

40GBASE-ER4 link coverage

Pete Anslow, Ciena

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Introduction

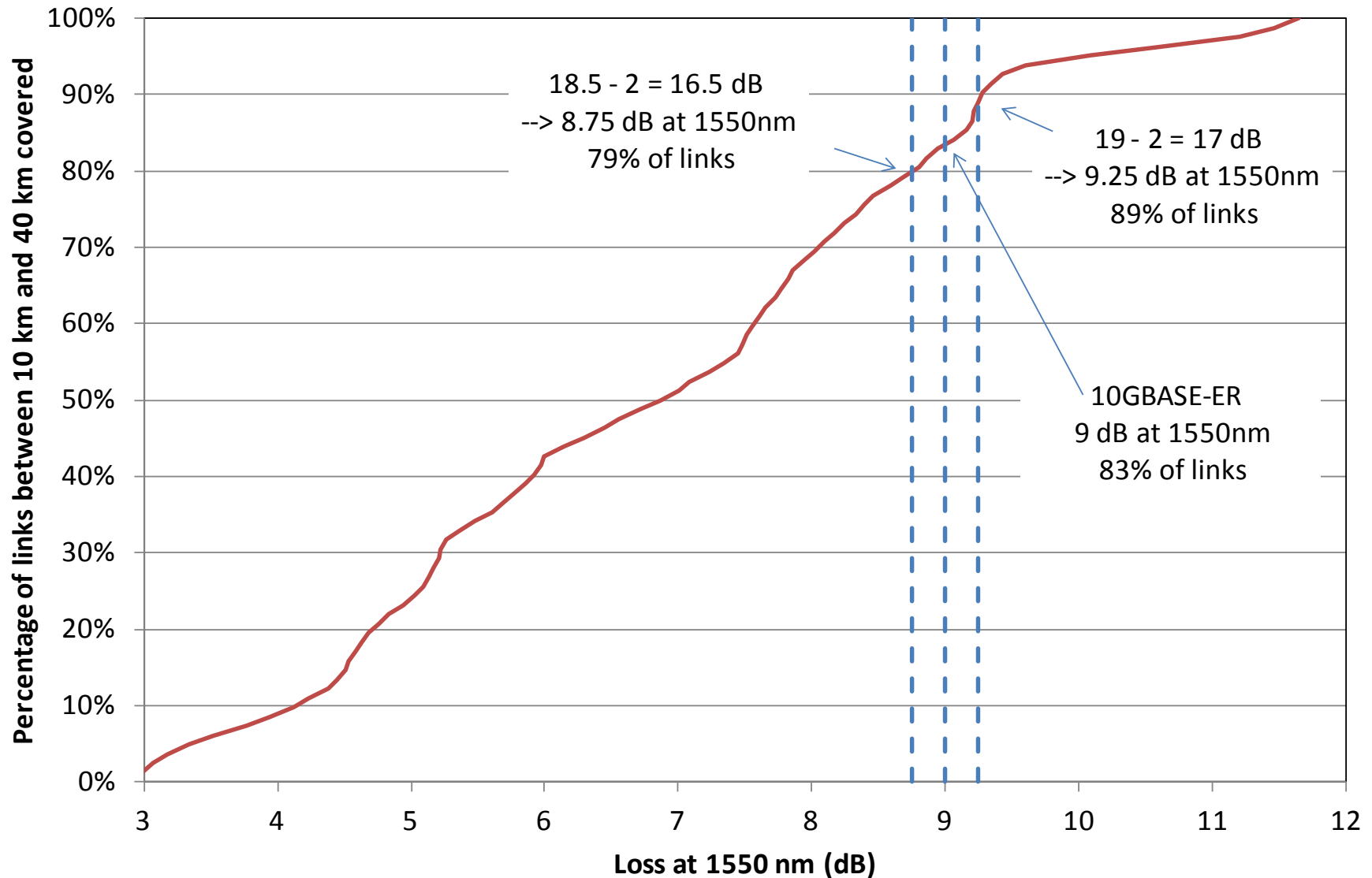
At the 40 Gb/s and 100 Gb/s Fiber Optic Task Force SMF Ad Hoc call held on 23 October 2012 [cheng_01_1012_smf](#) proposed to increase the maximum channel insertion loss from 18.5 dB (in the adopted baseline) to 19 dB.

During the discussion of this proposal, the question was raised as to what proportion of links in the range of 10 km to 40 km would be covered by the two limits.

In order to try to answer this question, the data that was used to create Figure 10-8 of [G.Sup39](#) was re-analysed by removing any links shorter than 10 km or longer than 40 km. This gave data from ~100 links from 8 operators.

A graph of link coverage vs loss is shown on the next page.

Installed link coverage



Conclusion

The adopted baseline power budget for 40GBASE-ER4 is based on 18.5 dB maximum channel insertion loss. From the installed link data analysed in this contribution, this covers about 79% of links between 10 km and 40 km

Changing the maximum channel insertion loss to 19 dB would change the coverage to about 89% of links between 10 km and 40 km

Whether this is the best thing to do or not depends on the expected increase in module cost due to the change.

Thanks!