

Register space for user defined data within 10BASE-T1S v.1.0

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Motivation

- With 10BASE-T1S there is the chance to reserve 15 bits in the preamble for user defined data.
- The effort for providing such a register space seems very minor.
- These slides thus motivates potential uses for such register space in the 10BASE-T1S preamble.

Potential uses for the data space

Diagnostics

- Signal To Noise Ratio (SNR), relevant also and esp. during development
- MIB register information
 - Frame loss ratio
 - Additional MIBs on request via a “getMIB” instruction set
- Remote failure indication
 - Loopback tests to identify if end nodes are “alive”
 - Cable diagnosis (SQL, MSE, needs a TDR-like feature)
- Collision information in the multidrop segment (in case of erroneous function)

Network control data

- Network management (NM)
- Control of subsequent switches (Start-up and Shutdown, support of wake-up, e.g., http://www.ieee802.org/3/ch/public/adhoc/buntz_NGAUTO_02_0617.pdf)

Conclusion

- To enable 15 bits in the preamble for user defined data seems to require little effort, while allowing for various uses.
- The recommendation is therefore not to preclude the use of such register space by defining in the 10BASE-T1S specification the register space as an option.
- Any definition on how exactly the register space is used should be limited to the absolute necessary.