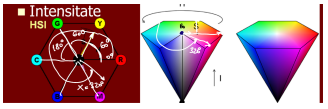
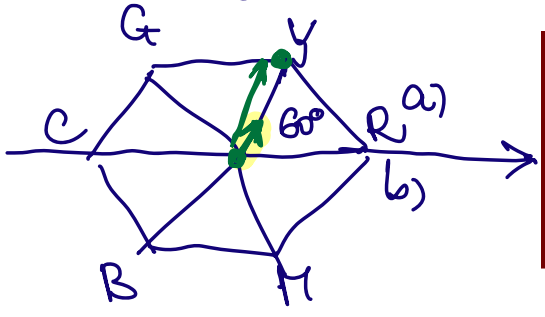
Co2 - Spații de culori pg. 28



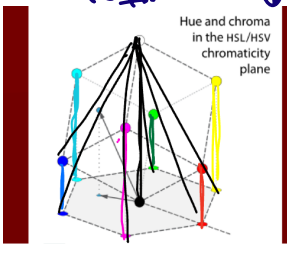
3. HSI hue (nuanță) $\in [0°, 360°)$

saturation: distanță cu alb: vector luminanță → 0 (mult alb)

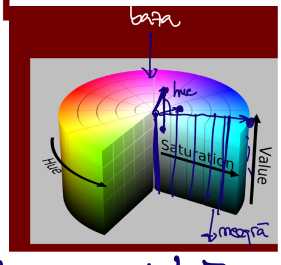
intensity (strălucire, intensitate) $[0,1]$ *255



HSI.

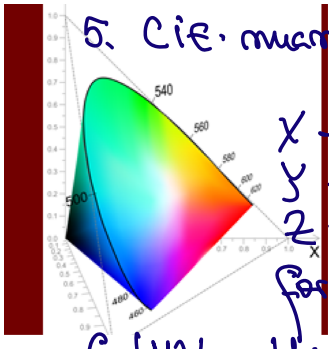


HSV.



4. HSV: cilindru Value (=) ?? Intensity HSI

5. CIE: nuanțe λ_{oranj} - λ_{oranj}
violet → roșu



X → ~ depinde de răspunsul celor 3 tipuri de conuri L, M, S

Y → ~ L și M conuri large și medium

Z → ~ răspunsul conurilor S (short)

forma de "cort mongon"

6. LUV: U:

V:

7. YUV: ~~jpg / jpeg / jdoo~~

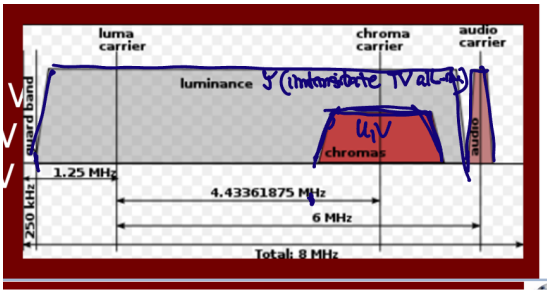
Y: luminanță / intensitate

U = B − Y (albastru)

V = R − Y (roșu)

YUV: video PAL standard

$$YUV = \begin{bmatrix} 0.299 & - & - \\ - & - & - \\ - & 0.362 & - \end{bmatrix} \begin{bmatrix} R \\ G \\ B \end{bmatrix}$$



→ LUV

L - luminanță

YCbCr - jpeg / jpeg / mpeg

U

$C_B = (B-Y)/2 + 0.5 \in [0,1]$

$C_R = (R-Y)/2 + 0.5 \in [0,1]$

V

RGB → GRAYSCALE

$$Gray = \left(\max(R,G,B) + \min(R,G,B)\right)/2$$

200 · 10 = 105. ∈ [0,255]

R = 100
G = 200
B = 10
} 1 pixel

$$Gray = (R+G+B)/3 = 200+100+10 = 310/3 = 100.333$$

$$Gray = 0.21R + 0.72G + 0.07B$$

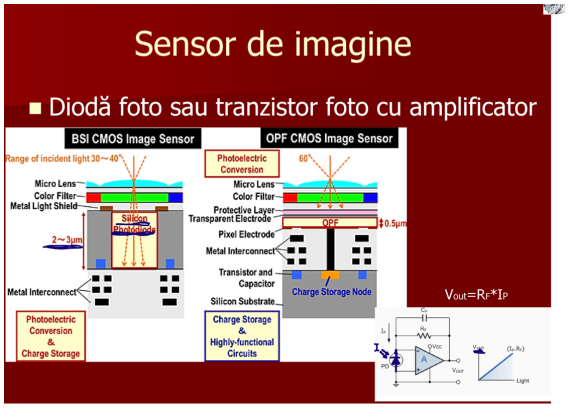
$$= 0.21\frac{100}{255} + 0.72\frac{200}{255} + 0.07\frac{10}{255} = \frac{1}{255}(21 + 144 + 0.7) = 36$$

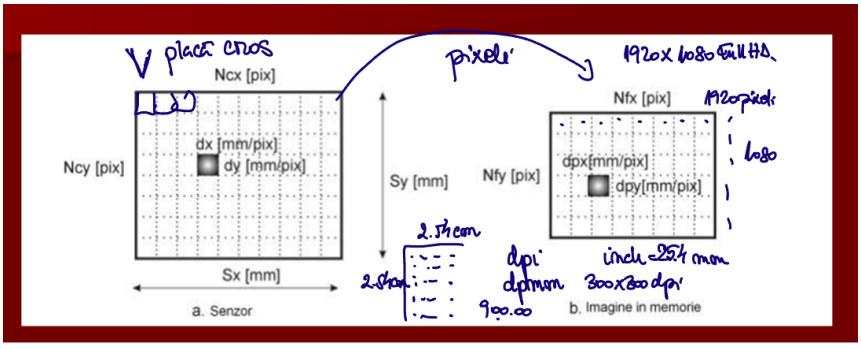
0.21 0.72 0.07

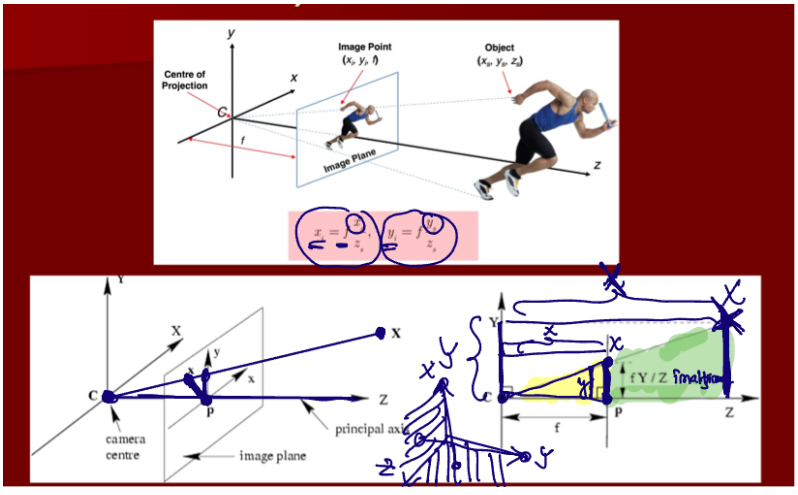
$$\approx 0.2989R + 0.587G + 0.114B$$

C03 – Senzori de imagine. Operații cu imagini

Bayerov Pattern
CMOS : placa






Centre of Projection
Image Point
Object
Image Plane
camera centre
image plane
principal axis
f
fY / Z