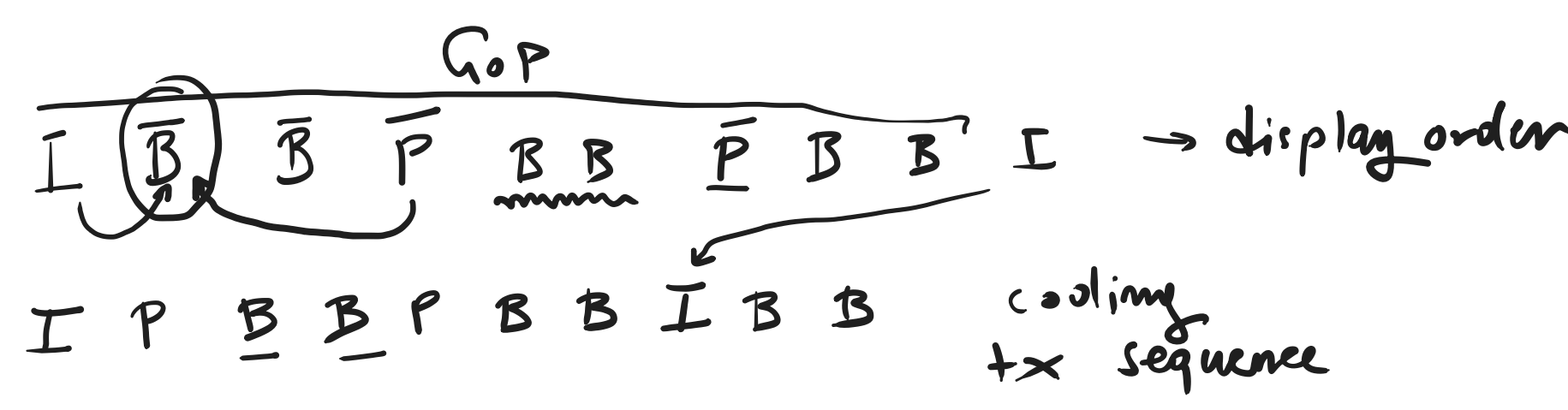


GOP I B B B B B P B B B B B  
P B B B B B I



MPEG-2 stream  
 κωδίκης CBR 4 Mbps  
 κωδικοποίηση 20 MHz  
 I frame → 5000 bytes  
 P frame → 25000 bytes  
 B frame → 10000 bytes

GOP = I B B P B B I 25 fps

πλάτος	ύψος	λίστα	Εμφάνιση	κωδικοποίηση	κωδικοποίηση	Αποκωδικοποίηση	Αποκωδικοποίηση
I	1	00 ms	0	100 ms	100 ms	120 ms	120 ms
→ B	2	40 ms	170 ms	20 ms	190 ms	210 ms	170 ms
→ B	3	80 ms	190 ms	20 ms	210 ms	230 ms	170 ms
P	4	120 ms	120 ms	50 ms	170 ms	190 ms	70 ms
→ B	5	160 ms	340 ms	20 ms	360 ms	380 ms	220 ms
→ B	6	200 ms	360 ms	20 ms	380 ms	400 ms	220 ms
→ I	7	240 ms	240 ms	100 ms	340 ms	360 ms	120 ms

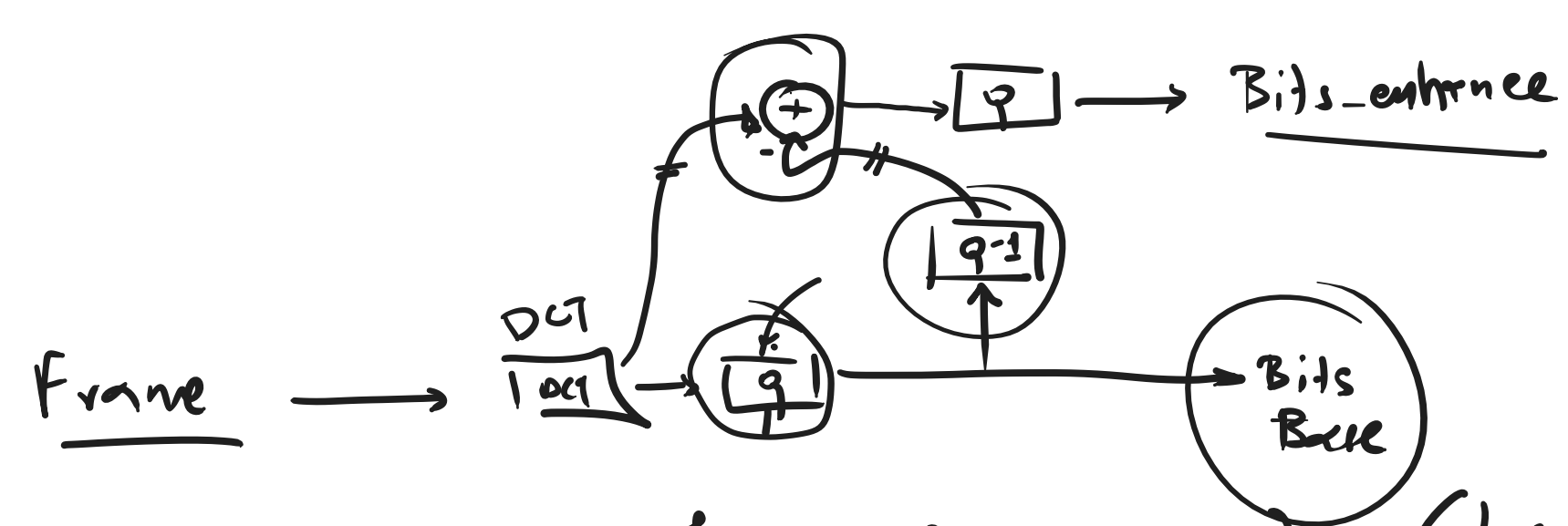
Διάφορα profiles → εύρος δυναμικού  
 MPEG-2 main Profile → 1920x1152, 1440x1152, 720x576  
 film production 60fps  
 30fps  
 MPEG-1 → moy interlaced (progressive)

4:2:2  
 Interlaced video  
 predictions — frame prediction for frame pictures  
 field prediction for field pictures  
 field prediction for frame pictures

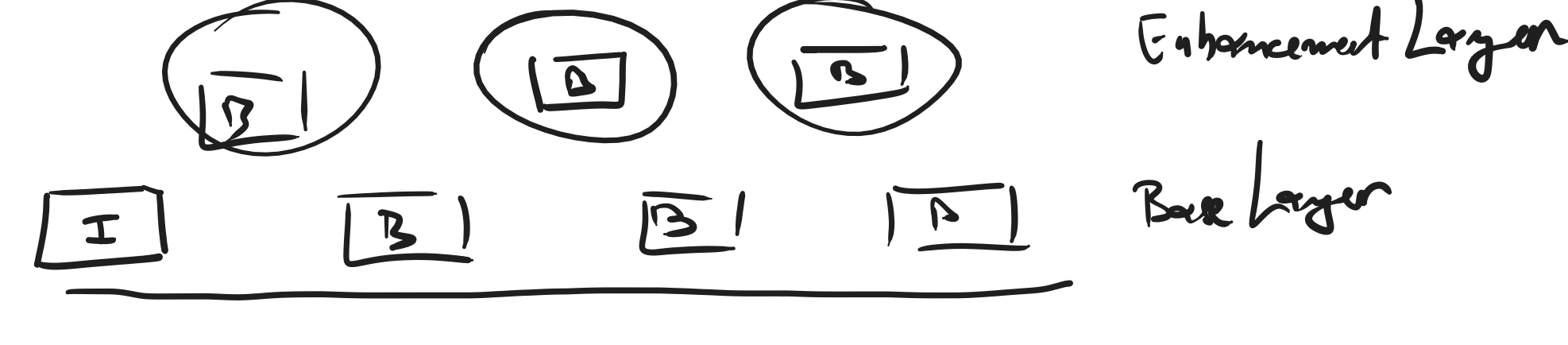
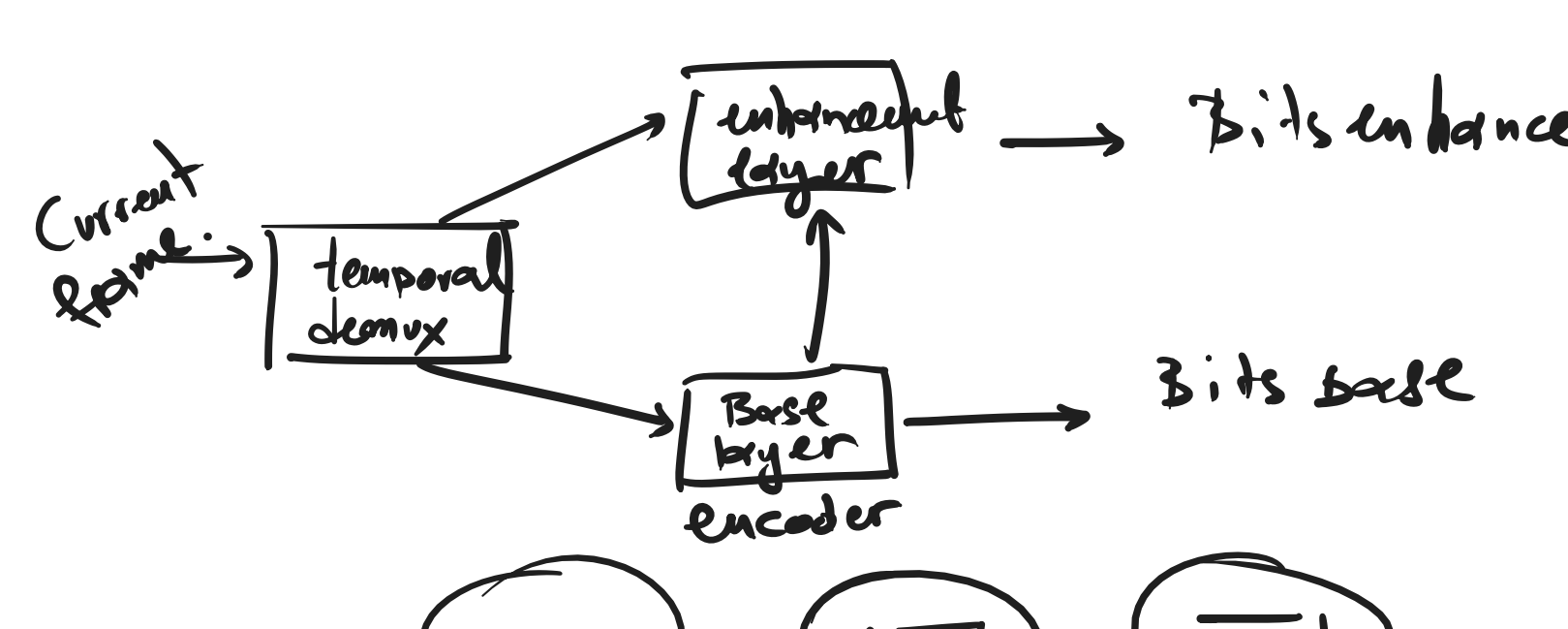
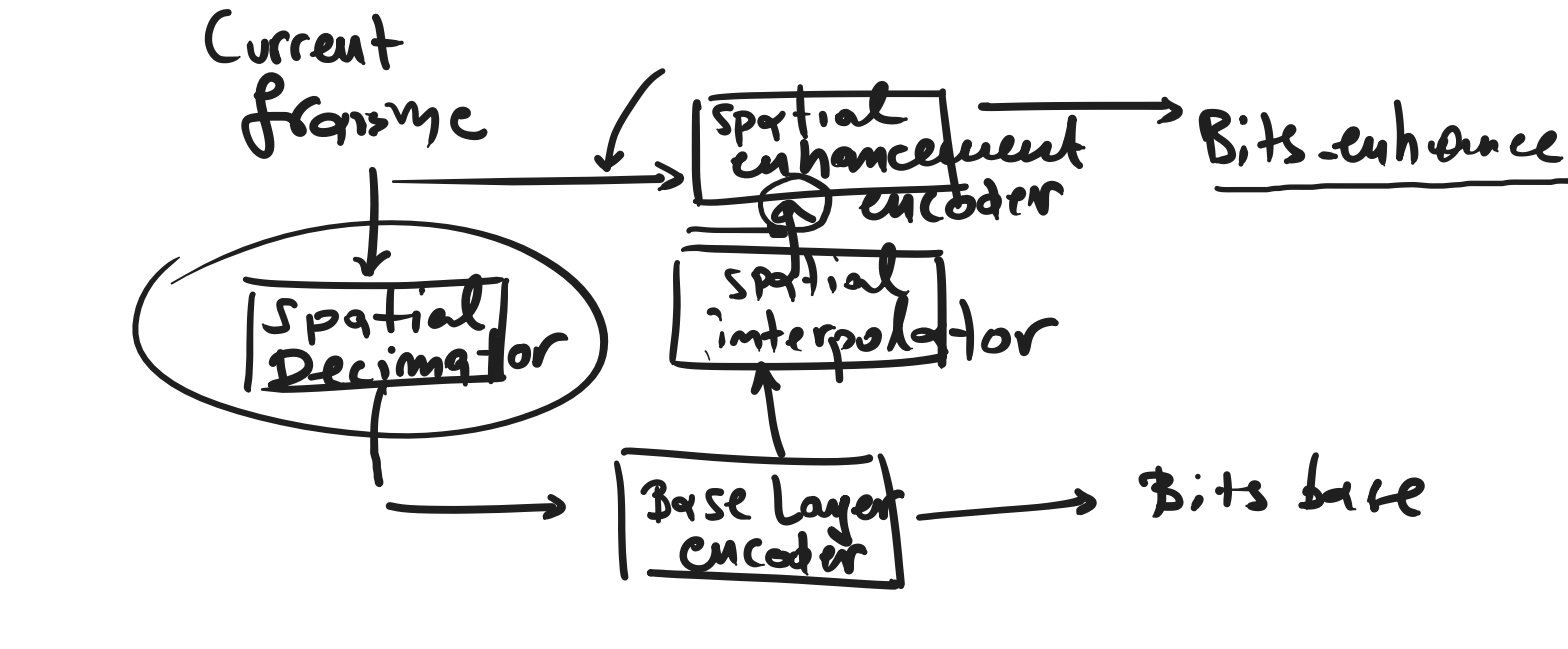
Top field → even fields lines → ZigZag scanning  
 Bottom field → odd lines

scalable coding  
 SNR scalability  
 Spatial —  
 Temporal —  
 Hybrid scalability  
 Data Partitioning

Base layer → Bits-base  
 Bits-enhance



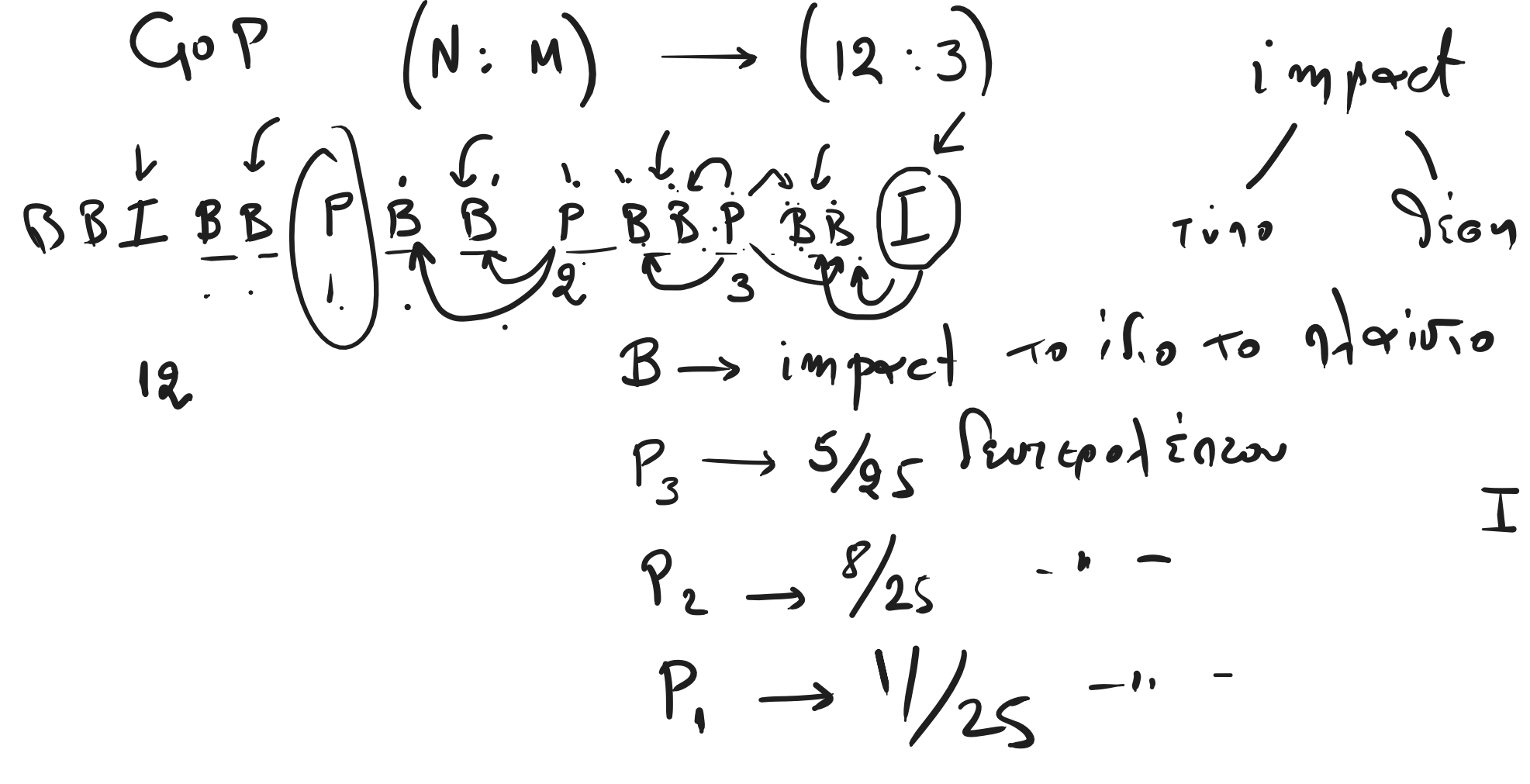
\* 0 encoder ηλείει το πρόσωπο της κωδικοποίησης (de-coder)  
 \* 1 encoder έχει διάκριση ανά κωδικοποίηση και μέγεθος δυναμικού  
 SNR scalability  
 Spatial scalability



video δικτύωση 1.5 Mbps δικτύωση  
 video → 300 kbps

CIF MPEG-1 I B B P B B P B B P B B P  
 352x288 P → 1/20 (B → ?) (W)

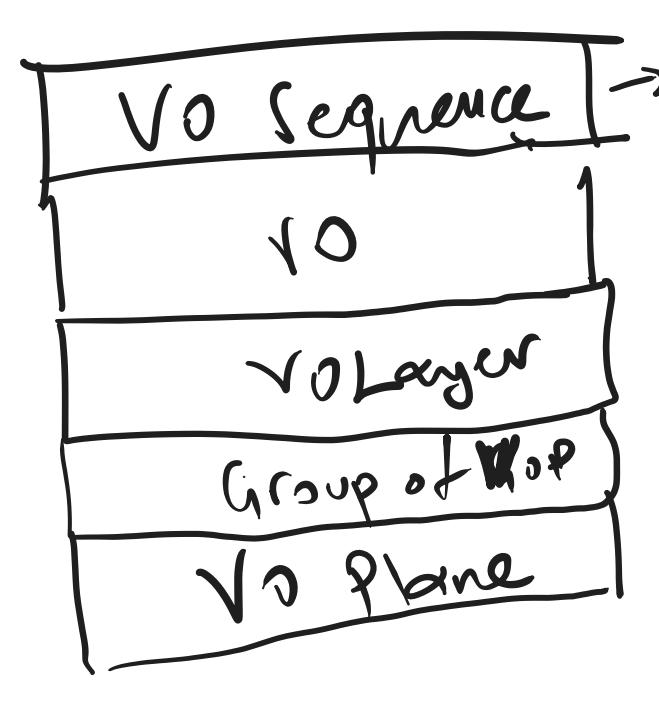
4.2:0 50 kbps  
 $1.2 \text{ Mbps} \rightarrow 30 \text{ fps} \times 352 \times 288 \times 1.5 \text{ bytes/frame} \times W$   
 $W = \left( \frac{1}{10} \cdot \frac{1}{12} + \frac{1}{20} \cdot \frac{3}{12} + \frac{1}{12} \cdot \frac{8}{12} \right)$



B → impact to info to quality 1/25 δευτερόλεπτα  
 P → 5/25 δευτερόλεπτα  
 P → 8/25 —  
 P → 11/25 —

ηχο το GOP structure  
 6 Mbps 11.265 4CIF 704x576 30fps  
 I → 1/10 P → 1/20 B → 1/40  
 (PB) GOP?

MPEG-1 → frame based coding  
 MPEG-4 → object based coding



VO : video object  
 VS → visual scene  
 VO → video objects  
 VO L → scalable coding  
 VO P → group into fo

Natural objects  
 Synthetic →