Some Issues within The 5 Criteria

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Broad Market Potential

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THAT IS: Market Need

Needs to be evaluated in terms of:

- The specific market need in terms of latency in units of time.
- The design constraints that can be tolerated by a BMP solution.
- Whether a new standard as proposed will actually satisfy the BMP

Broad Market Potential

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What is the specific market need in terms of latency in units of time:

- Needs to be defined more specifically

All we have as a requirement so far is that "The Express Packet"...

- HAS TO START TRANSMIT in less than 1588/2K of the packet transmit time (worst case)

Broad Market Potential

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All we have as a requirement so far is that "The Express Packet" has to start Transmit in less than 1588/2K of the packet transmit time (worst case)

We have:

- Nothing in microsec
- Nothing in distance (@ 5-6 nsec/meter)
- Nothing in market volume vs. delay (i.e. Market sensitivity to "expressness")

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We have no market data in terms of Market Sector:

- Automotive
  - Prospects good – Solving the problem with more cabling: Highly unattractive
- Industrial
  - Enthusiastic participation
  - Parallel links viable in marketplace (Reach sacrifice for shared link)
- No other target markets identified
- How much less is “Good Enough”?

A Resulting Question:

What speed increase is equivalent to improving max packet time to min packet transmit time?

IF worst case wait time is the determinate,
THEN the speed increase is:
    What it would take in uSec
        for a big packet to go by at the new speed
        vs. a min packet at the old speed
Answer: 28.4

A Resulting Question:

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What speed increase is equivalent to a Perfect DMLT? Answer: 28.4

Upgrade: 100BASE-TX to 40GBASE-T
will do a better job than we can,
worst case.

For the average case...
Upgrade: 1000BASE-T to 10GBASE-T
will do a “so, so” job.

Technical Feasibility:

(That is: How much better will it be?)
(Better than what?)

NOTHING will ever be better
in terms of timing, than a parallel link !!

- Within a single bridged system
- Two separate systems
  - Hooked together w/ router
  - Not logically hooked below
    - IP
    - Application

Parallel Link System:

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- Is only system with no time overhead (Interspersing takes time w/associated delay)

- Is only system w/ no distinguishing information required in the packet.

- Would not require a new standard in 802.3 Existing std or very minor tweaks in 802.1

Parallel Link Sys./Industrial:

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- Can be retrofitted to legacy cabling
  (Some cases: Reduced reach)

- 2 or perhaps even 4 || Linx with:
  - RTPGE/4 Pair Cat 5
  - Reach 100 M goes to ?? (15/45/??)

- 2 || Linx w/ fiber
  - 2 up, single fiber duplex (-3 dB)

- N || Linx w/ fiber
  - Coarse WDM (little to no reach penalty)

Parallel Link Sys./Vehicle:

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- Green Field application, legacy cabling DNA
- Additonal media weight = Major problem
  (Cars: Yes, Trucking/Rail: No)
- Fiber: Largely not useful
  (Cars/Trucks: True, Rail: Useful)

Conclusion:
The market success of Express Interspersion appears to be completely dependent on the automotive industry.

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The market success of Express Interspersion appears to be completely dependent on the automotive industry.

In other markets that are less cost and weight sensitive, going to higher speeds and (distinguished) parallel links will be very competitive on cost and will offer better performance.

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