S-38.110 Telecommunication Switching Technology I, Exercise 4

Brax/Ilvesmäki 24.2.2000

The answers are to be returned before the exercise begins either to the exercise assistant (in person or via email to lynx@tct.hut.fi) or to a box underneath the lab's noticeboard.

Task 1

a) Construct a strict-sence non-blocking and symmetric Clos network for 30x30 case..
b) Draw a strict-sence non-blocking STS-switch in 2M PCM form to get a 120 subcriber switch.
(Lecture)

Task 2

Let us compare the complexity of the Cantor network with the complexity of the strict-sense non-blocking Clos network: Accounting for the crosspoint count for multiplexers and demultiplexers, show that thet the crosspoint count for the Cantor network is $4N (\log_2 N)^2$.
(Hui: Chapter 3: Exercise 5a)

Task 3

Let´s keep comparing the complexity of the Cantor network with the complexity of the strict-sense non-blocking Clos network: Compute $N = 2^m$ for which $N \times N$ Cantor network has a smaller crosspoint count than that of the optimal three stage strict-sense non-blocking network considered in Task 5b of Exercise 3. *(Hui: Chapter 3: Exercise 5b)*

Task 4

Draw a self-routed route 001 011 for a N=8 Shuffle network. *(Hui: Chapter 5)*