Finland Passive Optical Network Energy Saving



Overview

This paper presents a comprehensive review of methods aimed at improving the energy efficiency (EE) of wired access passive optical networks (PONs) and active optical networks (AONs). With the growing global deployment of Fiber-to-the-Home (FTTH) networks driven by the demand for ensuring high-capacity broadband services, mobile network operators (MNOs) face challenges of excessive energy consumption (EC) of wired optical access networks (OANs). This paper presents a. Over the past year, PREIN Flagship for Photonics Research and Innovation has con-tinued to deliver strong scientific, educational, and societal impact, confirming the maturity of the Finnish photonics ecosystem built during the Flagship period. Throughout 2025, PREIN activities have remained at a. This article introduces the technologies that con-tribute to low latency and power saving of optical access networks being researched and developed by the Optical Access System Project at NTT Access Network Service Systems Laboratories. to set idle devices in a state (“sleep”) at neg-ligible power consumption; such devices should be promptly re-waken up when needed.

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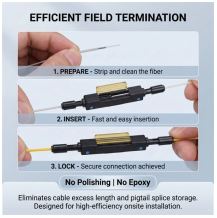
The Finnish Transport and Communications Agency Traficom has published a pilot study on the energy consumption of communications networks ...



We present a comprehensive survey of the energy conservation research efforts in PON starting from conventional PON to SDN based PON leveraging virtual and physical network functions.



The most important energy management and power-saving methods for Optical Line Terminals (OLTs) and Optical Network Units (ONUs), as key OAN components, are overviewed in the paper.



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The Research Council of Finland''s flagship initiative has been a long-standing funding pro-gramme which fosters high-impact research and bridges scientific excellence with societal and economic ...



Pluggables permit to avoid energy-hungry interfaces as transponders, thus reducing the power consumption of the network. However, the use of pluggables is limited by a shorter optical reach.



Energy Conservation in Passive Optical Networks A Tutorial and Survey. This article provides a comprehensive survey on energy conservation in Passive Optical Networks (PON), discussing the ...



We summarize the lessons learned from the recent advancements, identify important challenges ahead and outline several future research directions that can contribute to further ...

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