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Implementation of Optical Network Connectivity through Physical and Logical Channel Approach -An Overview

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Abstract Optical networks play a vital role in advanced communications. Basically networks transmit and receive the packets (Bits per second). Hence this paper mainly focuses on Physical Channel Connectivity (PCC) and Logical Channel Connectivity (LCC). Further Network Connectivity Parameters (NCP) and Network Simulation Parameters (NSP) in order to obtain spatial channel connectivity in the form of throughput.PCC describes the raw bits functionality, whereas the LCC describes the Gain enhancement in terms adhoc network connectivity. NCP determines the node connectivity and their demand distribution productivity, where as NSP provides the network integrity in terms of their connectivity.

Keywords: *PCC, LCC, LCP, NCP, NSP*

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1. Introduction

Propagation of optical networks consists of throughput connectivity gives the packet transmission i.e. channel capacity as in Figure 1. In Physical channel connectivity, optical network connectivity is divided into fiber distribution as shown in Figure 2, protection methodologies is Figure 3, demand association in Figure 4 and synchronous and asynchronous approach in Figure 5. The Logical channel connectivity, optical network connectivity is given by packet addressing, fair queuing, self transformation in order to obtain an integrated approach towards local and global as shown in Figure 6. The capacity of the channel contains the information through broadband in terms of transmission and propagation parameters. The flow content is estimated through different boundaries i.e. flow vs. throughput and Time vs. Number of packets. It also delivers the packet arrival and departure information too. Generally, congestion is a drawback in networking. In fiber optic networks it can be avoided by providing a service tag enables minimum degree glow content and maximizing the channel utilization.

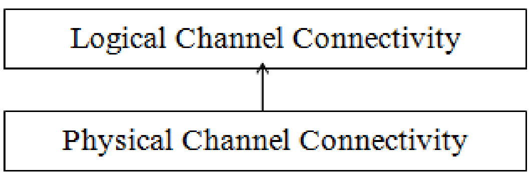

Figure 1. Channel Connectivity

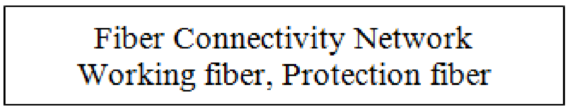

Figure 2. Fiber Distribution

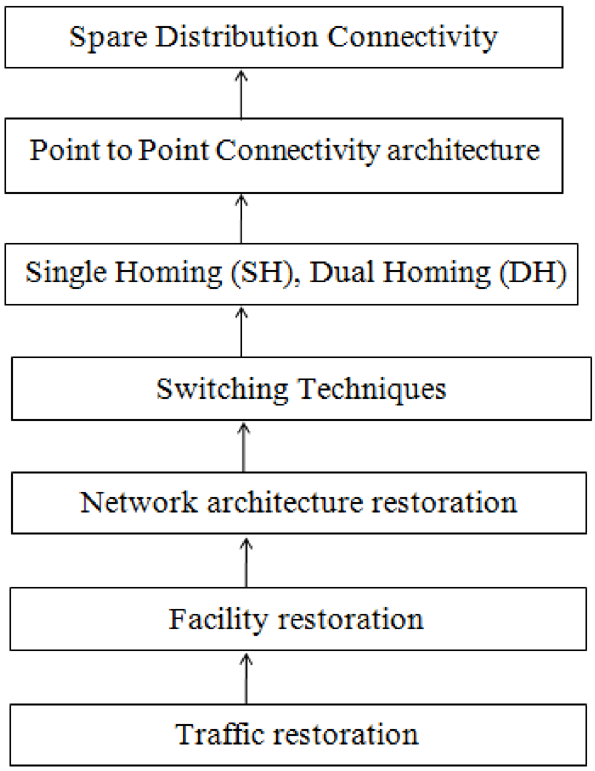

Figure 3. Protection Methodologies

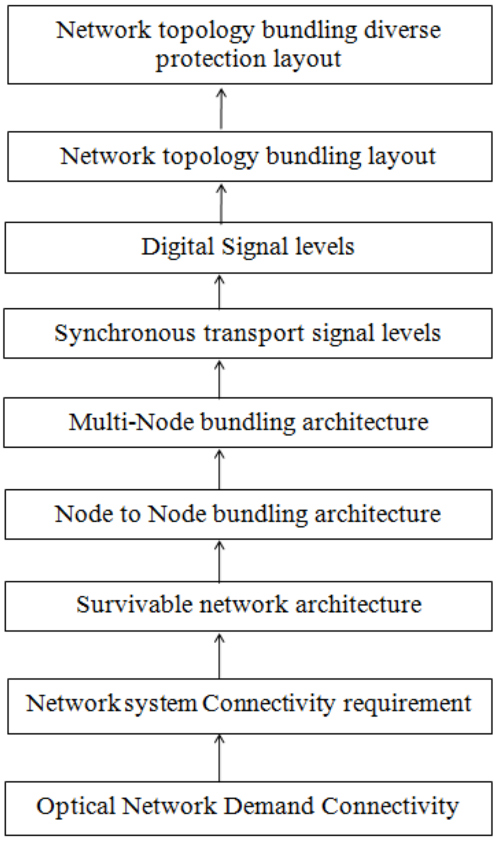

Figure 4. Demand Association

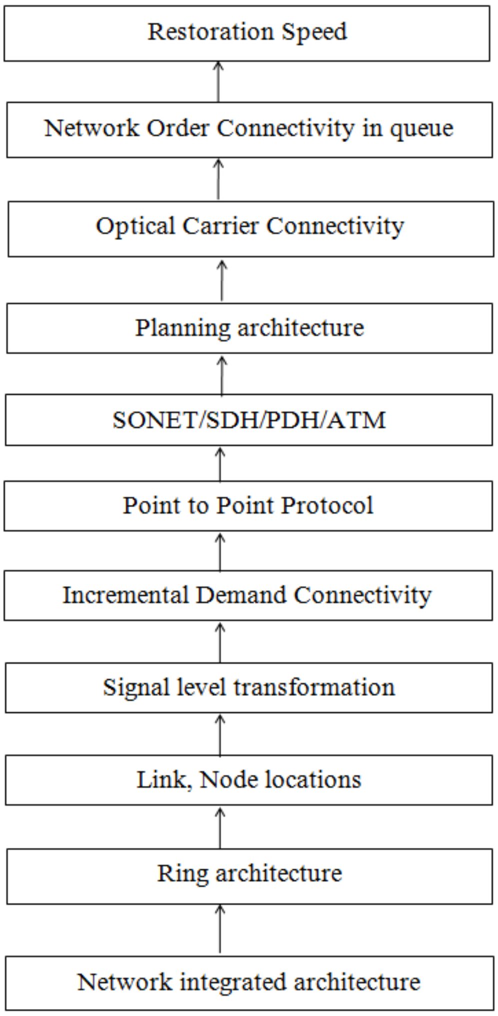

Figure 5. Synchronous and Asynchronous approach

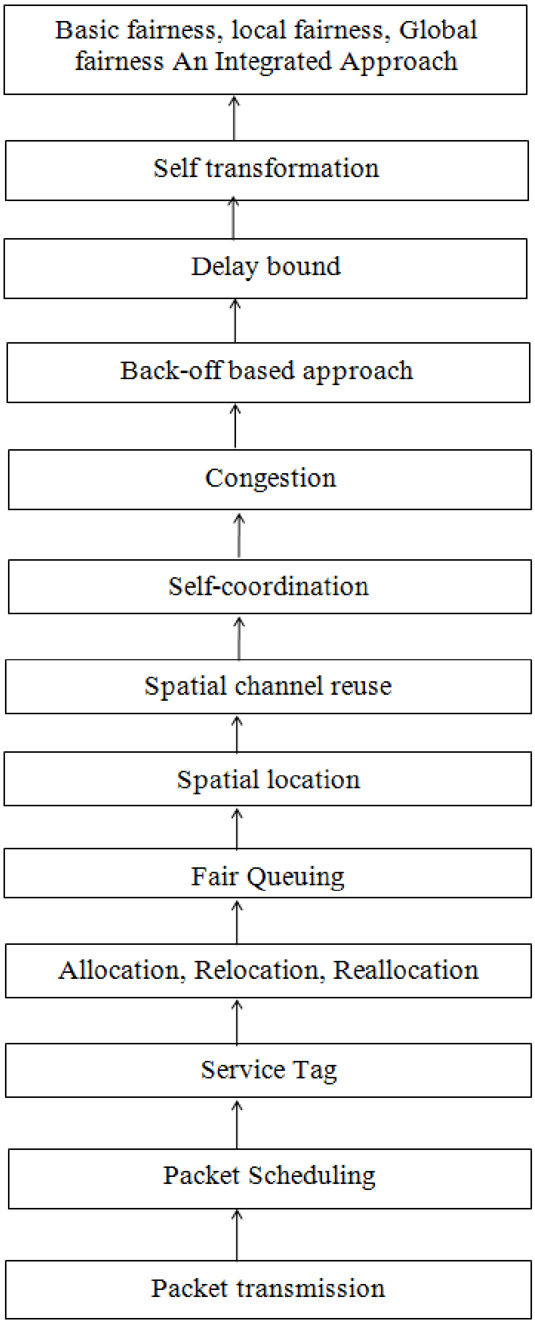

Figure 6. Logical channel connectivity parameters

2. Analysis Design and Implementation

Optical Network Connectivity consists of the following assumptions viz.,

The flow propagation between transmitter and receiver.

Decision analysis.

Flow path should be proper in a single connectivity and multi connectivity to avoid subsequent collisions.

By the above assumptions packet level service can be obtained effectively. In this optical network in adhoc nature is used to maximize the channel connectivity from physical channel network connectivity to logical channel network connectivity. In this all the node connectivity's are taken into consideration by means of their link and data propagation between transmitter and receiver. It acts as a combination of the present link, data and as well as the past link and data availability in the network. Delay is an important factor which gives transmission rate between starting and finishing tag in a distributed nature. It also avoids the greediness in a network by the vertex in terms of node, adjacent node and degree of node in order to estimate the local fairness and global fairness models.

Network simulator will give the better results in terms of the total number of packets throughput ratio and as well as the reuse gain ratio between physical and logical channel connectivity, further fairness is also achieved as shown in Table 1 and Table 2.

Table 1. Channel Connectivity Simulation result-1

Simulation Parameters	FQ
Bandwidth(Mb)	2
Routing Protocols	MAC
Max Node Size	15
Max Flow Size	12
Life Time	757.385
Number of packets	1,200.33
Throughput Ratio	188
Special Reuse Gain	88

Table 2. Channel Connectivity Simulation result-2

Simulation Parameters	FQ
Bandwidth(Mb)	2
Routing Protocols	ADP-COL
Max Node Size	12
Max Flow Size	10
Life Time	475.830
Number of packets	1,029.055
Total Throughput Ratio	200
Special Reuse Gain	100

Scalability, mobility and fair queuing enhancement can be achieved by using channel location and allocation methods. In this self transformation provides fair bandwidth scheduling. By this delay bound can be minimized so as to obtain short term and long term throughput.

An integration method will help us to analyze, design and implement the layers connectivity to ensure their higher reuse gain, fair queuing methodologies for multilayer and complex network mechanisms from the following assumptions.

They are

1. Infinite sources for point-to-point and multi-point.
2. Packet weight
3. Time domain vs. Frequency domain
4. Basic fairness vs. local fairness vs. global fairness
5. Robust & dynamic

An effective packet scheduling throughput along with maximum channel utilization is achieved.

3. Conclusion

Optical network connectivity has been measured through the physical era and the logical era and also the adhoc connectivity through simulation procedures is represented. This can be further projected in the direction of by employing different types of multiplexing, multiple access and spatial channel allocation effectively.

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