

# Smart Grid advancements based on the HummingBoard solution

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Smart grids represent a highly sophisticated technological innovation that enables the intelligent integration of energy generators, consumers, and storage systems. This integration facilitates the provision of electricity that is both efficient and of high quality, while minimizing losses and ensuring the security of power supply. Despite its potential benefits, this technology is susceptible to security breaches, privacy issues, and vulnerabilities. The TESTBED2 initiative is a comprehensive research endeavor that spans various fields of study throughout Europe. The main aim of this study is to develop novel methodologies to enhance the scalability of smart grid services through the utilization of emerging technologies, such as blockchain. The present study expounds upon the fundamental framework of the proposed system, which employs blockchain technology as a means of certification authentication. This action was carried out within the framework of the research paper. In addition to the system description, we present the HummingBoard implementation as well as smart grid authorization policies in this paper.

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