## **GPON** in a **BOX**

paulo andré<sup>1</sup>, armando pinto<sup>2</sup>, antónio teixeira<sup>2</sup>, mário lima<sup>2</sup>, rogério nogueira<sup>1</sup>, joão pinto<sup>4</sup>, ali shahpari<sup>4</sup>, telmo almeida<sup>1</sup>, gabriel gonçalves<sup>4</sup>, fernando parente<sup>4</sup>, andreia alves<sup>4</sup>, irina carvalho<sup>4</sup>, paulo monteiro<sup>4</sup>, josé girão<sup>2</sup>, joão davim<sup>4</sup>

<sup>1</sup> department of physics & instituto de telecommunicações (IT), university of aveiro
<sup>2</sup> department of electronics, telecommunications and informatics & instituto de telecommunicações (IT), university of aveiro
<sup>3</sup> department of physics & I3N, university of aveiro
<sup>4</sup> instituto de telecommunicações (IT)

This Project is promoted by Portugal Telecom Inovação in collaboration with the Instituto de Telecomunicações (IT) and financed by the QREN with total investment of 6.5 M€.

The main objective is to develop new components for the next generation of optical networks. These components, to be manufactured by Portuguese industry, should provide complete off-the-shelf solutions to interconnect residences and business centers through optical fibers, allowing the subscription of services such as digital and analog TV, internet and voice. The characteristics for the developed solutions, in comparison with commercial ones, are the low implementation cost and energy consumption, flexibility in terms of network

design and interoperability with of other brands equipments.

IT ontributions are to develop solutions for the subscribers of optical interfaces, to implement and propose new amplifications concepts, to increase the total network length and to provide tools for the network cost planning.