

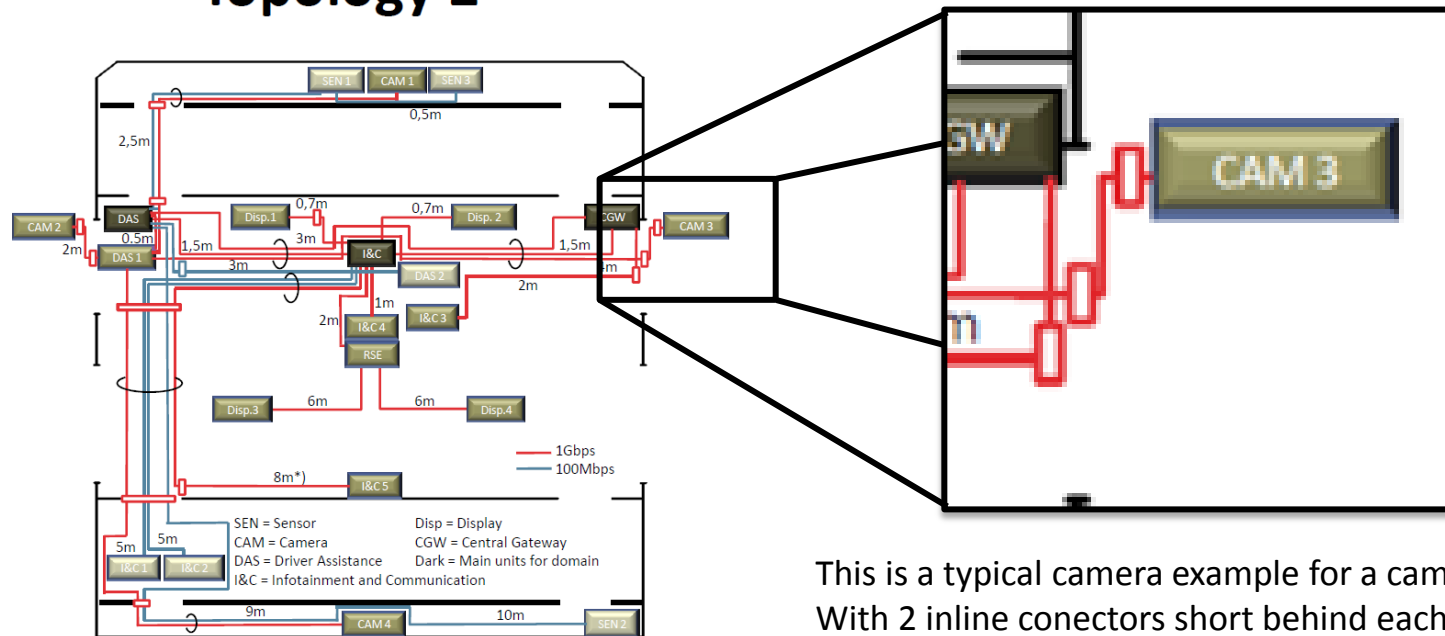
# Worst Case Topology for Return Loss

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# already available

From [http://www.ieee802.org/3/bp/public/jan13/matheus\\_3bp\\_02\\_0113.pdf](http://www.ieee802.org/3/bp/public/jan13/matheus_3bp_02_0113.pdf):

## Topology 2



This is a typical camera example for a camera in the mirror, With 2 inline connectors short behind each other (e.g. 20cm – 20cm) and then a longer cable to the camera

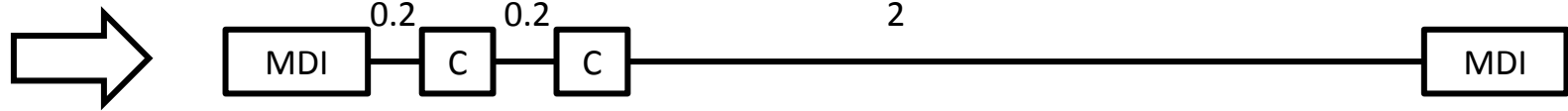
\*) Average cable length for 1Gbps (not considering inline connectors) is 3,15m; the average link length for Ethernet is 3,5m

# proposal for worst case RL (length in [m])

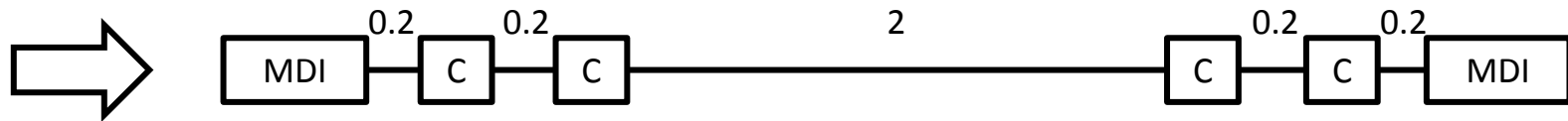
- Camera example

Proposal

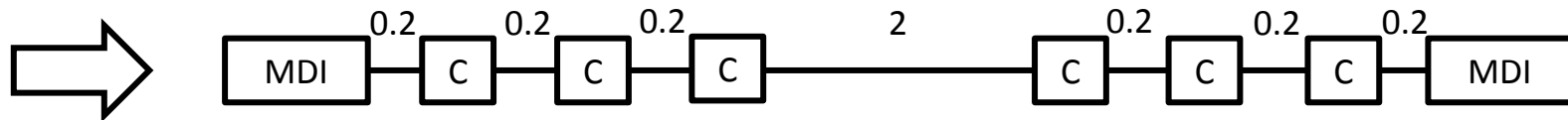
Measuring RL from this side



- Adding two cameras with longer cable in between (not realistic)



- Adding margin by additional inline (over estimation)



# proposal for worst case channel at all (compliance test)

- Using 3 Inlines on each side (or even more) until RL limit is reached
- Adding long cable in between: 15[m] + X[m] (X = to model temperature)
- Using long cable with different impedance then rest of the channel:  
e.g. 100ohms (ideal) for 0.2m pieces and 90ohms for 15[m]+X[m]:  
→to have more return loss in the lower frequency

