Terminology

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Introduction

- At Sept SG Meeting – the following objectives were proposed (http://www.ieee802.org/3/B10K/public/17_09/villarruel_b10k_01b_0917.pdf)
  - 200 Gb/s 40-80km interface with appropriate support for DWDM systems
  - 100 Gb/s 40-80km interface with appropriate support for DWDM systems
- At Dec 12 SG Ad Hoc Call
  - It was noted general agreement on terminology is needed when discussing proposed “DWDM systems” objectives above
  - Terms noted included - PHY, Link ,DWDM, Channel, Lambda, In-line amplification, point-to-point link, lane, channel, signal

Per IEEE P802.3 D3.0

- Suggested List: **PHY, Link ,DWDM, Channel, Lambda, In-line amplification, point-to-point link, lane, signal**
- **1.4.160 channel:** 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.)
- **1.4.281 lane:** A bundle of signals that constitutes a logical subset of a point-to-point interconnect. A lane contains enough signals to communicate a quantum of data and/or control information between the two end-points.
- 1.4.283 **link:** The transmission path between any two interfaces of generic cabling. (From ISO/IEC 11801.)
- 1.4.372 - **Physical Layer entity (PHY):** Within IEEE 802.3, the portion of the Physical Layer between the Medium Dependent Interface (MDI) and the Media Independent Interface (MII), Gigabit Media Indepen-dent Interface (GMII) or 10 Gigabit Media Independent Interface (XGMII), consisting of the Physical Cod-ing Sublayer (PCS), the Physical Medium Attachment (PMA), and, if present, the WAN Interface Sublayer (WIS) and Physical Medium Dependent (PMD) sublayers. The PHY contains the functions that transmit, receive, and manage the encoded signals that are impressed on and recovered from the physical medium. (For example, See IEEE Std 802.3, Clauses 23 to 26, Clause 32, Clause 36, Clause 40, Clauses 48 to 54, Clauses 58 to 63, Clause 65, Clause 66, Clauses 82 to 89, and Clause 96.)
- No definitions provided for **DWDM, Lambda, In-line amplification, Point-to-point link**

Other Observations

- DWDM - the only mention found in IEEE P802.3 D3.0 is in 1.3 Normative References
  - ITU-T Recommendation G.694.1—Spectral grids for WDM applications: DWDM frequency grid.
- CWDM – only 2 instances
  - 1.3 Normative References - ITU-T Recommendation G.694.2—Spectral grids for WDM applications: CWDM wavelength grid.
  - 87.6 - The center wavelengths are members of the CWDM wavelength grid defined in ITU-T G.694.2 and are spaced at 20 nm.
- How is an “optical link” like 400GBASE-LR8 defined? Per IEEE Std 802.3bs-2017 -
  - **1.4.72l 400GBASE-LR8:** IEEE 802.3 Physical Layer specification for 400 Gb/s using 400GBASE-R encoding and 4-level pulse amplitude modulation over eight WDM lanes on single-mode fiber, with reach up to at least 10 km. (See IEEE Std 802.3, Clause 122.)
- So what is DWDM link? DWDM network? DWDM Systems?
  - Different types?
- Do we need to address CWDM?

Moving Forward

- Work in anslow_b10k_01_0118 proposes different “optical links” (not IEEE defined term)
  - But not clear there is agreement on general terms that describe the different types of optical links or related aspects
- Proposed list of terms to define –

1. Channel
2. CWDM
3. CWDM Link
4. CWDM Network
5. CWDM Systems
6. DWDM
7. DWDM Link
8. DWDM Network
9. DWDM Systems
10. In-line amplification
11. Lambda
12. Lane
13. Link
14. PHY
15. Point-to-point link
16. Signal

  - Other Terms?
- For discussion on “appropriate support for DWDM Systems” it is important to understand ITU-T definitions. Liaison?

Terms (to be defined by Terminology ad hoc)

1. Channel
2. ~~CWDM~~
3. ~~CWDM Link~~
4. ~~CWDM Network~~
5. ~~CWDM Systems~~
6. DWDM
7. DWDM Link
8. DWDM Network
9. DWDM Systems
10. In-line amplification
11. Lambda
12. Lane
13. Link
14. PHY
15. Point-to-point link
16. Signal
17. WDM

Updated per Study Group Discussion @ Jan 2018 Interim