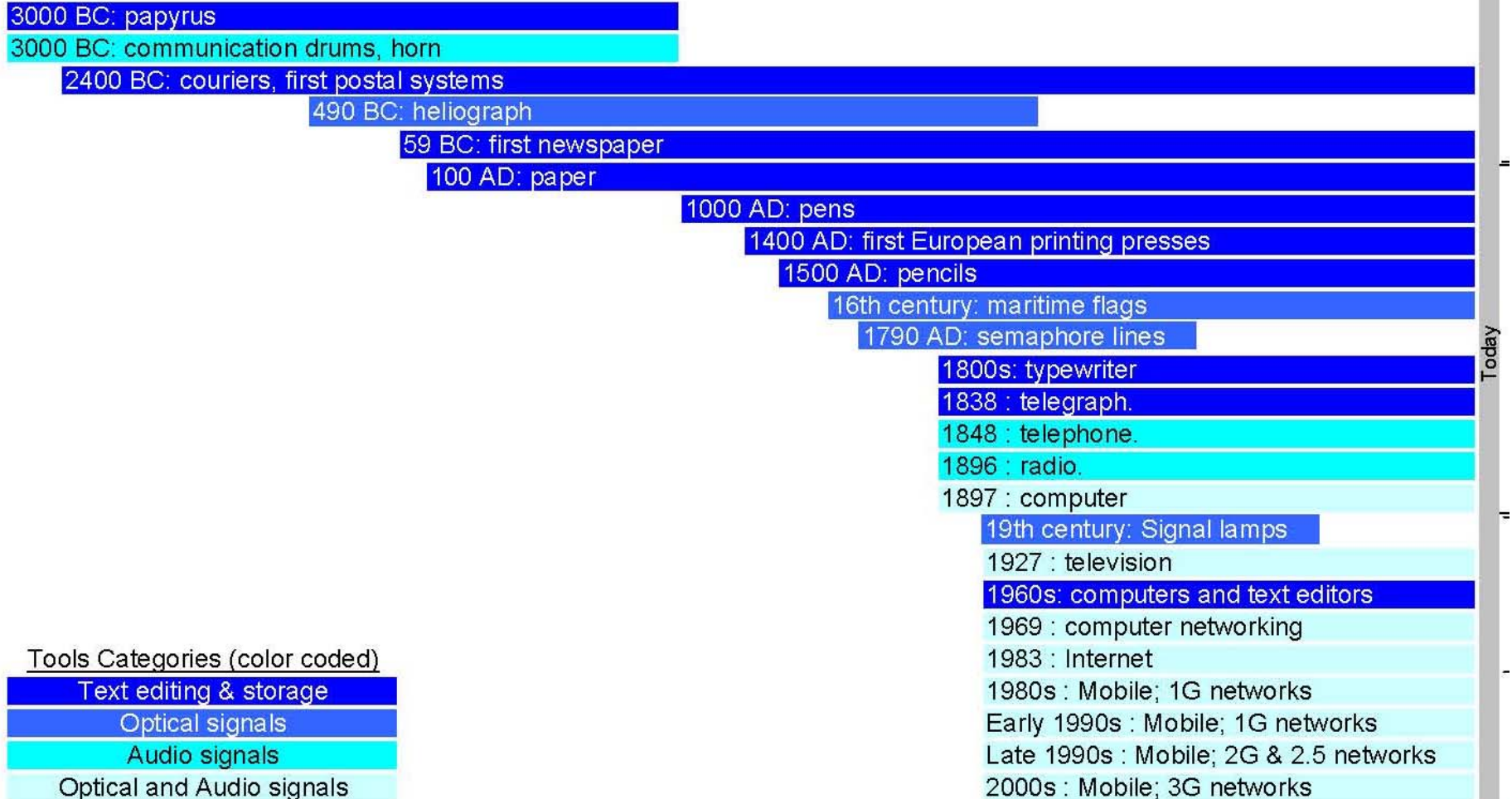


FUTURE CENTRE



Un mondo che Comunica

Evoluzione strumenti per comunicare



By: Mhd Alaa Al Khourdajie

Sources: 1 - Wikipedia - Histry of Telecommunication

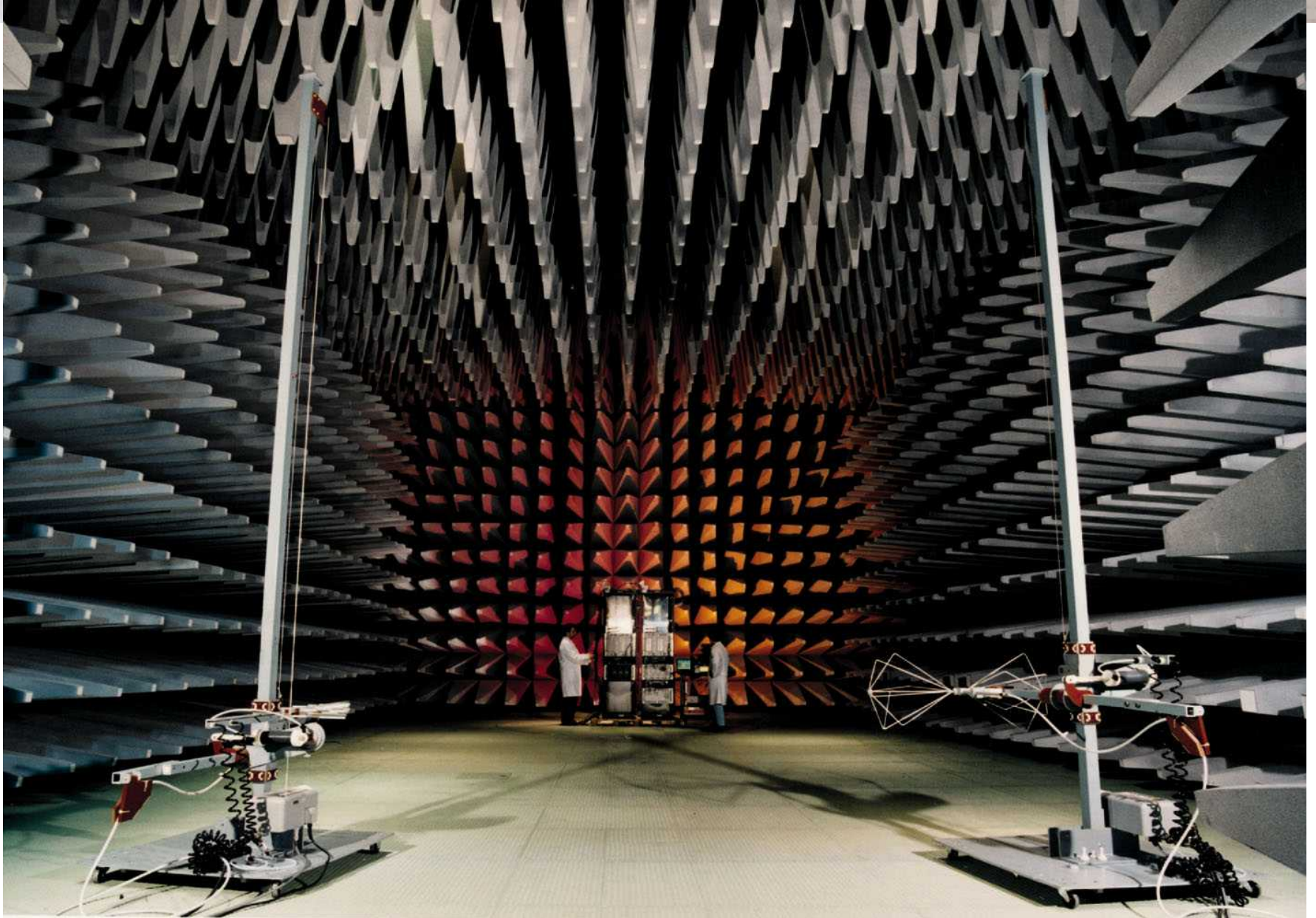
Elementi di teoria della Comunicazione

SEGNALE

DISTURBO



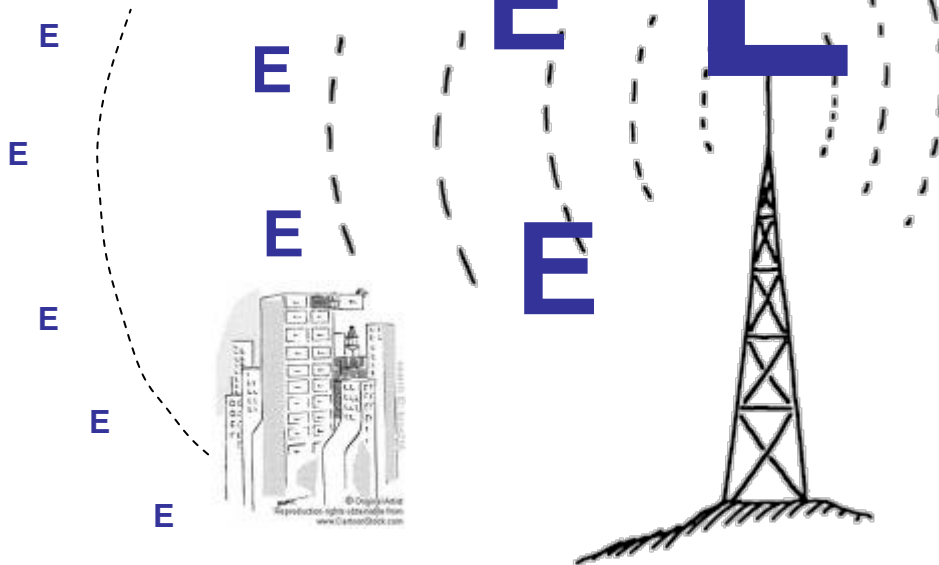
Camera Anecoica



Elementi di teoria della Comunicazione

PROPAGAZIONE

ENERGIA

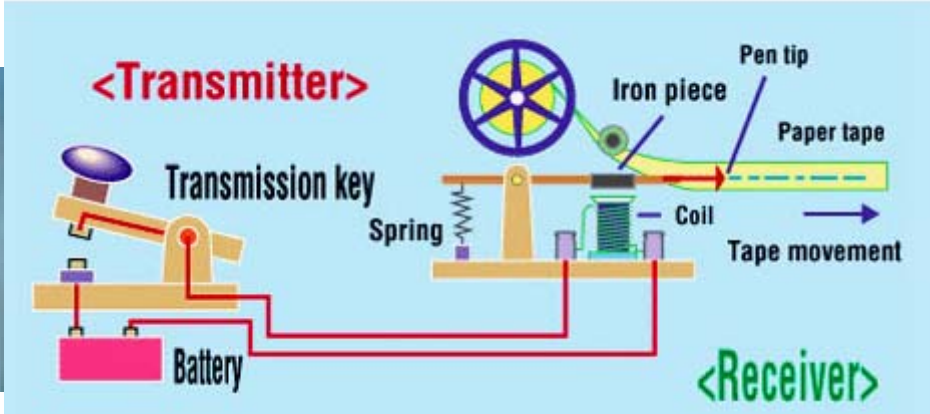
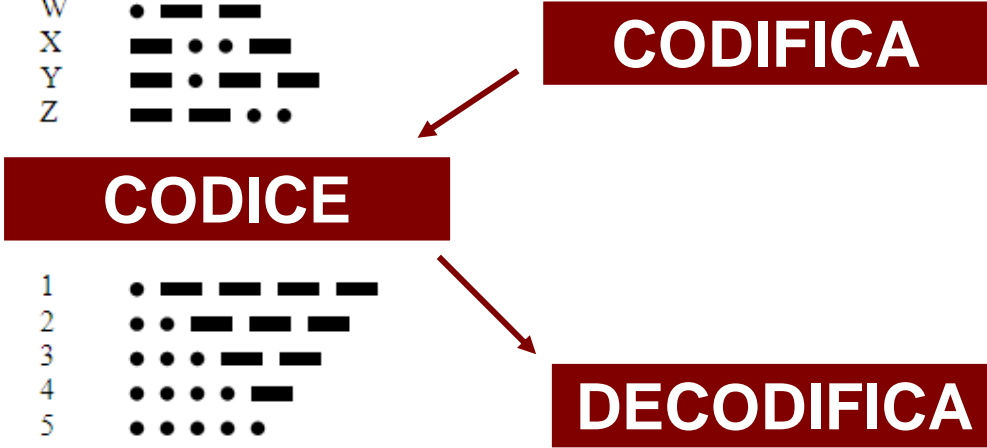


ASSORBIMENTO

MEZZO

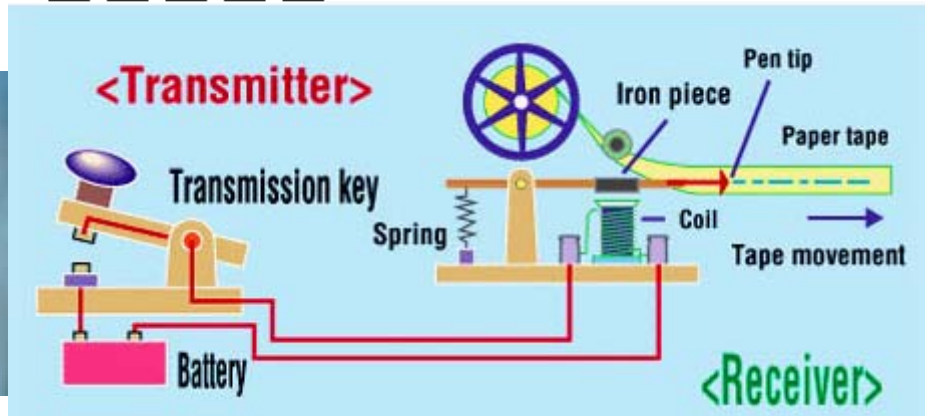
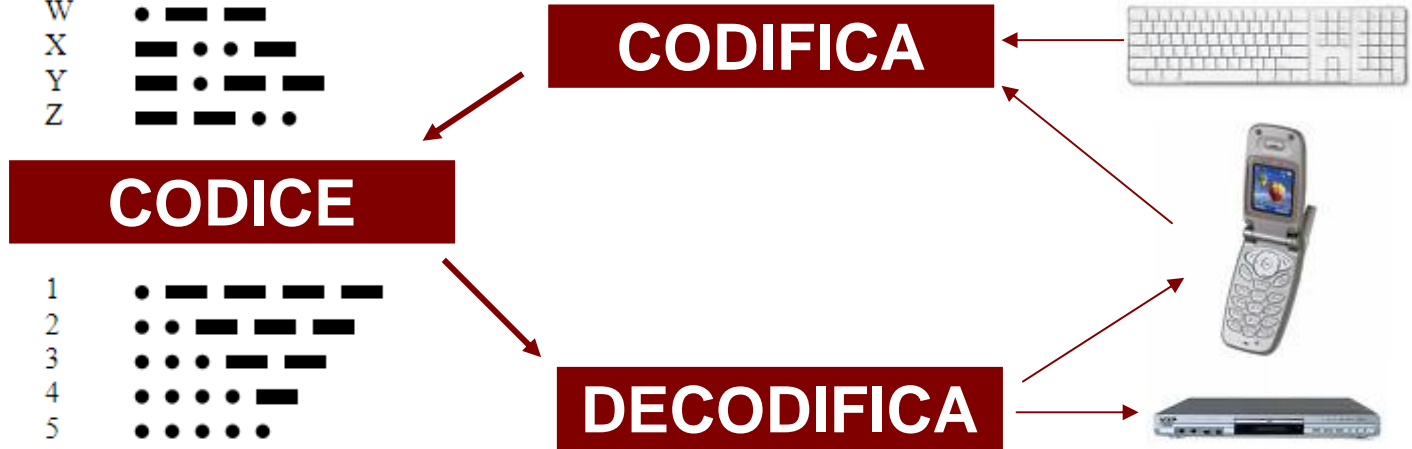
La codifica del Segnale

A	● —	U	● ● —
B	— ● ● ●	V	● ● ● —
C	— — ● ● ●	W	— ● ● —
D	— ● ● ●	X	— ● ● —
E	●	Y	— ● ● —
F	● ● — ●	Z	— — ● ●
G	— — ● ●		
H	● ● ● ●		
I	● ●		
J	● — — —		
K	— ● ● —		
L	● — ● ●	1	● — — —
M	— — —	2	● ● — —
N	— ●	3	● ● — —
O	— — — —	4	● ● ● ●
P	● — — ●	5	● ● ● ●
Q	— — ● —	6	— ● ● ●
R	● — ● ●	7	— ● ● ●
S	● ● ●	8	— — ● ●
T	—	9	— — — ●
		0	— — — —

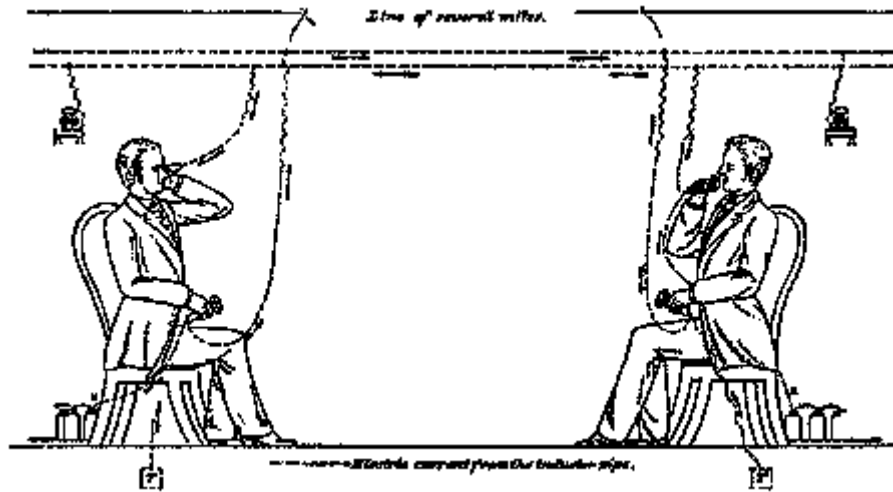


La codifica del Segnale

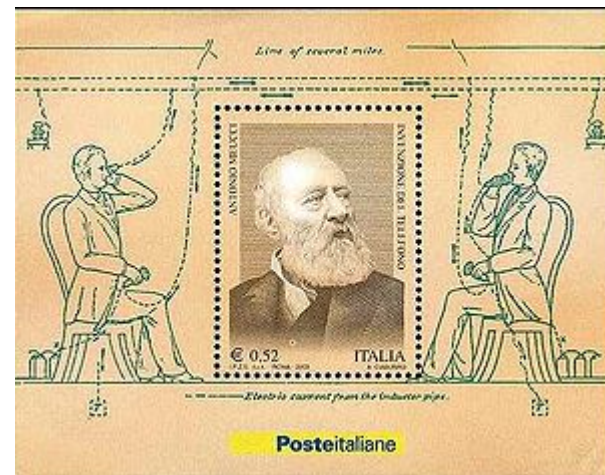
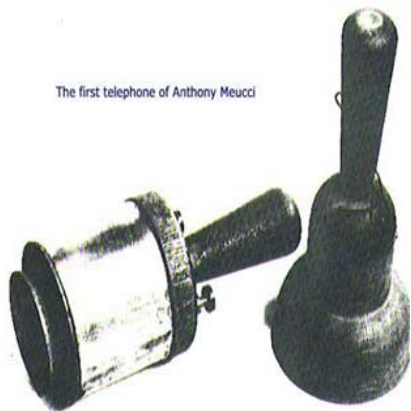
A	● —	U	● ● —
B	— ● ● ●	V	● ● ● ●
C	— ● ● ● ●	W	— ● ● ● ●
D	— ● ● ● ● ●	X	— ● ● ● ● ●
E	— ● ● ● ● ● ●	Y	— ● ● ● ● ● ●
F	● ● ● ● ● ● ●	Z	— ● ● ● ● ● ●
G	— ● ● ● ● ● ● ●		
H	— ● ● ● ● ● ● ● ●		
I	— ● ● ● ● ● ● ● ● ●		
J	— ● ● ● ● ● ● ● ● ● ●		
K	— ● ● ● ● ● ● ● ● ● ● ●		
L	— ● ● ● ● ● ● ● ● ● ● ● ●	1	— ● ● ● ● ● ● ● ● ● ● ● ●
M	— ● ● ● ● ● ● ● ● ● ● ● ● ●	2	— ● ● ● ● ● ● ● ● ● ● ● ● ● ●
N	— ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	3	— ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
O	— ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	4	— ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
P	— ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	5	— ●
Q	— ●	6	— ●
R	— ●	7	— ●
S	— ●	8	— ●
T	— ●	9	— ●
		0	— ●



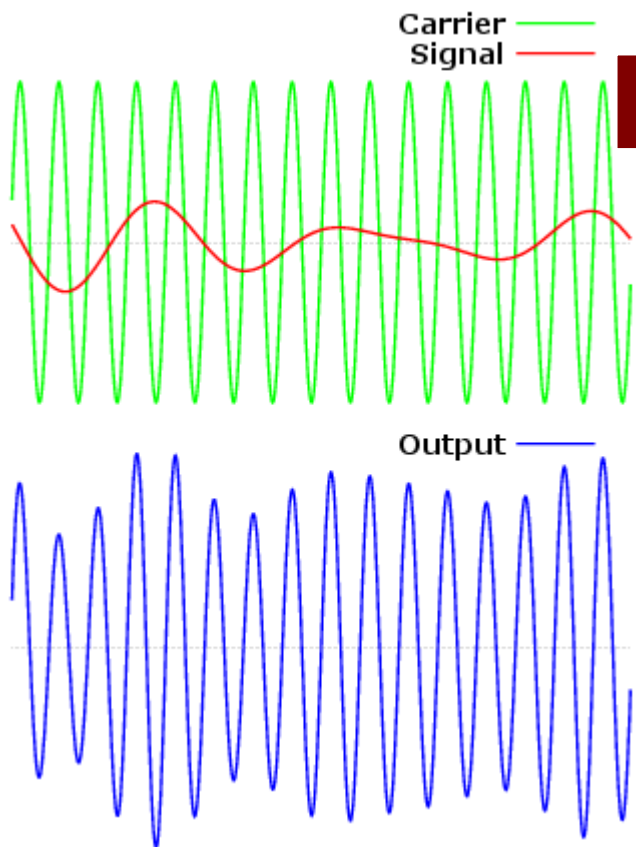
Nasce il telefono



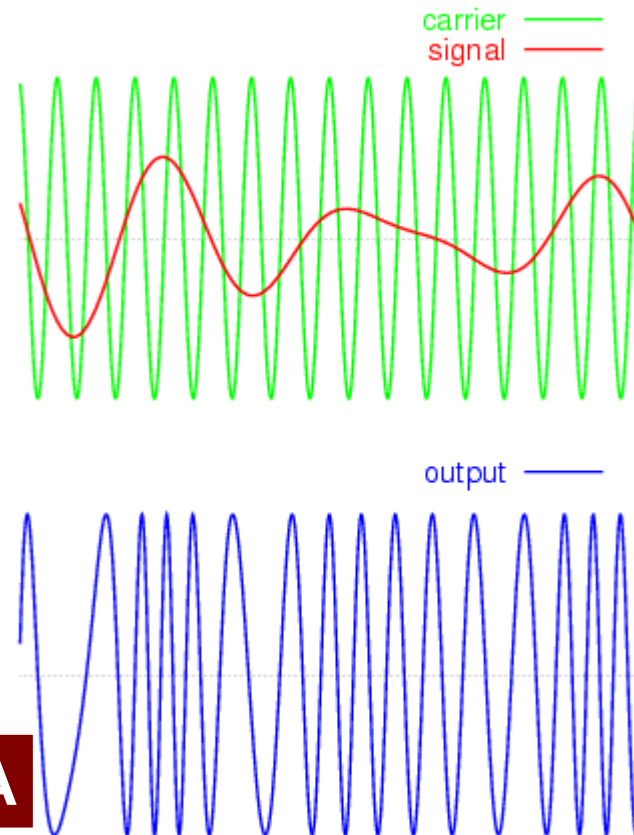
The first telephone of Anthony Meucci



Sistemi di codifica del segnale

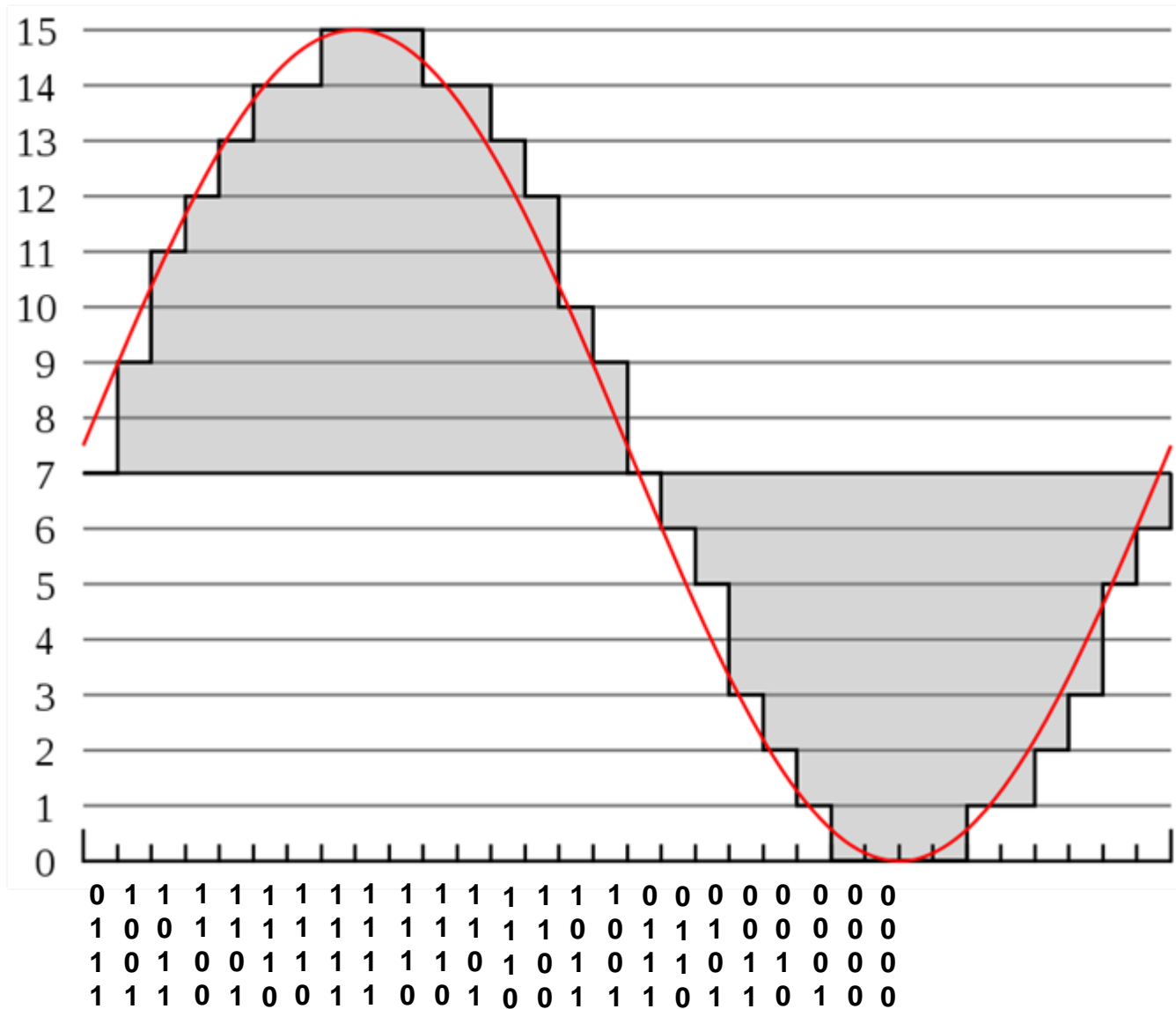


MODULAZIONE DI AMPIEZZA

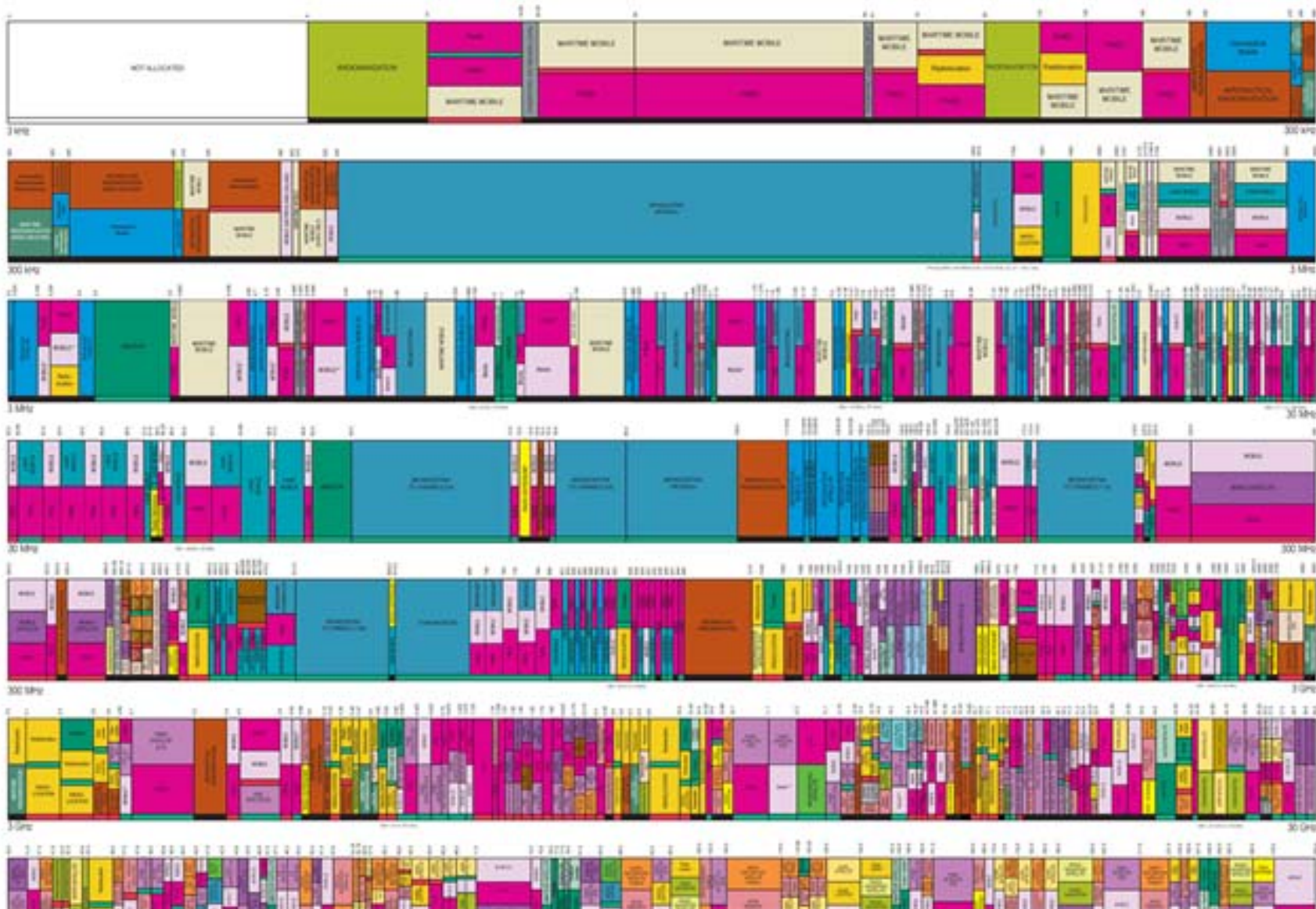


MODULAZIONE DI FREQUENZA

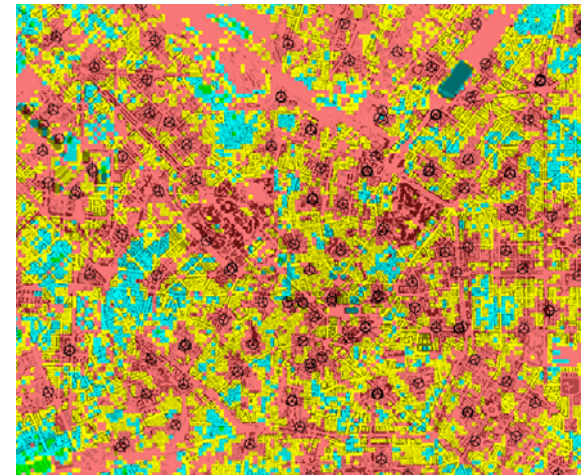
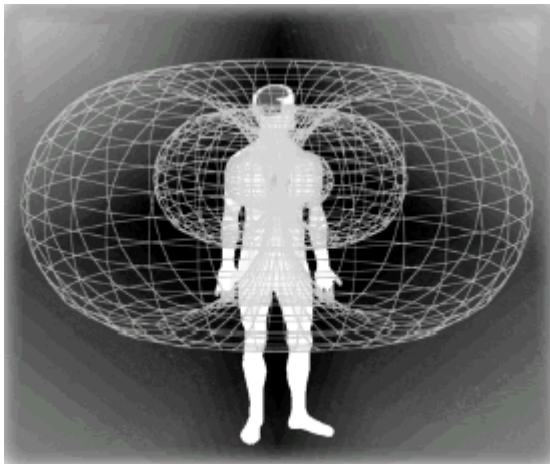
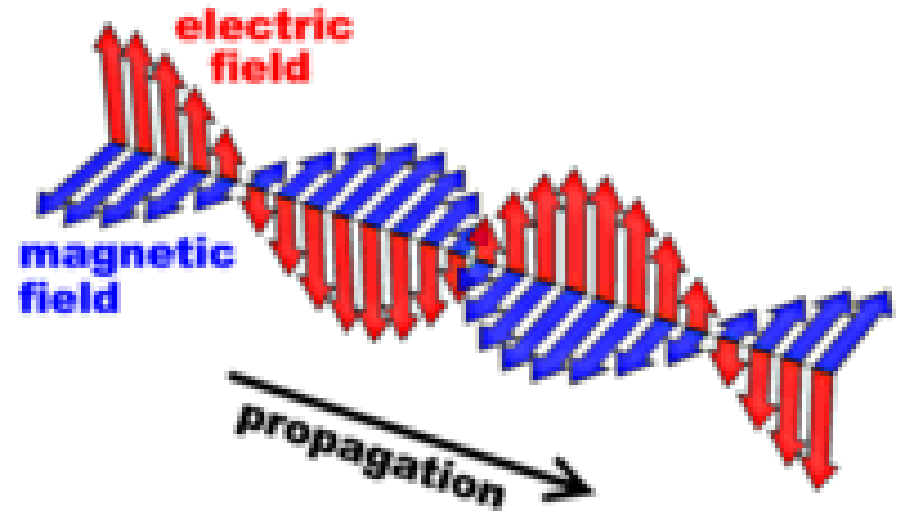
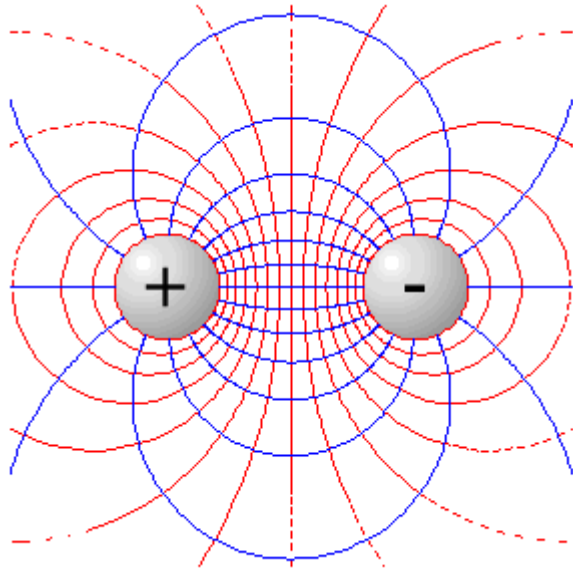
Codifica PCM – Pulse Code Modulation



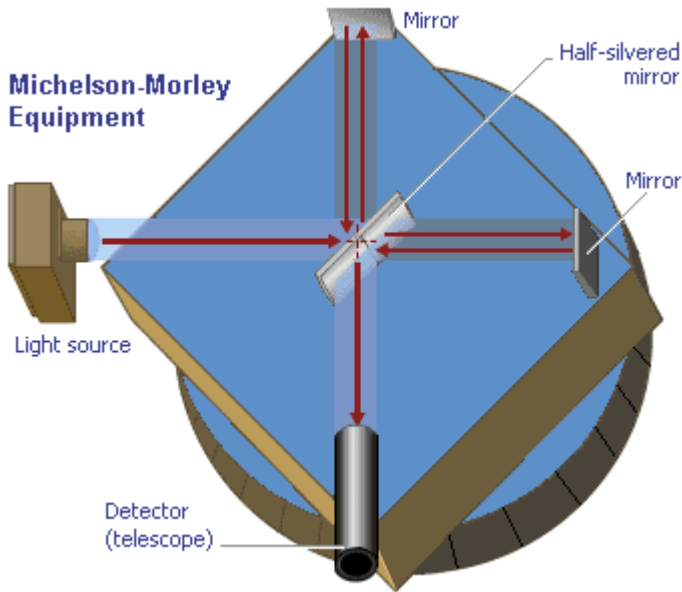
Lo Spettro



Il Campo Elettromagnetico



Quanto è veloce ...la luce?



299792.458 km/s

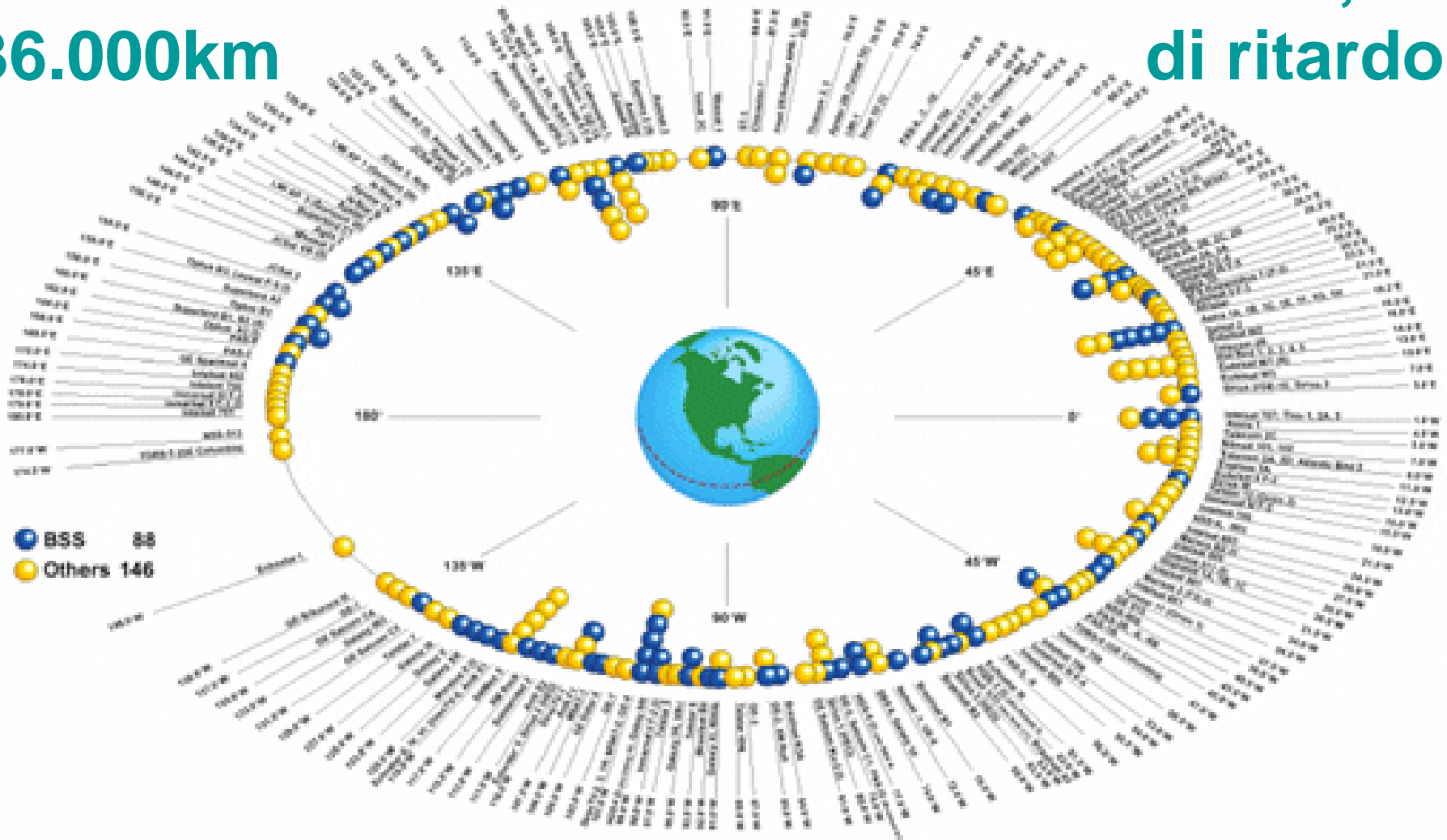
(12.000 orbite lunari in un giorno)

Comunicazione via Satellite

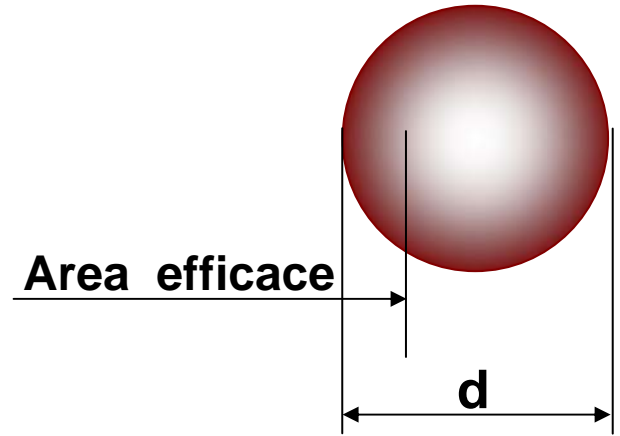
Clark Belt
36.000km

Circa 0,23''
di ritardo

**Commercial Communications Satellites
Geosynchronous Orbit**



Il cavo in Rame



La Larga Banda

Se ... 1 Mbps = 1 metro, allora



Modem 50Kbps = 5 cm



ADSL 2Mbps = 2 m



ADSL 20 Mbps = 20 m

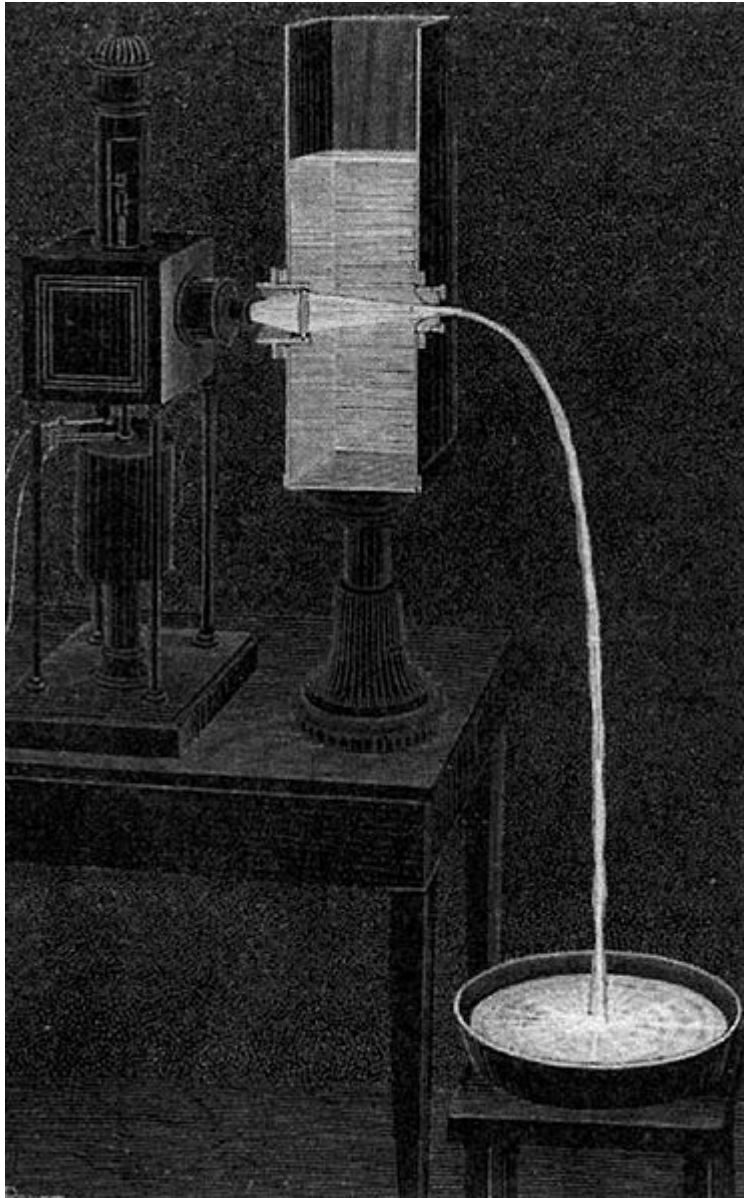


Fibra in casa 1 Gbps = 1 km



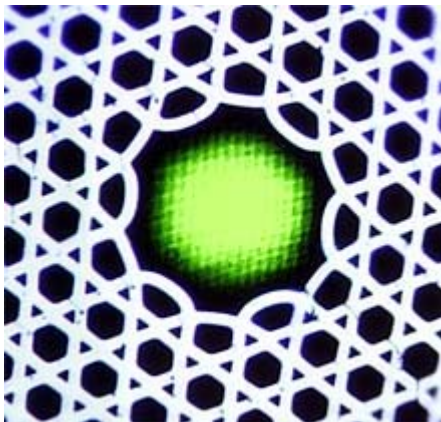
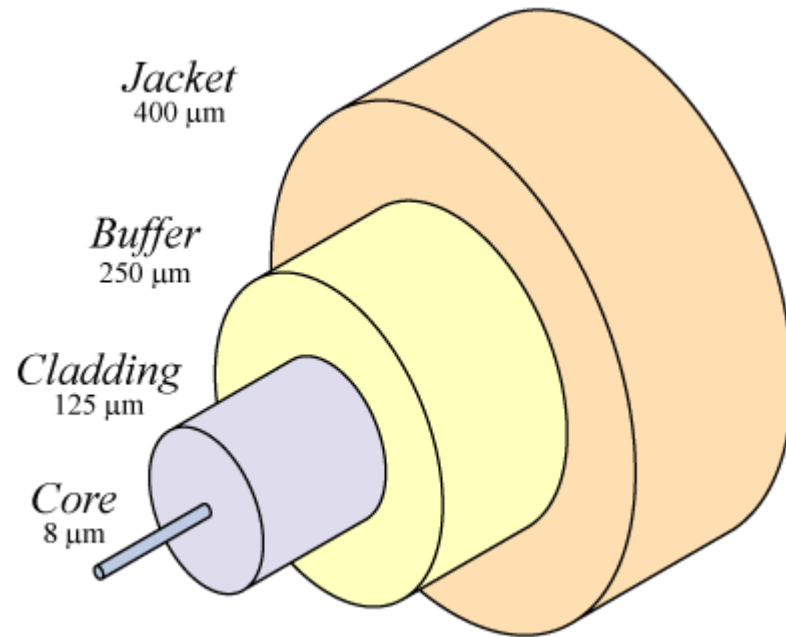
Fibra in Rete 6,4 Tbps = 6.400 km

La Fontana di Luce



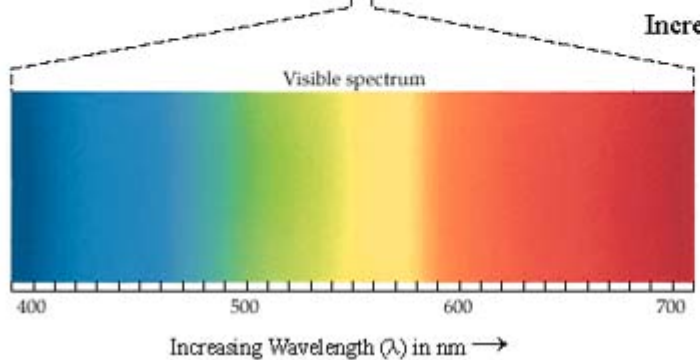
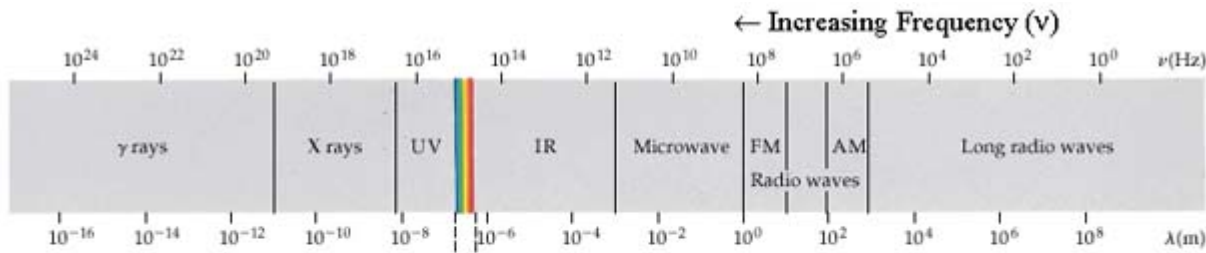
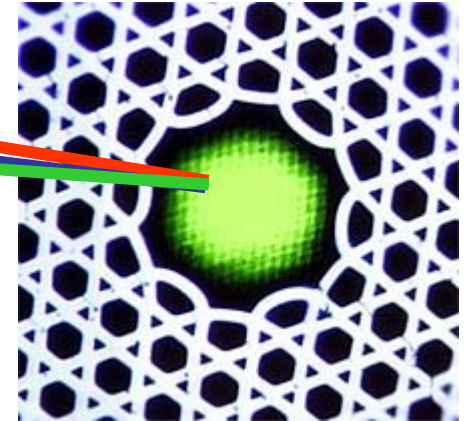
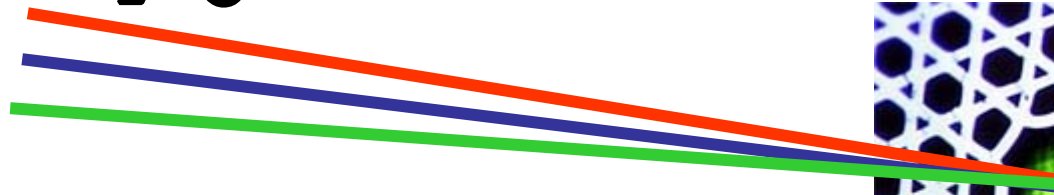
**La fontana
di Colladon**

Struttura della Fibra Ottica

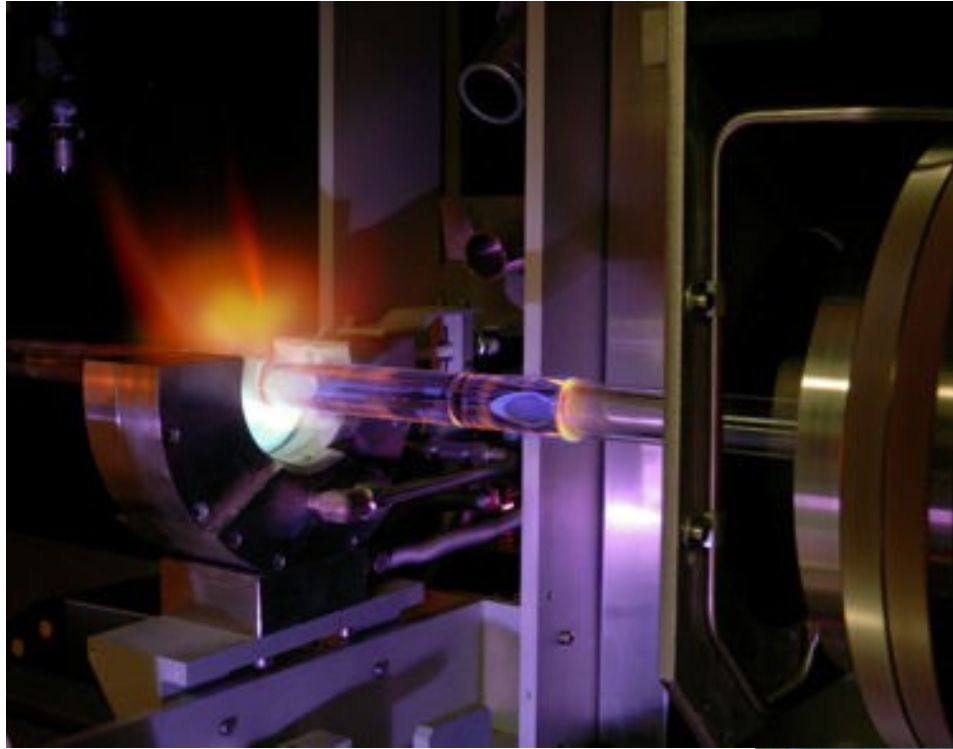


Wavelength Division Multiplexing

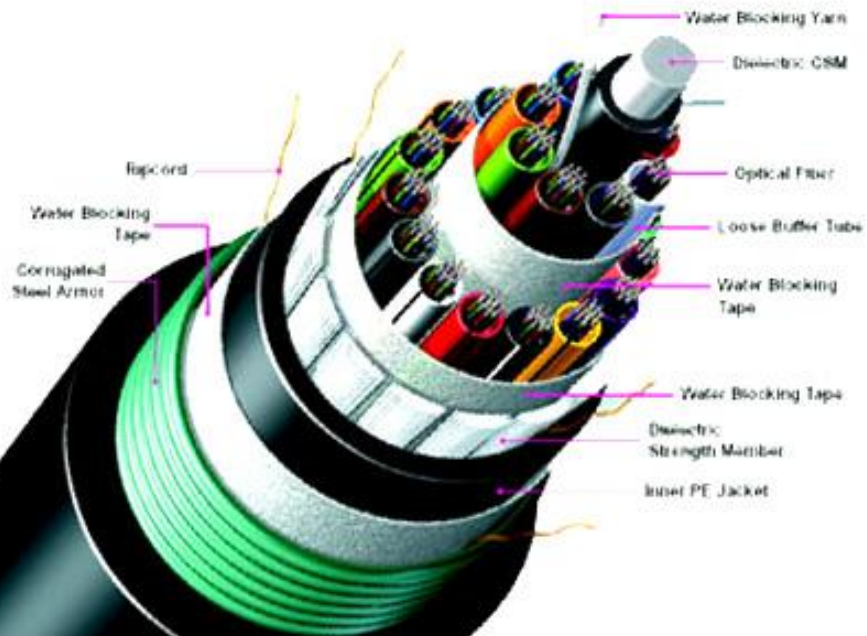
λ



Produzione della Fibra Ottica



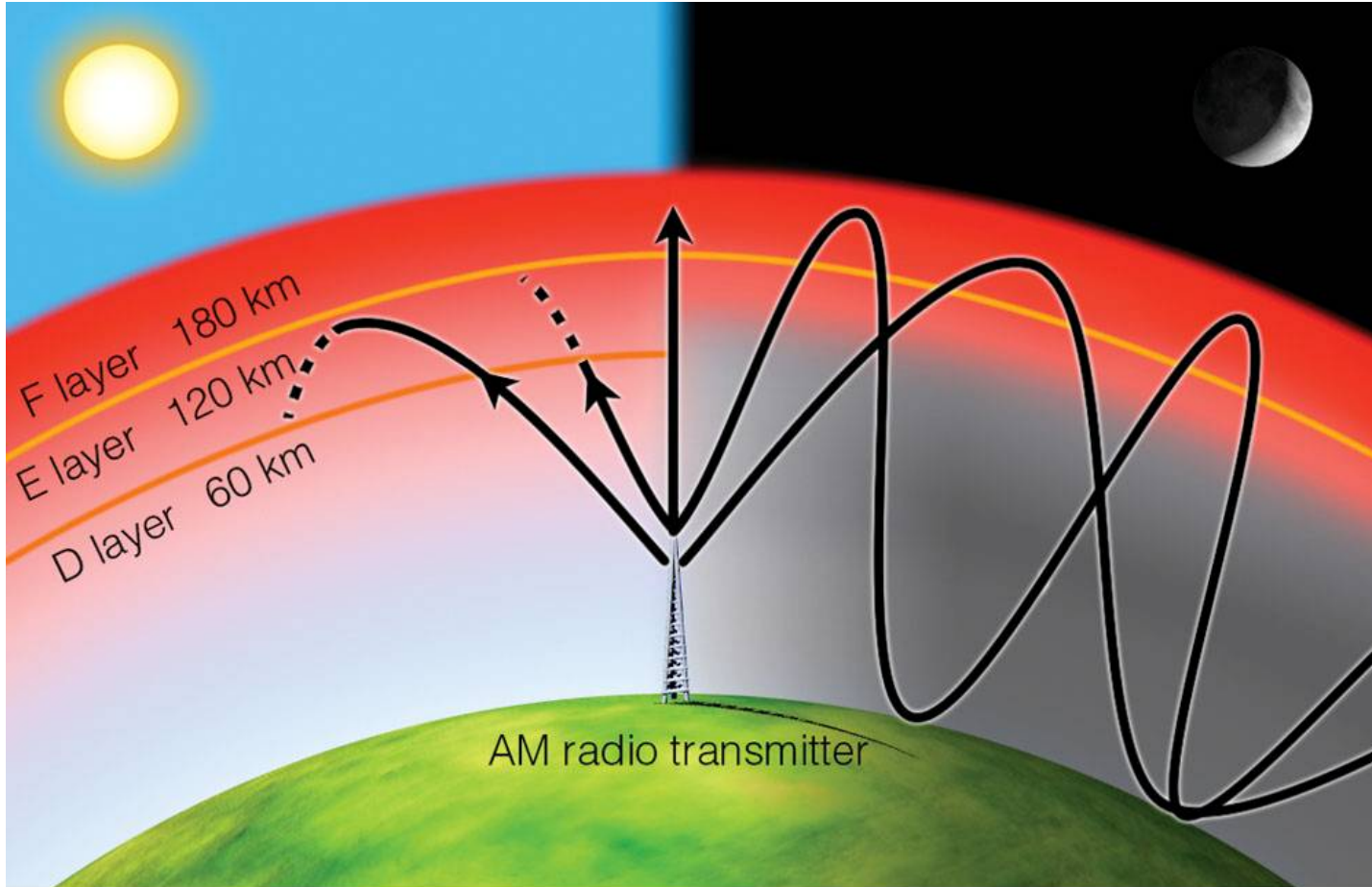
Produzione della Fibra Ottica



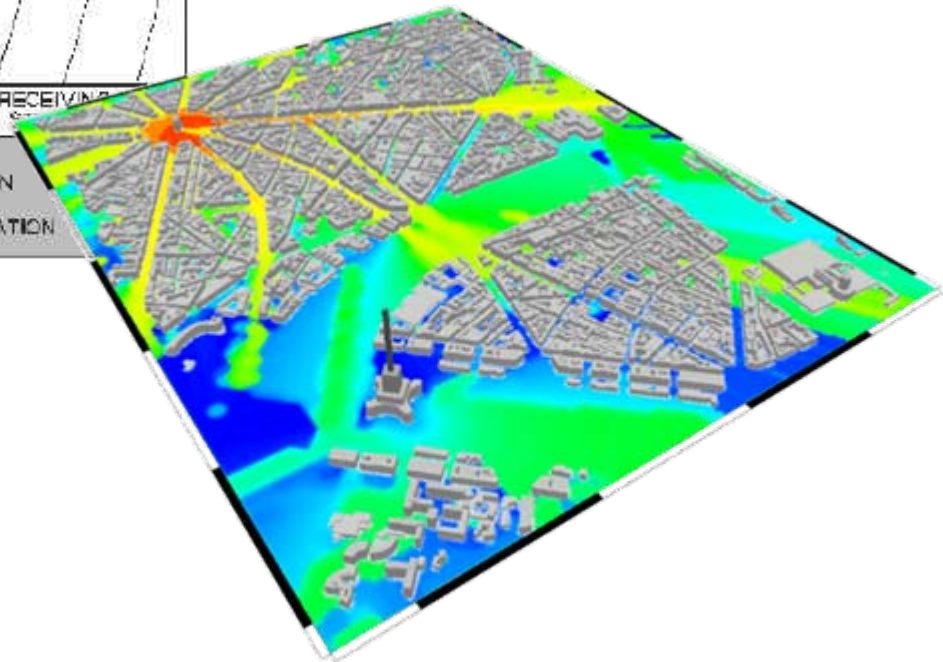
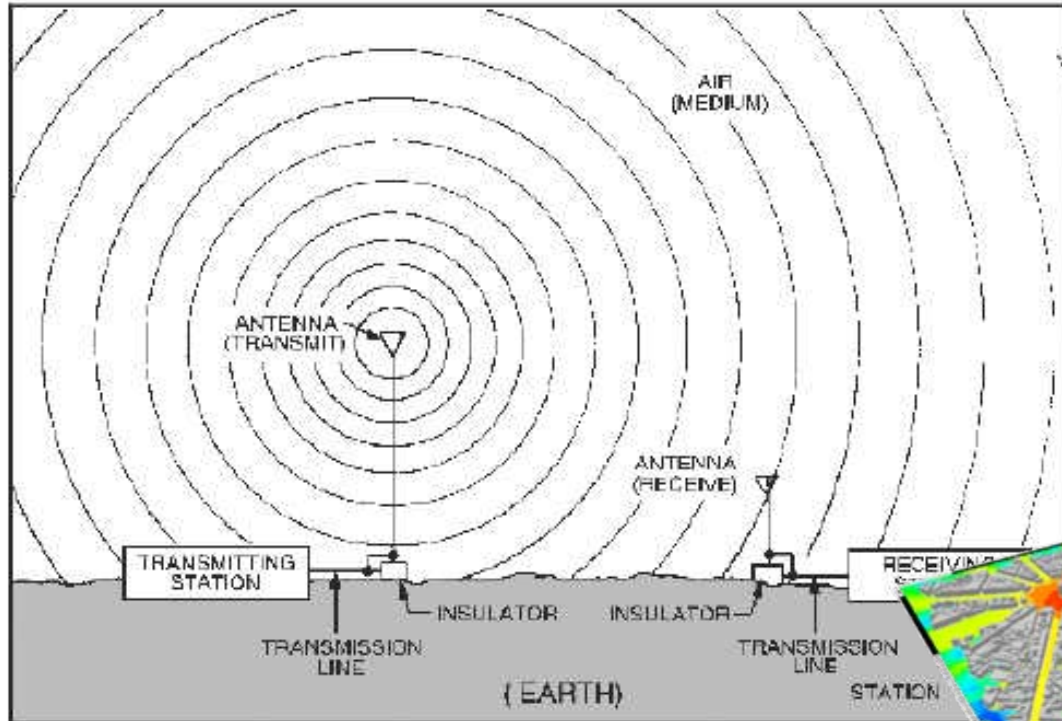
La Radio: comunicare sopra l'Oceano



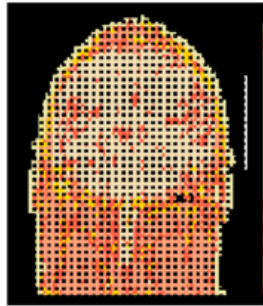
Le Onde Radio



Antenne e Propagazione

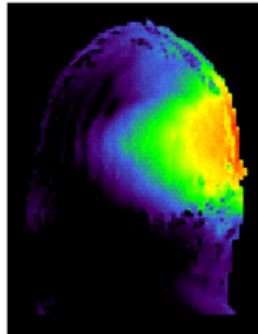


Radiazione Elettromagnetica e ...noi



Voxel size =
1.0x1.0x1.0 mm

Tissues: muscle &
high water content
tissue-light red, fat
and bone-dark yellow,
blood-dark red, brain
-light yellow, skin-ligh
yellow



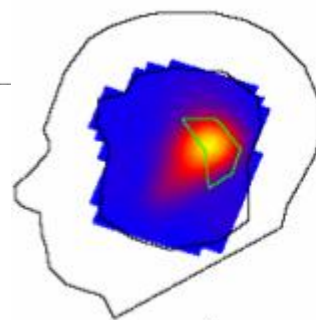
Radiated power
from antenna =
125 mW

0 db = 9.50 W/kg

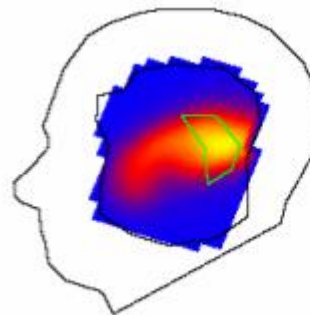
0 -9 -18 -27 -36



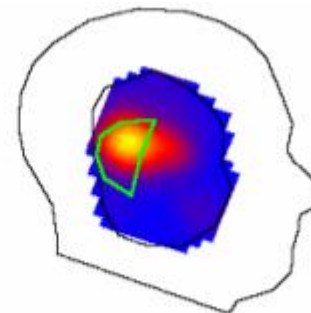
Figure 5a. Geometry of (top) and SAR distribution in phantom human head model exposed to 1900 Mhz dipole antenna.



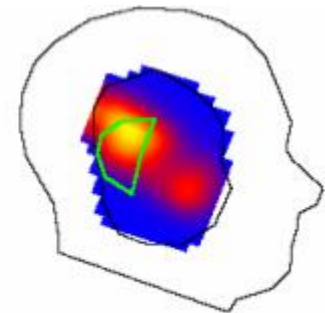
a)



b)



c)



d)

FUTURE CENTRE



Grazie