

عنوان مقاله:

A Key Management Schema Based on ECC to Secure the Substation and Control Center Communications in Smart Grids

محل انتشار:

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خلاصه مقاله:

Since the invention of electricity, global power grids have been at the forefront of technological advances. The antiquated infrastructure of power system which provides power to the city s homes, factories and businesses are replaced with a new power distribution system. This new infrastructure of power distribution includes the collection of digital systems called the smart grid. In the smart grid, one of the main components is the distribution system, and the consumption reports are transferred from the substations to the control center. Currently, the smart substations use the IEC61850, however, it is not completely safe. IEC 62351 is used to secure this standard. However, the security protocols are provided for IEC 62351 standard, and there are different security issues to this standard. This paper presents a key agreement scheme with an authentication mechanism based on ECC for securing the communication between the data center and substation. In addition, it can cover the standard security weaknesses, and the session .(key is generated due to the time limit for the two important protocols in IEC 62851 (i.e. GOOSE and SV

کلمات کلیدی:

Session key, Authentication, Key agreement, Smart grids, Security, Substation

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