Sistem Komunikasi 1

Bab 1

PENDAHULUAN

KOMPONEN PENILAIAN:

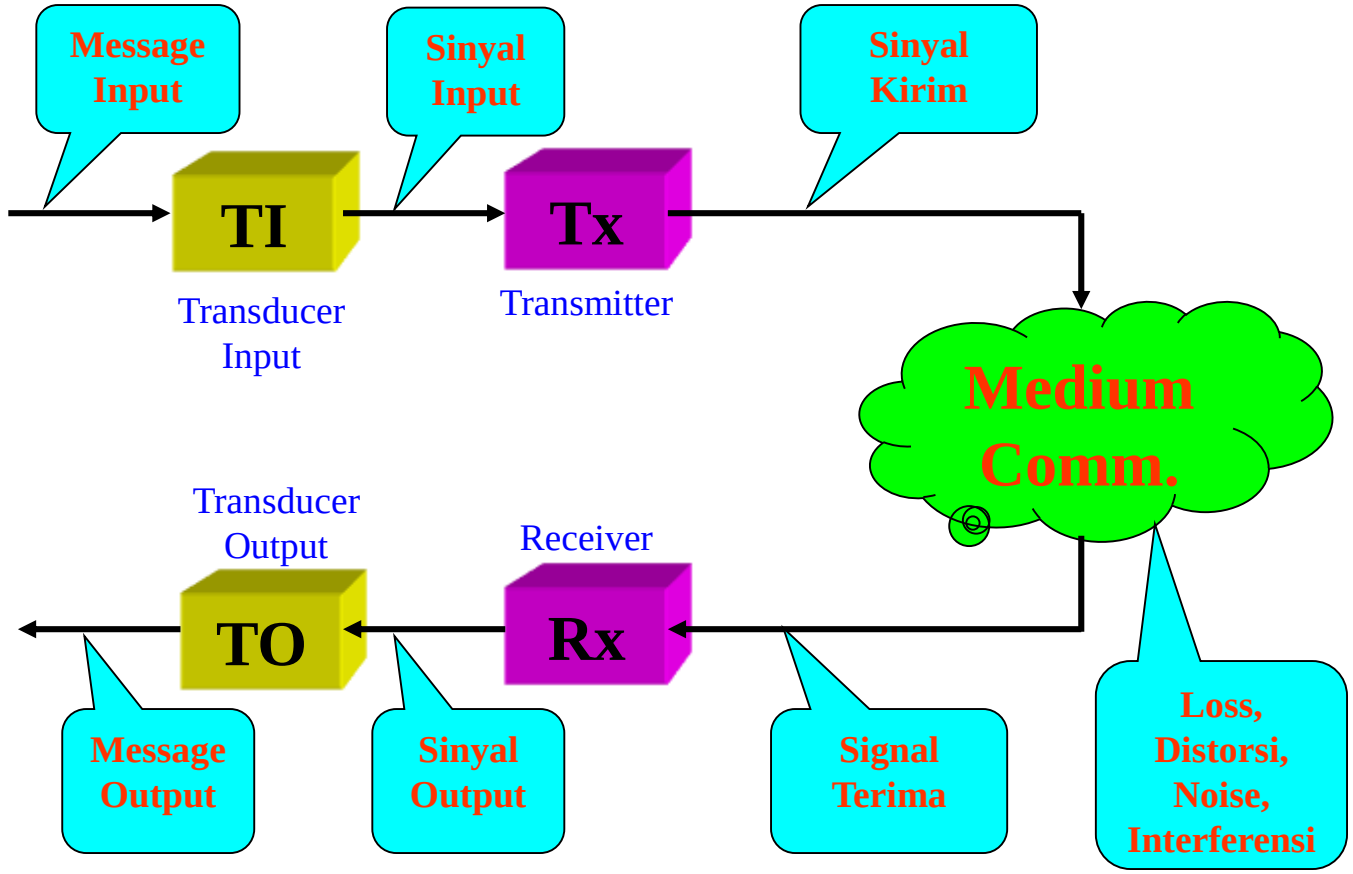
- UTS: 35%
- UAS: 35%
- Tugas / Quis/ PR : 30%

NA=0.35*UTS+0.35*UAS + 0.3*Tugas/PR/Quis

KOMPONEN PENILAIAN:

- Nilai Skor Matakuliah (NSM)→ Nilai Mata Kuliah (NMK)
- 80 < NSM NMK= A
- 70 < NSM ≤ 80 NMK= AB
- 65 < NSM ≤ 70 NMK= B
- 60 < NSM ≤ 65 NMK= BC
- 50 < NSM ≤ 60 NMK= C
- 40 < NSM ≤ 50 NMK= D
- NSM ≤ 40 NMK= E

BLOK SISTEM KOMUNIKASI

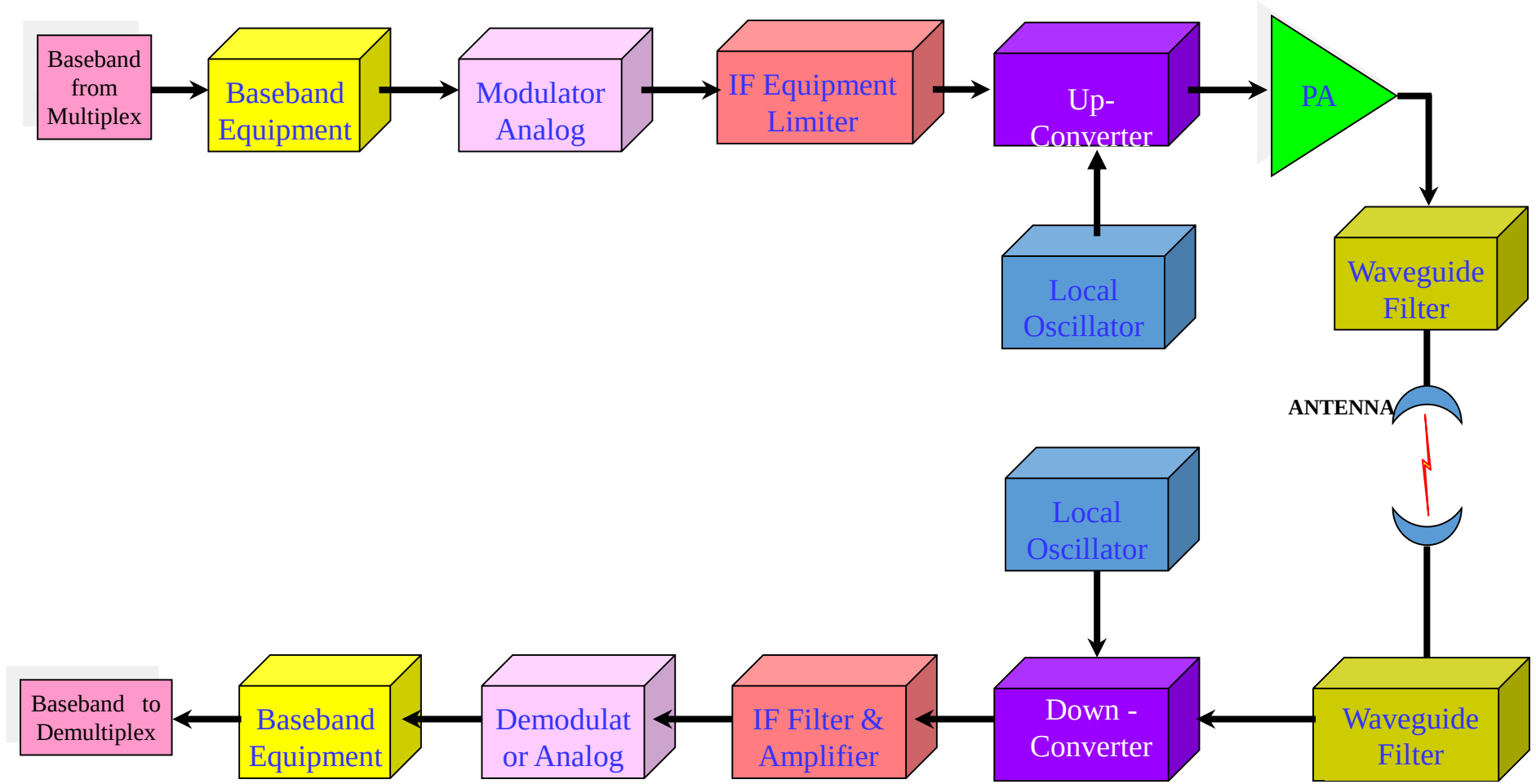


Message : **informasi seperti suara, data, gambar, video, kode**

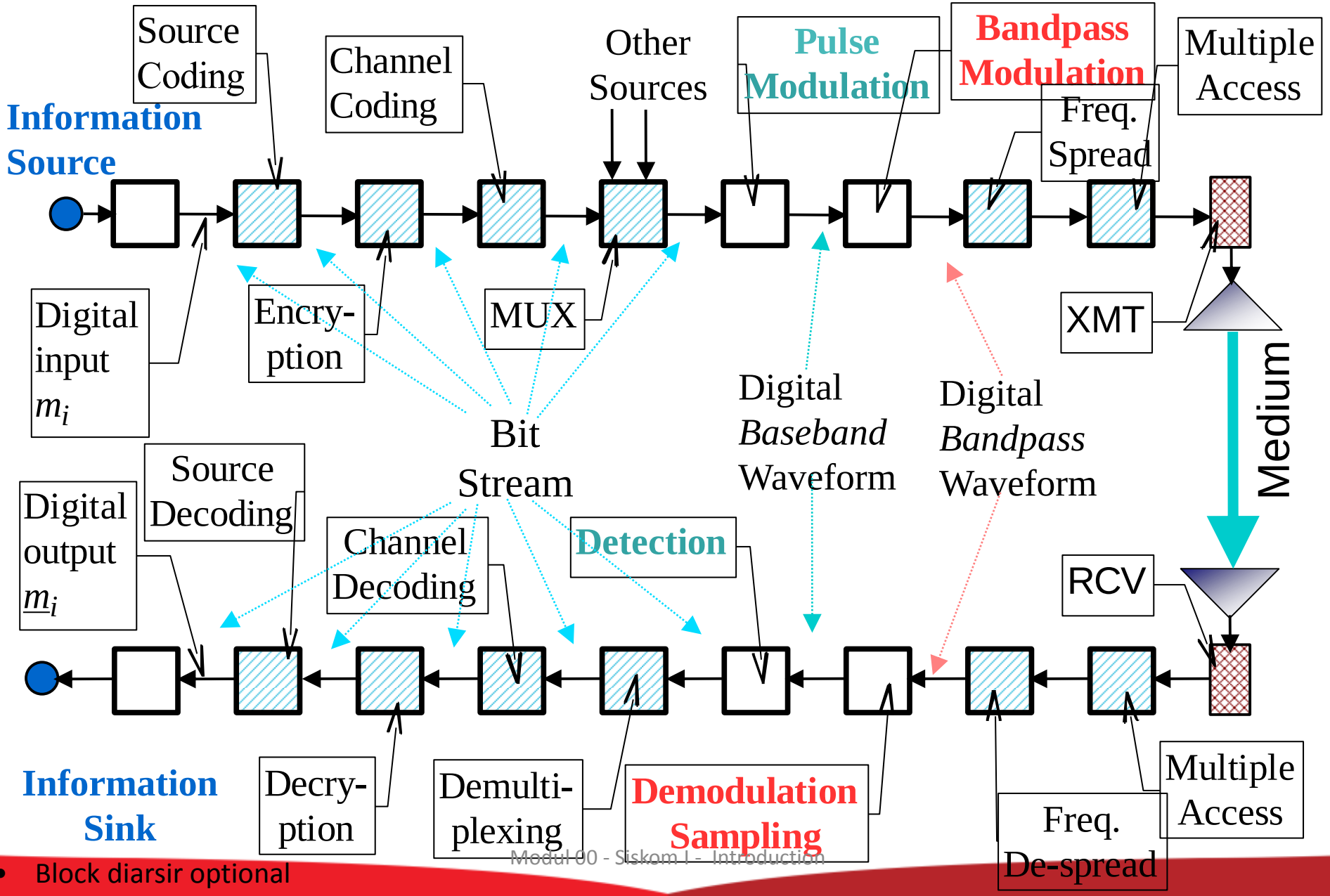
Signal : **bentuk listrik dari informasi**

Transducer : **mengubah informasi menjadi sinyal listrik dan sebaliknya**

BLOK SISTEM KOMUNIKASI RADIO ANALOG



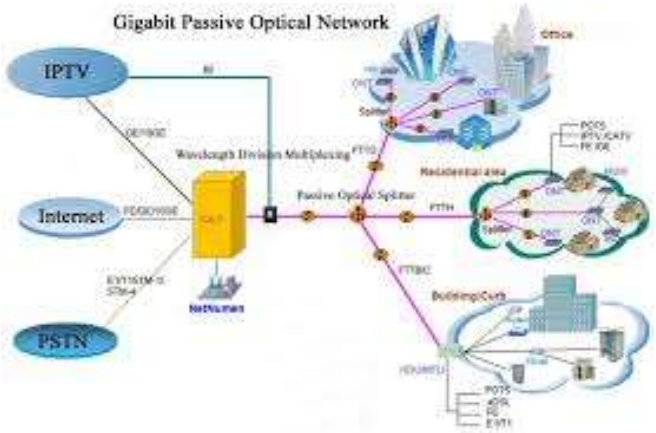
BLOK SISTEM KOMUNIKASI DIGITAL



- Block diarsir optional

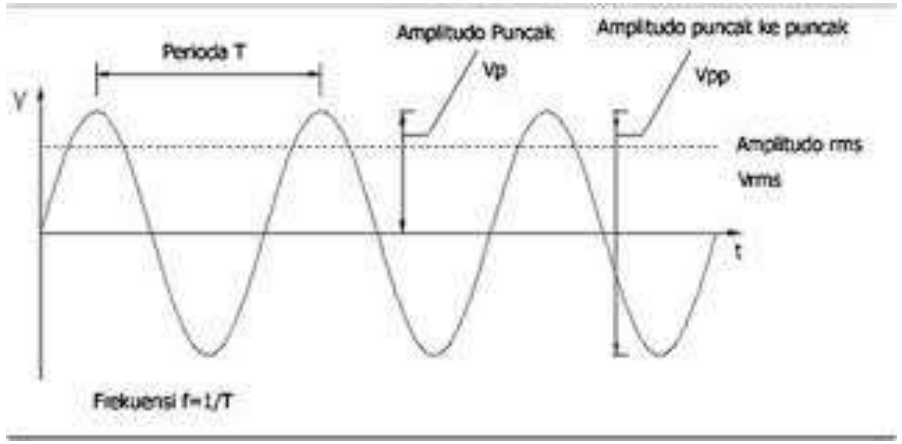
Perkembangan Teknologi Komunikasi

- Sistem Komunikasi Seluler: 1G, 2G, 3G, 4G, 5G
- Sistem Komunikasi Optik
- Sistem Komunikasi Satelit
- Sistem Komunikasi Radio
- Dll



Sinyal

- $S(t) = A \cos(2\pi f t + \phi)$



- S(t) bisa merepresentasikan:
- Tegangan satuannya **volt**
- Arus satuannya **ampere**

- Frekuensi :

$$f = \frac{1}{T}$$

Parameter Penting

- Energi sinyal

$$E_s = \int_{-\infty}^{\infty} |s(t)|^2 \, dt$$

- Daya sinyal

$$P_s = \frac{E_s}{T} = \frac{1}{T} \int_{-\infty}^{\infty} |s(t)|^2 \, dt$$

Bandwidth of signal – cont'd

- Different definition of bandwidth:

a) Half-power bandwidth
b) Noise equivalent bandwidth
c) Null-to-null bandwidth
d) Fractional power containment bandwidth
e) Bounded power spectral density
f) Absolute bandwidth