre sensing, in-network computing, optical intra and inter DC networks,
- specifying flexible and agile E2E management, enhancing QoE and QoS, using telemetry, and adapting autonomous network frameworks for the domain of optical communication networks,
- assuring a service-oriented approach for the fixed optical network generations,
- developing optical industrial networks,
- providing operator guidance for green broadband networks using energy efficiency measures,
- developing a WG F5G Proof of Concept framework to validate F5G-A/F6G specifications, services or architecture options,
- leveraging the synergies between fixed networks (Transport, Aggregation, Access, Customer Premises) and wireless communications to foster convergence in residential, enterprise and vertical services, and a coherent evolution towards the 6th generation mobile network.
- Testing methodology to validate the F5G technologies

Annex (informative): collaboration with other bodies

WG F5G will seek to actively coordinate and cooperate with the groups both inside and outside of ETSI as shown in the TC ATTM ToR with the addition of the following groups:

- TC STQ
- TC CYBER
- TC SAI
- ISG MEC
- SDG OSL
- SDG TFS

External groups

- IEEE (Institute of Electrical and Electronics Engineers)
- IETF (Internet Engineering Task Force)
- WFA (Wi-Fi Alliance)
- CCSA (China Communications Standards Association)
- WBBA (World Broadband Association)
- WAA (World WLAN Application Alliance)
- IOWN (Innovative Optical and Wireless Network)

The WG F5G may identify further groups during the progression of the work.