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-Tutorial-
Just what is an 802.3 Repeater
What is it good for?
Why is it better than a Dot 1bridge?
Why is it worse than a Dot 1bridge?

P802.3cg TF Interim Mtg

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GraCaSI S.A./Independent

A basic coax net (i.e. mixing segment)
Electrically (attenuation) limited to 500 meters.

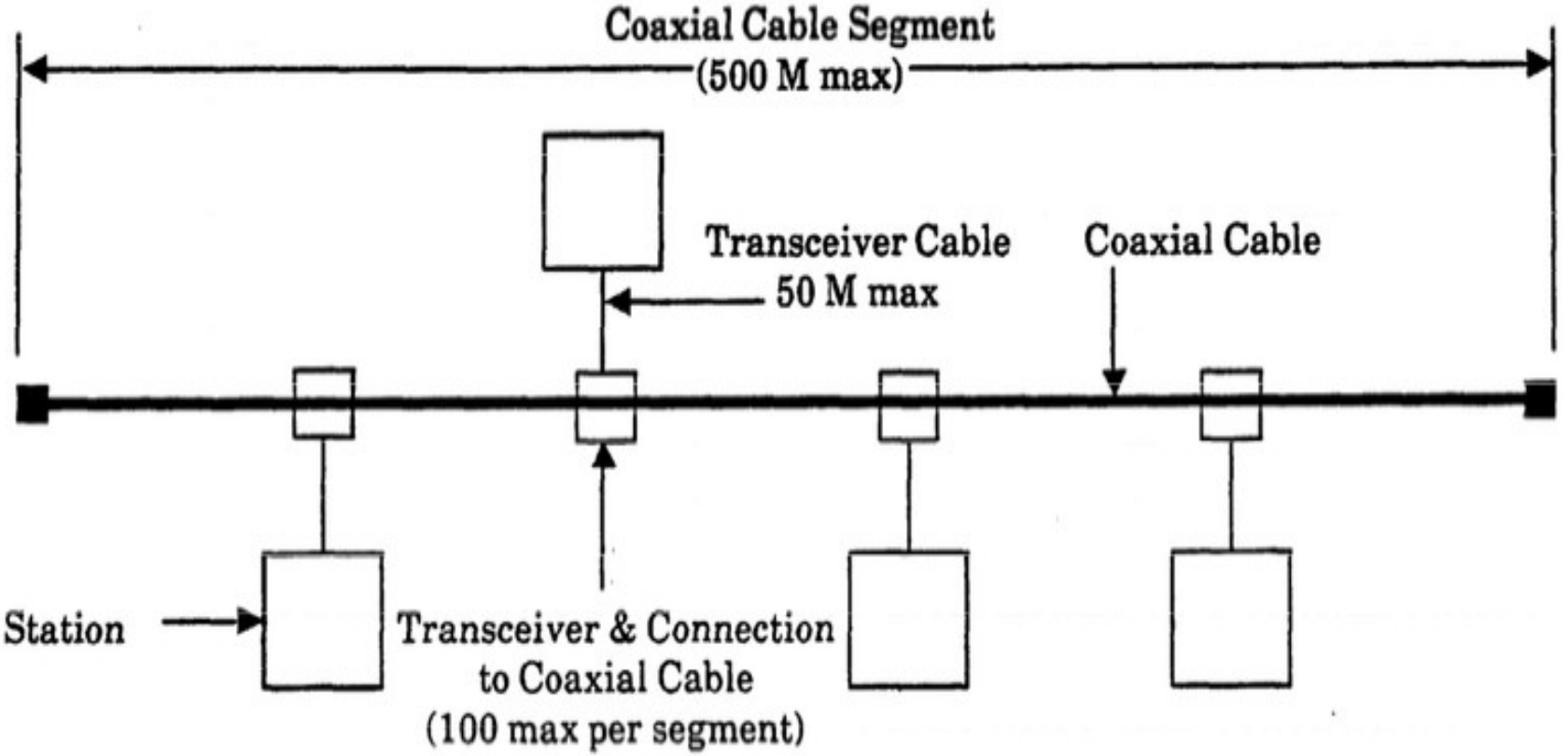
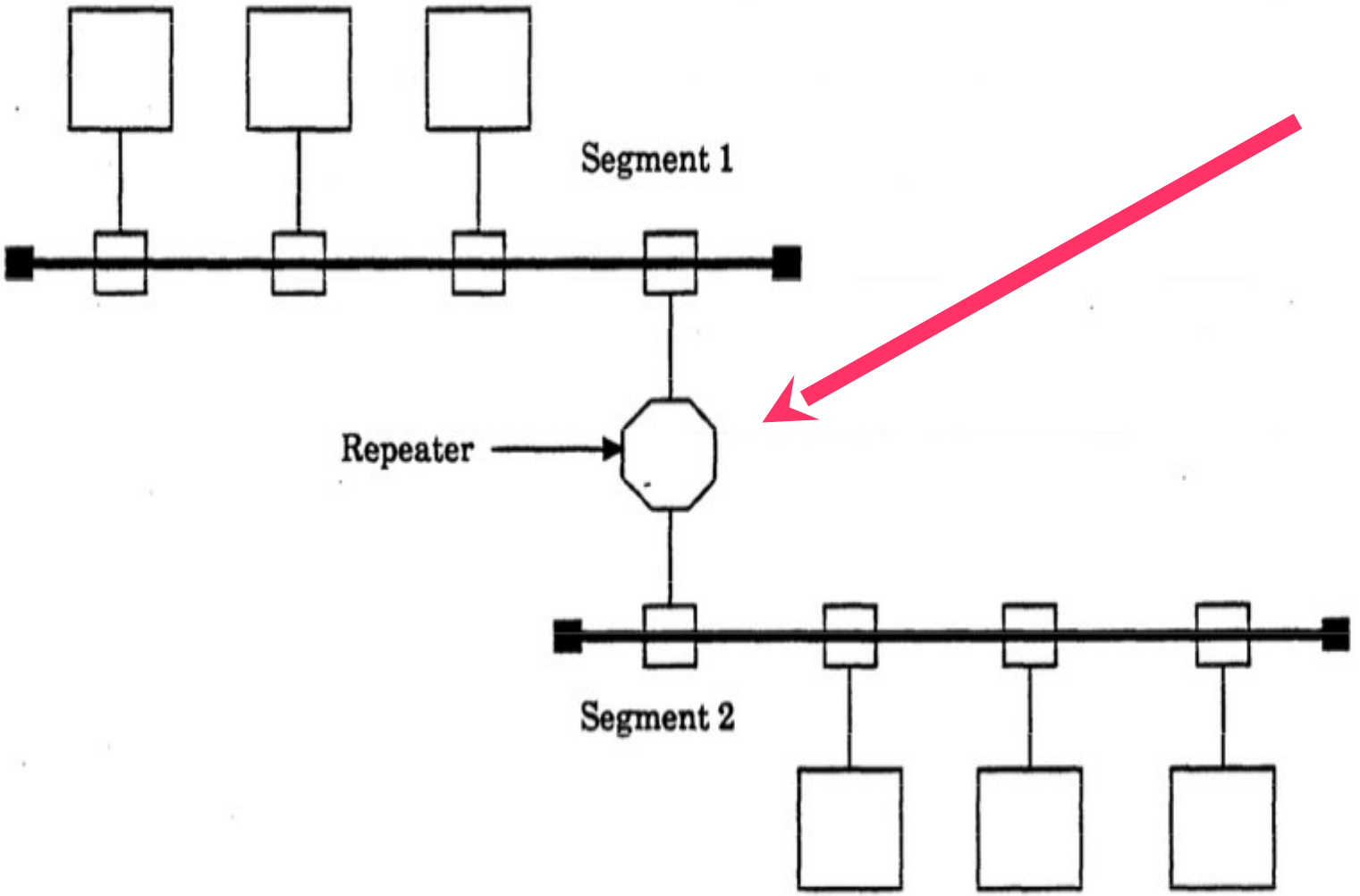


Figure 7-1a: Minimal Configuration

Simple device to extend beyond electrical limits to logical (slot time) limit.



Just what is an 802.3 Repeater?

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1) Defined by 802.3 cl. 9 (cl. 27 & cl. 41 are derivative of 9)
   Spec is AUI to AUI

2) Half Duplex (i.e. it has to select a direction when activated)

3) Bit store (& activity) and forward. Therefore low fixed delay

4) Restores clean transmit waveform & timing

5) Handles both Collision and Data transfer conditions

6) No packet storage, output filtering, error checking

7) Can be managed, turn ports on/off, gather stats

Why is it better than a Dot 1bridge?

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1) Cheaper, simpler. Far, far fewer gates. Lower complexity than a single MAC (vs. req'd MAC/port in a bridge)

2) No MACs involved, just PHY to PHY

3) Inherently “cut-through”. Low, fixed delay (< 10 bit times)

4) Bit store (& activity) and forward. Therefore low fixed delay

5) Economical when only req't is topology extension or media conversion

Why is it worse than a Dot 1bridge?

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1) Half Duplex only, can't do anything involving FDX

2) Single speed only, can't do speed changes

3) Generally considered obsolete, poor availability, few experts

4) Moore's law has badly eroded its cost advantage when its gate cost advantage is buried in a packaged, powered product that has gone through distribution and marketing/sales.

5) Much less flexible (see #1 & #2) in the application space, not a great a platform for adding features

Conclusion:

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In just the way we thought we were done with CSMA/CD forever, this project proves that may not be true. Making 10BASE-T1S a full member of the 802.3 family of transceivers (as it should be) may well open up new markets for cl.9 repeaters as IP blocks for use in the automotive and IoT Markets.

What it takes to do this is trivial and should be done anyway to meet our obligations as a project.

The END

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The END