



SNS COLLEGE OF TECHNOLOGY
An Autonomous Institution
Coimbatore-35



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++'
Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECB301-ANALOG AND DIGITAL COMMUNICATION

III YEAR/ V SEMESTER

UNIT 1 – ANALOG COMMUNICATION

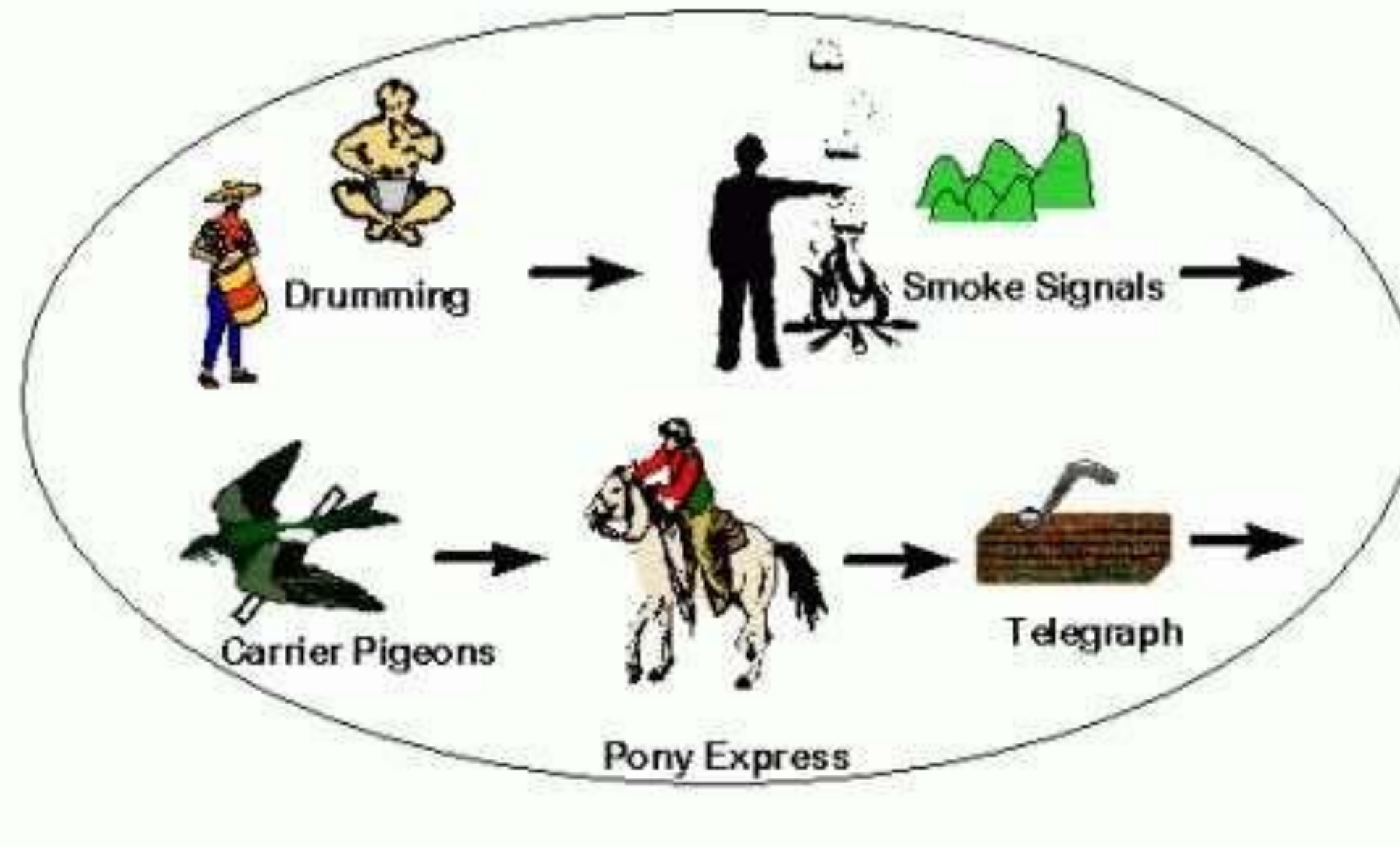
TOPIC – INTRODUCTION TO COMMUNICATION SYSTEMS



INTRODUCTION



Evolution of Telecommunications





MORSE CODE



Morse code is a character encoding scheme used in telecommunication that encodes text characters as standardized sequences of two different signal durations called *dots* and *dashes* or *dits* and *dahs*. Morse code is named for Samuel F. B. Morse, an inventor of the telegraph.



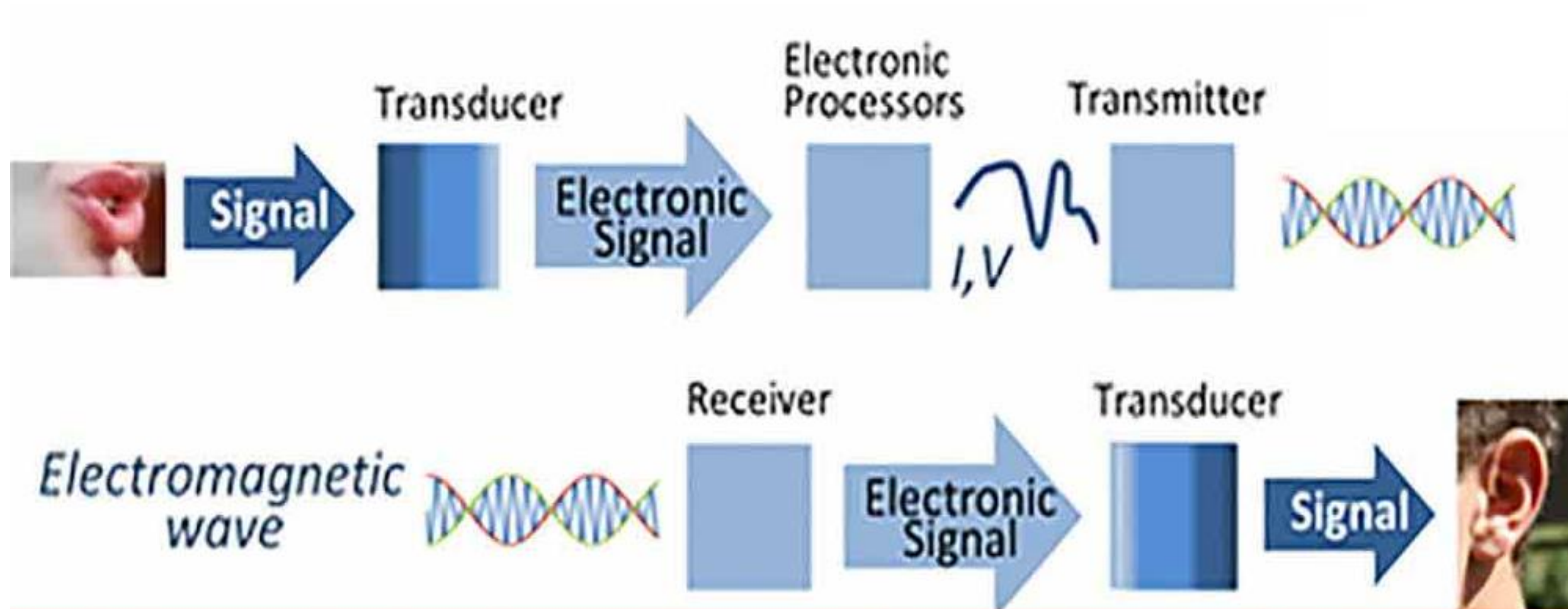


MORSE CODE TRANSMITTER AND RECEIVER





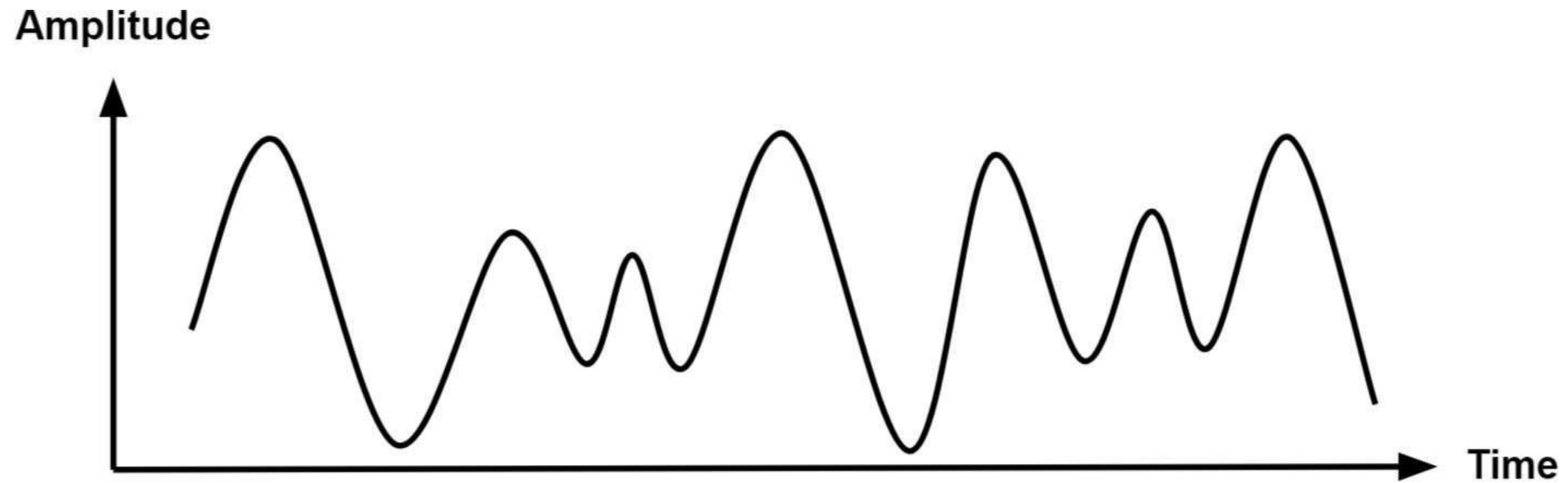
ELEMENTS OF COMMUNICATION SYSTEM



Basic Communication System-Elements | Its Applications | Block Diagram

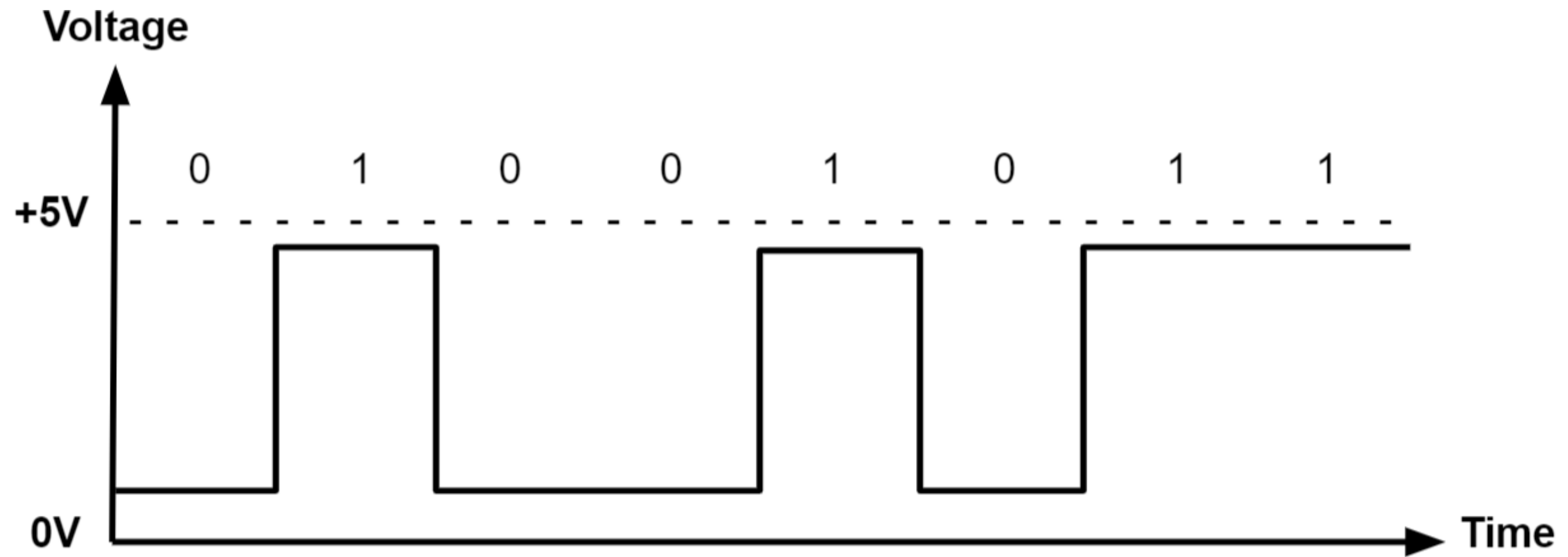


ANALOG SIGNAL



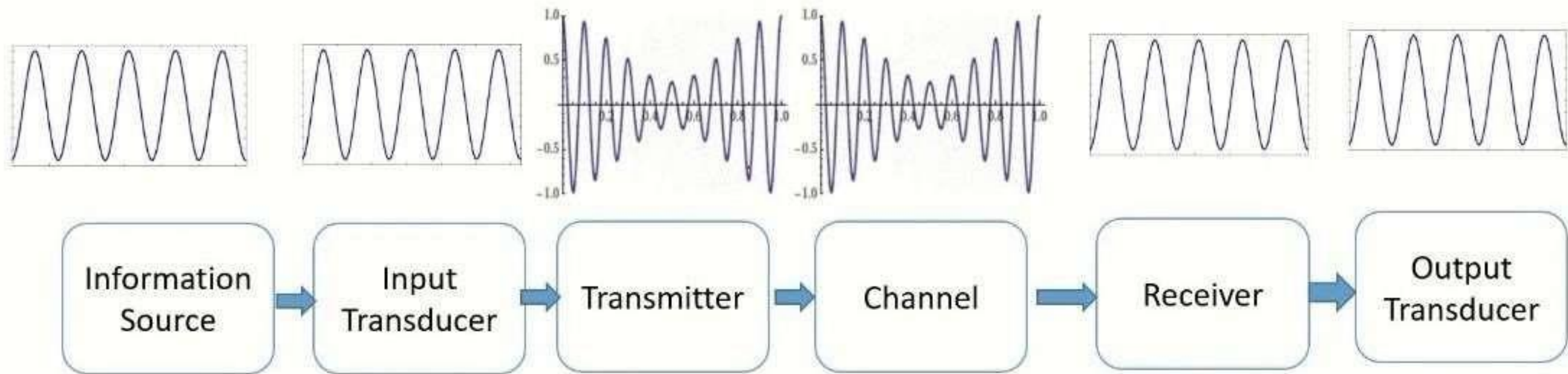


DIGITAL SIGNAL



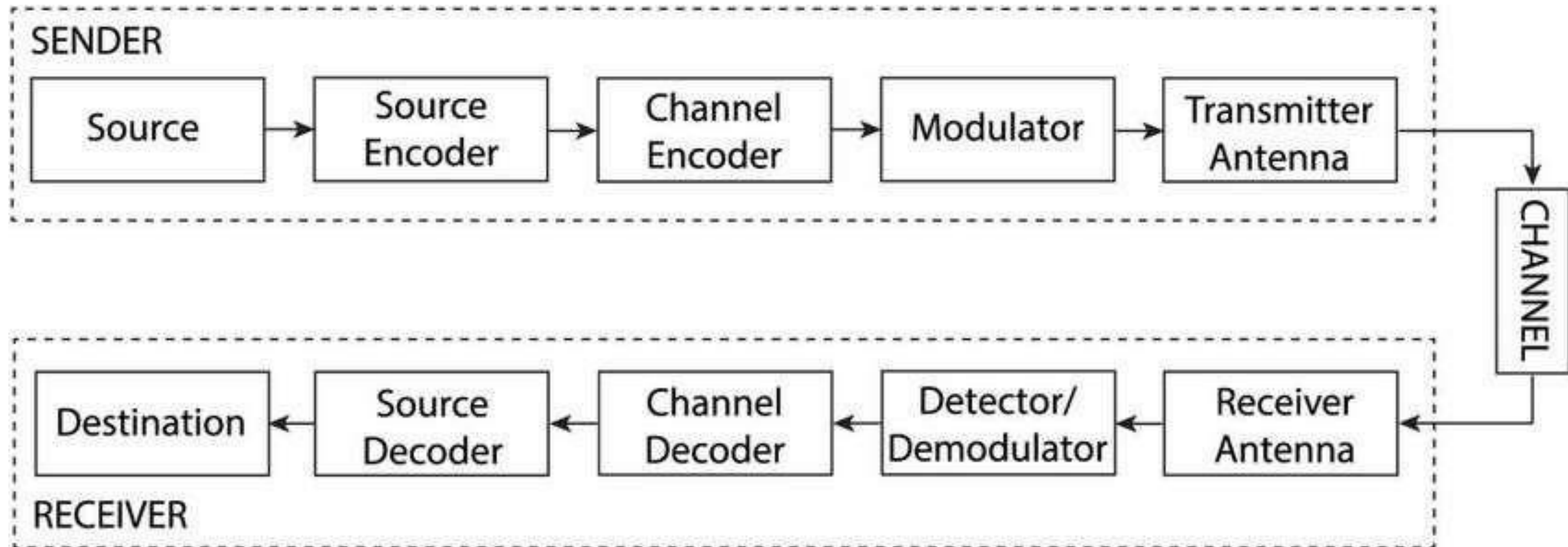


BLOCK DIAGRAM OF ANALOG COMMUNICATION SYSTEM





BLOCK DIAGRAM OF DIGITAL COMMUNICATION SYSTEM





ADVANTAGES OF ANALOG COMMUNICATION SYSTEM



- Analog signals are easier to process.
- Analog signals best suited for audio and video transmission.
- Analog signals are much higher density, and can present more refined information.
- Analog signals use less bandwidth than digital signals.
- Analog signals provide a more accurate representation of changes in physical phenomena, such as sound, light, temperature, position, or pressure.
- Analog communication systems are less sensitive in terms of electrical tolerance.



DISADVANTAGES OF ANALOG COMMUNICATION SYSTEM



- Data transmission at long distances may result in undesirable signal disturbances.
- Analog signals are prone to generation loss.
- Analog signals are subject to noise and distortion, as opposed to digital signals which have much higher immunity.
- Analog signals are generally lower quality signals than digital signals.



ADVANTAGES OF DIGITAL COMMUNICATION SYSTEM



- Digital signals can convey information with less noise, distortion, and interference.
- Digital circuits can be reproduced easily in mass quantities at comparatively low costs.
- Digital signal processing is more secure because digital information can be easily encrypted and compressed.
- Digital systems are more accurate, and the probability of error occurrence can be reduced by employing error detection and correction codes.
- Digital signals can be easily stored on any magnetic media or optical media using semiconductor chips.
- Digital signals can be transmitted over long distances.



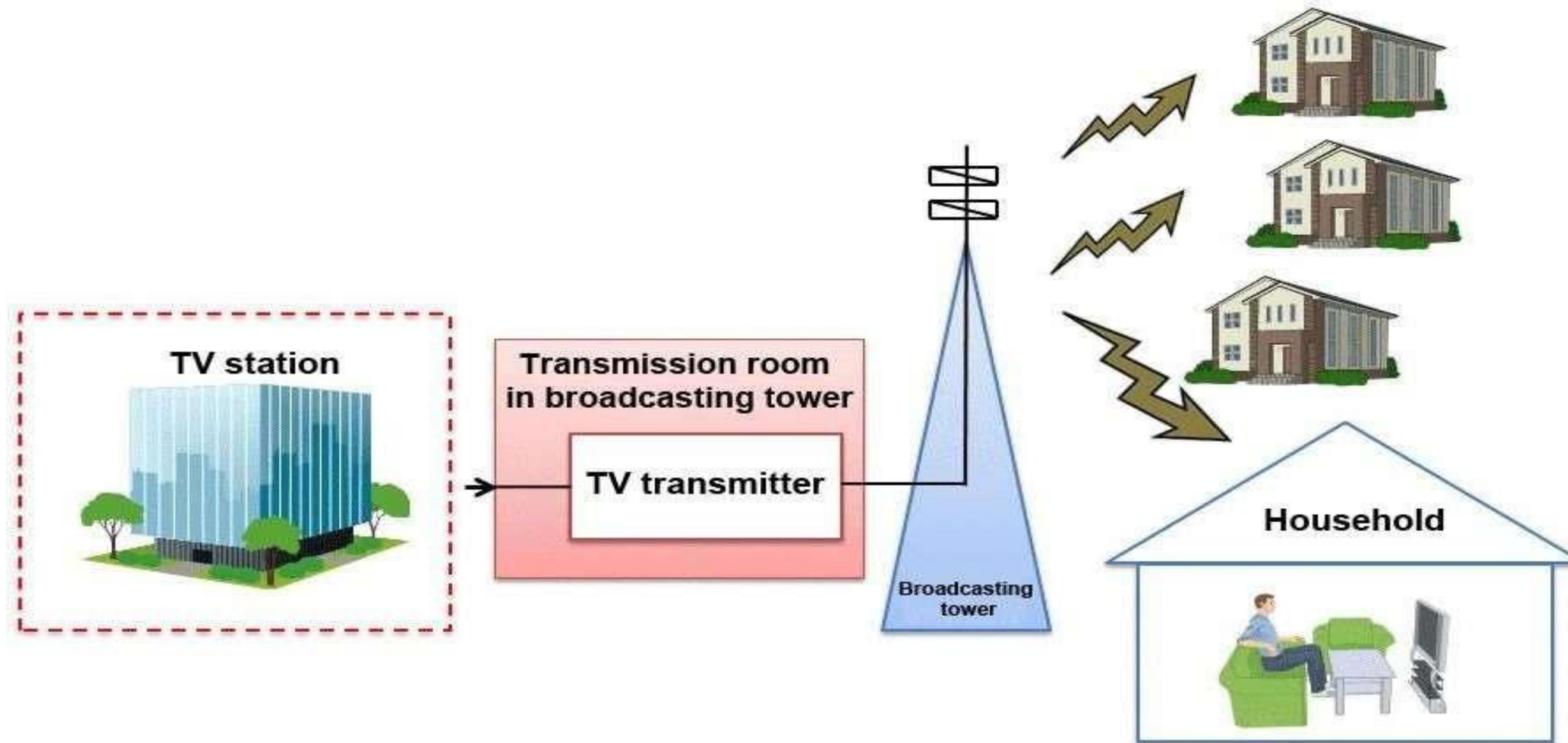
DISADVANTAGES OF DIGITAL COMMUNICATION SYSTEM



- A higher bandwidth is required for digital communication when compared to analog transmission of the same information.
- DSP processes the signal at high speeds, and comprises more top internal hardware resources. This results in higher power dissipation compared to analog signal processing, which includes passive components that consume less energy.
- Digital systems and processing are typically more complex.

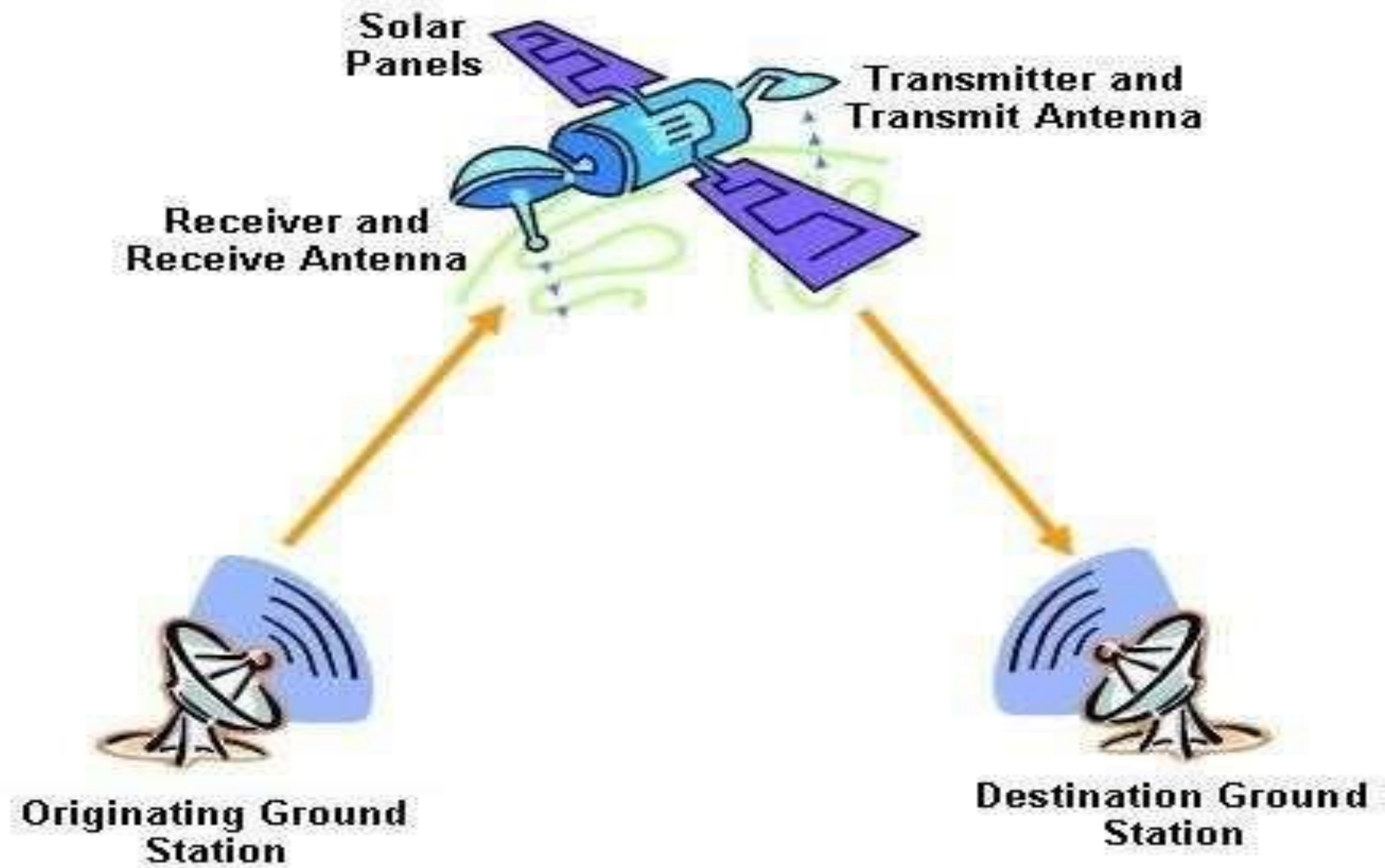


FAMILIAR COMMUNICATION SYSTEM



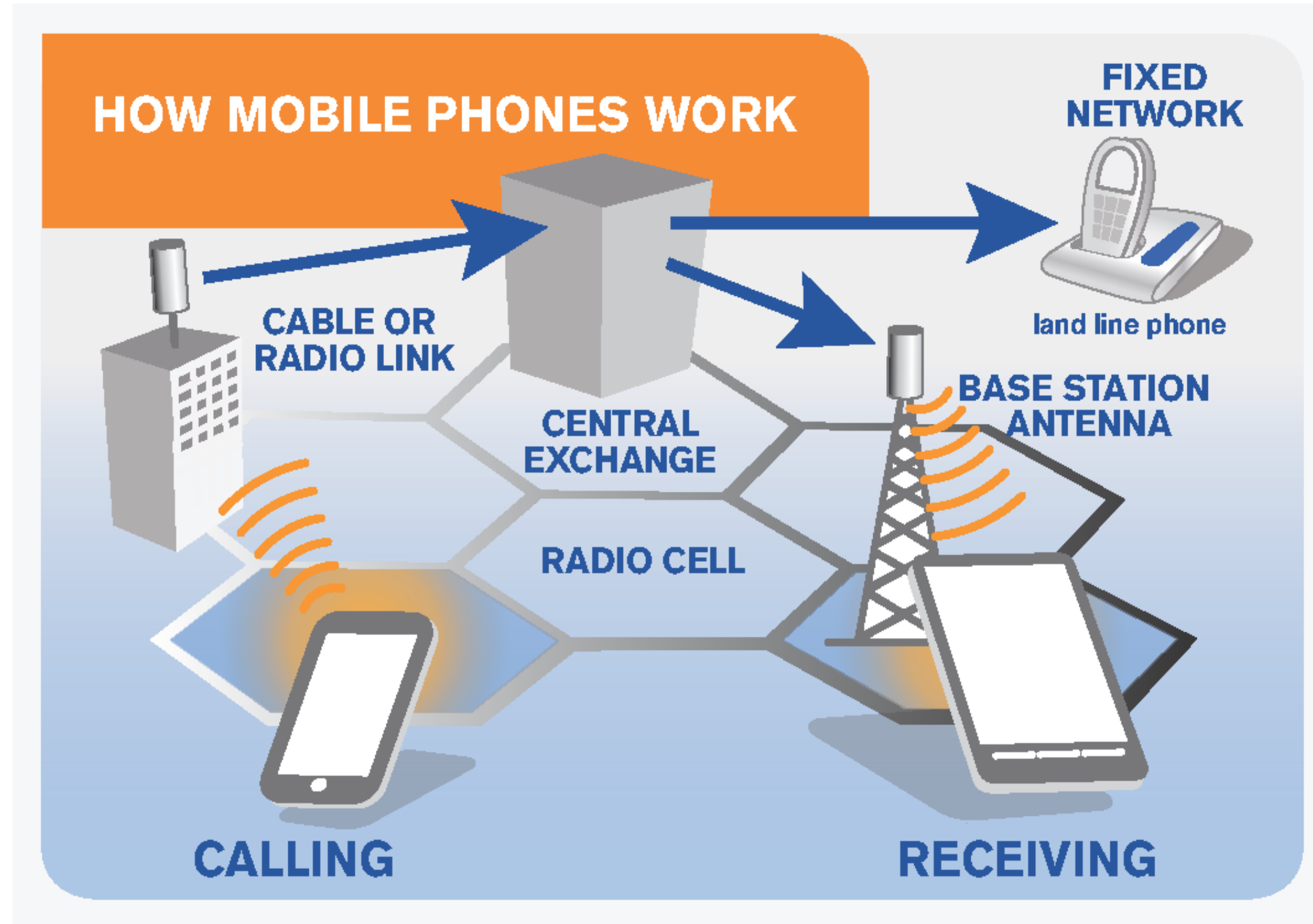


FAMILIAR COMMUNICATION SYSTEM



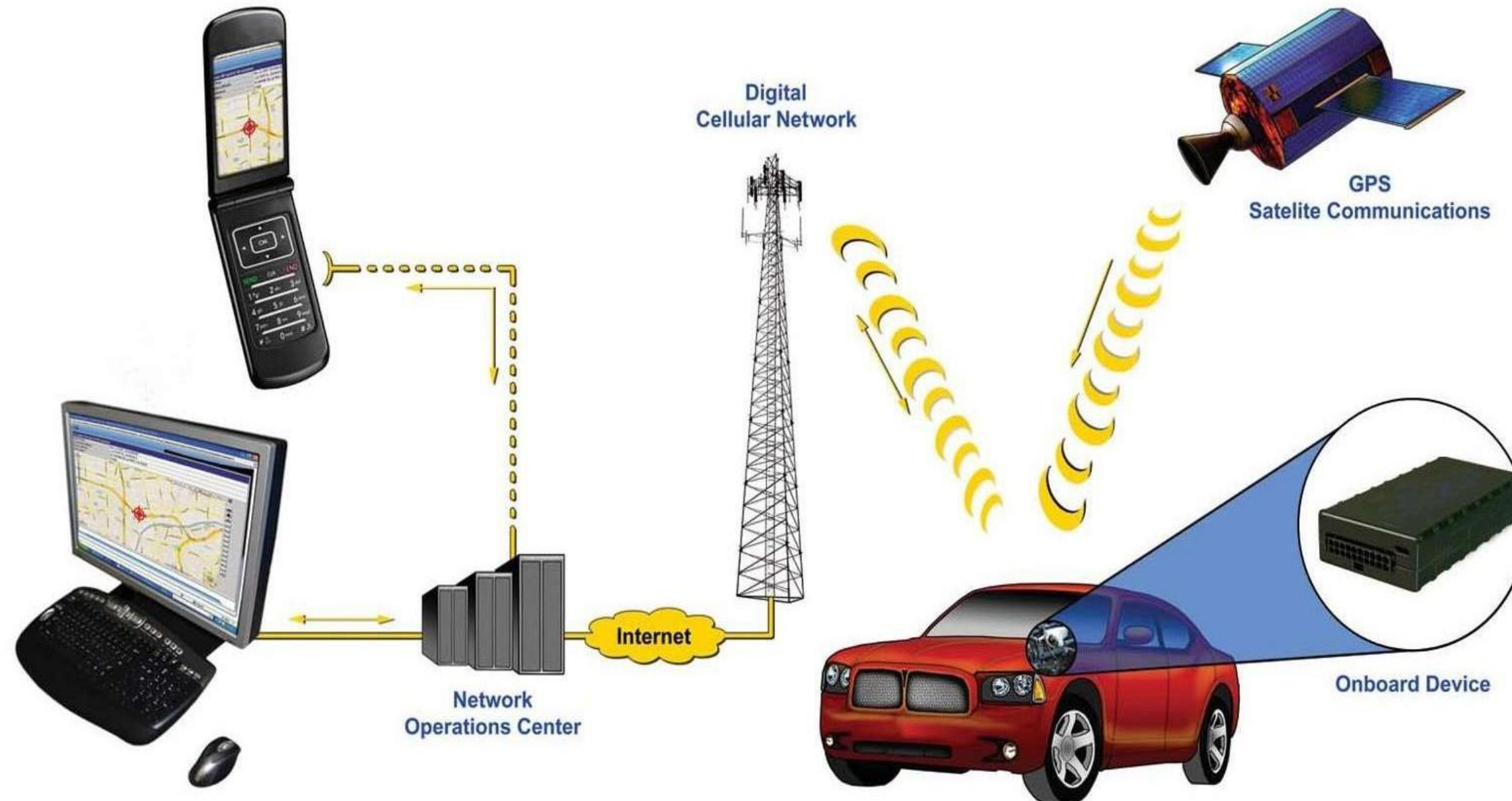


FAMILIAR COMMUNICATION SYSTEM





FAMILIAR COMMUNICATION SYSTEM



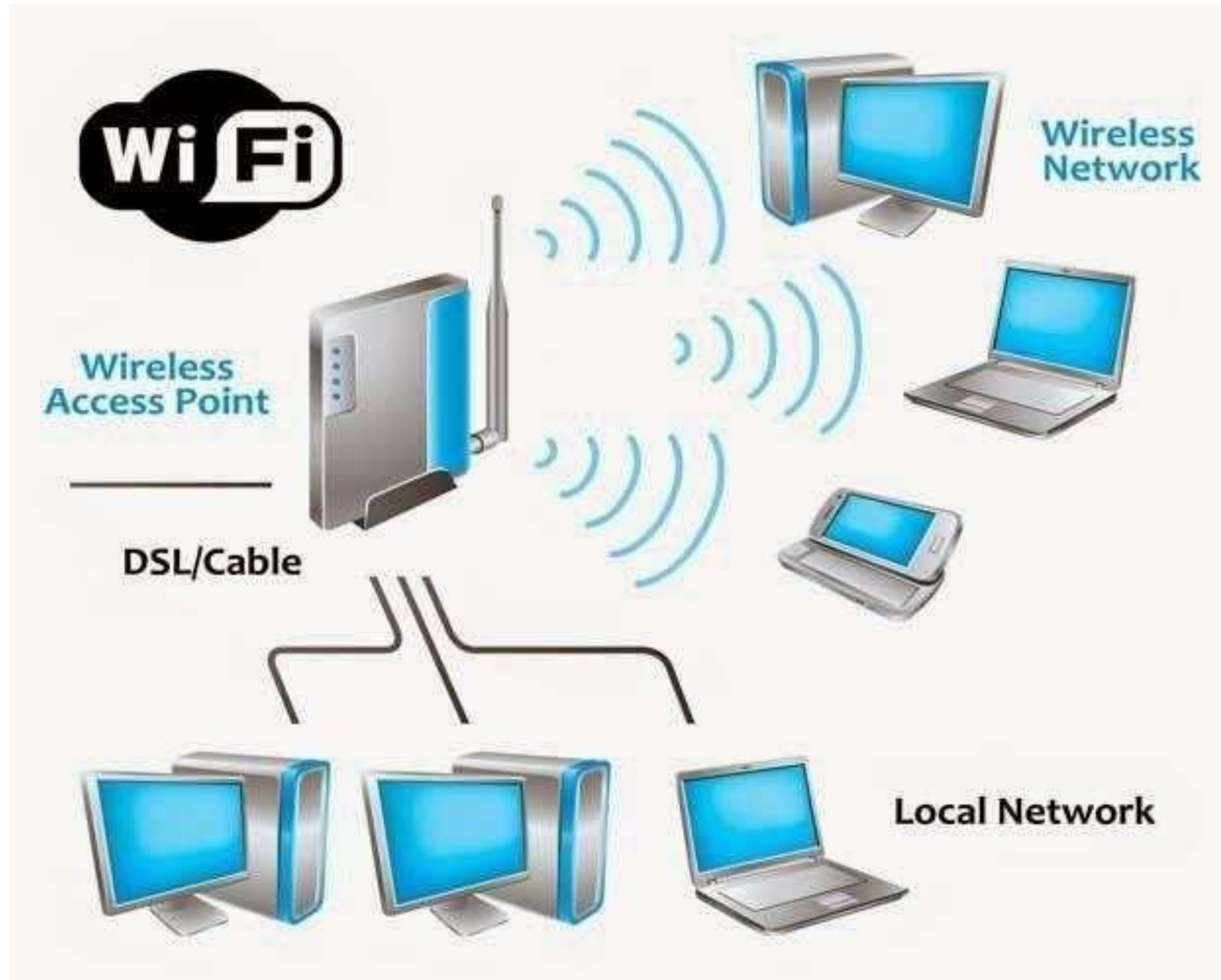


FAMILIAR COMMUNICATION SYSTEM





FAMILIAR COMMUNICATION SYSTEM





THANK YOU