Summary of Inter-channel crosstalk methodology

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Overview of the proposed approach

- The inter-channel crosstalk ad-hoc was formed to determine an approach to allow budgeting for inter-channel crosstalk penalties in a black link
  - A crosstalk definition based on (integrated noise)/(integrated signal) is insufficient
- An approach to bound inter-channel crosstalk has been proposed:
  - Define a **Transmit spectral mask**
  - Define **DWDM Black Link transfer functions** for **signal** and **crosstalk** paths
- Presentations have been made to clarify the problem, and for both the Tx Spectral Mask and Link transfer function characteristics
  - https://www.ieee802.org/3/cw/public/adhoc/21_0212/maniloff_3cw_01_210212.pdf
  - https://www.ieee802.org/3/ct/public/20_11/way_cw_01b_201116.pdf
  - https://www.ieee802.org/3/cw/public/adhoc/21_0201/maniloff_3cw_01a_210201.pdf
- Methods to characterize the DWDM Black Link have been presented
- This provides a framework for 802.3cw to define the methodology
  - Details for penalty allocations and fine-tuning the approach are expected

DWDM Black Link

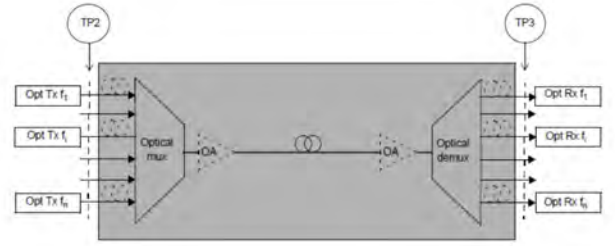
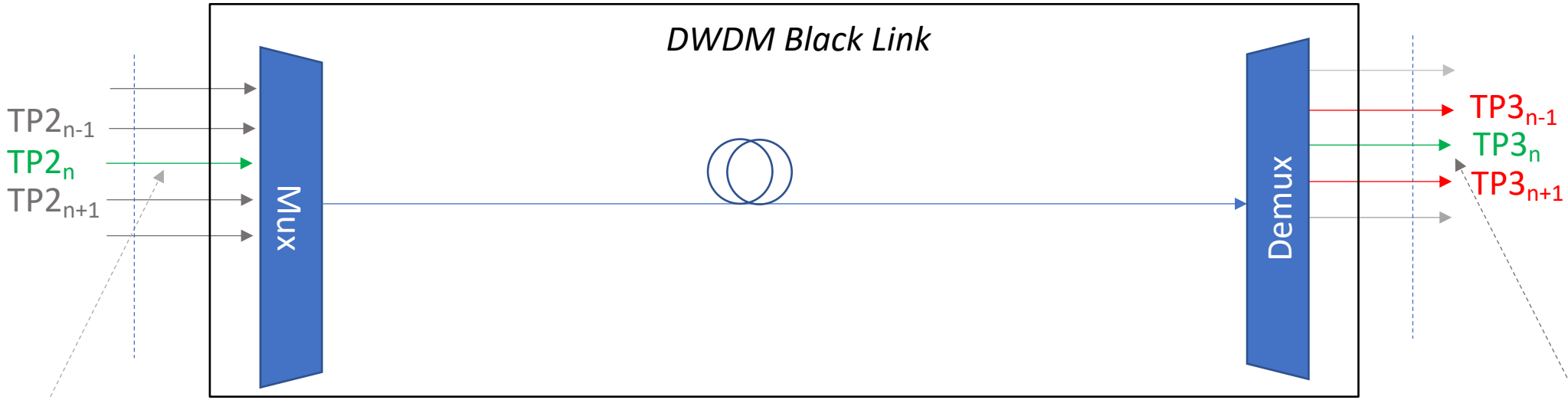


Figure 156–3—Example configuration of the black link approach



Each Port in TP_2 will have transfer functions defined for signal and crosstalk paths

$TP2_n$ to $TP3_n$ is a signal path (DWDM Channel)
$TP2_n$ to $TP3_{n-1}$ & $TP3_{n+1}$ are crosstalk paths

By specifying crosstalk path spectral attenuation profiles, 802.3cw can provide the required information for the DWDM Link (Black Link) without specifying individual components

Specifying the Tx spectral mask and the DWDM link spectral attenuation between ports allows calculation of the crosstalk power spectrum

Thanks!