PROJETO COFINANCIADO PELA UNIÃO EUROPEIA

Acrónimo - Título	Transformer 4.0 : Digital Revolution of Power Transformers
Concurso/aviso	01-0247-FEDER-045926
Duração	2020-2023
Orçamento total (% Incentivo)	2.833.072,46€
Objetivo geral	The R&D project Transformer 4.0 (TRF4.0) explores the digital transformation in power transformers, taking advantage of the capabilities of Digital Twins (DTwins). These DTwins, being virtual models' representative of physical systems, enable disruptive approaches in design, manufacturing, and operation of transformers. They are able to introduce new communication approaches and offering new features, such as the monitoring and intelligent operation of transformers, allowing the optimization of operations and the life cycle improvements, taking advantage of the detailed virtual multiphysics models and artificial intelligence. This project combines complementary research expertise from different groups: Efacec, INESCTEC (Research Institute in the areas: Informatics, Industry and Innovation) and INEGI (research institute in the areas: mechanical and industrial engineering), and MIT - Massachusetts Institute of Technology, through the Sociotechnical Systems Research Center, allowing for a broad and multidisciplinary research project.
Promotores	- Efacec Energia - Máquinas e Equipamentos Eléctricos S.A - INESC TEC - Instituto de Engenharia de Sistemas e Computadores, Tecnologia e - INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial
Resultados esperados	- Digital-twin-based platform, covering all the life-cycle stages, from the conception to the dismantling. State-of-the-art solution are focused on specific stages, addressing specific issues/processes - Model-based communication with suppliers and customers - Ageing Digital Twin, continuously evolving based on received data regarding manufacturing data, updated manufactured geometry, wearing caused by in-service cycles, ageing parameters measured in periodical inspection tests, information regarding detected anomalies, etc - Digital and advanced manufacturing technology for power energy industry