

SURVIVABILITY TECHNIQUES IN OPTICAL WDM NETWORKS

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Abstract

Different Network survivability approaches in mesh based WDM optical network against link failures are discussed in this paper. These approaches are based on two survivability paradigms: 1)Path protection/restoration and 2)Link protection/restoration. Distributed protocols for path and link restorations have been proposed. A generalized sharing concept allows for sharing of important resources like OEOs, pure all optical wavelength converters which constitute the dominant cost factor in an optical backbone network and optimization of their number is of paramount importance. The design goals of the these mechanisms are to 1)improve performance by reducing the number of connections blocked on account of wavelength converter unavailability, and 2)reduce the cost by lowering the number of converters required per node .Different approaches and algorithms to establish and protect multicast sessions against single link failures in optical mesh WDM networks are also discussed.