A protected LR-PON deployment plan for the UK

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The mass deployment of fibre access networks is probably the most important network upgrade strategy for operators over the coming decade. Next generation networks and in particular the Long-Reach Passive Optical Network (LR-PON) solution aim to increase long term economic viability and sustainability of Fibre to the premises (FTTP) deployment. The LR-PON solution achieves this by minimising the number of nodes and the amount of electronic equipment required within the network. Since a LR-PON replaces the metro backhaul network (which is usually a protected part of the network), protecting the long reach part of LR-PON network against failures becomes a critical issue that needs to be taken into account. With our work we introduce a novel protection mechanism that, by spreading the load generated by a node failure over the network, can significantly reduce the overall protection capacity required. We then present a practical FTTP deployment scenario based on our protected LR-PON architecture for the UK network.