

AFCS Application

AFCS Help Fiber Maintenance

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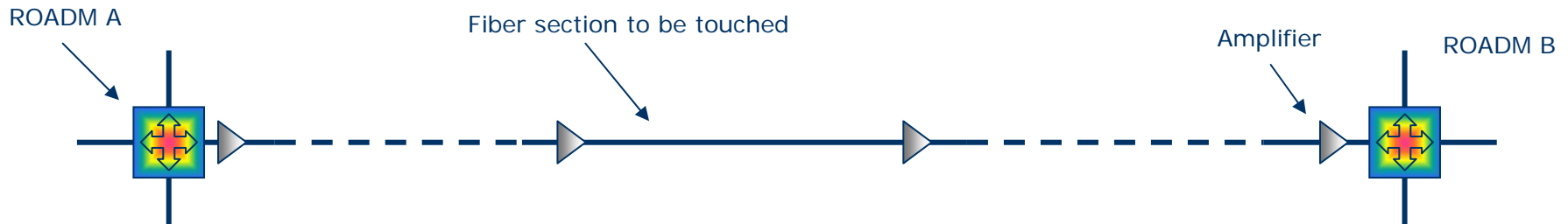
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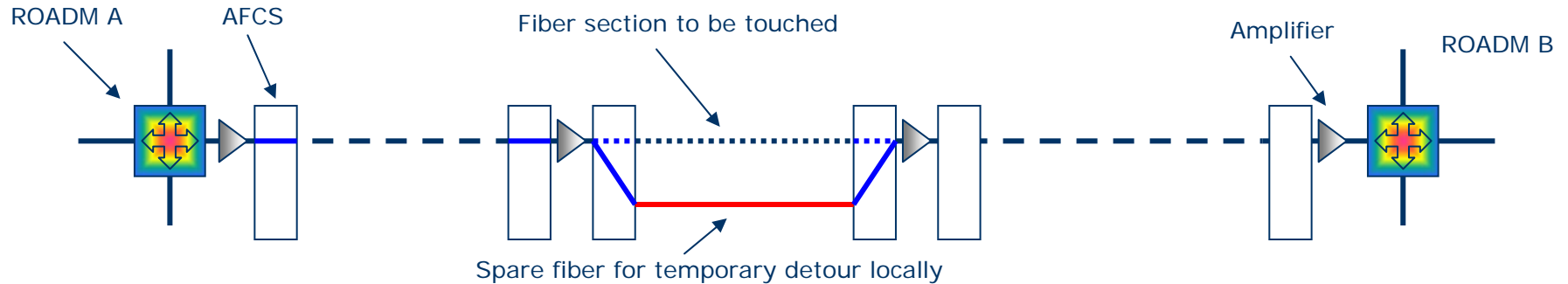
Present Mode Operation

- ▶ Fiber maintenance in a network is inevitable due to local construction, cable re-arrangement, trouble shooting, etc.
- ▶ Before fiber maintenance work starts, the traffic on the fiber must be switched to an alternative route between terminals to avoid traffic interruption
- ▶ It becomes much more difficult to switch traffic as each fiber now carries multiple DWDM channels, and ROADMs would no longer necessarily be the terminal points



In PMO all traffic on the effected path must be switched to alternative routes before maintenance work begins.

How AFCS Helps Fiber Maintenance



- ▶ Install AFCS (optical switch) at each amplifier site
- ▶ When a fiber section between two amplifiers needs maintenance work, simply switch all traffic of the affected fiber to a spare fiber with the help of AFCS
- ▶ All terminal equipment is not impacted by the interruption; therefore, there is no need to switch all traffic to alternative routes between terminals
- ▶ All traffic can be switched back to the working fiber after the maintenance work is complete

Benefits of the Application

▶ Technical Benefits

- This is a solution to solve foreseeable problems in fiber network maintenance with a heavy number of DWDM channels
- The down time of the affected fiber route can be reduced dramatically
- Save operation costs

Benefits of the Application

- ▶ Who Can Benefit from the Application
 - Carriers with large fiber network infrastructure
 - Fiber network owners who lease fiber to carriers
 - Carrier hotel owners
 - Data center owners

Benefits of the Application

► Challenges

- How fast the switch speed needs be to prevent interruption is still under investigation
- Capital expense justification for large scale deployment of AFCS equipment is still in debate