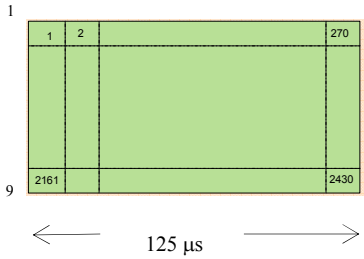
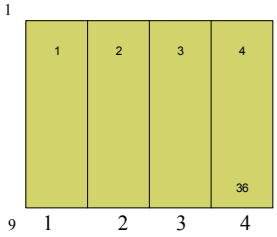
1. Basic Structure



125 µs →2430 x 8 Bits
1 s →155.52 Mbits

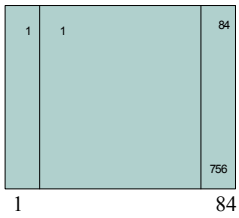
2. Structure for 2Mb/s and 34Mb/s

2.048 Mb/s



125 µs = 36 x 8
1s = 2304 kb

34.368 Mb/s



125 µs = 756 x 8
1s = 48.384 kbits

<u>Spare bits for Path over head + Justification</u>

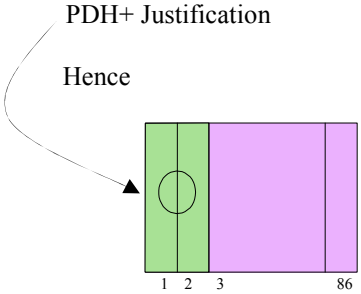
Spare bits
= 0.256 (12.5%)

Spare bits
= 14.02 (40%)

For 34 Mb Structure 21Nos 2.048 Mb/s can be placed.

3. Observations
   3.1. For 34Mb/s in PDH 2.048Mb/s, 16 steams can be multiplexed.
   3.2. In SDH 21 No can be Multiplexed WHY?
   3.3. For PDH, CEPT 34.368 Mb/s and PDH American Equipment is 44.736Mb/s,
   Hence 84 columns are used for 44.736Mb/s American systems, SDH stream stems from American SONET. Hence it has been designed for American 44.736Mb/s.
   3.4. Every basic structure has to accommodate for each PDH+ Justification
   Hence for 34 direct to be placed, it needs more two columns to accommodate PDH+ Justification

Hence



   3.5. If we fill with 21Nos of 2.048 Mb/s, these first 2 columns are spare

4. Structure for 140Mb/s

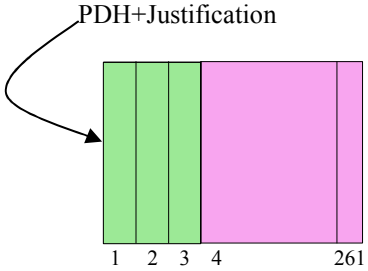
Similarly for 140Mb/s (actual 139.264Mb/s)

For 125 μs = 2322 x 8bits
1s= 148.605

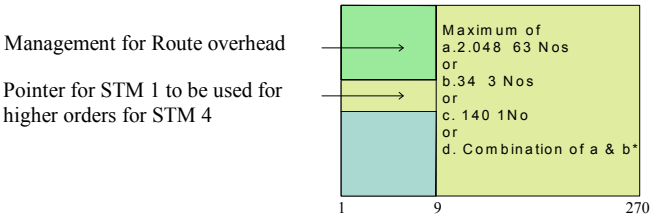
Spare bits for POH + Justification
= 9.344
= (6.7%)

5. Observations
   1. For 140Mb/s is PDH (CEPT) there are 4 Nos 34Mb/s streams. But in SDH only 3 Nos 34 Mb/s can be accommodated.
   2. Hence in SDH,63 Nos 2.048 Mb/s in STM 1 can be accommodated.
   3. No equipment for PDH 140Mb/s (America)

6. Similar reasoning as for 3.4: in order to accommodate direct 140Mb/s into SDH 3 columns are used for PDH+Justification



7. If we fill with 3 of 34Mb/s, these first 3 columns are spare
8. Accommodation of bit rates for SDH



* If,
1No 34 Mb/s then maximum of 42 No of 2 Mb/s
or
2Nos 34 Mb/s then maximum of 21 No of 2 Mb/s