

# Other Opportunities for 802.3cg 10SPE July 2017

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# 10SPE Goals and Objectives today

- As per [http://www.ieee802.org/3/cg/objectives\\_10SPE\\_111016.pdf](http://www.ieee802.org/3/cg/objectives_10SPE_111016.pdf) and other presentations to 10SPE, the accepted targets for the group are control networks within the following industries/applications.

Automotive

Industrial Automation

Building Automation

# 10SPE Key characteristics

- Single pair connection
- Low cost/data rate suitable for sensors
- Ability to support power and data
- Multiple reaches (e.g. 15m, 1000m, etc.) for different use cases
- Targeting installed base cable in Industrial and Building Automation

**It's Ethernet!!**

# 10SPE Other opportunities

- From the presentations below, it's clear that 10SPE has large opportunities in intra-system (server, switch, etc.) applications
  - Non-Industrial Use of P802.3cg - Server -  
[http://www.ieee802.org/3/cg/public/July2017/Lewis\\_3cg\\_01\\_0717.pdf](http://www.ieee802.org/3/cg/public/July2017/Lewis_3cg_01_0717.pdf)
  - Short-reach/FR-4 use case and link segment  
[http://www.ieee802.org/3/cg/public/July2017/Lewis\\_3cg\\_02\\_0717.pdf](http://www.ieee802.org/3/cg/public/July2017/Lewis_3cg_02_0717.pdf)
  - Intra-Switch Management Interface Use Cases for Single Pair Ethernet  
[http://www.ieee802.org/3/ad\\_hoc/ngrates/public/17\\_07/bains\\_nea\\_01\\_0717.pdf](http://www.ieee802.org/3/ad_hoc/ngrates/public/17_07/bains_nea_01_0717.pdf)

# Intra-system 10SPE: common themes

- Many systems (e.g. server, switch) use a large number of internal control networks
- 10SPE could replace a number of other internal control networks interfaces within systems (e.g., I2C/SMBus, MDIO).
- Many systems that ship in the order of millions of systems per year, contain high 10s to low 100s of these legacy links.
- These legacy links contribute to a relatively high percentage of design, debug and support issues.
- Many endpoint devices are implemented using FPGAs or micro controllers, and could support a "fast & richer" interface than I2C etc.

**I believe that the benefits of moving to 10SPE significantly outweigh the relatively minor impact overall system cost.**

# Intra-system 10SPE: variations

These intra-system links can be used for:

Fixed internal and/or proprietary (e.g., control link to power supply).

Use similar internal links (e.g. PCB trace, connectors, etc.) as the legacy interfaces

Forward compatibility (autoneg) to enable new rates later

Pluggable modules defined by an MSA (e.g. QSFP-DD)

Support both the older interface and 10SPE on the same link to enable easier adoption.

**Choosing SPE vs something else out of scope for 802.3**

Forward compatibility (autoneg) to enable new rates later

# Intra-system 10SPE: open

- Process

Do we pursue this?

In 802.3cg (TBD - may need a PAR modification), or a new project?

- Technical

Link segment definition, can we use the 15m automotive?

Relative system cost of vs I2C/MDIO for an FPGA/Micro.

Discovery of pluggable components, SPE vs I2C/MDIO (“do not preclude”).

# Intra-system 10SPE: Call To Action

- Proceed?

Do you support continuing this work at this time?

- How to Proceed? Some options:

Additional investigation work in 802.3 NEA?

“Transfer” work to 802.3cg (with PAR modification if required)?

Develop new CFI/PAR/etc. to create new task force for this?

# Straw Polls as 802.3 NEA SPE AdHoc

# Straw Polls #1

I support further work to investigate and address the intra-system use of 10SPE:

Yes:  $20+7 = 27$

No:  $1+0 = 1$

Abstain:  $3+8 = 11$

## Straw Polls #2

I support progressing the intra-system use of 10SPE by (Chicago):

More consensus building in 802.3 NEA AdHoc: 0+0

Request 802.3cg to take this up: 22+6=28

New CFI work in 802.3 NEA AdHoc: 0+0

Abstain: 9+8=17

## Straw Polls #3

I support progressing the intra-system use of 10SPE by (only one):

More consensus building in 802.3 NEA AdHoc: 0+0

Request 802.3cg to take this up: 17+8=25

New CFI work in 802.3 NEA AdHoc:0+0

Abstain: 8+8=16

# Consensus

WE BUILD IT.

May 2017, New Orleans, LA

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Thank You!

# Straw Polls #N

Question:

Choice 1:

Choice 2:

Choice 3:

Choice 4:

Abstain:

End