

HOMEWORK 2

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1) If you have 20 stations all connected to the same wire and all using digital transmission.

What method of sharing the media must be used? Why do you need a sharing method?

The method of sharing the media must be used is using a repeater or a hub. Actually, a hub is one of the repeaters, which is known as a multiport repeater. Those devices can amplify and shape signals distorted by noise. Therefore, the signals can reach further.

2) Wiring specifications for a protocol such as Ethernet have a maximum length for a wire between two stations. Why does there have to be a maximum length for a wire?

Since when signals are transmitted for a long distance, they are attenuated and distorted by noise, the media has to have a maximum length for a wire. For example, IEEE defines that the maximum length of unshielded twisted pair is 100 meters.

3) What transmission impairment(s) are improved when moving from twisted pair to coax cable.

A transmission impairment that is improved when moving from unshielded twisted pair to coax cable is interference by noise. Coax cable is tolerates interference well than unshielded twisted pair, even though it also prevents from interference by using cancellation together with twisting wires.