



TDD – DS/US Dynamic Allocation

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Dynamically US/DS Time Allocation

- Dynamically reconfigure the allocated upstream and downstream
- Statistical Multiplexing Gain
 - Delivers better service experience to end users
 - Lower cost to operators
- Better BW utilization

US/DS Time Division - Possibilities

☐ Fixed Allocation

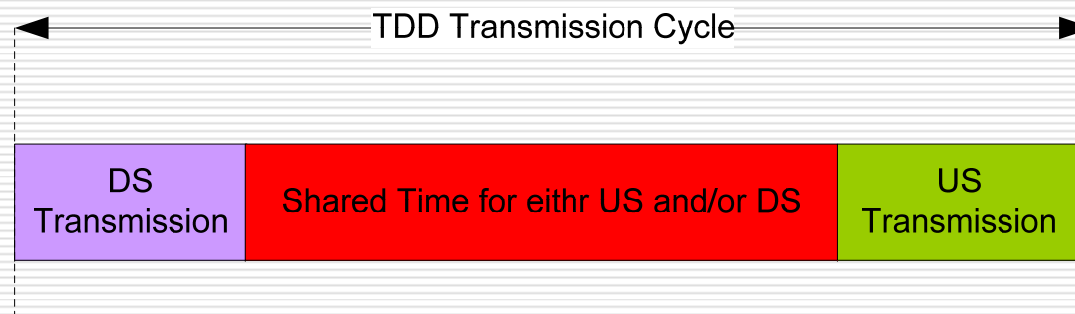
- Determined by PHY link in setup
- Rarely changed – Can be adapted from time to time to give a good average performance
- No statistical multiplexing gain

☐ Dynamic Allocation

- CLT may change BW allocation (using Gate messages) to both DS and US
- New to EPON
- Statistical multiplexing gain

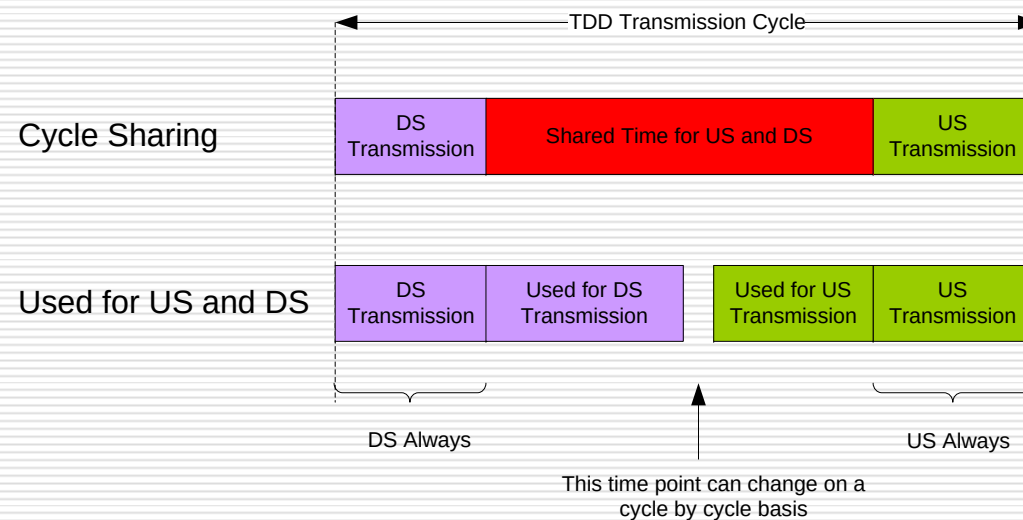
Variable Allocation Strategy (1)

- The TDD cycle is divided into 3 parts:
 - Fixed DS time
 - Fixed US time
 - Shared time – for either DS and/or US
- TDD allocation to DS and US is performed by an augmented DBA function



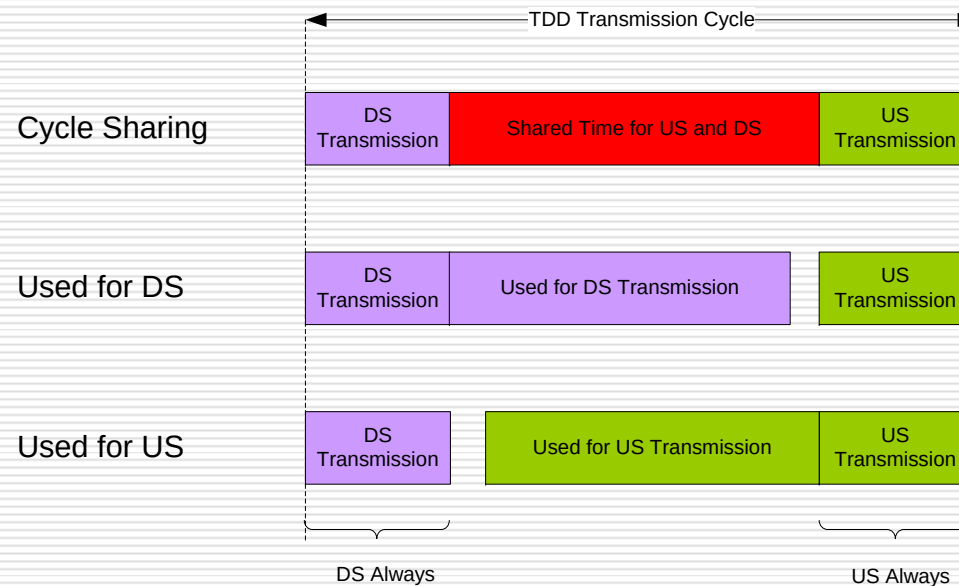
Variable Allocation Strategy (2)

- ❑ Option 1 - Part of the cycle may be used for US and the other part for DS
 - The time point between US and DS is determined by the CLT
 - Guard time is kept only between US and DS



Variable Allocation Strategy (3)

- ❑ Option 2 – The shared time is used for either US or DS
 - The shared time is not used for both US and DS
 - Guard time is kept only between US and DS



Remarks

- ❑ Option 2 can be seen as a special case of option 1 (2 different allocations)
- ❑ By setting the length of the Shared Time to 0, we're back with the conventional TDD
- ❑ PHY Link – need to decide when it is active
- ❑ Need to decide about minimum values for US and DS time

Decisions

- ❑ EPoC should support dynamic TDD
- ❑ TDD cycle will consist of
 - Fixed US Time
 - Fixed DS Time
 - Shared Time, which can be used to either US or DS transmission