# G Suppl. 45 Optical access systems power conservation

- Investigation of methods to save power across optical access transmission systems: PON & point to point
- Reminder of the state of the art of power consumption allowances per type of devices, per generation
- Establishing a catalogue of protocol enabled power saving methods and taxonomy [1] in a holistic approach
- Description of the operation conditions to make low power modes acceptable, e.g.: [2] in complex ONUs

- Explanation of the state machines and messaging necessary to take full advantage of the mechanisms across the set of ITU-T recommendations
- Proposals of new access network architectures based on mid-span extenders [3], enabling further network consolidation
- Show examples of possible power savings estimations based on the mechanisms
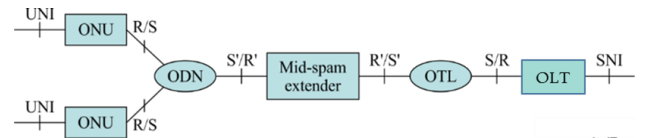
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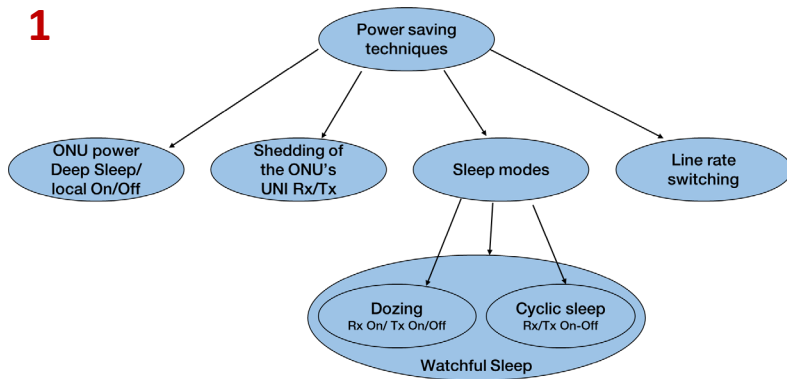
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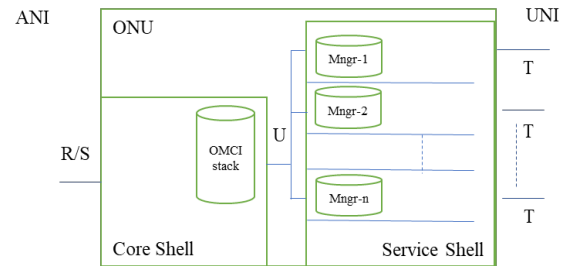
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ITU-T G Suppl. 45 describes the power saving capabilities offered by the optical access context applied to its constitutive active devices' configurations: OLT, ONU and reach extenders. For each of them power saving concepts are listed across the diversity of ITU-T technologies: PON (ITU-T G.984, ITU-T G.987, ITU-T G.9807 & ITU-T G.9804), point to point (ITU-T G.9806) and multi-channel (ITU-T G.989).

ITU-T G Suppl. 45 proceeded to the collection of operators needs through surveys, to match the various worldwide use cases of the ITU-T defined technologies. Among them, maximal power consumption allowances per devices are reminded, to secure compliance to BBCoC expressing the state of the art of the technology.

ITU-T G Suppl. 45 examines conditions for low power modes not to be mistaken for outages, especially when affecting the diverse ONU remote devices types , thanks to protocol adaptations, enabling periodic link availability checking, to assess SLA and define the appropriate wake up periods for the various architecture and services requirements

ITU-T G Suppl. 45 paves the way to the next steps for operators to study with implementers the value of the parameters appropriate across the many use cases collected [4] along the development of the PON technologies to quote the worldwide dominant technology.

In addition to the ONU side, that is the focus of ITU-T SG15 Question 2 on defining the transmission interface, G Suppl. 45 also gives examples of best practices to save power on the OLT side.

BBCoC: Code of Conduct on Energy Consumption of Broadband Communication Equipment

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For more information, please visit the ITU-T Study Group 15 website at: www.itu.int/go/tsg15