LAB 11

## Use the rate multiplier parameter to progressively load the network.Set the channel number to 10 and NMC to 50 (or less) in order to speed up the simulations adn transceiver to shannon technology. What do you observe on the total allocated tra\_c, the average rate per lightpath and the congestion as the network load increases with the rate multiplier.

## From the previous point, \_x the rate multiplier to the full network load. What happens to the total allocated tra\_c and the congestion if you in-crease the number of channels to 15?

## Consider the last point of exercise 10 where you have been asked to write the upgrade line method by improving a speci\_c line noise \_gure by 3dB. What you observe on the total allocated tra\_c, the average rate per lightpath and the congestion, if instead of upgrading the most congested line you upgrade one of the least used? Repeat the two upgrade cases at two di\_erent network loads ("full" and "not full" states). How you explain the results that you get?

## Repeat the previous point by degrading the noise \_gure by 3 dB (i.e, noise\_gure 3 dB larger). What you observe? Why?

## We have seen the results on a network made of SMF as \_ber type, with dispersion (beta) equal to 21.27e-27 [s/(Hz m)]. What happens to the total tra\_c and the average lightpath bitrate if you assume instead a network made up of LEAF \_ber only (beta equal to 6.58e-27 [s/(Hz m)])? Why?

## Modify the nodes.json \_le and construct your own network topology bigger with respect to the previous one. Construct it by adding 3 further nodes and connect them as you want. HINT: don't make the new network fully connected (each node is not connected to every other node) and try to keep the average length of the lines connecting the new nodes not shorter of that in the last network json provided. Repeat the previous points on

## the new network and make your comments.