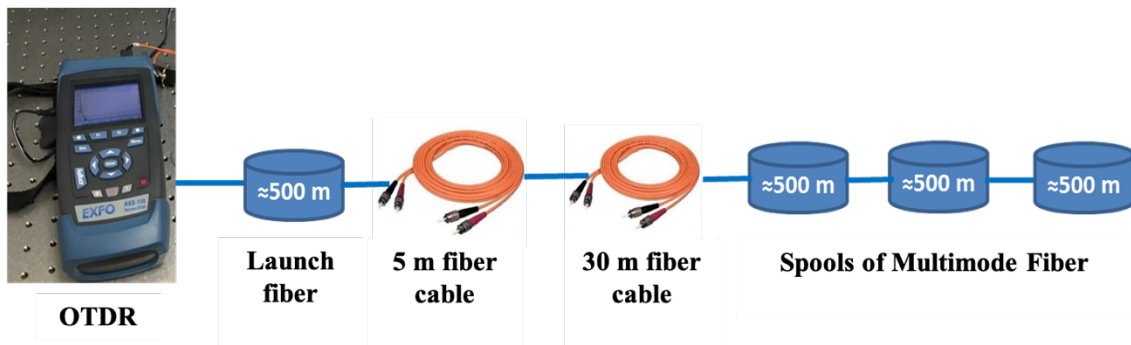


Name:

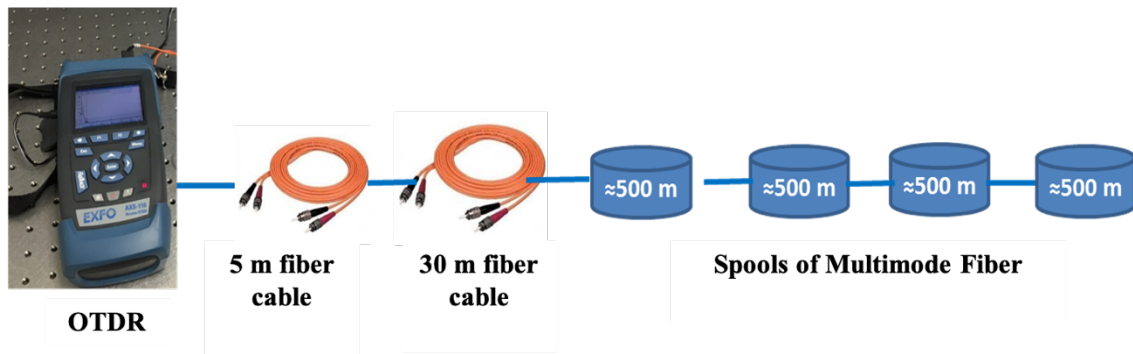
Lab Group:

Exercise 1. According to the next experimental setup shown in the figure, follow the next steps to characterize the multimode fiber link and answer the next questions:



- Set the suitable configuration parameters of the OTDR to correctly visualize the events in the optical link.
- Perform a battery of tests on the optical link taking the following situations:
 - Long pulse width and long averaging time
 - Short pulse width and long averaging time
 - Long pulse width and short averaging time
 - Short pulse width and short averaging time
- In each of the previous situations, locate the events and make a table with the following characteristics:
 - For the complete trace: estimated the length of the link and the total losses.
 - For reflective events: position of the event, losses that occur in the event and maximum reflectivity that occurs.
 - For non-reflective events: Position of the event and losses that occur in it.

Exercise 2. Modify the previous setup, as shown in the next figure. Now, take the same measurements again and see what differences you see from the previous setup. Justify these differences and the phenomena that occur.



Exercise 3. In this exercise you should characterize the GPON network in the physical layer in the next way:

- Set the suitable configuration parameters of the OTDR to correctly visualize the events in the downstream channel of the GPON.
- Perform a battery of tests on the downstream channel taking the following situations:
 - Long pulse width and long averaging time
 - Short pulse width and long averaging time
 - Long pulse width and short averaging time
 - Short pulse width and short averaging time
- From the achieved traces in the downstream link you should determine what type of events it is, that is, a connector, a fusion, a cut, a tension zone, and so on.
- Analyze the upstream channel under the same procedure.