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Re-Viewing

Preemption

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Pre-emption was presented to 802.3 as "the problem" to be solved. That didn't go smoothly. Many viewed Pre-emption as a pre-chosen solution rather than the problem. Pre-emption was presented to 802.3 as "the problem" to be solved. Re-examining the "problem"...
Too many networks...

Too many kinds/per car

Too many networks/per car

Too much copper in harnesses

Growing real-time requirements

Want open networks (Ethernet) for:

Factory accessory entertainment systems

After market systems

Customer devices

Automotive Problems:
Go to one kind of network (Ethernet considered to be the answer)

Converge traffic from multiple networks

Preserve/reestablish real-time „network“ for on-board process control stuff.

Go to higher speed

Meet auto envirion. needs (temp. vibe. etc.)

Allow for traffic growth

Accommodate converged traffic

Go to one kind of network

Ethemet considered to be the answer

Converge traffic from multiple networks

Industry desire:
Network Convergence:

- It is a traffic multiplexing problem
- The Question: Where in the stack to put the mux point?
  - In software (good efficiency, poor real-time performance)
  - Above the MAC in hdw (Granularity of muxing not fine enough given defined interface)
  - In the MAC at octet level (Major redesign of MAC, MAC concepts)
  - In the PHY at code group level (Redo every new PHY)
Doesn't solve PHY transit variability (EEE) of Ethernet MAC.

Breaks long standing (unspecified) behavior.

Would require redo of long established, stable MAC verification and test tools.

Would impose new segmentation/reassembly requirement onto MACs.

Proposed by 802.1 to 802.3.

In the MAC at octet level:
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Proposed by Thompson

PHY with 2 upper ports

Done before in 802: Std 802.9a-1995 (10BASE-T and B-ISDN)

Allows greater flexibility

(2 ports into 1 bridge OR separate bridges)

In the PHY at code group level:

In the PHY at code group level:
Easy simulation w/ existing tools

less deterministic

Second network would be more open, and fully simulated timing behavior

Allocate one network as closed with engineered

between two networks

Provides complete and transparent separation

the paper is still blank

Hooks can be added to RTPGE while the

Could be added on to RTPGE

May not need any 802.1 work at all

PHY MUX Advantages:
Completely transparent to MAC & above.

- Mux is VERY simple state machine
- Two ends sync Muxes during IDL
- 2 Speeds can be symmetrical or asymmetrical
- Design verification pretty simple

PHY MUX Advantages (2):

- Completely transparent to MAC & above.
Major closing point

The problem should be fully open to creative solutions at this point.
THANK YOU!
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