**DATA ENCAPSULATION EXPLAINED**

Data encapsulation takes data from a higher layer and adds a header to it, treating the higher layer information as data. Below is is a diagram to simplify the above explanation.

Application

Transport

Udp header and data

Internet ip header

LINK

Frame header and data

The physical layer is responsible for physical transmission of the data, link encapsulation allows local area networking, Ip provides global addressing of individual computers, and TCP selects the process or application (the TCP or UDP port) that specifies the service such as WEB or TFTP server.

During encapsulation each layer builds a protocol data unit(PDU) by adding a header and optionally a trailer, both of these contain control information to the PDU from above.

**A CLEAR CASE EXAMPLE IS** : in the ip suite the contents of a web page are encapsulated with an HTTP which applies as the header, then a TCP header, Then an IP header and both a trailer and frame header. The frame is forwarded to the destination node as a stream of bits, where it is turned into the respective PDU’s **( DE ENCAPSULATION**)

The product of encapsulation is that each lower layer provides a service to the layer above it, at the same time each layer communicates with the corresponding layer on the receiving node. They are called adjacent layer interaction and same layer interactions.

NB The most abstract layer is often known as the upper layer protocol while the specific layer is known as the lower layer protocol.