

A contention resolution evaluation, through simulation, in Optical Burst Switching networks (OBS) has been done. Evaluating two different contention resolution schemes, full wavelength conversion (Conv) and fiber delay lines (FDL), and combining them (Conv + FDL or FDL + Conv).

A programming task has been done first, equipping an existing OBS simulator with different modules, to allow it to use this contention resolution schemes. Then, a simulation process has been done. Comparing these different contention resolution schemes in terms of burst loss probability and burst extra delay (introduced by the mechanisms). At this point, two different network topologies have been considered; the first of them consisting in a line topology with direct connected sources to the OBS nodes; the second one is based in this line topology but with the sources increase and they are moved away of the central nodes.

The results show the importance of the network topology in OBS scenarios, the effects of the burst programming schemes and the offsets. In addition, it has been shown the advantages and disadvantages of the different contention resolution schemes, and the good results obtained in the combination of wavelength conversion and fiber delay lines, mainly when wavelength conversion is done first.

Finally, a theorist chapter describing OBS basics, and two simple theorist models of wavelength conversion and fiber delay lines are presented.