Challenges in Resource Management of Passive Optical Networks

These advancements are paving the way for more robust and agile network maintenance practices that address emerging challenges in high-capacity optical communications.

Abstract: The explosive development of emerging telecommunication services has stimulated a huge growth in bandwidth demand as people seek universal access to telecommunication networks. In ...

The aim of this thesis is to study and evaluate current contributions and propose new efficient solutions to address the resource management issues mainly in EPON.

Next-generation passive optical access networks (NG-PONs) are continuously evolving to meet the ever-increasing demands of telecom operators and end-users, playing a fundamental role ...

First, the physical PON infra-structure is not entirely visible to the network management system (NMS) for fault manage-ment operations. Second, failures within the fiber plant are likely to entail service ...

In a wavelength-routed WDM network (as well as in other networks), the failure of a network element (e.g., fiber link, cross-connect, etc.) may cause the failure of several optical channels, thereby ...

Increased bandwidth, reduced latency and symmetric downlink and uplink capacity are among the key drivers for Next-Generation Passive Optical Network (NGPON) technology while ...

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This paper proposes a novel cooperative algorithm for resource optimization in a time-wavelength division multiplexed (TWDM) passive optical network (PON) incorporating a cloud radio ...

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