After achieving the optimal solution of subproblem 1

For all user j

Find ship-to-ship/shore links that have minimal  and not fully used up, add them to the set S.

While QoS constraint is met for all user

Find the link in S with worst rate and remove it.

While subcarrier constraint not met

Find the link in the unmet timeslot that has worst rate, remove it and substitute it with something else.