

Data Centre Link Lengths



Alan Flatman

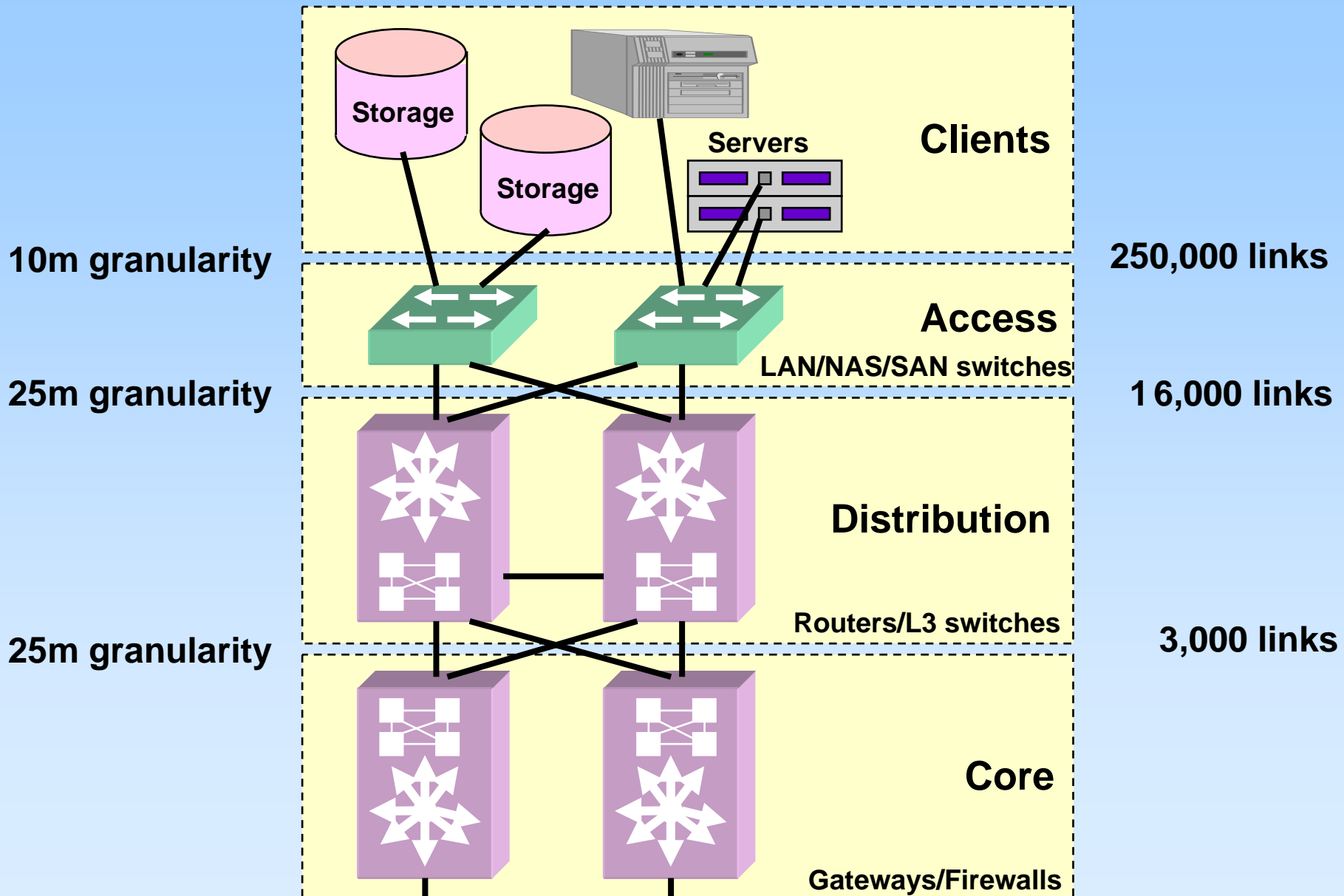
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Flatman Data Centre Cabling Survey

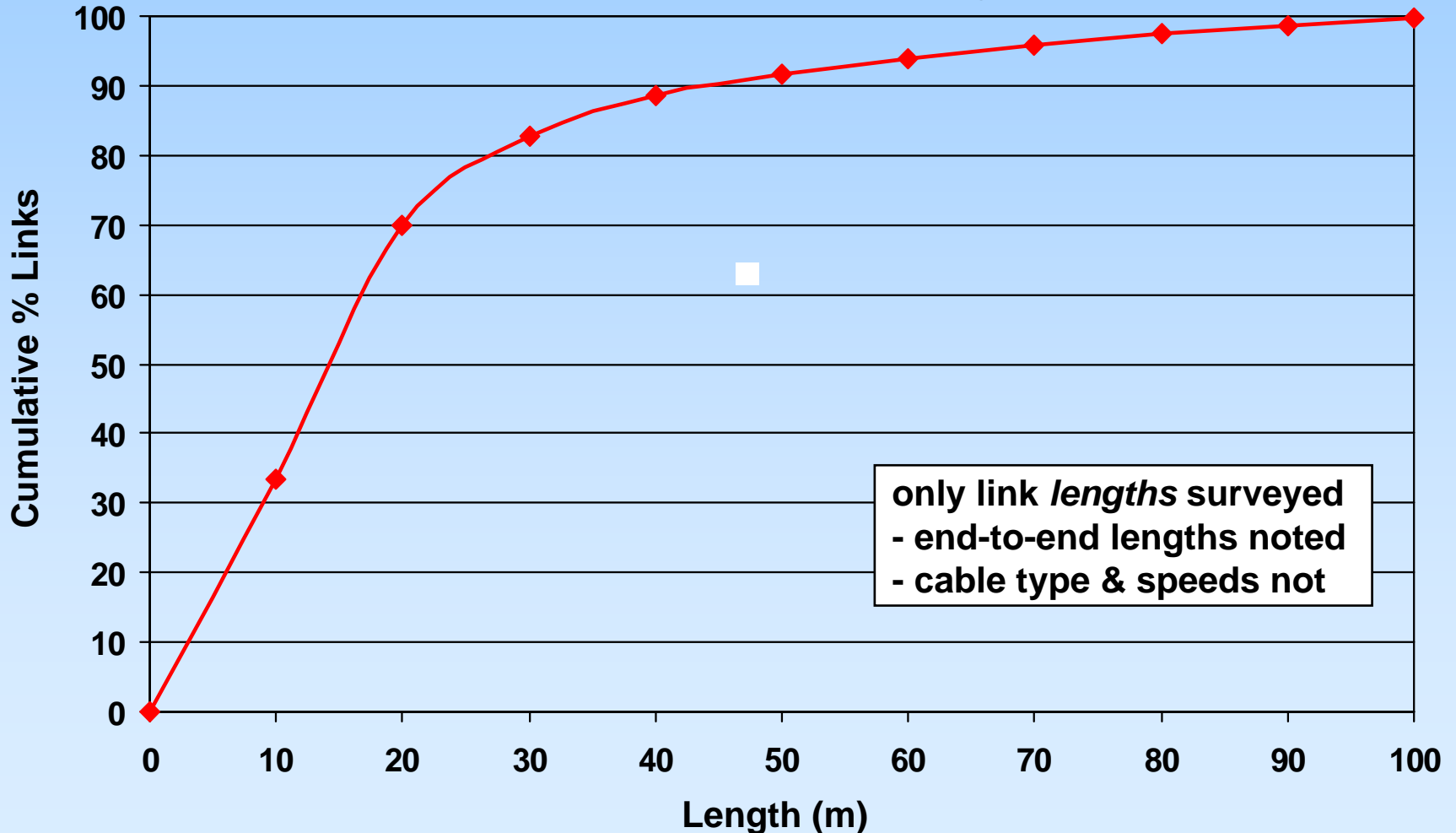
- **summary presented to IEEE 802.3ba in Jan 2008**
 - **www.ieee802.org/3/ba/jan08/flatman_01_0108**
- **9 enterprise data centres from US, UK, Germany**
- **total data centre floor space = 715,000 square feet**
- **small, medium, large, v. large sizes (IDC classes)**
- **EoR/centralised switching commonplace in 2007**
- **server-to-ToR switch link length distribution added in flatman_01_0311 100G NG Cu SG**
 - **assessed to represent ~60% cabled server-to-switch links based on Dell'Oro ToR switch port volumes**

Flatman Data Centre Survey Data



Data Centre Server-to-Switch Link Lengths for EoR/Centralised Switching

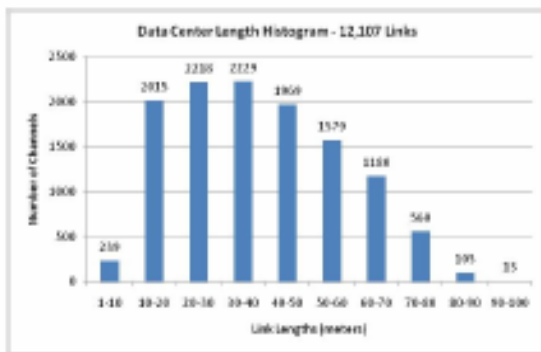
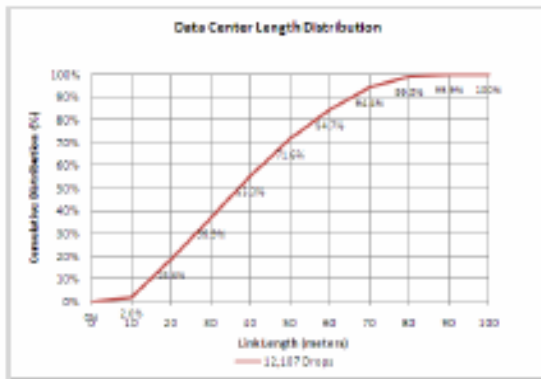
Source: www.ieee802.org/3/ba/jan08/flatman_01_0108



Contribution to IEEE 802.3 NGBASE-T Study Group; 12-15 November 2012, San Antonio

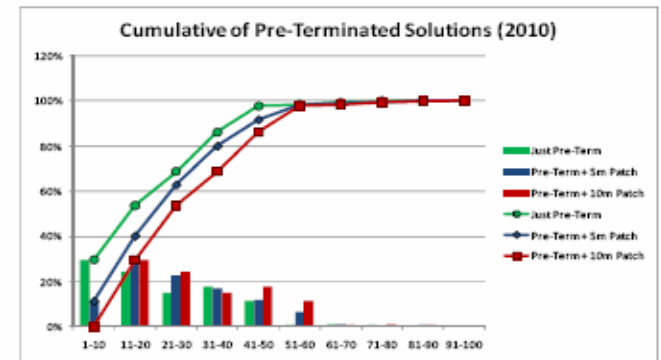
Data Centre Link Distributions reported by larsen_02_0912

All pre-terminated copper only cabling



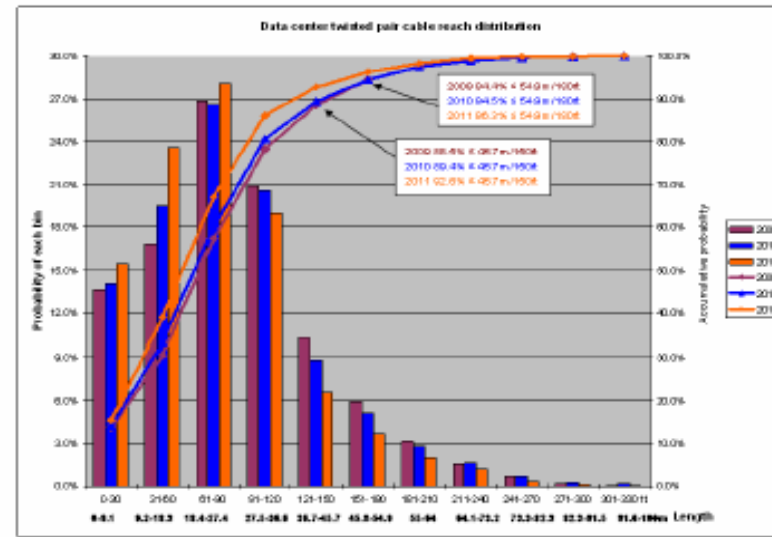
Source: TR42.7-2011-06-049-LengthHistogram
(Contribution made by Val Maguire of The Siemon Company to TIA in June, 2011)

2010 Pre-Terminated Solutions with Patch Cords Added

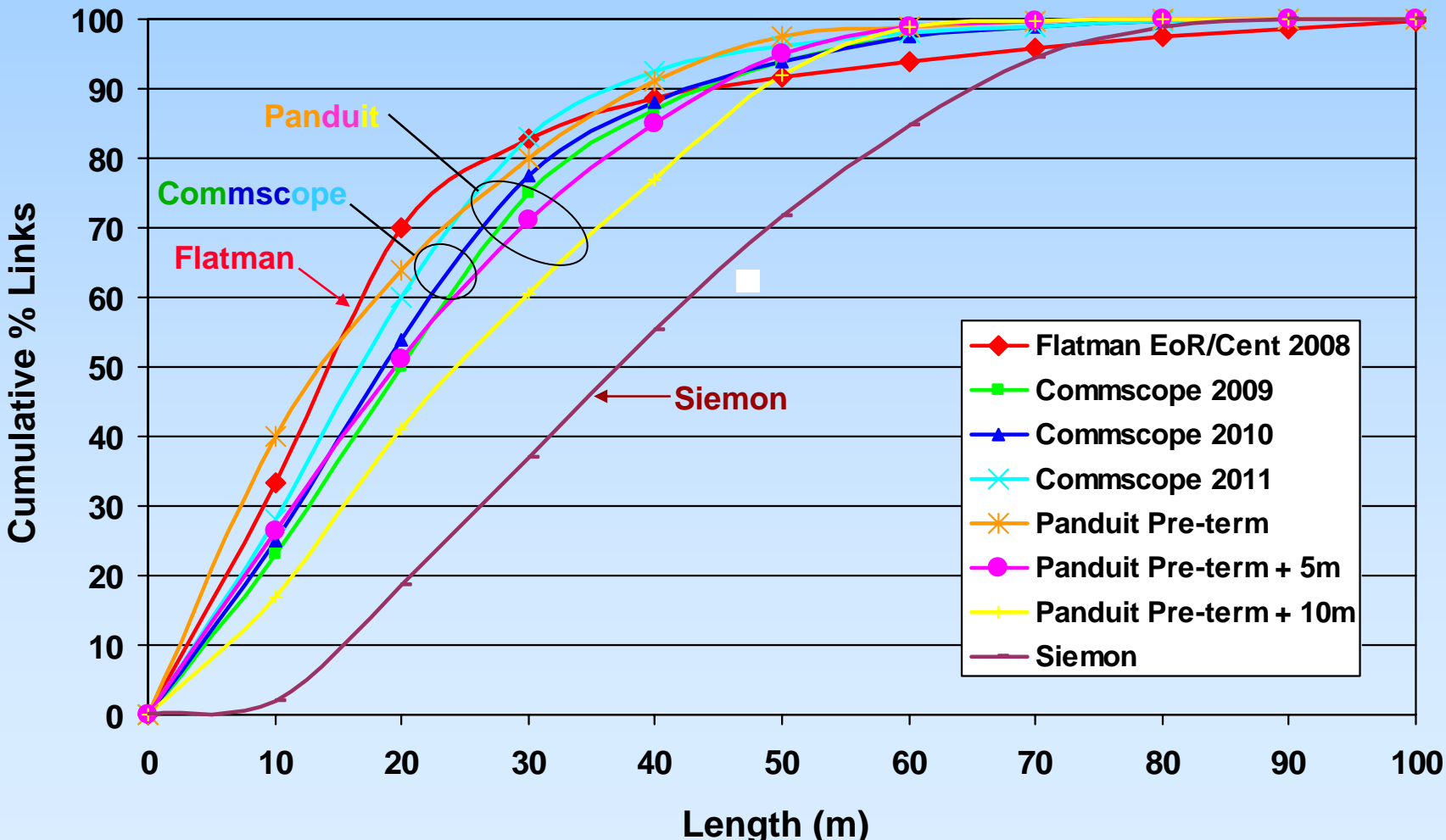


Patch cords just added to the total length of the pre-terminated solution

Source: TR42.7-2011-10-070-ChannelLengths
(Contribution made by Frank Straka of Panduit to TIA October 2011)



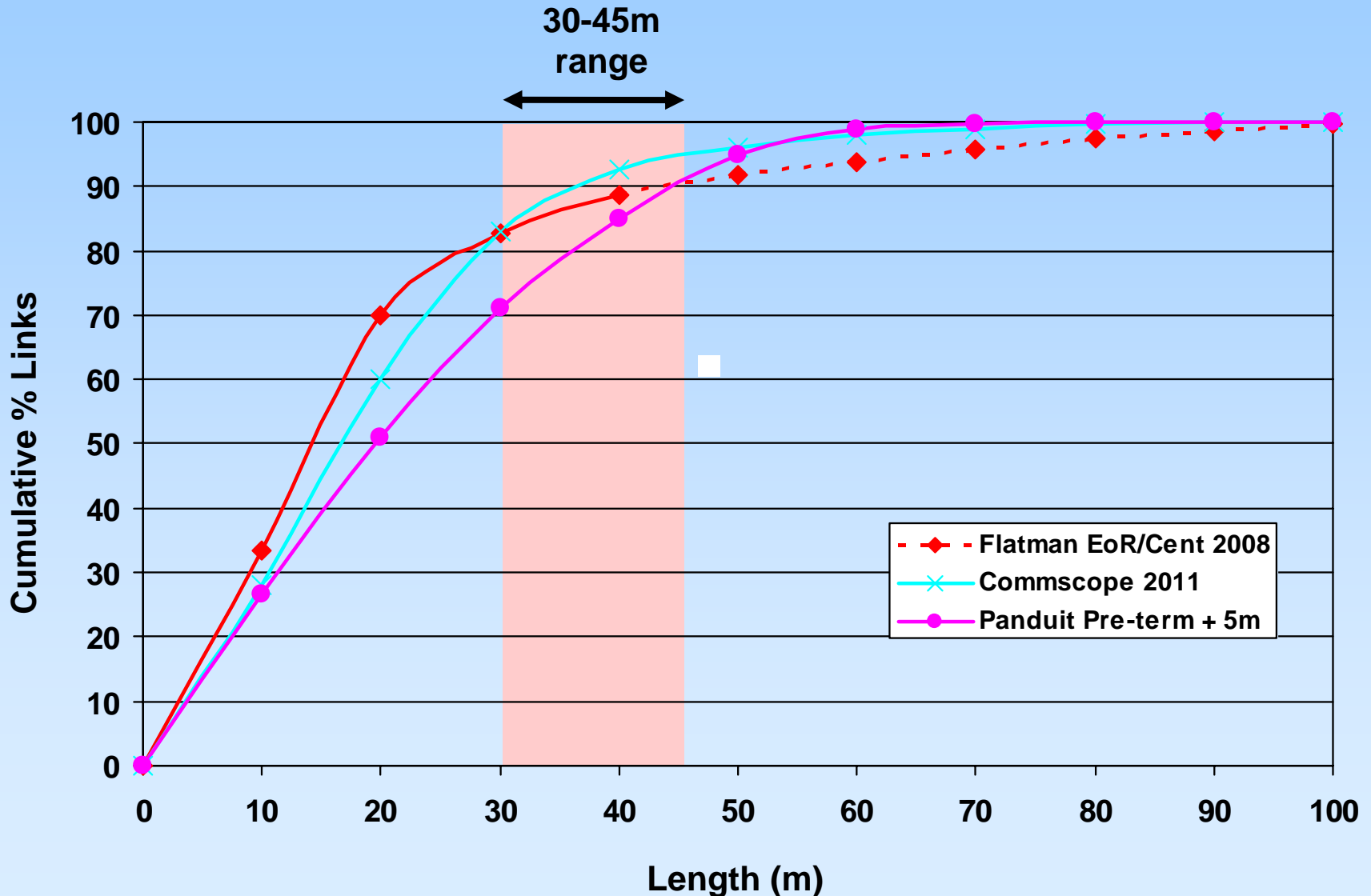
Comparison of Flatman 2008 Data with Commscope, Panduit & Siemon Data



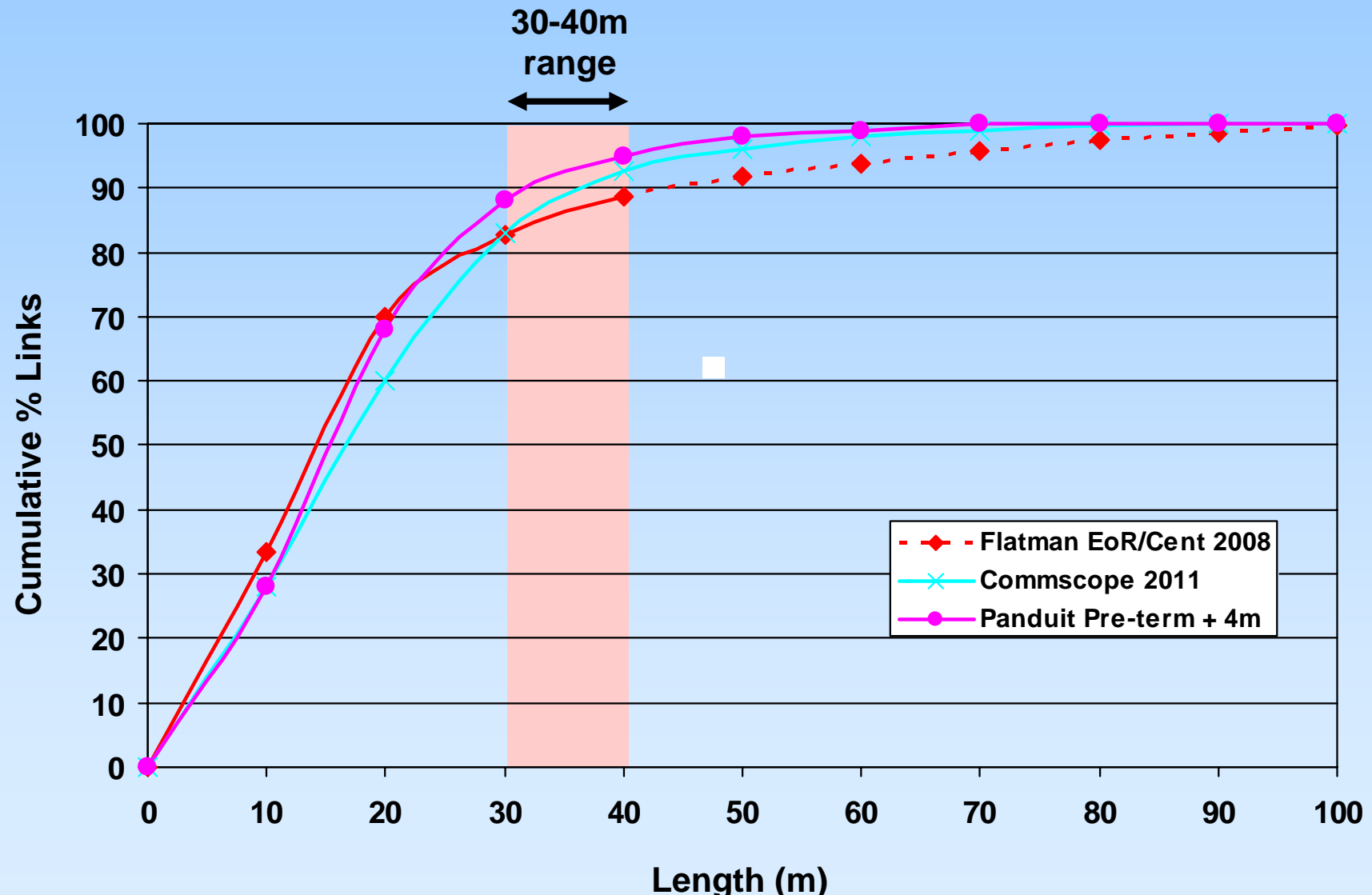
Some Observations

- COMPARE** ➤ Flatman data from a large end user survey, supplier data based on product shipments
- IGNORE** ➤ long tail >40m in Flatman distribution probably from centralised switches
- USE LATEST DATA** ➤ slight trend in link shrinkage over time with Commscope data
- USE 5m CORDAGE** ➤ most representative data from Panduit will probably include 5m total cordage, not 10m
- OVERLOOK** ➤ unable to reconcile Siemon link distribution

Comparison of Filtered Data

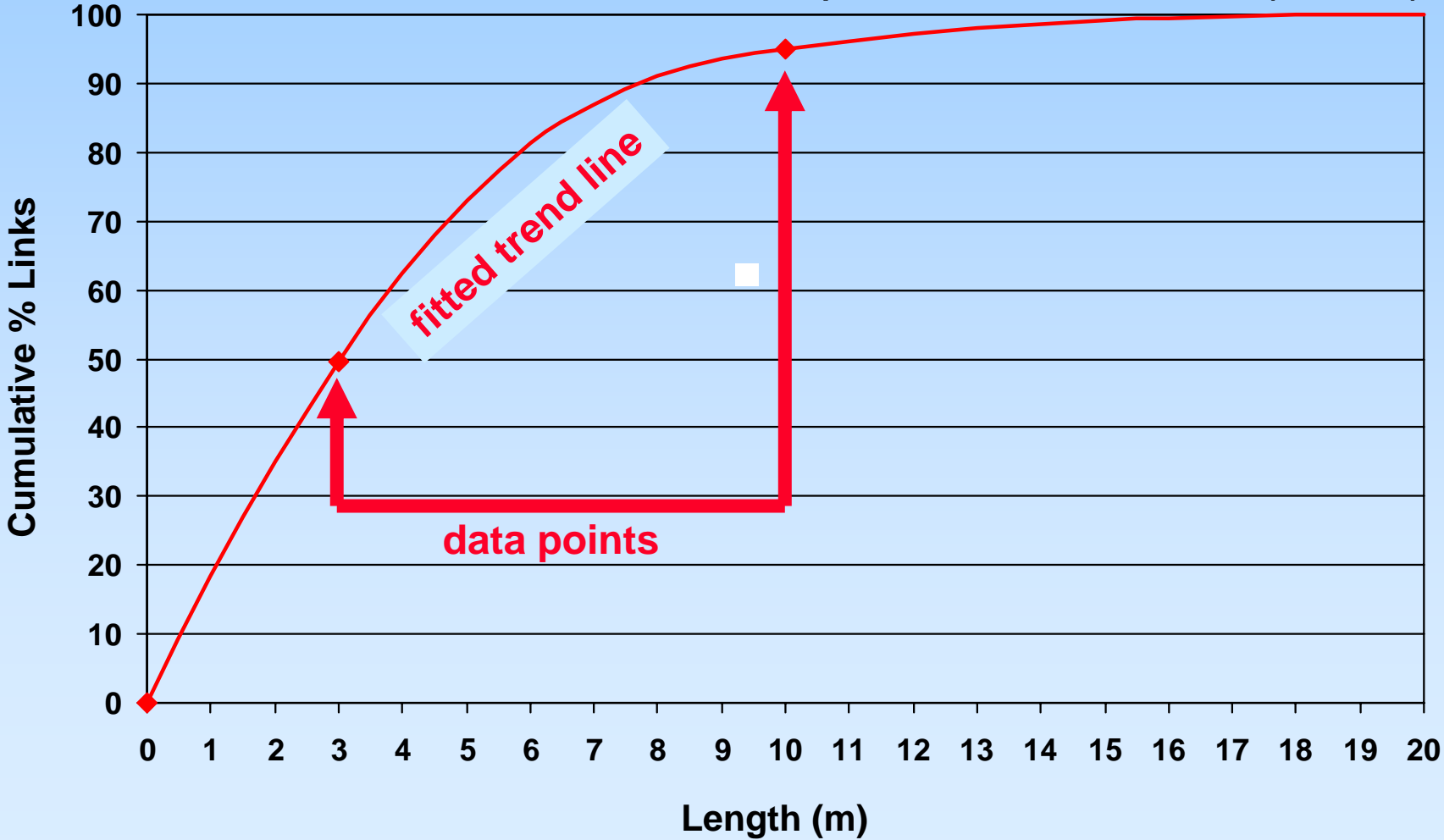


Comparison of Filtered Data with update from wagner_01_1112

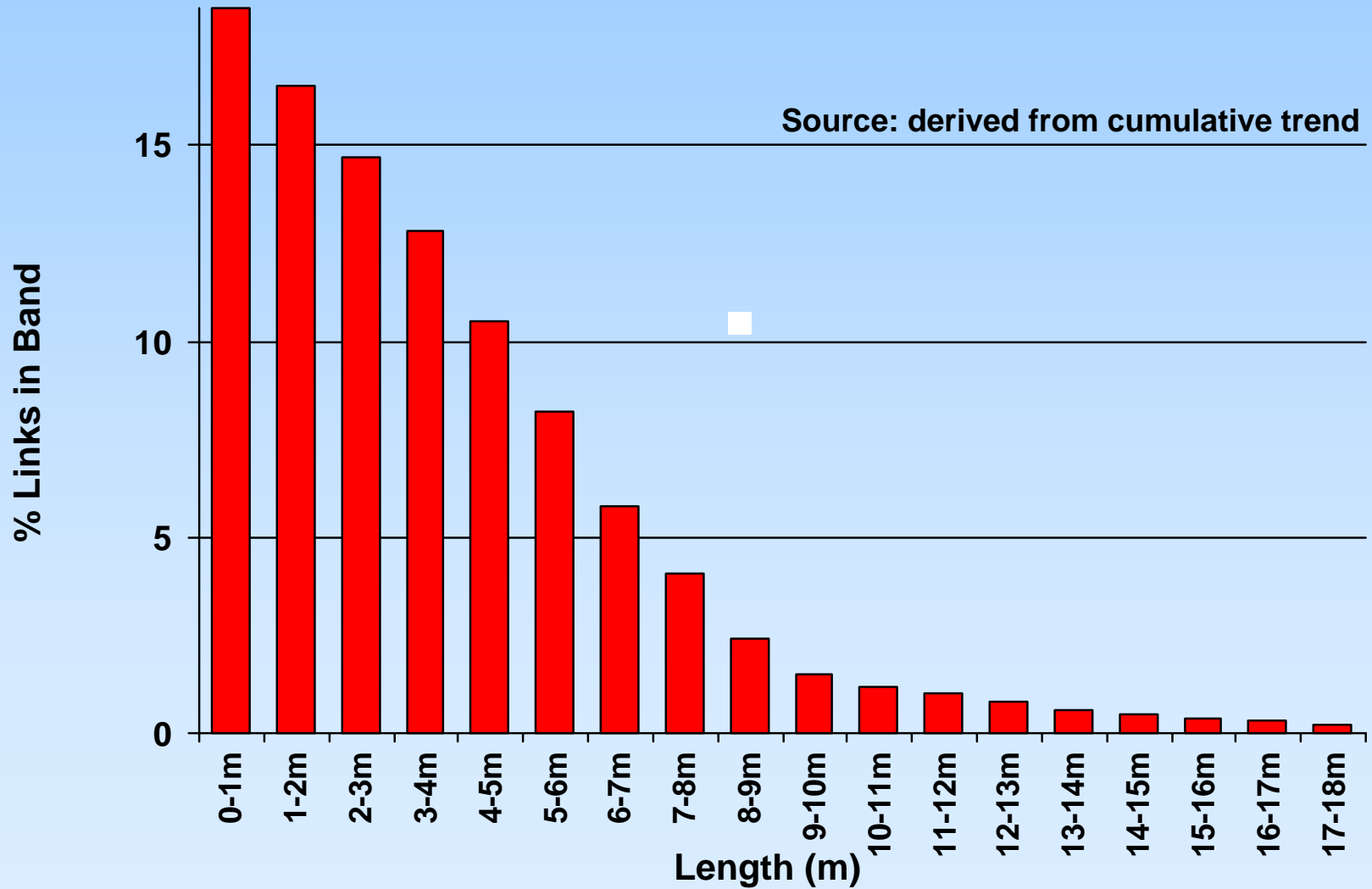


Data Centre Server-to-Switch Link Lengths for ToR/Cabinet-to-Cabinet Switching reported by flatman_01_0311 100G NG Cu SG

Source: data points from J+M Consultants (Feb 2011)



Data Centre Server-to-Switch Link Lengths for ToR/Cabinet-to-Cabinet Switching



Questions?