

Mentor PROJECT

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Multiplexing in Cellular Communication

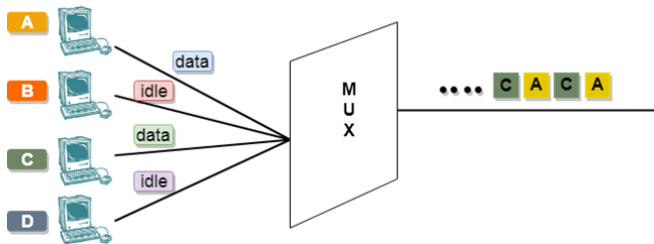


Figure: Multiplexing

- a technique used in telecommunication and data transmission
- efficient use of resources
- optimising bandwidth

Types of Multiplexing

There are mainly five types of division multiplexing methods as follows:

- ① Time Division Multiplexing
- ② Frequency Division Multiplexing
- ③ Space Division Multiplexing
- ④ Code Division multiplexing
- ⑤ Wavelength Division Multiplexing

The following slides will cover first three Multiplexing Tehniques.

Time Division Multiplexing

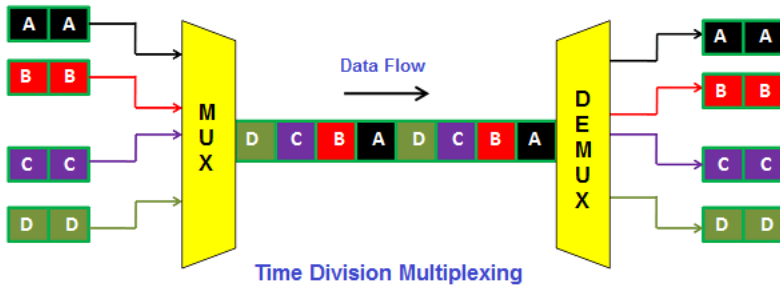


Figure: TDM

TDM – Key Points

- Time Slot Allocation
- Sequential Transmission
- Fixed or Variable Length Slots
- Efficient Utilisation of Time
- Examples

Frequency Division Multiplexing

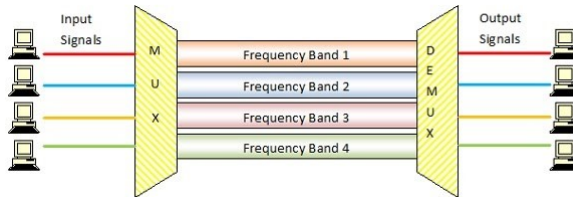


Figure: FDM

FDM – Key Points

- Frequency Allocation
- Independent Channels
- Efficient use of Spectrum
- Commonly used Analog Communication
- Examples

Space Division Multiplexing

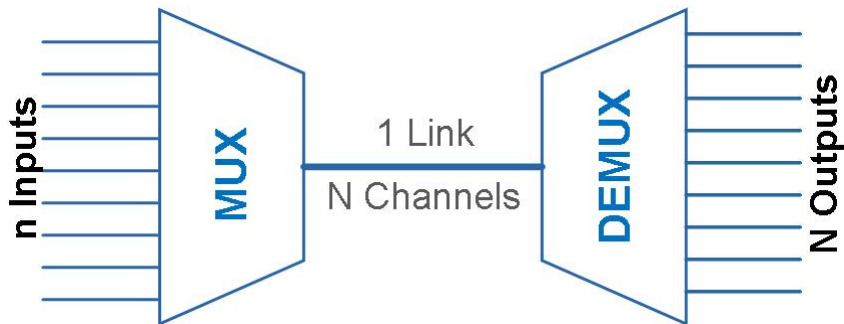


Figure: SDM

SDM – Key Points

- Multiple Spacial Paths
- Spacial Seperation
- Independent Transmission
- Application in Optial Fiber Communication
- MIMO technology
- Efficiency and Capacity
- Examples