

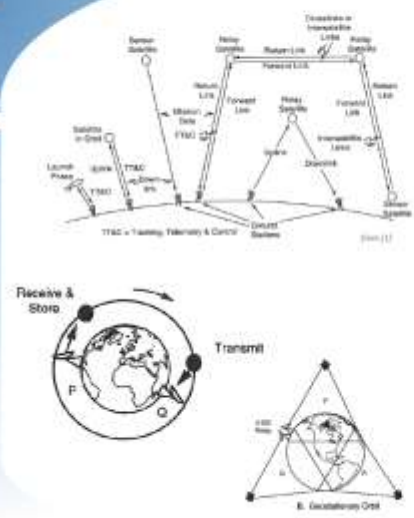
Power point Example

NEUROHEADWAY

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SATELLITE COMMUNICATION

INTRODUCTION



PRINCIPLE LINK TYPES

- In general the communication works via radio communication
- Different methods are possible
 - Direct links from satellite to ground
 - Link through relay satellites and then to ground
- Different means...
 - Antennas
 - Frequencies
- ...can be used for different paths
 - Uplink / Forward Link
 - data from ground to satellite
 - Downlink / Return Link
 - data from satellite to ground
- In most cases a satellite has no continuous contact to ground, so the gathered data is stored, until a direct visibility between satellite and ground station is given.
 - This approach is called store and transmit.

Receive & Store

Transmit

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SATELLITE COMMUNICATION

INTRODUCTION



COMMUNICATION PROCESS

- At the start some data is generated by the satellite (e.g. a picture is taken)
- In a first step this data is digitalized to be storable as 1/0 in the satellite memory
- Before transmission the data is:
 - Packaged... so split in small packages, much like a puzzle
 - Coded... the size of the data is reduced and the certainty of correct transmission is increased. A little bit comparable to stepping a file.
 - Formatted... each data package receives a label and address etc. You can imagine it like writing on each puzzle piece the location where it belongs to.
- To enable the transmission
 - First a carrier wave is created.
 - a radio wave of high frequency
 - The digital, coded, and formatted information is recombined in the carrier wave.
 - This process is called modulation
- The modulated radio wave leaves the transmitter and is sent toward the receiver

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