LABORIS:

From electronics debug to remote laboratories and renewable energy, a research group on engineering education!

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Abstract

The LABORIS - Testing Systems Research Group is a specialized research unit operating within the Center for Innovation in Engineering and Industrial Technology (CIETI) at the Instituto Superior de Engenharia do Porto (ISEP/P.Porto). The group focuses on research on **remote laboratories, engineering education, and design for debug and test**. By bridging the gap between hardware testing and pedagogical design, LABORIS drives innovation in how engineering concepts can be taught and practically applied through remote-access technologies.

The ongoing research and development focus on the use of standard web browsers to control actual physical equipment housed at partner institutions worldwide, instead of relying on computer simulations or being restricted to physical campus benches.

Simultaneously the group is managing the SHOREWINNER Project (Southern European Community for Offshore Wind Energy) a co-funded European Union initiative designed to build a specialized workforce for the rapidly growing offshore renewable energy sector. This four-year initiative (2024–2028) brings together a consortium of 22 partners across five Southern European countries: **Portugal, Spain, Italy, Greece, and Cyprus**.

The primary mission of the project is to bridge the gap between labor market demands and training by establishing five **Centres of Vocational Excellence (CoVEs)**. These specialized centers cooperate locally with industry representatives, academic bodies, and vocational schools to design targeted, high-quality educational programs that address regional energy goals.