

Link Section Discussion

IEEE 802.3bt 4 Pair PoE

~~National Pi Day~~

~~Tuesday, March 14 2017~~

Version 3

May interim 2017

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With help from Yair Darshan

Definitions

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- Channel (Cabling-11801): end-to-end transmission path connecting any two pieces of application specific equipment
NOTE Equipment and work area cords are included in the channel, but not the connecting hardware into the application specific equipment.
- Channel (legacy 802.3): A band of frequencies dedicated to a certain service transmitted on the broadband medium.
(See IEEE 802.3 Clause 11.)
- Channel (current 802.3): In 10BROAD36 and 10GPASS-XR, a band of frequencies dedicated to a certain service transmitted on the broadband medium. Otherwise, a **defined** path along which data in the form of an electrical or optical signal passes.
(For 10BROAD36, see IEEE Std 802.3, Clause 11, for 10GPASS-XR see Clause 100, Clause 101, and Clause 102.)

Definitions (2)

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- Link segment: The point-to-point full-duplex medium connection between two and only two Medium Dependent Interfaces (MDIs). (From 802.3-2015)
- Link section: The portion of the **link** from the PSE to the PD. (From 802.3-2015, it uses the term “link” from cabling docs. Our current draft proposes to change this. Probably a bad idea. No reason for this change & out of scope)
- Link: The transmission path between any two interfaces of generic cabling. (Current 802.3 def'n taken from ISO/IEC 11801.)

Definitions (3)

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- Link section: The portion of the link from the PSE to the PD.

(Current 802.3 definition uses term from cabling docs. Our current draft proposes to change this. It is a poor idea & is out of scope!)

- (From bt draft 2.4 as proposed)
Link section: The portion of the link segment from the PSE to the PD.
(Poor because there is no defined interface between link segment and midspan PSE)

My Fantasy Definition (discussion)

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- Link section: The point-to-point medium connection between two and only two Power Interfaces (PIs).

As currently in 802.3

(Updated, see later slide)

vs. the actual as currently in 802.3 which is:

- Link section: The portion of the link from the PSE to the PD.
- In dinner w/ Yair I discovered the shortcoming of this current def'n. (Check the def'n of “link”) as the interface between “link” and PSE is undefined.

My Fantasy Definitions

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- **Existing** Link section: The point-to-point medium connection between two and only two Power Interfaces (PIs).

Should be updated to:

- Link section: The point-to-point medium connection between **the active PSE Power Interface (PI)** and **the PD PI**.
- **ACTIONS:**
 - **Comment against def'n change (GOT to do)**
 - **Put in Maint Req (GOT: Done)**

8802-3/802.3 REVISION REQUEST

DATE: May 23, 2017
NAME: Geoff Thompson
COMPANY/AFFILIATION: GraCaSI S.A.
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REQUESTED REVISION:

STANDARD: IEEE Std 802.3-2015
CLAUSE NUMBER: 1.4.254
CLAUSE TITLE: link section

PROPOSED REVISION TEXT:

CURRENT TEXT: 1.4.254 link section: The portion of the link from the PSE to the PD.

PROPOSED TEXT: 1.4.254 link section: The point-to-point medium connection between the active PSE Power Interface (PI) and the PD PI.

RATIONALE FOR REVISION:

To more precisely define the link section with respect to its endpoints and to more carefully and fully align the definition to the definition of the link segment.

IMPACT ON EXISTING NETWORKS:

On existing networks there should be no change. There may be very minor changes (improving accuracy) on testing of existing networks and cabling plant.

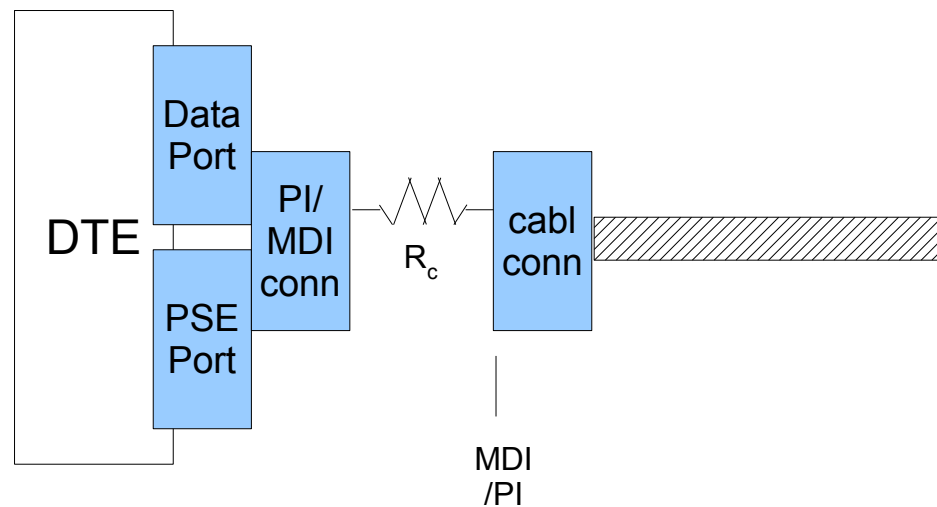
Please attach supporting material, if any
Submit to:- David Law, Chair IEEE 802.3
and copy:- Adam Healey, Vice-Chair IEEE 802.3
At:- E-Mail: stds-802-3-maint-req@ieee.org

----- For official 802.3 use -----
REV REQ NUMBER: XXXX
DATE RECEIVED: Xxx Xxx, 20XX
EDITORIAL/TECHNICAL
ACCEPTED/DENIED
BALLOT REQ'D YES/NO
COMMENTS:

For information about this Revision Request see -
http://www.ieee802.org/3/maint/requests/revision_history.html#REQ20XX

Diagrams - 0

- Detail of the MDI and/or the PI (expansion of the CONNECTED case)

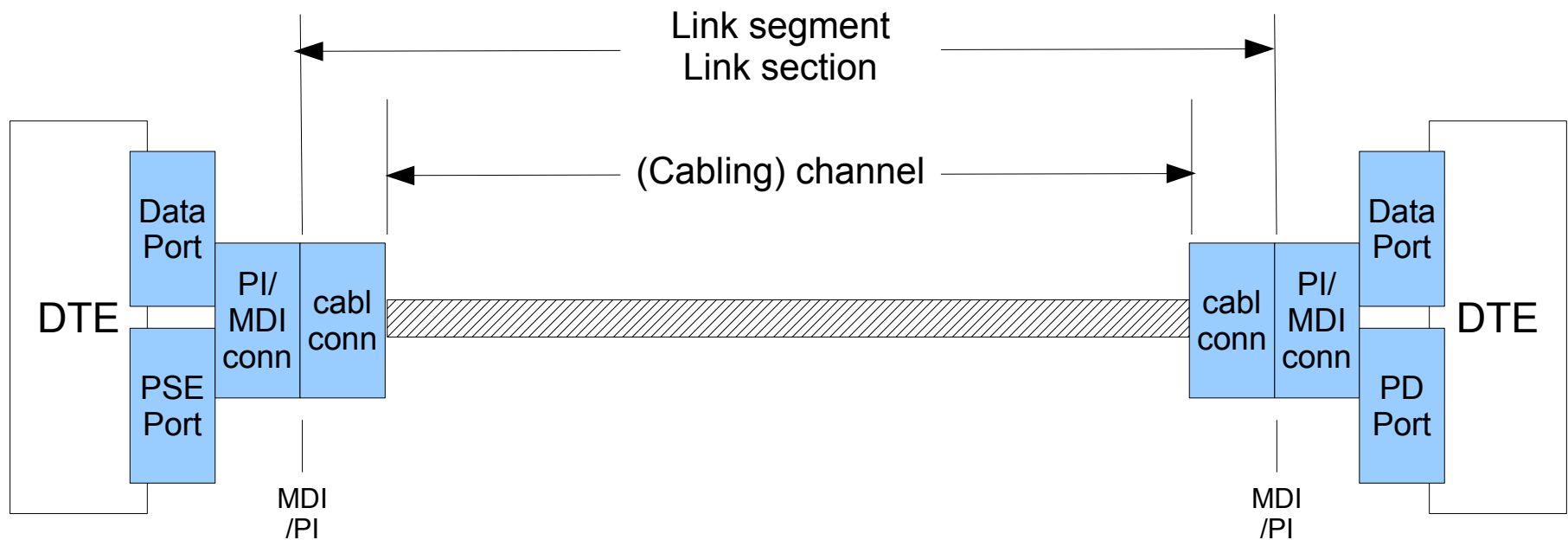


That is, the contact resistance is allocated to the socket. Other factors that require a mated pair for measurement are de-embedded and allocated proportionally to socket or plug.

More research req'd on my part to pinpoint references as to precisely which side is allocated the contact resistance.

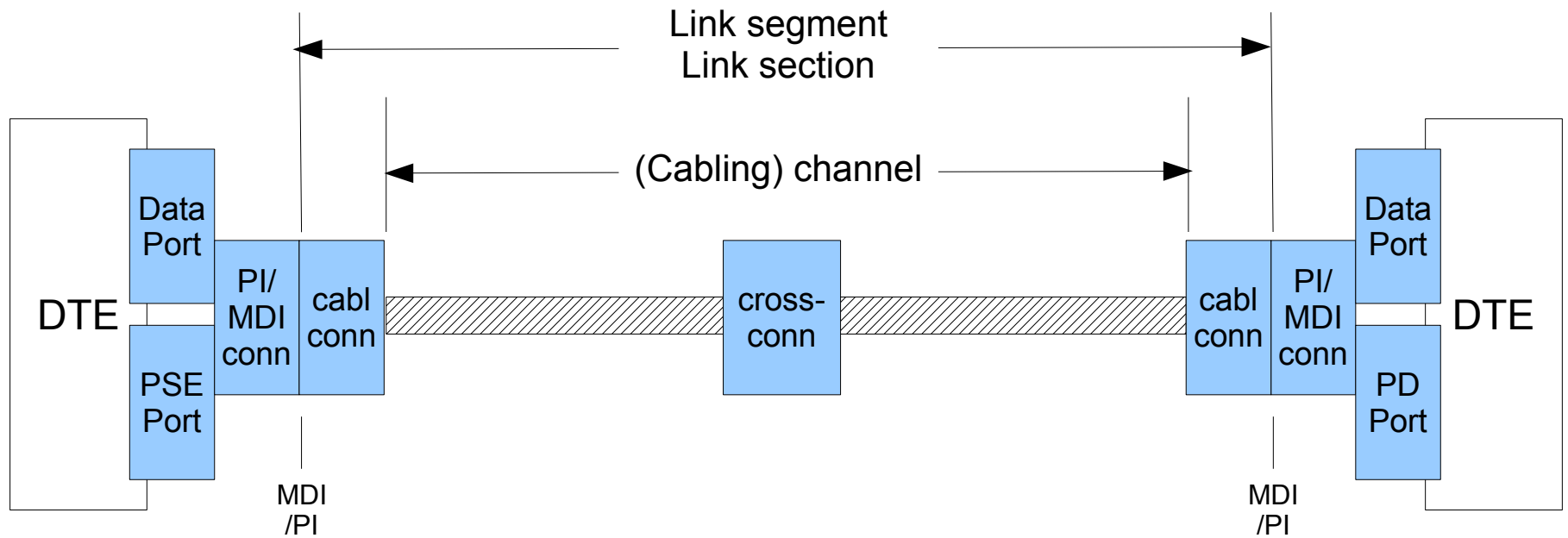
Diagrams - 1

- Link section
- Link segment simplest case



Diagrams - 2

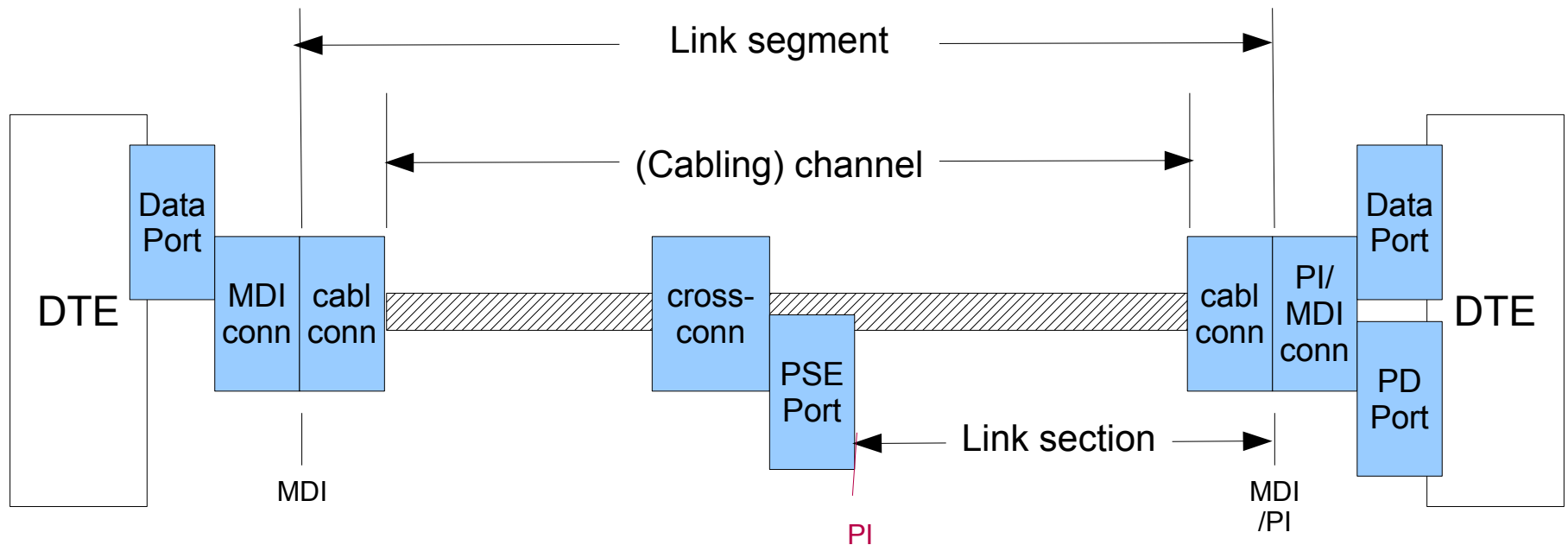
- Link section
- Link segment simplest case



Diagrams - 3

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- Link section
- Link segment
simplest case, 10/100 clause 33 midspan



“Simplest cases”

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- Drawn from 802.3af/at
- Has one and only one instance of a PSE.
- Has one and only one instance of a PD.

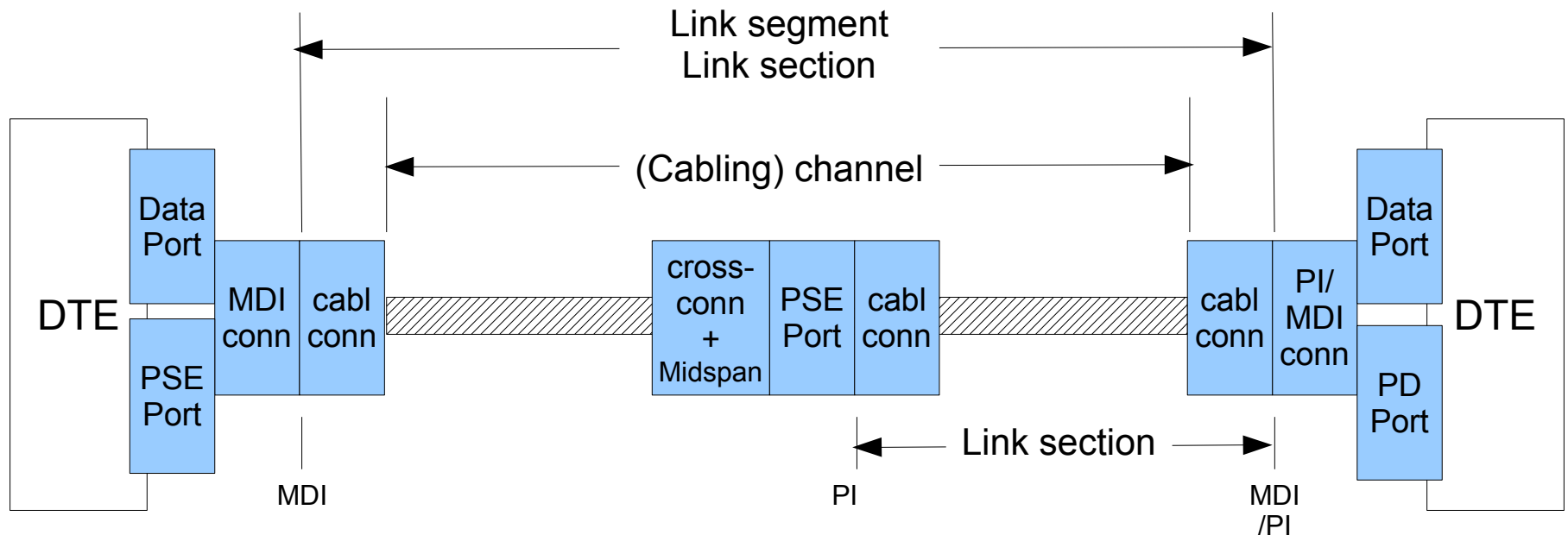
More complex cases

- ~~PSE in more than one location~~
- PSE in more than one location but no more than one may be active

Diagrams - 4

- Link section (apparently 2, not really)
- Link segment

Not complex, DC block precludes endspan



THANK YOU
for
your time, participation
and consideration.

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STANDARDS ADVISORS

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