

Annex 176A nomenclature

(comments #196, #577 against D1.0)

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Introduction

- As stated in comment #196, the annex addresses its topic with several names: “control function”, “start-up protocol”, “interface control function”, as well as “training”.
- The basis of this annex is the PMD control function defined in 136.8.11 (and previously 92.7.12 and 72.6.10), also known as “PMD startup protocol”.
 - The protocol, and the control function, are not specific to PMDs anymore. Another name is required.
- In practice, this feature is commonly referred to in the industry (and in some 802.3dj contributions) as “link training” or LT...
 - Although this term/acronym is not defined anywhere in 802.3
- Also, comment #577 notes that the annex currently uses the terms “segment” and “link” that have specific (and different) definitions in subclauses 1.4.505 and 1.4.372 respectively.
- This is not helpful for clear communication!

The importance of having a name

- This feature will be mentioned in multiple places:
 - Inside annex 176A, where it's defined
 - In annex 176D, annex 176E, clause 178, and clause 179, which require it
 - In introduction clauses – 116, 169, 174 (nomenclature tables etc.)
 - In PMA clause 176, where the IS_SIGNAL primitive is defined based on this feature
 - Possibly in optical PMD and inner FEC clauses 180, 181, 182, 183, 184... if training over optics is adopted
- References to annex 176A from other clauses are often in tables that mainly contain acronyms associated with the corresponding features
- Using the same term (and acronym) everywhere would help everyone!

Possible nomenclature for the “feature defined in Annex 176A”

- Some terms that came up

- A. Interface control function (ICF) 15/43
- B. Link startup function (LSF) 8/24
- C. Link training and startup function (LTSF) 0/1
- D. Segment control function (SCF) 15/48
- E. Segment startup function (SSF) 16/45

The word “function” can be replaced with “protocol” for any of the above.

- The numbers above show the number of entries found in www.acronymfinder.com for each option with F/P as the last letter.
- Preferably, decision should be made for Draft 1.1.

Addressing comment #577

- The definitions of the terms “link” and “segment” in 1.4 reflect their usage in the days of CSMA/CD...
 - **1.4.524 segment:** The medium connection, including connectors, between Medium Dependent Interfaces (MDIs) in a CSMA/CD local area network.
 - **1.4.372 link:** The transmission path between any two interfaces of generic cabling. (From ISO/IEC 11801.)
- Also
 - **1.4.378 link section:** The portion of the link between the PSE Power Interface (PI) and the PD PI
 - **1.4.379 link segment:** The point-to-point full-duplex medium connection between two and only two Medium Dependent Interfaces (MDIs).

Usage of these terms

- The term “segment” is mainly used in CSMA/CD clauses (8, 9, 10, 14, 18, 23, 29, 32), most of which are obsolete technology.
 - Its last independent usage (not as “link segment”) seems to be in clause 42 for half-duplex 1000 Mb/s Ethernet.
- The term “link segment” persists in twisted-pair related clauses
 - but its meaning seems to have become “a connectorized cable” (not the same as the definition).
- There are other terms used in many places that do not match the definitions in 1.4...
 - Notably “channel”, “port”, “stream”.

Possible remedies

- A. Find alternative terms to describe the electrical or optical path between active components (referred to as “segment”) and the multitude of these paths and components between endpoints (referred to as “link”) and replace them across annex 176A; alternatively, rephrase annex 176A to avoid usage of these terms
 - This seems like a lot of work that would not help most readers (at least those who are not interested in the older meaning of the terms)
- B. Add statements at the introduction to 176A explaining the usage of these terms within the annex.
 - This has been done many times, for example in optical clauses that define the term “channel”
- C. Do nothing
 - If there is consensus that the text in annex 176A is clear and non-ambiguous, we can keep it
 - Acknowledging that terms in 802.3 are sometimes used with different meaning than their definitions in 1.4 (which are often too specific and/or obsolete)
 - The definitions could be changed (e.g. limited to CSMA/CD) in maintenance

That's all

(Let the fun begin)